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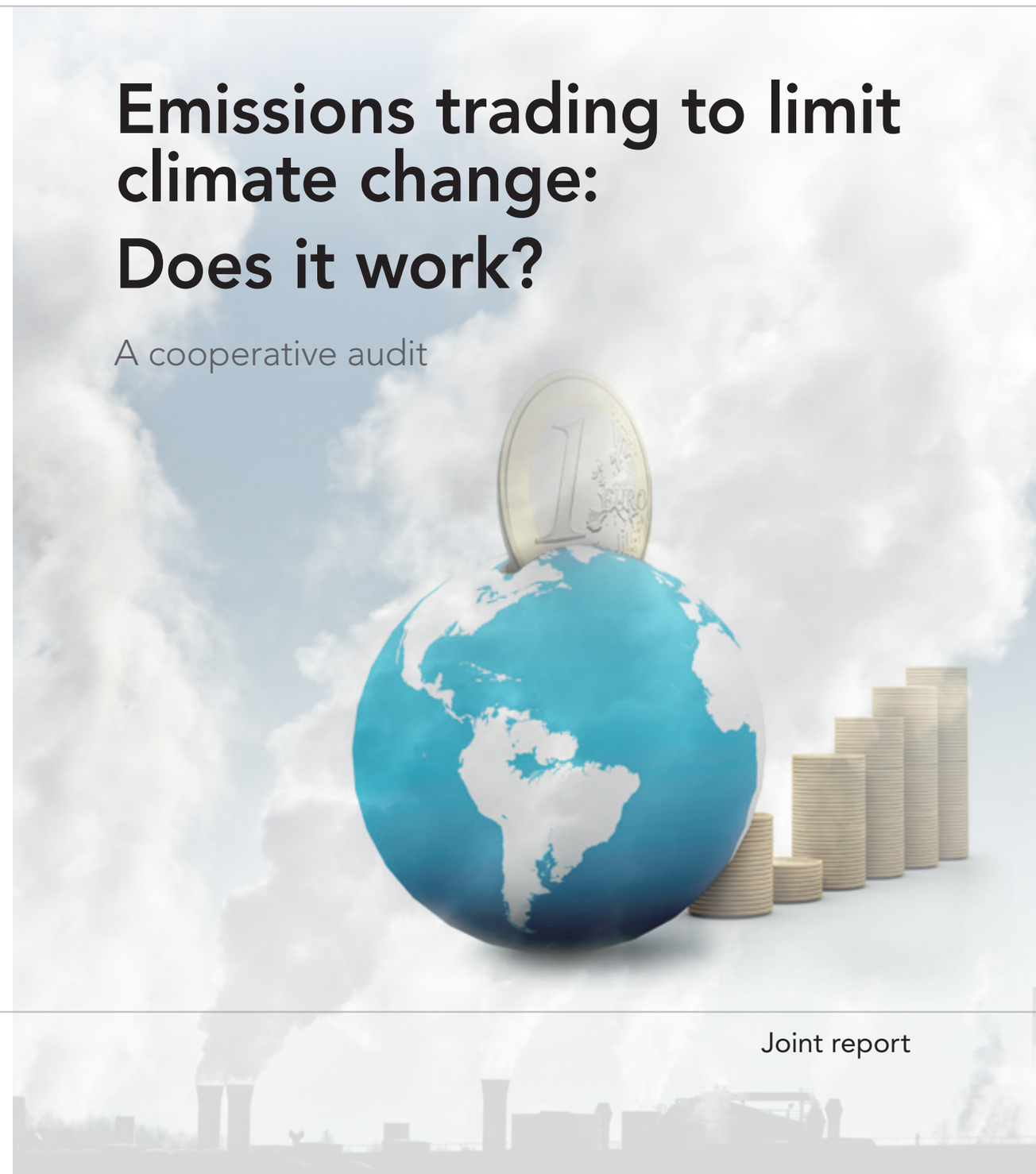
Emissions trading to limit climate change: Does it work?

A cooperative audit



Joint report

Seven European Supreme Audit Institutions have been partners in this cooperative audit on emissions trading:

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Supreme Audit Institutions

The role of Supreme Audit Institutions (SAIs) is to conduct independent audits of governments' activities. These assessments provide the national parliaments with objective information to help them examine the government's public spending and performance. The International Organisation of Supreme Audit Institutions (INTOSAI) is the international umbrella organisation for Supreme Audit Institutions. The aim of the institutionalised framework is to promote development and transfer of knowledge, improve government auditing world-wide and enhance professional capacities, standing and influence of member SAIs in their respective countries. The regional organisation for Supreme Audit Institutions on the European level is EUROSAI. One of its working groups is the EUROSAI Working Group on Environmental Auditing (EUROSAI WGEA). The aim of the working group is to contribute to increase the SAIs' capacity in auditing governmental environmental policies, to promote cooperation, and to exchange knowledge and experiences on the subject between SAIs.

Messages from Heads of Supreme Audit Institutions

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The Supreme Audit Institutions play an important accountability role by reporting to parliaments on the efficient, effective and cost-effective implementation of, amongst other things, environmental and energy policies.

Climate change is considered by both United Nations (UN) and EU as one of the biggest environmental, economic and social challenges, and needs to be addressed in a coordinated effort at an international level. Emissions trading is a key policy instrument in meeting national and the Kyoto Protocol emissions targets in a cost-effective way. The implementation of the EU Emissions Trading System (EU ETS) and the project-based mechanisms under the Kyoto Protocol (the Clean Development Mechanism (CDM) and Joint Implementation (JI)) have been a huge administrative undertaking and entail new tasks and roles for governments and companies. There are potential risks related to the implementation of these systems as well as to their effectiveness.

The aim of the cooperative audit has been to assess the trustworthiness, reliability and effectiveness of the EU ETS and project-based mechanisms under the Kyoto Protocol. This report draws on findings gained from individual audit reports from seven countries in the years 2008–2012.

The cooperative audit has established that the governments of the Nordic–Baltic–Polish partnership have implemented the EU ETS in line with current EU legislation and the provisions under the United Nations Framework Convention on Climate Change (UNFCCC). The effectiveness of the system in contributing to long-term emissions reductions is however a major challenge as allowance prices have been low due to a general surplus of allowances in the system during the period 2008–2012.

Moreover, the full potential of the JI and CDM mechanisms is not being realised. The main reasons are slow approval and verification procedures. The cooperative audit has also identified weaknesses in the risk management in the buyer countries.

There has been significant Value Added Tax (VAT) fraud related to emissions trading, which challenges the credibility of the system and results in a loss of state income. Some countries have introduced temporary measures against VAT fraud in trading allowances, but a comprehensive and long-term solution is not yet in place.

Based on these conclusions, we recommend consideration of the following:

- In order to ensure adequate incentives for long-term reductions of emissions, it should be ensured that instruments are in place and used to limit any excessive amounts of allowances/credits for the next emissions trading period.
- Governments should consider making full use of their discretionary power provided by EU legislation to improve the effectiveness of the system.
- Vigilance is still needed in the area of VAT fraud, and cooperation between tax authorities and EU ETS administrators, as well as cross-border cooperation remains important.
- To speed up the project process, simplifying procedures for CDM projects should be considered, without giving up the strict requirements for control and verification. It is also important that the buyer countries conduct proper risk analyses in order to detect and handle problems at an early stage.

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Summary

The Nordic–Baltic–Polish cooperative audit on emissions trading was performed in 2012 and involved the Supreme Audit Institutions (SAIs) of Denmark, Finland, Latvia, Lithuania, Norway, Poland and Sweden.[1] The report builds on 13 individual national audit reports.

The aim of the cooperative audit was to assess:

- the effectiveness of the EU Emissions Trading System (EU ETS) in reducing national greenhouse gas emissions or fostering technology development
- the proper functioning of the EU ETS: national registries, greenhouse gas emissions permits and emissions reporting
- the implementation and administration of Clean Development Mechanism (CDM) and Joint Implementation (JI) programmes

There are clear indications from the cooperative audit that the emissions limitation targets adopted in the Kyoto Protocol or through the EU Burden Sharing Agreement are likely to be met in all seven countries by the end of the first Kyoto Protocol commitment period (end of 2012). The countries have implemented the EU ETS in line with the current EU legislation and the provisions under the UNFCCC. However, the effectiveness of the system in reducing emissions is a major challenge. For the Nordic countries the EU ETS provided little incentive for long-term reductions in CO_2 emissions as allowance prices have been low due to a general surplus of allowances in the system during the period 2008–2012. Taking into account the slower economic growth than expected, emissions trading did not provide a strong market mechanism that has raised the costs of emissions related to production and given a competitive advantage to cleaner production.

The audits for Latvia, Lithuania and Poland have shown that emissions have increased at a slower pace than economic growth. However, in this audit it has not been possible to measure whether this can be attributed to the effectiveness of the EU ETS.

Most governments have not used their discretion provided in the EU legislation to auction 10% of the allowances to operators or to set restrictions on the use of operators' revenues from selling allowances. Both of these factors have led to less control of the system.

The EU ETS has been complicated to put into place, but overall the system has been properly implemented. Verification procedures for operators' monitoring and reporting of emissions are in place. However, the data security of the national registries has been challenged by fraudsters. Major concerns relating to IT security have been addressed through national initiatives and system changes. The recent centralisation of the registry is expected to strengthen security further.

There have been major cases related to cross-border VAT fraud in trading allowances. These were caused by lack of a proper verification of the identity of individuals and by criminals who were abusing normal VAT reimbursement procedures. The identification problems were solved and a temporary change to reverse charge VAT in several countries has reduced the risk of fraud, while a long-term and more comprehensive solution is still to be established.

All the Nordic countries have established purchase programmes for CDM and JI projects. Delivery of credits has generally taken longer than planned. The audit from a host country concluded that the full potential for JI projects has not been realised yet. Furthermore audits in the Nordic countries have found that better risk assessment could improve effectiveness.

1 Estonia participated as a reviewer of the report.

Acronyms and glossary

AAU – Assigned Amount Unit: a Kyoto Protocol unit equal to one tonne of carbon dioxide equivalent. The industrialised countries in Annex I to the United Nations Framework Convention on Climate Change (UNFCCC) are issued AAUs up to the level of their assigned amount. AAUs may be exchanged through international emissions trading.

Allowance – An allowance to emit one tonne of carbon dioxide equivalent during a specified period. Allowances are part of the EU Emissions Trading System and are transferable. An allowance from the project-based mechanisms (Clean Development Mechanism and Joint Implementation) is often called credit.

Carbon leakage – An increase in emissions outside a country or region as a direct result of a policy to limit emissions in a country or region, for example in the form of a cap or a tax on emissions.

Cap and trade principle – A cap is set on the total amount of greenhouse gas emissions that can be emitted by the installations in the system. Companies receive emissions allowances within a fixed limit that they can use to compensate for their emissions, sell or buy. The limit on the total number of allowances available ensures that allowances have a value.

CDM – Clean Development Mechanism: A mechanism under the Kyoto Protocol through which developed countries finance greenhouse gas emission reduction or removal projects in developing countries.

CER – Certified Emission Reduction: A Kyoto Protocol unit equal to one tonne of carbon dioxide equivalent. CERs are issued for emission reductions from Clean Development Mechanism projects.

CO_2 – Carbon dioxide: A gas produced by burning carbon and organic compounds and by respiration. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance.

CO_2 equivalent – a unit for measurement of greenhouse gas emissions. It states the quantity of a greenhouse gas expressed in terms of the amount of carbon dioxide that has the same impact on the climate: the impact of, for example, 1 kg of methane corresponds to 21 kg CO_2.

Community Independent Transaction Log – Monitors, registers and validates all transactions between accounts in the National registries. Replaced by the European Union Transaction Log upon activation of the Union Registry.

Cost-effectiveness – The degree to which objectives are achieved in comparison to relative expenditure.

Credit – refer to "allowance".

Effectiveness – The extent to which objectives are achieved and the relationship between the intended impact and the actual impact of an activity.

Efficiency – The relationship between the output, in terms of goods, services or other results, and the resources used to produce them.

ERU – Emission Reduction Unit: A Kyoto Protocol unit equal to one tonne of carbon dioxide equivalent. ERUs are generated for emission reductions from Joint Implementation projects.

ETS – Emissions Trading System: A climate policy instrument based on a cap and trade principle, aiming to reduce greenhouse gas emissions by providing economic incentives.

EU Burden Sharing Agreement – Under the Kyoto Protocol, the pre-2004 EU-15 group of Member States has taken on a common commitment to reducing emissions by 8 % on average between 2008 and 2012, compared to base-year emissions (1990). Within this overall target, differentiated emissions limitation or reduction targets have been agreed for each of the 15 pre-2004 Member States under an EU accord known as the "Burden-Sharing Agreement".

EUROSAI – European Organisation of Supreme Audit Institutions

EUROSAI WGEA – EUROSAI Working Group on Environmental Auditing

EU ETS – EU Emissions Trading System, formerly also referred to as Emissions Trading Scheme.

European Union Transaction Log – Automatically checks, records and authorises all transactions that take place between accounts in the Union Registry.

Flexible Mechanisms – The Kyoto Protocol introduced three market-based mechanisms, thereby creating what is now known as the "carbon market." The Kyoto mechanisms are: Emissions Trading, the Clean Development Mechanism and Joint Implementation.

GHG – GreenHouse Gas: Gaseous constituents of the atmosphere, both natural and anthropogenic, which absorb infrared radiation in the atmosphere.

Hacking – Unauthorised attempt to bypass the security mechanisms of an electronic system.

INTOSAI – International Organisation of Supreme Audit Institutions

IPCC – The Intergovernmental Panel on Climate Change was set up in 1988 to provide authoritative scientific assessments on climate change.

International Transaction Log – Related to the United Nations Framework Convention on Climate Change, verifies transactions proposed by national registries to ensure they are consistent with rules agreed under the Kyoto Protocol.

JI – Joint Implementation: A mechanism under the Kyoto Protocol through which a developed country can receive emission reduction units when it helps to finance projects that reduce net greenhouse gas emissions in another developed country.

Kyoto Protocol – The Kyoto Protocol was adopted under the United Nations Framework Convention on Climate Change in 1997 and sets binding targets for the reduction of greenhouse gas emissions by industrialised countries.

LULUCF – Land Use, Land Use-Change and Forestry

National Allocation Plan – Each member of the EU Emissions Trading System has to develop a National Allocation Plan. The plan defines the total amount of emissions allowances for a given period and how it intends to allocate these to operators.

Operator – A company subject to the EU Emissions Trading System.

OECD – The Organisation for Economic Co-operation and Development.

Phishing – An attempt to get access to confidential information under the pretence of being a trustworthy part of the electronic system in question.

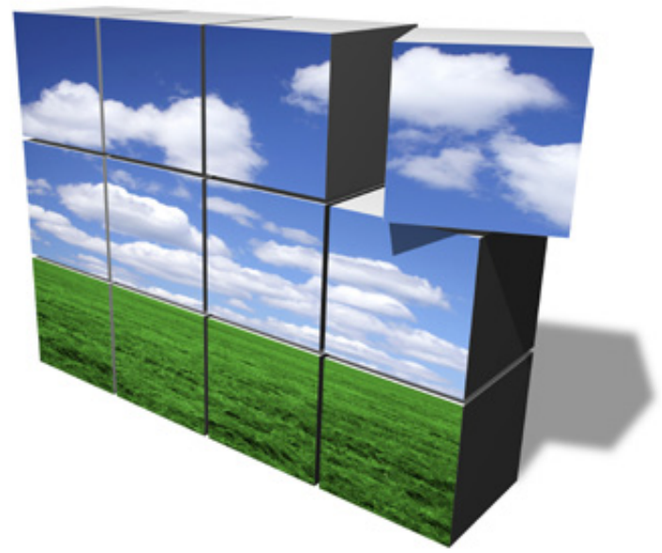
Project-based mechanisms – Established under the Kyoto Protocol, see JI and CDM.

Reverse charge VAT collection – Value Added Tax collection system whereby the buyer – and not the seller, as in the general rule – is responsible for calculating and paying the value added tax on the sales.

SAI – Supreme Audit Institutions

UNFCCC – United Nations Framework Convention on Climate Change

VAT – Value Added Tax



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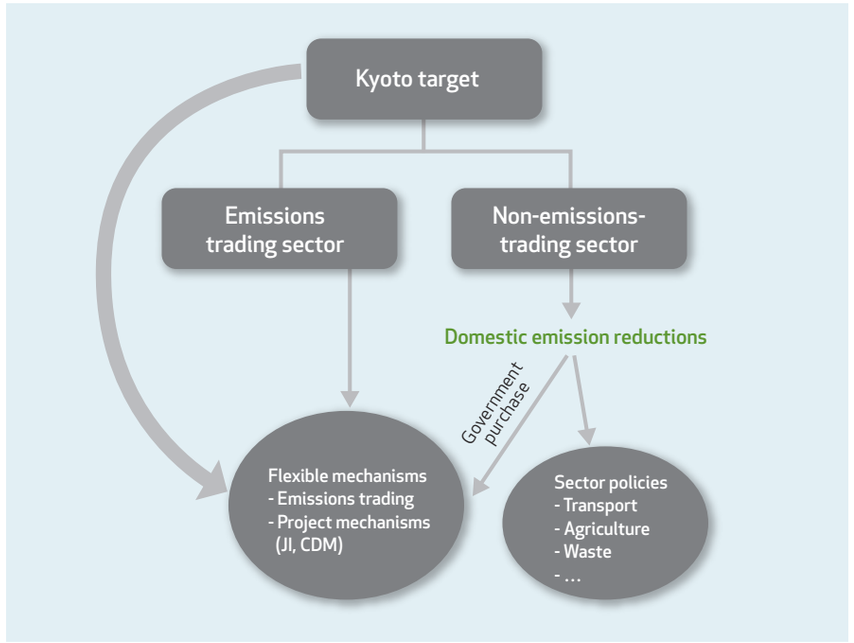
1 Background

1.1 The EU Emissions Trading System

The Kyoto Protocol under the United Nations Framework Convention on Climate Change (UNFCCC) has worked out the so-called flexible mechanisms to meet national emissions targets. These mechanisms consist of Emissions Trading Systems (ETS), the Clean Development Mechanism (CDM) and Joint Implementation (JI). The Kyoto Protocol provides individual country targets for greenhouse gas (GHG) emissions.[2] The EU has within the framework of the Kyoto Protocol established an Emissions Trading System (EU ETS) as a key policy instrument to mitigate GHG emissions. Figure 1 illustrates the relation between the EU ETS and non-ETS sectors and the different Kyoto mechanisms.

Figure 1: The relation between the EU ETS and non-ETS sectors



2 The pre-2004 15 EU Member States are committed to reducing their average emissions by 8% in the period 2008–2012 compared with base year levels (1990). For the EU to reach its reduction targets, in 1998 a political agreement was reached to divide the burden of reaching this target unevenly among Member States.

The EU ETS is one of the cornerstones in the EU "20-20-20" energy and climate target. Its purpose is to reduce GHG emissions in a cost-effective and economically efficient manner. It is based on the "cap and trade" principle. The cap represents the amount of total allowed emissions for the system as a whole and for each installation emitting GHG. That means that the effectiveness of the system is in principle equal to the total emissions reductions according to the cap. One carbon credit unit, or emissions allowance, is the right to emit one tonne of CO_2 equivalent.

The EU implemented its first ETS in 2005. In 2008 the system was expanded. The ETS now operates in 30 countries (the 27 EU Member States, Iceland, Liechtenstein and Norway). The system covers GHG emissions from installations such as power plants, combustion plants, oil refineries and iron and steel works, as well as factories producing cement, glass, lime, bricks, ceramics, pulp, paper and board. The installations currently in the system account for almost half of the EU's CO_2 emissions and 40% of its total GHG emissions.

If the operator has a deficit of allowances in relation to its emissions, the operator can buy more allowances on the market. If the operator has a surplus of allowances, the operator can sell them. The cost of buying allowances is meant to trigger investments that will reduce emissions, or reduce the demand for carbon-intensive products. The price of allowances is determined by the market (supply and demand). The number of allowances in the ETS is consequently an important factor for its effectiveness.

National Allocation Plans (NAPs) set out the total quantity of allowances that governments grant to operators in the first (2005–2007) and the second (2008–2012) trading periods. Before the start of these periods, each country had to propose how many allowances to allocate in total for the trading period and the amount each installation would receive. The plans were subject to approval or rejection by the European Commission or the EFTA Surveillance Authority. For the 2008–2012 trading period the cap corresponds to the sum of allowances in the NAPs which have been approved. The total number of allowances in the EU ETS can only be changed if the cap in the EU ETS is modified. Operators may, however, buy CDM and JI credits up to a certain limit – and in this way the actual number of allowances in the EU ETS is increased above the cap.

From 2012 the EU ETS also covers airlines. When the third trading period (Phase III, 2013–2020) starts, the system will be extended to cover more sectors, petrochemicals, ammonia and aluminium industries and to additional gases. Further, the EU sets the cap for each Member State and allocates free allowances to the Member States. In Phase III the EU has put in place a single European cap on emissions in the ETS. The European Commission has proposed to amend the ETS Directive to postpone some of the allowances to a later part of Phase III in order to increase the allowance prices in the first part of Phase III by limiting supply.[3]

3 *Commission prepares for change of the timing for auctions of emissions allowances.* News article, 25 July 2012.

During Phase II operators could receive their allowances free of charge from the state, or buy some of them. For the trading period 2008–2012, at least 90% of the allowances had to be allocated free of charge. The remaining allowances could be sold, by for example auctioning. Within the EU, six Member States have informed the European Commission that they would auction allowances. In Phase III the EU expects to give half of the allowances away for free and auction the other half.

Operators must be in possession of a GHG emissions permit including a monitoring plan which defines the methods for measurement or calculation of emissions. A thorough assessment of operators' GHG emissions permit applications is essential in order to provide a sound basis for subsequent emissions reporting.

Correct emissions monitoring and reporting is the basis for operators' annual allowance settlement, but also the basis for future allocation periods on an aggregated country level as well as on the operator level. Adequate verification of emissions monitoring and reports is therefore crucial. The Commission has within the framework of the ETS Directive adopted reporting guidelines for GHG emissions. The Directive (Article 14) requires governments to ensure that operators of installations monitor and report their GHG emissions in accordance with these guidelines. Operators have to submit emissions reports electronically each year within a fixed deadline. The competent authority for GHG emissions has then to verify these reports and approve the amount of reported emissions. Operators must surrender the equivalent number of allowances by 30 April of the same year.

Each state participating in the EU ETS must operate a national ETS registry. The registry system is similar to a banking system, which keeps track of the ownership of money in accounts, but does not look into the deals that lead to money changing hands. To participate in the EU ETS, a company or a natural person must open an account in one of the national registries.

These registries are online databases that record:

- accounts to which allowances have been allocated
- transfers of allowances ("transactions") performed by account holders
- annual verified GHG emissions from installations
- annual reconciliation of allowances and verified emissions, where each operator must have surrendered enough allowances to cover all its emissions

The National registry shall ensure the accurate accounting of allowances as well as the accuracy of data, the security of data storage and exchange, and the transparency and auditability of transactions. Given the significant monetary value of the ETS for both the state and the operators, it is paramount that the national registry is secure and functioning properly. In addition, well-functioning control mechanisms and transparency are important factors to instil confidence in the system. The trustworthiness

of the EU ETS depends on its capacity to protect itself from different kinds of fraud, such as hacking[4], phishing[5] and VAT fraud.

In July 2012, the national registries have been replaced by a single EU registry operated by the European Commission. The European Union Transaction Log (formerly Community Independent Transaction Log) records and authorises all transactions that take place between accounts in the EU ETS registries. This verification is done automatically and ensures that any transfer of allowances from one account to another is consistent with the EU ETS rules.

1.2 The Clean Development Mechanism (CDM) and Joint Implementation (JI)

The so-called project-based Kyoto mechanisms, CDM and JI, allow for the use of certified reductions from third countries to meet own emissions targets. These are based on the principle that it does not matter for climate change where the GHG emissions occur, and that emission-reducing measures can be implemented where they give the greatest emissions reduction per unit of money invested. The purpose of the CDM is to assist countries without quantified commitments in achieving sustainable development and in contributing to the ultimate objective of the UNFCCC, as well as to assist the Annex I Parties under the UNFCCC (see box 1) in meeting their quantified emission commitments. It is also a goal of the Kyoto Protocol that CDM projects should result in real, measurable, long-term benefits and reductions in emissions which are additional to any that would have occurred in the absence of the certified project activities. JI, like CDM, is a project-based mechanism, but JI projects are carried out in countries with quantified commitments under the Kyoto Protocol (see box 1).

The Parties to the Kyoto Protocol have adopted detailed rules for the verification of CDM and JI projects. All CDM projects must go through an extensive certification process in which emissions reductions and their contribution to sustainability in the host country must be documented. This process is intended to ensure that projects are implemented in accordance with CDM regulations negotiated by the parties to the Kyoto Protocol. The project must be approved by an external designated operational entity, by the CDM Executive Board appointed by the UNFCCC and by the host country. The CDM Executive Board evaluates and certifies projects. An external certified company checks the project at two different stages: on validation and on verification. A similar system is in place for JI projects.

4 Hacking attacks may occur if internal security is not strictly ensured such as by logging into an unsecured network.

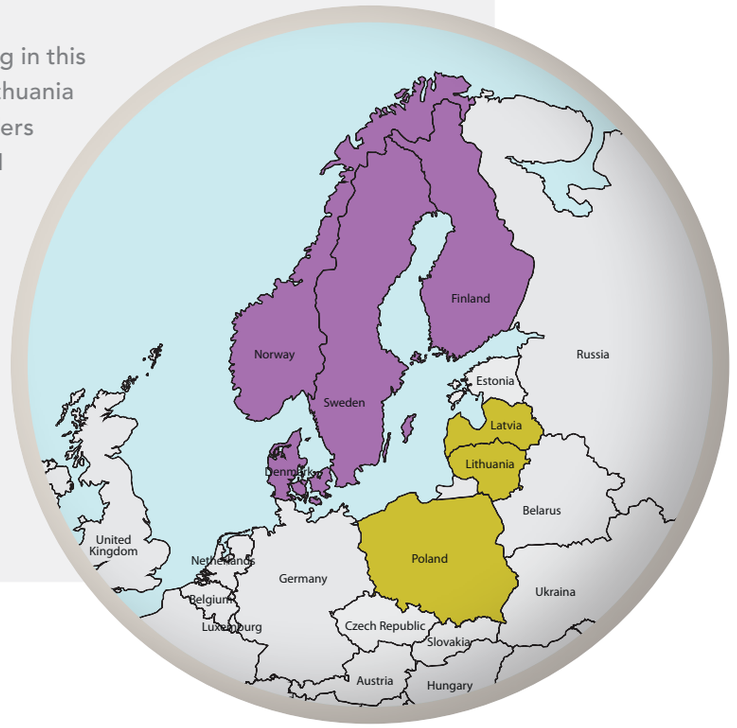
5 Phishing is attempting to acquire account holders' user names and passwords under the pretence of being a trustworthy part of the electronic system, and thus gain access to the system.

BOX 1: COUNTRIES WITH QUANTIFIED COMMITMENTS

Industrialised countries listed in Annex I to the UNFCCC, which have accepted emissions targets for the period 2008–2012 in accordance with the Kyoto Protocol. They include

- most of the original OECD members, except USA and Canada (including Denmark, Finland, Norway and Sweden)
- the European Union members, except Cyprus and Malta
- countries with economies in transition (including Latvia, Lithuania and Poland)

Of the countries participating in this audit, in particular Latvia, Lithuania and Poland are potential sellers of allowances and hosts of JI projects. Denmark, Finland, Norway and Sweden are potential buyers of credits from CDM and JI projects.



1.3 Scope of the cooperative audit

The aim of the cooperative audit was to assess:

- the effectiveness of the EU ETS in reducing national GHG emissions or fostering technology development
- the proper functioning of the EU ETS: national registries, GHG emissions permits and emissions reporting
- the implementation and administration of CDM and JI programmes

The audit has focused on the first commitment period of the Kyoto Protocol and the second phase of the EU ETS, i.e. 2008–2012.

The scope of the individual audits of the participating SAIs naturally varies, as both risks and implementation differ between the countries. An overview of the scope and time of audits is provided in table 1. Abstracts of the individual national audits are provided in chapter 6.

- All partner countries to the audit except Finland have audited effectiveness in terms of either emissions target achievement or emissions trading as a means to achieving the target.
- Registry systems were audited by Denmark, Latvia, Lithuania, Norway and Poland and emissions reporting by Latvia, Lithuania, Norway and Poland.
- The implementation and administration of CDM and JI programmes were audited by all partner countries, except Latvia[6]. Denmark only audited the contribution in the form of credits from CDM/JI projects.

Table 1: Partner countries' audits

	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
National targets / Kyoto Protocol	2012		2011		2010	2009 2012	2009
Effectiveness of emissions trading	2012		2011	2008 2012	2010	2009 2012	2012
Implementation and administration of CDM/ JI programmes		2009 + follow-up in 2011		2012	2010	2012	2011
Emissions reporting and registries	2011		2011	2012	2012	2009 2012	
No. of reports	2	1	1	2	2	2	3

6 Where there are no accepted CDM and JI programmes.

1.4 Audit methods

Cooperative audit

The overall findings, conclusions and recommendations as well as the case studies in this report are based on the SAIs' answers to a set of common audit questions (see chapter 7) and on the national audit abstracts. Supplementary information has been provided by SAIs on request. The interpretation and incorporation of the individual national findings in the cooperative audit's findings, conclusions and recommendations have been quality controlled by each individual SAI.

National audits

The national audits' approaches, including audit criteria, methodology, quality control and publication of the national results, have been carried out in accordance with the countries' standard procedures. The audit criteria applied in the national audits are based on national criteria, EU legislation and international commitments. The common basis for the audit criteria is provided in chapter 9. The actual criteria used can vary from audit to audit. Standard auditing methodologies like interviews, document analysis, spot checks and questionnaires have been applied.

2 Findings

2.1 The effectiveness of the EU Emissions Trading System in reducing GHG emissions

In order to assess the effectiveness of the EU ETS in reducing GHG emissions, the following audit objectives have been addressed:

1. Will the countries fulfil their GHG emission targets under the Kyoto Protocol for the period 2008–2012?
2. Has the EU ETS given incentives for operators to invest in GHG emission reducing technologies?
3. Has the implementation of the EU ETS in each country been conducive to ensure effectiveness?

BOX 2: EFFECTIVENESS OF THE EU ETS IN REDUCING GHG EMISSIONS

In assessing the effectiveness of the EU ETS in reducing GHG emissions, two factors have been examined:

- whether the objectives of the system in terms of reaching the GHG emission targets have been achieved
- whether the achievement of the objective of reaching the GHG emission targets can be attributed to the EU ETS

2.1.1 Targets under the Kyoto Protocol and the EU Burden Sharing Agreement are likely to be met

The cooperative audit shows that in some of the countries, the EU ETS is a significant mechanism in reaching the Kyoto Protocol targets. Overall, the EU has a reduction target of 8%, with individual country targets according to the EU Burden Sharing Agreement (see table 2).

Table 2: GHG emissions and Kyoto Protocol targets (excluding LULUCF)

	Base year emissions (Mill. tonnes CO_2 equivalents)	Target 2008–2012, %-change base year	Change base year–2008 (%)	Change base year–2009 (%)	Change base year–2010 (%)	Emissions 2008 (Mill. tonnes CO_2 equivalents)	Emissions 2009 (Mill. tonnes CO_2 equivalents)	Emissions 2010 (Mill. tonnes CO_2 equivalents)
Denmark	70	-21	-7.1	-11.3	-10.5	65	62	63
Finland	71	0	-0.2	-6.0	+6.0	70	66	75
Latvia	27	-8	-55.8	-58.7	-54.5	12	11	12
Lithuania	49	-8	-51.0	-59.1	-57.1	24	20	21
Norway	50	+1	+8.1	+3.3	+8.2	54	52	54
Poland	564	-6	-28.9	-32.3	-28.9	401	382	401
Sweden	73	+4	-12.6	-18.0	-9.0	64	60	66

Source: Annual European Union greenhouse gas inventory 1990–2010 and inventory report 2012. Technical report No 3/2012. The European Environment Agency, 27 May 2012 and UNFCCC.

Table 2 shows that the emissions from Latvia, Lithuania and Poland have been substantially below the average target each year from 2008–2010. It is therefore practically certain that these countries will meet the target. For the participating Nordic countries, except Sweden, actual emissions in the period 2008–2010 have been either above or close to the target. However, the final accounts indicating whether these countries will meet the target will not only depend on national emissions reductions in the remaining part of the period, but also on the countries' use of the flexible mechanisms. The audits show that in these countries, overall the reduction targets are likely to be met by a combination of the EU ETS and the other flexible mechanisms. Whether the countries will meet the target for 2008–2012 cannot be assessed definitely until data for the remaining part of the period are available.

The EU ETS covers substantial parts of emissions from different sectors (see chapter 1) but its scope varies between the countries. Table 3 shows that the ETS sectors are relatively biggest in Finland and Poland and relatively smallest in Latvia and Lithuania. In Finland, annual emissions vary considerably, e.g. depending on weather conditions. In 2010, the emissions in Finland were unusually high due to a shortage of hydroelectric power in the Nordic electricity market.

Table 3: Per cent of GHG emissions covered by the EU ETS in 2010
(% of total emissions excluding LULUCF)

	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
% of GHG emissions covered by EU ETS	43%	55%	27%	31%	36%	50% (CO_2 only)	34%

Source: The SAIs

Table 3 shows that the EU ETS covers a large share of emissions in all countries. Case 1 shows that the ETS sector in Denmark has contributed to the overall GHG emissions reductions with a share which is in line with what was expected in the National Allocation Plan (NAP).

CASE 1: Expected and actual share of emissions from the ETS sector in Denmark are the same

In Denmark, the actual share of GHG emissions from the ETS sectors was 43% in 2010, almost the same as the expected share for the period 2008–2012, which was 44%. The Danish audit concludes that this is more likely because of the economic crisis than because of the EU ETS.

2.1.2 In some countries, the EU ETS has not provided adequate incentives for operators to invest in GHG emission reducing technology

The price of allowances has been lower than expected

For the EU ETS to have long-term effects on GHG emissions, it should lead to more clean technology investments than would have been the case without the ETS.

BOX 3: ECONOMIC INCENTIVES TO REDUCE EMISSIONS

According to standard economic theory, if reducing an operator's emissions is cheaper than the price of allowances, the operator has an incentive to reduce GHG emissions and sell possibly freely allocated surplus allowances rather than buying extra allowances. On the other hand, if reducing GHG emissions costs more than the price of allowances, it is in the interest of the operator to buy allowances corresponding to its emissions. In these considerations, the operator will also have to assess the need for reductions under future ETS systems.

Figure 2 shows the actual price of allowances in Phase II of the EU ETS. The price of allowances was only for a short period, in 2008, above EUR 20. After this, the price stabilised at around EUR 15 from end of 2008 until mid-2011. Since second half of 2011, the price has gradually decreased to below EUR 5. By the beginning of December 2012 the price was EUR 6.

Figure 2: The price of allowances 2008–2012 (EUR)

Source: Thomson Reuters

A Green Paper[7] from the European Commission from 2000 estimated that a price of EUR 33 is necessary to make the EU ETS effective. The expected price of allowances used when Denmark drew up its NAP was EUR 20. Thus, the actual allowance price has – with an exception of a short period – been lower than the price projected to ensure the effectiveness of the system.

According to a EU Commission working document[8], it is likely that the financial crisis is the main reason for the low price of allowances compared with the projected price. The crisis has led to lower than expected industrial production, which again has led to a lower demand for allowances.

Case 2 from Denmark and Norway illustrates that alternatives to buying allowances may be more costly. Furthermore, replacing the previous tax system with the EU ETS has resulted in fewer incentives to reduce domestic emissions in Norway. Case 3 from Sweden illustrates that due to the low prices in the EU ETS the Swedish ETS companies pay considerably less for their emissions than the companies outside the ETS.

7 Green Paper (COM(2000) 87 final) on greenhouse gas emissions trading within the European Union. Brussels, 8.3.2000.
8 The EC Staff Working Document (2012) 234 final, 25.7.2012.

CASE 2: Alternatives to buying allowances are more expensive

Estimates from the Danish audit (2012) on Denmark's GHG emissions reductions show that the price of allowances needed to be considerably higher than EUR 20 for it to have been cost-effective for energy-producing enterprises to invest in land wind energy instead of coal.

In Norway the EU ETS has replaced a CO_2 tax in several sectors. The audit from 2010 concluded that the current price of allowances gives weaker incentives for implementation of national measures in most sectors than the tax did, because the tax implied a price of emissions which was higher than the current allowance price. The effect of the ETS in reducing national emissions was estimated to only 0–0.5 mill. tonnes per year.

CASE 3: Polluters' costs for emissions in Sweden

Both the EU ETS and the CO_2 tax provide a price on CO_2 emissions, but companies in the trading sector have in practice paid very little, in some cases nothing, for emissions. This is due to reductions in and exemptions from climate-related taxes. This is also due to Swedish companies having obtained a completely free allocation of more allowances than they have needed (see case 6).

In principle the CO_2 tax was abolished for Swedish companies within the ETS from 2011. For companies outside the ETS, the CO_2 tax has been increased during 2010–2015. According to the Swedish NAO's calculations, Swedish companies in the trading sector are expected to see a decrease in expenditure on CO_2 tax of EUR 750 mill. per year for the period 2009–2015. In the non-trading sector, the companies are expected to see an increase in expenditure on CO_2 tax of EUR 209 mill. per annum during the same period.

Carbon tax could be effective in reducing growth in emissions

Case 4 from Norway shows that a higher tax – and thus a higher price on emissions – provides an incentive for companies to invest in emissions-reducing technologies.

CASE 4: Carbon tax on Norwegian petroleum activities has reduced the growth in emissions

Energy generation causes about 90% of the emissions from Norway's petroleum sector. A CO_2 tax on petroleum activities offshore was introduced in Norway in 1991. The 2010-audit found that this tax level translates into a cost per tonne of CO_2 emitted that is higher than in other sectors. In addition, emissions from this sector have been lower than they would have been without the tax. Operators report that measures to improve energy efficiency have been motivated by taxation. The audit found that this effect has decreased in recent years because available reduction measures are no longer considered cost-effective by the companies.

Allocated allowances have exceeded actual emissions

Table 4 and 5 show the projected emissions compared to the allocations requested by each country from the European Commission, as well as the allowances allocated in the ETS sectors for each country.

Table 4: ETS Phase II: Projected emissions compared to requested allowances and allocated allowances. Annual average 2008–2012. Mill. tonnes CO_2 equivalents

	Projected GHG emissions in the ETS sectors as submitted to the European Commission from each country	Allocations asked for by the country	Actually allocated allowances
Denmark	29.7	24.5	23.9
Finland	45.3 (average per year 2008–2011)	39.6	37.6
Latvia	6.25	6.25	3.4 (until 31 July 2011)* 6.25 (as per 1 Aug. 2011)*
Lithuania	18.4	16.6	8.8
Norway	21.0 (2010)	15.0	15.0* (of which 6.3 were auctioned)
Poland	208.5 (including new entrants)	208.5	205.6 *
Sweden	27.1	25.2	22.5 *

Source: The SAIs

*Including reserve for new entrants

In Phase II each country decided the total amount of allowances for its ETS sectors as a whole in its National Allocation Plan. The replies from the countries show that the methodologies used to calculate projected emissions and decide the total quantity of allowances differ between the countries. For most countries, the amount of allowances asked for were lower than the projected emissions and the finally approved

number of allowances were the same as or lower than the amount asked for. All plans have been approved by the European Commission or the EFTA Surveillance Authority.

Exept for Norway, Denmark (2008–2010) and Finland (2010), table 5 shows that allocated allowances have been higher than the actual GHG emissions in the ETS sector taken together for all of the countries in all four years.

Table 5: Allocated allowances for EU ETS Phase II compared with actual emissions. Mill. tonnes CO_2 equivalents

	Allocated allowances for ETS Phase II, average per year, including reserve according to the NAP	Actually allocated allowances for 2008–2011, average per year	Actual emissions 2008	Actual emissions 2009	Actual emissions 2010	Actual emissions 2011
Denmark	24.5	23.9	26.5	25.5	25.3	21.5
Finland	37.6	37.6	36	34.4	41.5	35.1
Latvia	3.4 (until 31 July 2011) 6.25 (as per 1 Aug. 2011)	3.4 (until 31 July 2011) 4.41 (as per 1 Aug. 2011: information at 4 July 2012)	2.7	2.5	3.2	2.9
Lithuania	8.84	6.0	6.1	5.8	6.4	5.6
Norway	15	7.9	19.3	19.2	19.4	19.2
Poland	208.5	204.0	204.1	191.2	199.7	203.0
Sweden	22.5	22.2	20.1	17.5	22.7	19.8
EU ETS overall – for comparison	2,081	1,983	2,120	1,880	1,938	1,854

Source: Data provided by each SAI and EC home page (http://ec.europa.eu/clima/policies/ets/registries/documentation_en.htm and http://europa.eu/rapid/press-release_IP-07-1614_en.htm)

When actual emissions are below the allocated allowances, there is no incentive for the operators to buy extra allowances. Thus in the present Kyoto period (2008–2012), the operators have had very limited need to buy extra allowances or invest in emissions-reducing technologies. However, there is no accurate information on whether the reductions have been achieved via lower production, investment in clean technology or by other means. As is seen in table 5, an average total of 1,983 mill. allowances have been allocated for the period 2008–2011, while actual emissions have been on average 1,948 mill. tonnes per year. In Denmark, the amount of allowances allocated free of charge was 97% of the actual emissions in the period 2008–2011.

The audits for Latvia, Lithuania and Poland have shown that emissions have increased at a slower pace than economic growth. However, in this audit it has not been possible to measure whether this can be attributed to the effectiveness of the EU ETS.

2.1.3 The governments have not designed the parts of the system under their discretion optimally

In general, all allowances were handed out for free

In Phase II, each country decides the amount of allowances to be allocated to the sectors which are part of the ETS and, within the framework of the ETS Directive, whether the allowances are handed out for free to individual operators or auctioned. Governments in six out of seven countries handed out allowances for free, thereby reducing their own control over the system. Only Norway auctioned a large share of its allowances. (See cases 5 and 6).

CASE 5: Allocation of allowances in Norway

According to the EU ETS Directive, at least 90% of the allowances will be allocated free of charge. Norway, as an EEA/EFTA country, has been exempt from this provision for the period 2008–2012. Norway decided to sell approximately half of the allowances. No free allowances were allocated in the petroleum sector.

CASE 6: Surplus of allowances in Sweden

Every year from the start of the ETS in 2005, the trading sector in Sweden has been allocated far more allowances than it has required. Due to this, some installations and trade and industry sectors may have received considerable income without having had to take action to reduce emissions. To date, the surplus of allowances that have been allocated free of charge to Swedish companies has constituted a redistribution of capital which can be estimated to a value of approximately EUR 104 mill. per trading period. Companies in certain trade and industry sectors have, however, had to purchase allowances.

Limited possibility to withdraw allowances

In five of the countries, if an operator does not use its production capacity as fully as assumed in the NAP, the operator is free to sell unused allowances. In two other countries, allowances can be cancelled or given to other operators in some cases: in Finland cancelled in case of malpractice, and in Lithuania if the operator goes bankrupt. In Norway, the annual allocation is conditional on the operator holding a valid pollution permit and not having ceased activity. In Sweden, if an operator's pollution permit is revoked, the remaining yearly part of the allowances attributed to that operator may not be issued.

Few restrictions on the use of revenues from the sale of allowances

In all of the partner countries to this audit except for Lithuania, private enterprises may use profits from selling allowances as they wish. This is in line with the market principle the system is based upon. However, private enterprises in Lithuania and public operators in Latvia and Lithuania must use revenues from the sale of allowances to invest in emissions reductions. In these two countries, some investment in emissions-reducing technologies is ensured to the extent that operators have sold allowances and that there is adequate control of the correct use of the profits. However, audits from the two countries conclude that the governments cannot prove that the control is adequate. Furthermore, one of the audits concluded that not all operators spent the revenues as required, i.e. on emissions-reduction measures, nor did they all report in line with requirements. This is demonstrated by case 7 from Latvia and Lithuania.

The Latvian audit has shown that in public service sectors, competitive conditions are not fully met, and therefore it is easy for enterprises to transfer costs of buying allowances to electric and heating energy consumers instead of investing in emissions reductions. Consequently enterprises in public service sectors are not always motivated to find the cheapest ways of reducing emissions themselves, contrary to the ETS basic principle.

CASE 7: Not all operators spent revenues on emission-reductions measures in Latvia and Lithuania

The Latvian SAI collected information from a sample of energy operators regarding their use of revenues from the sale of allowances in Phase I from 2005 to 2007. This showed that 17% of the energy sector operators in the sample used the revenues to cover expenses which were not related to the reduction of GHG emissions.

During the audit, tariff calculation methodologies for heat energy and cogeneration envisaged that operators must use the revenue from emissions trading to cover the costs of emissions reduction, such as renovating existing equipment and purchasing of new equipment; these costs must not be included in the relevant tariff. After publishing the audit report, which included findings of a lack of control over correct use of profits, the Public Utilities Commission amended the tariff calculation methodologies and abolished the requirement that the revenue from emissions trading must be used to cover the costs of emissions reduction, arguing that the EU legislation does not prescribe the obligation to invest revenues from emissions trading to cover the costs of emissions reduction.

In Lithuania, in 2009 two operators did not spend the revenues as required. One operator did not provide complete information on received and used incomes. In 2010, two operators did not submit required information to the Ministry of Environment.

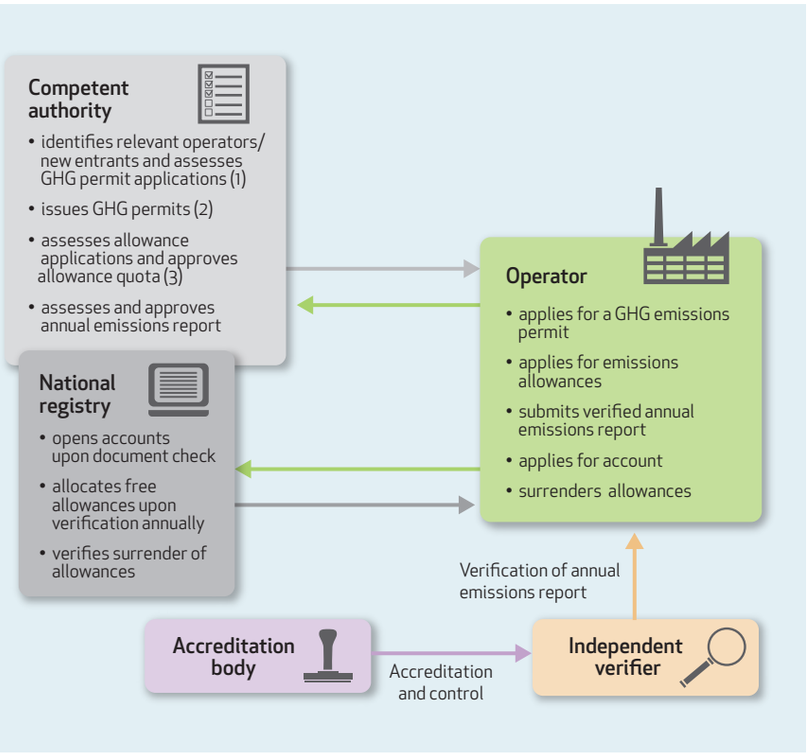
2.2 National registries, GHG emissions permits and verification of emissions reporting

Countries participating in the EU ETS must operate a national ETS registry, issue GHG emission permits to operators and verify emissions reporting. The objective of this part of the cooperative audit is to assess:

- whether all relevant operators are issued a GHG emissions permit and monitoring plan, and are allocated a correct number of allowances
- whether the national registry operates properly and securely
- whether the issue of fraud has been dealt with
- the adequacy of the emissions monitoring and reporting by operators

The organisation for issuing GHG emission permits and verifying emissions reporting is illustrated in figure 3, showing the roles of the competent authority, the national registry, independent verifiers and the accreditation body in relation to operators' obligations under the ETS.

Figure 3: The key roles in the ETS system



2.2.1 Operators are issued a GHG emissions permit and allocated a correct number of allowances

Identification of relevant operators subject to the ETS (see figure 3 point 1)

Although the institutional organisation of government bodies in charge of GHG emissions permits (competent authority) varies to some degree from country to country, the audit shows that the competent authority ensures that all installations subject to the ETS are identified. Information is provided by environmental agencies at national or regional level. Table 6 shows the number of installations subject to the EU ETS in each country.

Table 6: Number of installations subject to the EU ETS in each country in 2010

	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
Number of installations	380	589	77	101	110	811	754

Source: SAIs

Issuance of a GHG emissions permit and check of monitoring plan (see figure 3 point 2, page 30)

On the whole, the competent authority ensures that operators are issued an appropriate GHG emissions permit and that monitoring plans are in place.

Case 8 and 9 illustrate the importance of a proper assessment of emissions permit applications and the necessity of amending emissions permits and monitoring plans in case of changes at operator installations. The cases also give insight into a competent authority's assessment background.

CASE 8: Assessment of permit applications in Latvia

The Latvian audit has found instances where the competent authority did not verify whether the amount of fuel consumption indicated in the operator's pollution permit corresponded to the amount stated in the GHG emissions permit application. As a result, the fuel quantity stated in the GHG emissions permits in the audit sample exceeded the maximum permissible volume of consumption by approximately 20 million m^3 or 29%.

CASE 9: Assessment of permit applications in Norway

The Norwegian audit shows that many operators had already been part of the Norwegian ETS from 2005, but had to update their permit and monitoring plan for the next period. These operators were therefore already well known, as the same authority had evaluated their initial application and three annual emissions reports. In addition, on site-inspection with follow-up procedures had been carried out at these operators' installations.

The authority assessed the applications of operators new to the ETS. In its capacity as the national pollution authority, the authority was already acquainted with these operators as subjects to the Pollution Control Act and had a good background for assessing these applications. The audit also shows that in case of discrepancies between annual reports and emissions permits and monitoring plans, the authority demands that operators apply for a change in the permits and plans.

Allocation of GHG allowances to operators (see figure 3, page 30)

The audits establish that each country's National Allocation Plan sets out the total quantity of allowances to be granted to operators. In order to be allocated free allowances for the period 2008–2012, operators had to apply to the competent authority which assessed the operators' historical emissions before fixing their quota. In cases where historical data was unsuitable, due to substantial changes in activity, operators had to provide adequate documentation. Altogether, the national registry allocates annually the stipulated number of allowances allocated for free to each operator by 28 February after making sure that the operator is still entitled to receive these allowances.

2.2.2 National registries operate according to UNFCCC and EU requirements

Registry operation (see figure 3, page 30)

The audit shows that the required registry procedures are in place. The prescribed procedures are described in internal regulations and instructions, and are also to a large extent taken care of by the different national registries' software. In the course of the period 2008–2012, a number of technical problems have arisen. However, registry software has been continuously updated, and new software versions were implemented.

Registry security and control

National registries are regularly assessed by the EU and UNFCCC. The common software and hardware platform which the common Union Registry has provided since July 2012, is supposed to eliminate earlier problems and increase the system's reliability and security.

Case 10 and 11 describe two situations where the national registry was not operating normally due to the intervention of supervisory mechanisms at EU and UNFCCC level. In the first case the European Commission was responsible for a delay in the uploading of allocation plans in Latvia which caused late settlement. The second case relates to Lithuania, which has been partially suspended from trading allowances and Kyoto units with other countries as a result of inaccuracies identified in the country's reporting submitted under the Kyoto Protocol.

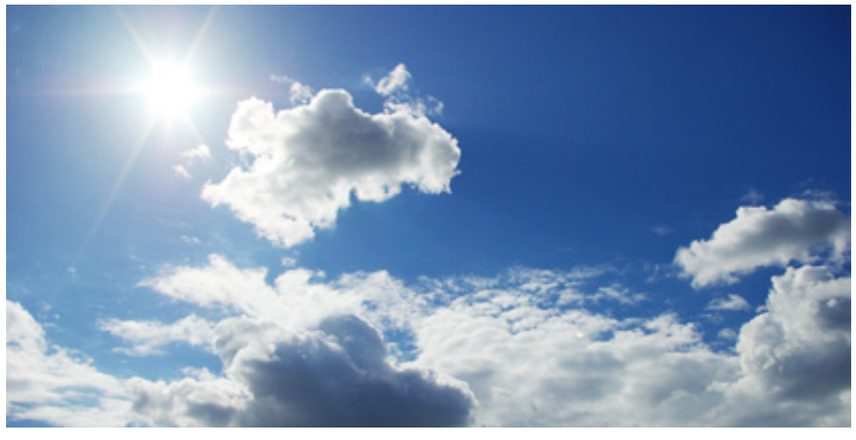
CASE 10: Delayed allowance allocations in Latvia

The Latvian audit shows that allowances were not allocated to operators in time, thus impeding timely settlement. This was the case in 2008 and 2009 when awaiting the European Commission's internal decision on uploading allocation plans meant that approximately 19% of allowance allocations were delayed by an average of 58 days.

CASE 11: Suspension of Lithuania from Kyoto mechanisms

The Lithuanian audit shows that the decision by the Kyoto Protocol Compliance Committee in December 2011 to suspend Lithuania from participating in the mechanisms under articles 6, 12 and 17 of the Kyoto Protocol has led to negative consequences for the country and operators:

- Operators could not trade allowances and Kyoto units with foreign countries.
- Lithuania cannot trade assigned amount units (AAUs) and is not able to receive funds for the Special Climate Change Programme until the suspension is cancelled. According to the decision Enforcement Branch of the Compliance Committee taken 24 October 2012, Lithuania is now fully eligible to participate in the mechanism under Articles 6, 12 and 17 of the Kyoto Protocol.



Public access to non-confidential information

The majority of audits show that national registries make non-confidential information available in accordance with UNFCCC and EU requirements at the International Transaction Log and Community Independent Transaction Log (now European Union Transaction Log) and national websites. Although information as listed in the case study by Latvia is publicly available, the Latvian audit (case 12) found that information had not been published concerning GHG emissions permits for 20% of the operators and 36% of the cancelled emissions permits, thus not providing the general public with information regarding operators' activities. As a result of the national audit, the Latvian authorities have now published the missing information.

CASE 12: Information is publicly available on the Latvian ETS Registry web page

The following information is publicly available on the Latvian ETS Registry web page:

- operators' permits and permit amendments
- operators' annual emissions reports
- verification reports
- decisions on approving operators' annual verified emissions reports

In addition, the web page of the Ministry of Environmental Protection and Regional Development publishes information about decisions on allowance allocation and cancellation.

2.2.3 Phishing and fraud have not succeeded in harming national registries

Table 7 gives an overview of detected cases of VAT fraud, hacking and phishing in Denmark, Latvia, Lithuania, Norway and Poland. Finland and Sweden have not carried out audits on their national registry.

Table 7: Detected cases of VAT fraud, hacking and phishing

	Denmark	Latvia	Lithuania	Norway	Poland
Detected cases of VAT fraud	Yes	None	None	Yes	Yes
Detected cases of attempted hacking	None	N/A	None	None	None
Detected cases of attempted phishing	Yes	N/A	None	Yes	Yes

Source: Denmark, Norway: national audits; Lithuania: Ministry of the Environment; Latvia and Poland: competent authority.

Phishing and hacking attacks

Phishing as well as hacking attacks aim at getting access to the system for the purpose of embezzling allowances. None of the audits has positively identified hacking attacks. However, several phishing attacks have occurred in Denmark, Norway and Poland, but did not succeed in obtaining confidential information as was the case in other European countries.[9] The phishing attacks exploited the open access to the e-mail addresses of account representatives on the website of the Community Independent Transaction Log. This information is no longer publicly available. All the countries affected by phishing attacks cooperated with national registries in other countries. The Polish case (case 13) illustrates actions taken by national registries such as temporary shut-down of the registry, an alert message on the registry's website and sent to account holders, and notification of the national authorities in charge of IT security.

CASE 13: Phishing attack in Poland in January 2010

Users of the Polish registry received an e-mail with a link to the website www.tradingprotection.com the purpose of which was to steal login and password information. The sender of the e-mail referred to cooperation with the European Commission and the national registry administration. Upon discovery of the fraud attempt, the following actions were taken:

- Access to the registry was blocked for 24 hours.
- An alert message was put up on the registry's website.
- Users were sent an alert e-mail.
- Users who responded to this warning had their password changed.
- The incident was reported to the Governmental Computer Security Incident Response Team and to the Central Investigation Bureau.

Temporary action has been taken against cross-border VAT fraud

As trade in allowances can involve transactions across borders, there is an inherent risk of VAT fraud, as with other commodities. Box 4 explains how cross-border VAT fraud is committed with GHG allowances.

Of the countries taking part in the cooperative audit, Denmark and Norway have reported cases of cross-border VAT fraud, whereas Latvia and Lithuania have reported none. The Polish case of VAT fraud hasn't been confirmed for its cross-border character. The Swedish and Finnish SAIs have not audited their national registries.

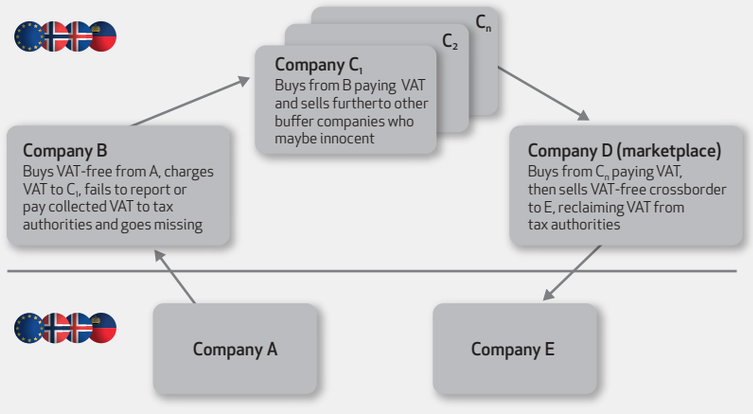
9 Other European countries such as Austria, Greece, Italy, Romania and the Czech Republic. Source: The Norwegian investigation into the Norwegian authorities' control of the Norwegian Emissions Trading System.

BOX 4: MECHANISMS OF CROSS-BORDER VAT FRAUD WITH ALLOWANCES IN THE EUROPEAN ECONOMIC AREA[10]

Cross-border VAT fraud exploits the fact that VAT is zero-rated on transactions with goods or services between VAT registered companies in different countries of the European Economic Area. A company buys VAT-free (zero-rated) from a foreign country and resells to another company in its own country. The selling company collects VAT on the resale, but fails to settle the VAT with the tax authorities. Instead the company transfers the money out of the country to where it is not readily possible to seize the funds.

The following figure illustrates cross-border VAT fraud: Company A buys a substantial quantity of allowances which are then sold to company B in another EEA country. No VAT is charged on the transaction. Company B now resells the allowances to company C in its own country and charges VAT in connection with the resale. After company B has received the VAT from company C, company B fails to settle the VAT with the tax authorities. There may be several innocent buffer companies in between before the allowances are resold cross-border to company E (or back to A), after which the last company in the chain is reimbursed by the government for its VAT paid. The government has now reimbursed the VAT without receiving the tax from company B. Company B goes bankrupt or missing.

This kind of fraud is also called carousel or Missing Trader Intra Community fraud.



10 The European Economic Area comprises EU members, Iceland, Liechtenstein and Norway.

The only available overall estimate of cross-border VAT fraud relating to GHG allowances in the EU ETS is Europol's estimate[11] of a total VAT loss of EUR 5 billion incurred by the treasuries. Europol's estimate was made in December 2009 when cross-border VAT fraud was at its peak. Case 14 shows the results from the Danish audit of the occurrence of cross-border VAT fraud in Denmark.

CASE 14: Danish VAT cross-border fraud linked to emissions trading

The Danish 2012 audit of the Danish ETS Registry showed that the Danish tax authorities identified a VAT loss of EUR 200,000 for the Danish treasury by examining trading patterns for accounts that had links to Denmark. However, the audit concluded that there is a risk that the actual VAT loss incurred by the Danish treasury may be higher. Moreover, 14 EU Member States have stated that they suspect VAT fraud in the amount of EUR 200 mill. through the Danish registry. Several countries have not quantified their suspected losses, and total losses may therefore exceed this sum.

The Danish registry ranked among those registries that had opened the largest number of person holding accounts in 2009; indeed, a calculation by the European Commission's central European registry shows that the approx. 1,000 person holding accounts that were opened through the Danish registry in 2009, equal to approx. 45 per cent of all the accounts opened throughout the entire EU during the same period.

The Danish audit showed that the Danish registry did not comply with EU regulations because it did not require account holders to provide documentation of their identities. This meant that from 2005 to 2009 it was possible for persons using false identities to trade in allowances in the Danish registry. The Danish authorities have taken action to limit the risk of fraud in the future: the VAT system has been changed to reverse charge, which limits the risk of fraud, and documentation of identities is now required. International cooperation has been improved.

11 *Carbon credit fraud causes more than 5 billion Euros damage for European taxpayer. Europol press release* 9 December 2009.

Fraud detection

The tax authorities or the entity responsible for the national ETS registry in the countries concerned detected cross-border VAT fraud. Suspicious trading could be a high number of transactions – up to 100,000 per day – or transactions between companies or persons already known to the tax authorities from other fraud cases. If criminal action was suspected to have taken place, the case was reported to the police for further investigation and, if possible, assets belonging to the suspects were frozen.

In Denmark and Norway, the two countries which have known cases of cross-border VAT fraud, the audits of the registries have shown that the tax authorities and the agencies responsible for the ETS registry have worked closely together to detect and investigate possible cases of such fraud. (See case 15 from Norway.)

CASE 15: The detection of cross-border VAT fraud in Norway

In September 2009, the Norwegian Climate and Pollution Authority (Klif) and the Norwegian Tax Administration (SKD) were made aware that suspicious trading activities had been discovered in other countries' registries. Klif monitored transactions in the registry on behalf of SKD, who did not have direct access to the registry. Klif noticed that large numbers of transactions had been made on two accounts within the space of a few minutes. In February 2010, several addresses were raided, resulting in the discovery of VAT fraud of approximately EUR 18.3 million between December 2009 and February 2010. Assets belonging to the companies involved have been frozen. Seven persons have been charged.

Klif supplied SKD with a list of 107 rejected applications for person holding accounts for further investigation, of which 16 had been uncovered as having committed document fraud and a further three that had been considered suspicious.

The Danish audit showed that the work of the tax authorities was facilitated when the tax authorities got direct online access to the Danish ETS registry. According to the Danish audit, most tax authorities in countries which are part of the EU ETS acquired direct access to their respective registries after the Danish case.

Uncovering suspicious chains of allowance transactions and identifying the fraudsters is a particularly complex task, because companies and persons from all over the world may open accounts and trade in any EU ETS registry. The Danish audit showed that tax authorities' efforts to combat cross-border VAT fraud in the EU are hampered by the fact that in cases of transnational economic crime, access to information on the trading and VAT payments between EU countries is limited. However, in this regard, the Danish and Norwegian audits have shown that both countries collaborated with other countries and international bodies to detect fraud and to limit the opportunities for future fraud.

Amendment of VAT rules

As a consequence of the cross-border VAT fraud in relation to trade in emissions allowances, the EU amended the VAT directive in March 2010 so that Member States were allowed to introduce reverse charge VAT[12] on a temporary basis, i.e. until June 2015.[13]

Denmark, Finland, Norway, and Sweden now have reverse charge systems on a temporary basis. With a reverse charge system, the risk of cross-border VAT fraud is considerably reduced. In Latvia, Lithuania and Poland, VAT is collected by normal charge system.

Proper verification of identities

The cases of cross-border VAT fraud committed via the Danish ETS registry demonstrate the importance of proper monitoring of the registries. Conversely, the Norwegian audit (see case 16) has shown that the Norwegian registry's strict application of documentation requirements for person holding accounts has meant that Norway to a large extent has avoided dubious account holders. Documentation control remains the responsibility of each country even though the registry has now been centralised at EU level.

CASE 16: Compliance with legal requirements for opening accounts in the Norwegian registry

The Norwegian Climate and Pollution Agency registered a dramatic increase in account applications during the first months of 2010. Out of 100 applications for person holding accounts only six were accepted in 2010 and three in 2011. Several incidents of falsified documentation were uncovered. Account opening requirements had been further strengthened following Commission Regulation (EC) No. 920/2010, demanding that at least one account representative has to be either Norwegian or resident in Norway for the last six months and provide certified documentation. Since 2011, account holders have to nominate an additional account representative.

12 Reverse charge VAT means that VAT is paid and deduced by the same company. Normally, VAT is charged by the seller with the buyer later reclaiming this amount from the tax authorities.

13 Council Directive 2010/23/EU of 16 March 2010 amending Directive 2006/112/EC on the common system of value added tax, as regards an optional and temporary application of the reverse charge mechanism in relation to supplies of certain services susceptible to fraud. The Directive applies until 30 June 2015.

2.2.4 Emissions monitoring and reporting is generally adequate

In all countries but Norway, where the competent authority itself has assumed the role of verifier, emissions reports submitted by operators are verified by accredited third-party verifiers. The competent authority then checks the completeness of the reports, the correctness of calculations and compliance with regulations and conditions in the monitoring plan. The interaction between the competent authority, operators, verifiers and the national registry is as illustrated in figure 3, page 30.

The audit in Latvia has shown that the national framework does not define criteria for assessment of emissions reports by the competent authority. Monitoring and reporting are in general considered to be adequate. Case 17 describes the verification process in Norway. As a result of control procedures sanctions have been applied in Poland, as exemplified in case 18.

CASE 17: Evaluation and verification of annual reporting in Norway

The competent authority checks that all emission sources are reported on. It verifies activity data for each emissions source, emissions factors and related uncertainty levels. The information is assessed comparing reported data with earlier reports, comparing cross-sector data and by means of on-site inspections. In Norway, on-site verification of annual emissions reports is chiefly carried out by the competent authority and not accredited third-party verifiers. Sanctions in case of non-conformity in relation to on-site inspections are rarely used as cautioning of coercive fines is usually sufficient to achieve compliance.

CASE 18: Sanctions following infringements by operators

In Poland, the National Centre for Emissions Management has blocked accounts in the Polish national registry in the period 2008–2012 in the following cases:

- Verified reports on emissions were not delivered to the Centre (337 cases).
- The fee for account administration was not paid (92 cases).
- Breach of regulations, liquidation of the installation, unpaid fee for allowances issued and first entry in registry, unclear legal situation of the installation owner, owner change (11 cases).

2.3 The implementation and administration of CDM and JI programmes

All the partners in the cooperative audits have quantified commitments under the Kyoto Protocol and have the right to host JI projects as well as to purchase credits from CDM and JI projects. The Parties to the Kyoto Protocol have adopted comprehensive rules for CDM and JI. The cooperative audit has looked into:

- the organisation of CDM/JI purchase programmes or JI hosting programmes
- whether JI projects are hosted and managed properly. The audits have looked into compliance with rules, not into what extent the JI projects actually deliver as intended.
- whether the management system for purchase of credits functions well
- whether goals for purchase are met
- whether there is transparency in the budgeting of funds for CDM/JI credits
- whether CDM/JI credit purchases are supplementary to national reductions

Different organisational structures

Clear roles and responsibilities are an important prerequisite for efficient CDM and JI programmes. All countries have appointed a main responsible ministry or agency. This is either a ministry or an agency responsible for environmental, energy or financial matters (see table 8). In most of the countries, several ministries and agencies are responsible for the implementation. However, several audits concluded that there have been some problems with respect to how the organisation functions:

- Finland: Complicated decision-making process in bilateral purchase, overlap between ministries' responsibilities and in monitoring of purchasing. Personnel resources were not optimally targeted.
- Norway: The Ministry of Finance is using its competence as an actor in financial investments in this area. The Ministry had initially little experience in emissions trading. The Ministry can if necessary seek advice from the Ministry of Foreign Affairs or the Ministry of Environment.
- Sweden: The Swedish Energy Agency spends little time on follow-up. The Agency has not documented evaluations of the projects or funds despite the projects running for seven or ten years (see case 22).

The Polish audit concluded that the responsible organisations perform their tasks in accordance with their responsibilities. The Agency providing advice to the Ministry employs over 80 specialists with university degrees. The institution is very active in organising training.

Table 8: Responsible actors for CDM/JI programmes in the Nordic–Baltic countries

Country	Responsible	Main role
Denmark	Danish Energy Agency under the Ministry of Climate, Energy and Buildings is responsible for purchase of credits. The Ministry of Foreign Affairs is responsible for development aid, and uses part of the funds for development aid to prepare for CDM projects.	Purchase credits from CDM and JI projects
Finland	The Ministry of the Environment is responsible for JI and Ministry for Foreign Affairs for CDM. In addition the Ministry of Employment and Economy coordinates and chairs the Steering Group for the Kyoto Mechanisms.	Purchase credits from CDM and JI projects
Latvia	NA	NA
Lithuania	Ministry of the Environment	Host projects and allocate JI credits
Norway	Ministry of Finance. Credits from funds are administered by the Ministry of Foreign Affairs or the Ministry of Petroleum and Energy.	Purchase credits from CDM and JI projects
Poland	Ministry of the Environment, National Centre for Emissions Management	Host projects and allocate JI credits
Sweden	The Swedish Energy Agency	Purchase credits from CDM and JI projects

JI projects are hosted and managed properly

Host countries for JI projects are obliged to approve JI projects following the procedures adopted under the Kyoto Protocol (see case 19). None of the two host countries addressing this audit question (Lithuania and Poland) have identified any weaknesses with respect to their country's implementation of these rules (see cases 20 and 21).

CASE 19: Procedures for JI project management in Lithuania

Lithuania is hosting 25 JI projects (2012). These are planned, developed and implemented in accordance with the Republic of Lithuania Law on Financial Instruments for Climate Change Management, the Procedures for the Implementation of JI and CDM projects under the Kyoto Protocol and other legislation. Also, JI projects are implemented following documents which are approved by the JI Supervisory Committee of the UNFCCC.

JI projects are administered by the Ministry of Environment in conjunction with other institutions authorised by the government, namely:

- accepts, examines and evaluates applications and other documents related to implementation of projects
- allows implementation of projects or denies implementation thereof
- exercises control of implementation of projects

In addition, an accredited independent verifier takes a decision on the acceptability of the project document and publishes information on the website of the JI Supervisory Committee.

CASE 20: Transfer of credits from JI projects in Poland

Poland is hosting 20 JI projects (2012). Before letters of endorsement (LoE) or letters of approval (LoA) are issued by the Ministry of the Environment, the opinion of the National Centre for Emissions Management is required. In all cases audited such opinions were prepared on time. Applications to obtain LoAs were supplemented by project documentation including project description and indication of the source of the financing. A list of the projects possessing an LoE or LoA was available on the National Centre website. Kyoto units (ERUs) were transferred to purchasers shortly after the Ministry's positive decision.

In accordance with general regulations, in Poland projects only receive national approval if they do not lead to double counting of national reductions. It also depends on "additionality", i.e. that the project would not have been completed without the project funding. There are no barriers for any countries to undertake JI projects in Poland.

CASE 21: Selecting JI projects in Lithuania

Lithuania has developed criteria for selecting potentially eligible priority JI projects with a view to achieve the established GHG emissions reduction objective and to ensure implementation of the provisions of national strategic documents by way of implementing JI projects:

- The JI project shall cover the areas where implementation of the national norms set for emissions from stationary and/or mobile pollution sources is highly relevant.
- The project shall be in conformity with JI project outputs provided for according to the Description of Order on Implementation of Kyoto Protocol JI and CDM Projects of the Minister of Environment.

Implementation of JI projects is in the interest of operators. Operators submit applications to the Ministry of Environment. The audit established that the Ministry of Environment and the Lithuanian Environmental Investments Fund approved the Idea Notes of all 25 JI projects which were commenced during the period 2008–2011.

Countries have established national procedures for buying credits

The buying countries can either enter into bilateral agreements with project owners, enter into agreements with funds which take care of the project portfolio or buy credits on the secondary market. The audits show that the buying country usually enters into bilateral agreements with project owners, but that credits are also obtained through funds.

The buying countries use different methods in the search for projects: web pages, direct contact with potential project owners (for example through the embassies in host countries or trade fairs), etc. In most cases payment is transferred only when credits are delivered, and consequently the financial risk is low. In some cases the buying country agrees to cover some of the project development costs.

The audits from Finland and Sweden have reported some transparency problems (see case 22 from Sweden). In Finland the mechanism administration has monitored the implementation of purchasing quite comprehensively. The information produced in this way has been used to improve purchasing activities. One problem regarding the transparency of activities is the difficulty of comparing cost and yield indicators.

All the buyer countries have set aside sufficient funding in the state budget to meet their objectives for purchase of credits. The funding is normally long-term, taking into account the uncertainties in actual deliveries. In Denmark, some of the funds used for preparation of a country to host CDM credits have been categorised as development aid and are reported as such and are therefore not included in the budget for buying credits. All audits have concluded that administrative costs are not visible or are only partly visible in the budget. The administrative costs were addressed in the Swedish audit (see case 23).

CASE 22: Administration of CDM/JI programmes in Sweden

Until June 2010, the projects and the funds have only delivered approximately 7% of all agreed credits with delivery up until 2020. The Energy Agency does not ensure that the projects and funds deliver credits at the rate agreed. Instead, the Energy Agency states that the most important task for the agency is to sign purchase agreements. The Energy Agency has not prioritised between different goals, purposes and objectives of the operation. As a consequence goal fulfilment, efficiency and effectiveness are difficult to assess. The Energy Agency spends little time on follow-up and has no documented evaluations of the projects or funds. The Energy Agency has furthermore not documented any summaries on how large a proportion of the credits have been delivered to date in relation to how many were expected. Failings in the follow-up and delays are contributing to uncertainties with respect to whether the Energy Agency will receive a sufficient number of credits to achieve the national milestone target by 2020.

The Swedish parliament does not get summarised information about how the central-government sector's purchases of credits contribute to the fulfilment of the goals and purposes that apply to the operation. The Environment and Agriculture Committee has repeatedly stated that the government's reporting of results needs to be developed and that it should be possible for the Committee to follow the link between inputs made, results achieved and the government's proposals for appropriations.

CASE 23: Sweden's administrative costs of CDM and JI

The Swedish National Audit Office has made an estimate of the internal administrative costs for the Swedish Energy Agency (which is responsible for purchasing CDM and JI credits) directly linked to the purchases of credits. The internal administrative costs consist of staff costs, travel costs, consultancy costs and other costs. The internal administrative costs per credit were low (approx. 5%).

There are also external administrative costs, such as transaction costs. The transaction cost is an external cost associated with the project during its entire life cycle, such as registration, validation and certification costs. Transaction costs usually amount to a maximum of EUR 1 per credit. The seller of the credits may also cover the transaction cost, which is then reflected in the price per credit.

Weaknesses in the risk management system for purchase of credits

JI and CDM projects are offered from a large number of countries, and different types of projects are eligible under the UNFCCC rules (for example wind power, forest, energy efficiency). Furthermore, the buying countries need to ensure that they will receive a sufficient number of credits to meet their targets under the Kyoto Protocol as well as their national targets.

All countries have established criteria for purchase. However, the strategies vary among the Nordic countries. Furthermore, the countries also have secondary objectives for buying credits. The audits include the following findings:

- Denmark: the choice of host countries is based on already strong relationships with host countries (in particular Southeast Asia and Eastern Europe). The Ministry had a clear strategy to buy credits to supplement domestic emissions reductions in order to reach reduction targets.
- Finland: in the selection of projects attention is paid to cost-efficiency, environmental integrity and other additional benefits. It also aims to have a variety of projects (spread of risks).
- Norway: the objective is to buy credits from different countries and different types of projects in order to reduce the risk. The Ministry also tries to balance risk and price when selecting projects for investments. The Ministry only buys credits from UN-approved projects. It is also an objective to contribute to a market for flexible mechanisms.
- Sweden: there are several purposes and objectives (UN-related, developing flexible mechanisms, supporting Swedish companies and environmental technology exports, renewable energy and energy efficiency, least developed countries). The government has not determined how many CDM and JI credits are to be bought and when. This makes it more difficult to plan and carry out the purchase of CDM and JI credits.

When buying credits from projects or funds, it is uncertain whether the project will be approved in the UN system, whether it will be accomplished and when and if it actually will deliver credits. The audits show that all the Nordic countries have established risk management systems to monitor delivery of credits. Both Finland and Sweden found weaknesses in risk management (see case 24 from Finland).

CASE 24: Risk analysis in the purchase of Kyoto flexible mechanisms in Finland

The risk management measures in the Finnish Carbon Procurement Programme were supposed to be based on the monitoring of the progress of international climate negotiations and EU legislation, the selection of types of project and host countries, the diversification of procurement, a conservative estimate of the number of units that will be produced, and the monitoring of the emissions balance. From the viewpoint of risk management, the main principle is broad diversification.

The audit indicated that the principle of diversification had been used, but the rationality of diversification had not been studied or monitored. The weightings in diversification had not been analysed sufficiently, and the effects of individual risks had not been reflected clearly in the procurement portfolio. Weightings were rather based on the steering group's subjective interpretation of the procurement situation, which was not based on systematic data collection.

The National Audit Office of Finland (NAOF) considered that the Ministry responsible for Kyoto mechanisms should strive to improve the planning of risk management. According to the follow-up audit that NAOF conducted in 2011, the Ministry of Employment and Economy had improved risk management. The Steering Committee for Kyoto mechanisms has evaluated the development and risks of purchases in three different scenarios. In addition, a portfolio management tool including risk perspective has been developed allowing a better evaluation of annual yield through different scenarios.

The Swedish audit concluded that risk and insecurities are not taken into account sufficiently. The Swedish Energy Agency does not have any documented risk analysis for decisions regarding the purchase of credits for the period 2002–2009. Although the Energy Agency has improved the documentation of the risk analysis, there are still weaknesses. It is unclear whether risks are identified and evaluated (see case 25).

CASE 25: Management of risks of CDM/JI projects in Sweden

The Energy Agency's work on risk was unstructured up until the end of 2009. Since the end of 2009 the Energy Agency works more systematically with risk assessments. However, the Agency's risk assessments are relatively shallow and not sufficiently critical, and they are usually completed once a purchase agreement has already been signed.

The Energy Agency's risk analysis in developing countries (including the least developed countries), ahead of purchases of credits, includes the most important factors – with certain exceptions. The risk of corruption and political risks have not been taken into account sufficiently.

Improved risk analysis could contribute to the development of the mechanisms through problems being detected at an early stage, and failings could be corrected. Risk analysis is also needed as background material for making prioritisations between possible projects and in order to assess what costs and climate effects the central-government sector's purchases of emission credits can be expected to entail.

Delivery of credits takes time

Timely delivery of credits is important in order to realise the climate benefit and for the receiving countries to meet their targets. Some countries have established objectives for buying credits or hosting projects (see table 9). For example, Norway's objective is to strengthen its emissions commitment under the Kyoto Protocol by 10 percentage points. This objective will be achieved through buying credits, primarily in developing countries. Table 9 illustrates that in most countries the achievement of credits is substantially below target. It is, however, too early to assess whether the targets will be met. Case 27 illustrates the reasons for delayed delivery as assessed in the Danish and Swedish audits.

CASE 27: Reasons why the delivery of credits takes time

In Denmark, more credits have been contracted for purchase than the target, because a delay in delivery due to prolonged implementation and verification processes was anticipated and to ensure that a sufficient amount of credits could be purchased. Projects to the amount of 2.7 million credits have been implemented, but are still awaiting verification and delivery to the registry. Delivery by mid-2012 is also below target, because implementation of projects to the amount of 2.2 million credits takes place throughout the period 2008–2012, and verification is to take place until the end of 2014.

According to the Swedish Energy Agency, deliveries are delayed primarily due to delays in the UN process (verification, certification and issuing). Apart from the delays in the UN process, the causes for deliveries not being realised to the extent expected are several. For example planned deliveries of credits are often overestimated in the project descriptions included in the purchase agreements. This is because the project owner usually makes the calculations in the project description before the project has started. Another reason is that the number of credits issued varies depending on weather and climate. The Swedish audit has concluded that better risk assessment could improve effectiveness by detecting and handling these problems at an early stage.

Table 9: Sale and delivery of credits for the period 2008–2012. Status per summer 2012. Mill. tonnes CO_2 equivalents

	Contracted for purchase	Delivered	Allocated after realisation of domestic JI projects	Transferred to the JI projects	Target
Denmark	19.8	10.7			16.0
Finland[a]	4.4[b]	0.9			7.0[c]
Norway	28.0[d]	7.4			19.0
Sweden[e]	10.0	0.7[f]			40.0[g]
Latvia	-	-	NA		NA
Lithuania	-	-	8.7	2.4	12.0
Poland	-	-	9.6	9.6	20.2

a) Status per June 2011 b) Including funds and bilateral purchases c) Includes 2 mill. tonnes from a pilot programme realised in 2000–2006 d) For delivery in the period 2008–2012 e) The CDM and JI credits received will only be used to reach the Swedish milestone target for 2020. The Swedish interim target for the period 2008–2012 shall be achieved without compensation for reductions in emissions in other countries f) Status per June 2010 g) The Swedish National Audit Office's general conclusion is that the government has not determined how many emissions credits are to be bought and when. The Government has now estimated that Sweden will need approx. 40 million CDM/JI credits during the period until 2020 to obtain the Swedish milestone target for 2020.

Source: SAIs

Lithuania has established targets for allocating credits (see case 28). The audit from Lithuania highlights that the main reasons why the full potential for JI is not met are because companies lack additional information about the reserve for JI projects, project development possibilities and free emissions reduction units.

CASE 28: The full potential for JI in Lithuania is not realised

Kyoto units (ERUs) are allocated to JI projects from:

1. JI reserve, which is administered by the Lithuanian Environmental Investments Fund
2. Assigned amount units (AAUs), which are allocated to Lithuania for the period 2008–2012

The planned volume of AAUs for JI projects for the period 2008–2012 is 12 mill. units. Neither the number of AAUs nor the JI reserve has so far been fully used. The actual amount of ERUs transferred for JI projects from the JI reserve totals 26% and from AAUs 28% of the reserved amount.

The Ministry of the Environment, which is in charge of the administration of JI projects, is not bound by legislation to provide information to companies about possibilities to implement JI projects and has delegated this task to the Lithuanian Environmental Investment Fund.

In the Nordic countries credit prices are lower than the alternative cost of domestic measures

The Kyoto Protocol states that the use of the flexible mechanisms shall be supplemental to domestic action for the purpose of meeting the quantified commitments. The price of CDM credits bought in the Nordic countries is approximately EUR 10–15 per tonne of CO_2. Data from Denmark indicates that the price of JI credits is lower (EUR 9.8 per tonne), while their purchases from funds are on average more expensive (EUR 17.1 per tonne).

Norway's audit concluded that for Norway, overall, domestic measures are more expensive than the allowance price. Also in Sweden the' government's cost per credit purchased has been lower than other measures for reducing emissions (see case 29).

CASE 29: Alternative costs of domestic measures

According to the Swedish NAO's estimate, the average cost per credit is between EUR 9.8 and 10.2, including staff costs. It has on average been more expensive to purchase on the secondary market, but it has been less risky. The average price has been EUR 15.4 per credit during the period 2007–2009. At present, the prices on the secondary market as well as on the market as a whole are substantially lower.

The costs of reducing the same emissions in Sweden are difficult to measure. A simplified way of estimating the cost of climate measures in Sweden is to compare them with the general CO_2 tax rate. During 2009 and 2010, the general tax rate for CO_2 was EUR 115 per tonne. However, due to reductions and exemptions, the average CO_2 tax levied has been EUR 45–60 per tonne during the years 2003–2009. A credit only represents one tonne of emissions during one year, while a measure carried out in Sweden may also result in reduced emissions over a longer period. The cost for measures that lead to long-term reductions in Sweden may therefore be lower than a short-term calculation shows.

3 Conclusions and Recommendations

Conclusions

The cooperative audit shows that there are clear indications that the emissions targets under the Kyoto Protocol or the EU Burden Sharing Agreement are likely to be met in the seven countries by the end of 2012, although a final conclusion cannot be drawn until data is available for the entire period. The EU ETS and the Kyoto flexible mechanisms – JI and CDM – are key policy instruments to meet national targets and to assist other countries in meeting their national targets.

The countries have implemented the EU ETS in line with the current EU legislation and the provisions under the UNFCCC. However, the effectiveness of the system in reducing emissions is a major challenge. For the Nordic countries, the EU ETS provided little incentive for long-term reductions in CO_2 emissions as allowance prices have been low due to a large surplus of allowances in the system during the period 2008–2012. Taking into account the slower economic growth than expected, emissions trading did not provide a strong market mechanism that has raised the costs of emissions related to production and given a competitive advantage to cleaner production. This implies a risk that the long-term reductions in these Nordic countries are in danger of not being met.

The audits for Latvia, Lithuania and Poland have shown that emissions have increased at a slower pace than economic growth. However, in this audit it has not been possible to measure whether this can be attributed to the effectiveness of the EU ETS.

The governments have to varying extents used their possibility to design those parts of the EU ETS which are under national discretion to exercise their ability to control the system. Only in one out of the seven countries has the government used its discretion to auction 10% of the allowances. Also, only two out of the seven countries have chosen to impose restrictions on the operators' use of the revenues from selling allowances. Handing out allowances for free, and not using the option of withdrawing allowances, have both led to less control over the system.

Further, the cooperative audit has shown the importance of adequate monitoring of the system in order to ensure its credibility. In most countries operators' monitoring and reporting is deemed adequate and verification procedures are in place. Verification is carried out by accredited third-party verifiers before annual reports are submitted to the competent authority for GHG emissions for final verification and approval, with the exception of one country, which is organised differently.

Further, the audit has shown that in countries which have legal restrictions on the operators' use of revenues from the sale of allowances, the governments have not had adequate control routines in place.

In some trade and industry sectors, such as electricity and heat, it is easy for enterprises to transfer the costs of buying emissions allowances to consumers instead of investing in emissions reduction projects. In such cases enterprises are not always motivated to find the cheapest ways of reducing emissions themselves. As regards the emissions-trading sector as a whole, a Swedish audit shows that companies in the trading sector have in practice paid very little, in some cases nothing, for emissions. This is not the case in the non-trading sector.

Registry systems are in place and operating in accordance with UNFCCC and EU security standards and requirements and were subject to regular testing by UNFCCC and EU bodies. National registries were based on different software and hardware solutions, which were continuously improved. Fraud attempts occurred in three of the partnership countries. However, the transition to a common software and hardware platform in 2012 with the introduction of the Union Registry is expected to further strengthen data and information security.

VAT fraud cases were detected in Denmark, Norway and Poland. Countries which have experienced major cross-border VAT fraud linked to emissions trading have changed their VAT legislation to a reverse charge system. This reduces the risk of cross-border VAT fraud substantially and thus constitutes an effective measure against this kind of fraud for the time being. However, a long-term and more comprehensive solution, which also builds on international cooperation and cooperation between authorities, is still not in place. Finally, the cooperative audit has shown that cross-border collaboration between registry owners and tax authorities is key to uncovering cases of VAT fraud on emissions allowances.

All the Nordic countries covered in this audit have established CDM/JI programmes. The purchase programmes are often also intended to support secondary objectives, for example sustainable development. Audits in the countries buying credits have identified problems linked to coordination, resources, experience and planning. Lack of risk management in the countries which buy CDM and JI credits, as well as slow approval and verification procedures for the projects, reduce the benefits of using CDM/JI projects to reach targets and ensure transfer of technology. Audits have shown that delivery of credits takes longer than planned and in some cases delivery is at risk. One audit from a JI hosting country has shown that the full potential for JI projects is not realised yet, partly due to the lack of information to potential hosts. Money is normally transferred when credits are received, which reduces the financial risk. Audits have concluded that there is a lack of government control and transparency in the procedures for buying credits.

Recommendations

- In order to ensure adequate incentives for long-term reductions of emissions, it should be ensured that instruments are in place and used to limit any excessive amounts of allowances/credits for the next emissions trading period.

- Governments should consider making full use of their discretionary power provided by EU legislation to improve the effectiveness of the system.

- Vigilance is still needed in the area of VAT fraud, and cooperation between tax authorities and EU ETS administrators, as well as cross-border cooperation remains important.

- To speed up the project process, simplifying procedures for CDM projects should be considered, without giving up the strict requirements for control and verification. It is also important that the buyer countries conduct proper risk analyses in order to detect and handle problems at an early stage.

4 Lessons learned

The partner SAIs appreciated the collaboration and found it valuable for the SAIs´ work. The cooperative audit contributed to the initiation of national audits covering aspects of emissions trading and to disseminate key findings from previous and new audits.

The flexible framework of the cooperative audit, where SAIs answered only questions that were relevant to their audit and context, made it possible for more SAIs to participate, and was very much appreciated. Even though the national audits´ topics and approaches differ, collaboration is possible and highly beneficial. In addition to the joint report, the cooperation was valuable as a learning process with respect to other countries' audit findings and methods. Furthermore, the participants felt that the cooperative audit was an excellent opportunity to thoroughly familiarise themselves with how the EU ETS helps countries to reduce GHG emissions and as a good opportunity for auditors to exchange experiences with their foreign colleagues.

The systematic set-up with a common set of audit questions to be answered makes it transparent who is contributing what findings – and on what basis the common conclusions are drawn. However, it is crucial to make the questions in the matrix very specific in order to ensure comparability and that everyone answers the question in the same way. The joint effort in developing the audit questions for the cooperative audit broadened the scope of the national audits and facilitated knowledge sharing.

The Nordic–Baltic–Polish auditors general endorsed the plan for the cooperative audit in early September 2011. A formal invitation to join was sent out shortly after. The joint report was released in December 2012. In spite of the rather tight timetable, it was possible to complete the joint report because countries initiating new audits were expedient and willing to share preliminary results before their audit was actually published. Cooperative audits take time and resources. This needs to be taken into account when planning such audits.

The SAIs of Denmark and Norway took the main responsibility for drafting the joint report. However, this work depended on each SAI contributing clarifications and addition information. Coordination throughout the process is crucial for a successful result.

Some of the audits performed were performance audits, while some were compliance audits. Effectiveness audits are recommended in order to identify system weaknesses. The cooperative audit also provided recommendations on how to eliminate the shortcomings established during the audit.

5 Acknowledgements

Seven Nordic–Baltic-Polish Supreme Audit Institutions (SAIs) have participated in this cooperative audit on the emissions trading systems. The idea of a Nordic–Baltic–Polish cooperative audit was first proposed in 2009 by the Danish Auditor General. At the meeting between the Auditors General of the Nordic countries in 2010, it was decided that Denmark and Norway should promote the initiative further and work out a proposal for a cooperative audit. The following SAIs welcomed the idea and joined the cooperative audit:

Rigsrevisionen, Denmark
National Audit Office of Finland
State Audit Office of the Republic of Latvia
National Audit Office of Lithuania
Office of the Auditor General of Norway
Polish Supreme Audit Office
Swedish National Audit Office

Rigsrevisionen, Denmark, and the Office of the Auditor General of Norway took on the role of coordinators for the audit. The cooperative audit was organised around three meetings where participants met for discussions. Rigsrevisionen, Denmark, hosted the kick-off meeting in Copenhagen in November 2011, followed by a mid-way meeting held in Vilnius by the Office of the Auditor General of Lithuania and a final meeting taking place in Gdansk under the auspices of the Polish Supreme Audit Office.

The project group is very grateful to Ms Airi Andresson from the National Audit Office of Estonia for her assessment of this report. The project group expresses equally their thankfulness to Ms. Herdis Laupsa, head of the EUROSAI WGEA Secretariat, for her useful comments and suggestions.

6 National Abstracts

DENMARK

Administration of the Danish Emissions Trading Registry

Published March 2012.
http://www.rigsrevisionen.dk/media(2186,1030)/09-2011.pdf

Objective
The objective of the audit was to assess whether the Ministry of the Environment and the Ministry of Climate, Energy and Building ensured that the Danish ETS Registry was managed in a satisfactory way.

Scope
The audit focused on the administration of the person holding accounts in the Danish registry, the scope of VAT carousel fraud and the reliability of the information to parliament.

Main findings
The main conclusion was that the Danish Energy Agency did not administer the Registry properly as it failed to check documentation for identities of account holders in contravention of the EU regulation. Widespread VAT carousel fraud, which with some uncertainty is estimated to be in the order of EUR 188 million, occurred in other participating countries, whereas Denmark itself was only marginally affected by these schemes. The VAT rules were changed in the EU as a result, and risk of fraud is now assessed to be low. The new reverse charge rules mean that VAT on these transactions may only be deducted by the legal entity that pays the VAT.

Response of the government to the audit
The identity verification problems were solved, but very late (in December 2009, more than half a year after the agency knew that they were causing severe problems). Since then, the registry has been purged and no further action remains to be taken.

Effectiveness of emissions reductions Denmark

Published October 2012.
http://www.rigsrevisionen.dk/media(2367,1030)/02-2012.pdf

Objective
The objective of the audit was to assess, whether the Ministry of Climate, Energy and Building ensures that the Danish emissions targets are met.

Scope
The audit focused on the first Kyoto commitment period 2008–2012 with binding targets. The report looked at whether the Danish climate strategy was incorporated into the National Allocation Plan (NAP), and whether the Ministry is ensuring that Denmark will reach its target for emissions.

Main findings
The Danish climate strategy intended to reduce CO_2 emissions at the lowest cost to the society. This meant that energy saving measures would only be invested in provided this was cheaper than meeting the Danish obligations by trading allowances in the EU ETS or by government purchase of credits. The Ministry of Climate, Energy and Building has largely incorporated the strategy into the National Allocation Plan. A total of 70% of reductions were to come from the flexible mechanisms, specifically 27% from governmental purchase of credits and 43% from companies trading allowances. The remainder of the reductions (30%) was to come from national initiatives, including raising new forest areas. In addition, the Ministry of Climate, Energy and Building expected to buy an additional 1 million credits per year, if Denmark did not receive a base year compensation, which Denmark had applied for in the EU. The audit shows that Denmark will meet the Kyoto target for 2008–2012.

Meeting the obligations entailed by the targets under the Kyoto Protocol was thus planned in a cost-effective way. However, as a consequence, Denmark has only initiated a few national reduction measures, which could provide for long-term CO_2 reductions in Denmark. Additionally, the economic crisis has meant that prices for allowances have been low and therefore the incentive to invest in lowering emissions has been lacking. If the long-term ambition for 2050 of phasing out fossil fuels is to be met, Denmark needs a stronger focus on long-term emissions reduction measures after 2012.

Response of the government to the audit
The government's response is expected in December 2012.

FINLAND

Emissions trading – flexible mechanisms under the Kyoto Protocol

Published November 2009.
http://www.vtv.fi/files/3120_Emissions_trading.pdf

Objective

The objective of the audit was to evaluate whether Finland has been successful in purchasing emission units through the flexible mechanisms under the Kyoto Protocol.

Scope

The audit concentrated on the functioning and effectiveness of Finland's mechanism purchases. The focus was on the Carbon Procurement Programme covering the period from the beginning of 2006 to the beginning of 2009.

Main findings

The audit found that purchasing activities have been satisfactory but could be improved. The audit noted some problems in the organisation of purchasing activities, such as the poor matching of personnel resources to work requirements, the complicated decision-making in Finland's bilateral purchases and overlap between the ministries responsible for purchasing activities. The analysis and description of planning, risk management and performance could be improved. Findings regarding performance also indicate that mechanism purchases are cost-effective compared with domestic measures to reduce emissions, and that in terms of administrative costs, investments in funds that produce emission units have been cheaper than bilateral purchase of emission units.

The NAOF called for more detailed calculations particularly concerning funds' expected yield and costs and document these in connection with the monitoring of activities. In calculating costs of bilateral purchases, the government should also take into account all the costs that have a substantial effect on activities, including the costs of support services. Indicators describing performance should be developed accordingly, as well as the planning of risk management.

Response of the government to the audit

The follow-up audit conducted in 2011 noticed that the government had taken appropriate steps to improve the governance related to mechanisms purchases. The Ministry of Employment and Economy had improved especially the risk management. Some decisions, however, are dependent on the details of the next emissions trading period.

LATVIA

Compliance of the GHG Emissions Allowances Administration with Legal Requirements and Effectiveness of the System in Latvia

Two audit reports and an informative report have been prepared:

1) 02.12.2011. Audit Report to the Ministry of Environmental Protection and Regional Development: on implementation of climate change reduction policy and compliance of the monitoring of operators with legal requirements;
2) 02.12.2011. Audit Report to the Public Utilities Commission: on inclusion of GHG allowance costs in energy tariffs and regularity of utilisation of sales revenue;
3) 19.12.2011. Informative Report on the compliance of the GHG emission allowances administration with legal requirements and effectiveness of the system in Latvia

Informative report in English is available at:
http://www.lrvk.gov.lv/upload/Info_zin_SEG_emisija_19Dec2011_EN.pdf.

Objective

To obtain assurance that:

1. the administration of the GHG emissions allowances is conducted in line with legal requirements;
2. the EU ETS has been introduced in Latvia in a way that motivates enterprises to decrease emissions, having minimum impact on their economic development.

Scope

1. The implementation of climate change reduction policy and allocation of emission allowances to operators in accordance to legal requirements and effectiveness of emission allowances allocation in Latvia.
2. The issuance of emission permits in accordance to legal requirements.
3. The controls of compliance with emission permit conditions and inspections of emission monitoring and annual emission reports in accordance to legal requirements.
4. The energy sector companies prepared tariff projects, where expenditure for purchasing of emission allowances and investment of revenues from emission trading in GHG emission reduction are included.
5. The control of emission allowances surrendering in accordance to legal requirements.

The period from 1 January 2005 to 30 June 2011 was audited.

Main findings

In accordance with the Kyoto Protocol, Latvia had to achieve an emissions reduction of 8% in the period from 2008 to 2012 from the emissions levels in 1990. Latvia's total GHG emissions in 2009 showed a decrease of 59% compared with the base year, so the Kyoto target has been fully achieved.

The effectiveness of the EU ETS could be enhanced, in order to fully achieve the objective, as specified in the European Union directive *"to reduce greenhouse gas emissions with the least possible diminution of the economic development of enterprises"*. The national legal framework currently fails to:

1. provide a possibility for the national authority to cancel GHG emissions permits, issued to enterprises, in cases where such enterprises have ceased operations and have not applied for cancellation of permits themselves. Thus allocation of unused allowances to other enterprises is limited;
2. ensure that common emission factors are applied to calculate the actual GHG emissions for enterprises. Thus operators may select the most favourable option and reduce the number of allowances to be transferred, thus saving transferrable emissions allowances;
3. impose on operators the obligation to invest the revenues received from sales of allowances in new technologies, thus facilitating the reduction of GHG emissions. For example, in the 2005–2007 trading period, 17% of the energy sector operators surveyed during the audit used sales revenues to cover expenses not related to reduction of GHG emissions. However, for operators in the regulated public service sector such a requirement was imposed as from 2008. However, it should be emphasised that such requirements are not imposed by the European directives / regulations either.

Response of the government to the audit

As a result of the audit 18 recommendations were made, which the audited entities agreed to implement by 1 January 2013.

LITHUANIA

Allocation, use and trading scheme of GHG allowances

The report will be available by the end of 2012.
http://www.vkontrole.lt

Objective

To assess whether the developed allocation, use and trading schemes for GHG emissions allowances and the registry system are efficient.

Scope

- **Audit subjects:** Ministry of Environment, Lithuanian Environmental Investment Fund
- **Questionnaires:** sent to 65 enterprises that received GHG allowances and to 14 entities that implemented JI projects, and to eight regional environmental protection departments
- **Auditing period:** 2008–2012, plus additional data from 2005–2007

Main findings

1. In 2010 Lithuania reduced its national GHG emissions by 56.9% compared with the 1990 level and thus meets the requirements of the Kyoto Protocol to the UNFCCC.

2. Lithuania meets the long-term objective of National Strategy for Sustainable Development to achieve a situation where the growth of emissions of pollutants and GHGs is two times slower than the growth of GDP. Over the period 2005–2010, GDP grew by 27.2% and emissions decreased by 10.1%). Nevertheless, there is still a need to invest in GHG emissions mitigation measures, although the possibilities are limited.

3. National Allocation Plan and reduction of allowances for each period for the country encourages operators to reduce GHG emissions.

4. A total of 31.1 million allowances were allocated to operators for the period 2008–2011. Operators have not fully used their allowances due to the decline in GDP and increase in electricity imports and still have approximately 7.4 million surplus allowances.

5. In some cases, funds received from sales of emissions allowances are used for measures not directly related to GHG emissions reduction. Operators do not always provide correct data in a timely manner. The Regional Environmental Protection Departments conduct insufficient monitoring of spending to avoid such situations.

6. The Ministry of Environment planned for EUR 646 mill. in revenue for the period 2010–2011 and for EUR 428 mill. in 2012. In the period from 2011 to 20 July 2012 the Special Climate Change Programme received EUR 362 mill. in revenue of which EUR 0.3 mill. had been used by the end of 2011. These funds have been allocated to projects for GHG emissions reductions. However due to the loss of projected revenues and the ongoing preparation of projects implementation has been postponed to a later period.

7. As a Party to the UNFCCC and in compliance with the Decision No. 280/2004/EC of the European Parliament and the Council, Lithuania annually submits a National GHG Inventory Report (NIR) to the European Commission and the UNFCCC Secretariat. The Ministry of Environment has not ensured substantial improvements in a timely manner for the national system of Lithuania to be able submit a sufficiently transparent, consistent, comparable, complete and accurate NIR. Therefore, on 21 December 2011, the Enforcement Branch of the Compliance Committee suspended Lithuania's eligibility to participate in the mechanisms. This has led to negative consequences:

   7.1. Operators could not trade emissions allowances and Kyoto units with foreign countries in the period from 21 December 2011 to 20 June 2012;
   7.2. Until the suspension is cancelled Lithuania cannot trade assigned amount units (AAUs) and will not be able to receive funds from the Special Climate Change Programme.

8. The remainder of reserve allocated to JI projects is equal to 13.2%, whereas the unused part of the planned assigned amount units also allocated to JI projects equals about 27.7%. However companies lack additional information about the reserve for JI projects, project development possibilities and free emission reduction units.

Response of the government to the audit

Pursuant to the overall aim of the ETS and JI projects to reduce the amount of GHG emissions the SAI recommended:

1. To revise the implementing regulations of the Climate Change Management Financial Instruments Law relating to the use of implementers' revenue for ETS and use and implementation of procedure for submission of reports on Kyoto units' distribution and use:
   1.1. To enhance monitoring and control of funds for the GHG emissions reduction measures;
   1.2 To propose means for accounting and including unspent balances from previous years into annual reports (see conclusion 5).

2. To take measures to allow prompter allocation and use of funds from the Special Climate Change Programme;

3. In order to avoid GHG accounting and reporting problems, to review annual GHG reporting procedures, and to strengthen institutional capacities

4. To take measures to ensure that more companies become aware of opportunities for the implementation of market mechanisms in the second commitment period of the Kyoto Protocol by ensuring information is not only published on the website of Ministry of Environment or subordinate institutions but also on the websites of Ministry of Energy, Ministry of Transport and Communications, Ministry of Economy and Ministry of Agriculture, which together with the Ministry of the Environment are authorised to manage projects.

NORWAY

Investigation into the Norwegian Authorities' Control of the Norwegian Emissions Trading System

Published October 2012.
http://www.riksrevisjonen.no/en/Reports/Pages/Emissions.aspx

Objective

The EU ETS is an essential element of Norwegian climate policy. Actors' confidence in the ETS and hence its effective performance depend on a reliable and trustworthy control system. The aim of this investigation has been to assess whether the Norwegian Climate and Pollution Agency (Klif) exercises adequate control over the Norwegian ETS. The investigation covers the period of 2008–2012.

Scope

The first part of the investigation has looked at compliance with relevant legislation, the Norwegian Emissions Trading registry's data and information safety and, more specifically, VAT fraud involving allowances. The second part of the investigation has looked at Klif's control measures involving emissions measurement, calculation and reporting by the operators.

Main findings

The investigation showed that Klif has established the Norwegian registry in compliance with hardware and software requirements, security standards and access and authentication rights as set out by EU legislation. The electronic version of the registry has been operative since 2009 and encompasses some 115 companies.

Strict application of documentation requirements for opening person holding accounts has to a large extent prevented dubious account holders from gaining access to the registry. Klif has effectively collaborated with the Norwegian Tax Administration on the discovery of value added tax (VAT) fraud in 2010. The risk of VAT fraud on allowances is now considered to have been significantly reduced, since Norwegian VAT legislation was quickly changed to VAT collection by reverse charge, which involves the buyer having to calculate and pay VAT.

Klif has issued emissions permits and monitoring plans after thorough assessment of operator applications. Klif benefited from its experience with the Norwegian ETS established in 2005. This built up in-house competence, plus Klif's knowledge of ETS installations as the pollution authority also allowed Klif to adequately examine the annual emissions reports of the operators via checking the documents submitted and conducting moderately frequent on-site inspections. In contrast to other countries, Klif itself carries out inspections at operator installations. Klif's procedures for allowance settlement are adequate.

Response of the government to the audit

The report was submitted to the Storting as an administrative report.

The Office of the Auditor General's investigation into target achievement in climate policy

Published May 2010.
http://www.riksrevisjonen.no/en/Reports/Pages/climate.aspx (full English translation)

Objective

The objective of the investigation has been to assess target achievement in relation to Norway's international climate commitments, and the work carried out by the authorities to implement the climate policy decisions of the Storting.

Scope

The investigation i.a. addressed the extent to which the cross-sector policy instruments contribute to goal achievement and to what extent Norwegian purchases of credits from the project-based mechanism contribute to target achievement.

Main findings

Cross-sectoral policy instruments have been based on the principle of cost-effectiveness, i.e. that the policy instruments trigger measures that result in the greatest possible reduction of emissions from the resources invested. Two cross-sectoral policy instruments, carbon tax and the emissions trading scheme, have been key elements in Norway's climate policy. The CO_2 tax has been a long-term policy instrument, and the investigation shows that the tax has triggered many emissions-reducing measures, primarily in the petroleum sector, where the tax level has been consistently high. The tax provides financial incentives for taking the climate into consideration when making investment decisions. Today, there are fewer remaining measures that can be implemented in relation to existing activities on the continental shelf for which the costs are equal to or lower than the total cost of allowances and taxes. The design of the tax has resulted in it having only a relatively small effect on total greenhouse gas emissions from emission sources in mainland Norway. Regulation via the emissions trading system has gradually replaced taxes in several sectors. At the current allowance price, this provides weaker incentives for implementation of national measures for most sectors than the tax did.

Pursuant to the Kyoto Protocol regulations the purchase of credits via the flexible mechanisms can compensate for increased emissions. Norwegian enterprises' purchases of allowances in the EU ETS will probably secure sufficient allowances to meet Norway's commitment under the Protocol. If this should prove to be insufficient, allowance purchases by the state will provide added security. It is therefore probable that Norway will meet its commitments under the Kyoto Protocol. The investigation shows that there is uncertainty relating to the Climate Settlement target of strengthening the Kyoto Protocol commitment by ten percentage points by 2012. Norway was slow to start its allowance purchases and had limited experience, and it will remain uncertain for a long time whether projects with which contracts have been signed will deliver the expected amount of allowances. It is possible, however, to purchase allowances in the secondary market. This gives greater security for the delivery of a sufficient number of allowances, but it is also considerably more expensive than purchasing credits from projects at an early stage.

POLAND

Functioning of the GHG Emissions Administration System and ETS

The audit was completed in June 2012.
http://www.nik.gov.pl. (The report will be available by the end of 2012.)

Objective

The objective of the audit was to examine and assess the legality of the systems as regards:

- limiting the national GHG emissions
- accomplishment of the administrative procedures for projects based on CDM and JI mechanisms
- running the national registry; monitoring and calculating the emissions and emissions allowance quantities

Scope

The period covered by the audit was 2008–June 2012. Additionally, the Polish SAO gathered some data from the selected installation operators, the Ministry of the Environment, the Ministry of Finance, and the National Fund for Environmental Protection and Water Management.

Main findings

In the period 2008–2011, the Polish GDP increased by over 15%, but CO_2 emissions remained almost unchanged (approx. 203 mill. CO_2 tonnes for ETS sectors) – so the economic growth in the country has not led to increased emissions. Moreover, the reduction target for Poland included in the Kyoto Protocol, a GHG emissions reduction in period 2008–2012 of 6% (relative to 1988), has been exceeded significantly. For 2010 this reduction was 28.3%.

The Polish SAO issued a positive opinion on the National Centre for Emissions Management (KOBIZE) activities. The national registry is run in accordance with national and EU legislation. The security solutions implemented for the registry are considered effective (none of the fraud attempts succeeded). KOBIZE also applied the procedures established for issuing allowances and for redemption. Allowances were issued in quantities determined in the National Allocation Plan or permits, whereas for their redemption information from verified reports (included in the national registry) was necessary. Before Letters of Endorsement or Approval for JI projects were issued, the Ministry of the Environment consulted with KOBIZE. Its opinions were given within the specified time frame and in the required legal form.

All of the projects which received the Ministry's recommendation were included on the KOBIZE website. ERUs were transferred to purchasers promptly.

Response of the government to the audit

The Ministry of the Environment will present its position after the national report is delivered (end of 2012).

SWEDEN

CLIMATE-RELATED TAXES

Published 14 February 2012
Reference: The Swedish National Audit Office (2012), Climate-related taxes – Who pays? RiR 2012:1.
http://www.riksrevisionen.se/en/Start/publications/Reports/EFF/2012/Climate-related-taxes--Who-pays/

Objective

The objective of the audit was to assess whether agency and government reporting of household and trade and industry expenditure on climate-related taxes is transparent and surveyable. The objective was also to examine whether there are significant differences in the distribution of expenditure on climate-related taxes between households and trade and industry, between various trade and industry sectors, between companies within and outside the trading sector (EU ETS) and between various household types.

Scope

The audit covers the application of climate-related taxes, primarily those on energy and carbon dioxide. The audit includes the question of whether government and agency reporting of the expenditure on and effects of climate-related taxes is transparent and surveyable. In order to assess the need for reporting, the audit has examined whether there are significant differences in the distribution of expenditure on climate-related taxes. Overall trade and industry expenditure on climate-related taxes and allowances in the EU ETS is also included.

Main findings

The Swedish National Audit Office's overall conclusions are that expenditure on climate-related taxes varies between different polluters, both between households and trade and industry, between different types of households, between the trading and the non-trading sectors, and between various trade and industry sectors. The polluter pays principle is not applied to its full extent. There are major differences with respect to how much different polluters pay for emissions. Climate-related taxes and the EU ETS are different policy instruments, but in practice their combined effect has been to increase these differences. According to the government, there may be reasons for deviating from the polluter pays principle if there is a risk of carbon leakage. But the government has not analysed or reported the amounts different trade and industry sectors have paid for their emissions. The analyses and reporting provided by the government and agencies do not provide a comprehensive and

clear picture of the expenditure on and the effects of climate-related taxes. This means that agencies, the government and the parliament do not have a basis for assessing whether climate-related taxes in combination with other policy instruments are cost-effective and to what extent they are compatible with the polluter pays principle. Furthermore, there is also no basis for assessing the risk of carbon leakage with respect to various Swedish trade and industry sectors and sub-sectors.

Response of the government to the audit

The government will continue its work to coordinate the economic policy instruments within the area of climate and energy. In the short term, the government will especially evaluate the effectiveness of the policy instruments and whether there is a need for supplements. Within the government offices, development work is under way to better follow up the distribution effects of CO_2 and energy taxes.

Efforts abroad to mitigate climate change

Published 16 February 2011
Reference: The Swedish National Audit Office (2011) Efforts abroad to mitigate climate change – the Central Government's acquisitions of CDM and JI credits, RiR 2011:8
http://www.riksrevisionen.se/en/Start/publications/Reports/EFF/2011/Efforts-abroad-to-mitigate-climate-change--the-Central-Governments-acquisitions-of-CDM-and-JI-credits/

Objective

The objective of the audit was to illuminate to what extent the central-government sector's purchases of emissions credits from other countries contribute to the fulfilment of Sweden's national milestone target for 2020.

Scope

The audit concerns the central-government sector's acquisitions of emissions credits from other countries between 2002 and June 2010. The emissions credits come from so-called CDM and JI projects aiming to reduce greenhouse gas emissions. Sweden's national milestone target for 2020 will be met partly with the help of such emissions credits. The Swedish Energy Agency has the main responsibility for purchasing emissions credits on behalf of the government, both directly from projects in other countries and indirectly through investments in climate funds. Up until June of 2010, the Swedish Energy Agency had signed agreements for the purchase of emissions credits from 33 CDM and JI projects and from five climate funds amounting to a total value of about EUR 80 million.

Main findings

The Swedish National Audit Office's general conclusion is that the government has not determined *how many* emissions credits are to be bought and *when*. The central-government sector's purchases of emissions credits have not been done efficiently, effectively and transparently enough, but the costs could be lower than for other measures.

Response of the government to the audit

The government intends to return to the parliament regarding how many emissions credits Sweden needs in order to achieve the milestone target for 2012. The government also intends to develop the reporting to the parliament and to develop the dialogue with the Swedish Energy Agency.

What are Sweden's emission rights worth?

Published December 2009
Reference: The Swedish National Audit Office (2009) What are Sweden's emission rights worth? – Handling and reporting of Sweden's Kyoto Units, RiR 2009:21.
http://www.riksrevisionen.se/en/Start/publications/Reports/EFF/2009/What-are-Swedens-emission-rights-worth/

Objective

The objective of the audit was to assess the transparency of the handling and reporting of the future national surplus of emission rights.

Scope

The audit deals with the reporting of Sweden's total national holdings and future surplus of emission rights. It covers the Kyoto Protocol trading period from 2008 to 2012 and relates to compliance with the Kyoto Protocol and the 2012 emissions target under the Swedish environmental-quality objective of *Reduced Climate Impact*. The Swedish National Audit Office does not evaluate the various options (selling, saving and cancelling). However, the audit examined the issues of (i) which options are available if the national emissions target for 2008–2012 is not given priority and (ii) which options are available if Sweden is to aim for that emissions target.

Main findings

The Swedish National Audit Office's overall conclusion is that reporting on Sweden's total holdings and future surplus of emission rights is not sufficiently transparent. Furthermore, there is a lack of information on how the handling of the surplus affects the attainment of the national climate objective and its emissions target for the period from 2008 to 2012. The national objective is considerably more ambitious

than the Swedish Kyoto commitment: emissions are to decrease by at least 4%. The absence of a decision on the handling of the future surplus is part of the reason why the government agencies and ministries concerned differ in their views on how Sweden's national climate objective is to be achieved. The Swedish parliament has not been given the opportunity to decide on the use of substantial financial resources.

Response of the government to the audit

The government will, according to the Swedish parliament's decision, return to the parliament with proposals for how to handle the future surplus of emission rights. This was the government's response after an announcement in the Swedish parliament. However, the government has still not put forward any proposals before the parliament.

The government has published information about the future surplus in the Central Government Report for 2009, 2010 and 2011.

7 Audit matrix

For the cooperative audit, the audit questions were organised in an audit matrix (see table below). Depending on the scope of the individual national audits, the SAIs responded to a selection of audit questions. Hence the data coverage varies for the different questions.

Based on the response to the questions, a selection of issues have been addressed in the report. Hence, not all the individual audit questions are specifically addressed or covered in the report. The green boxes show that the countries have been able to answer the question, the red boxes show that the countries have not been able to answer the question.

Questions	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
A – ETS Effectiveness in reducing national emissions / fostering technology development							
What were prices for GHG allowances in the period 2008–2012?	Information provided by the coordinator						
What was the initial price expectation for GHG allowances for the period 2008–2012?	✔	✔	✔	✘	✔	✔	✘
Was there a carbon tax prior to the ETS?	✔	✔	✘	✔	✔	✔	✔
How many per cent of GHG emissions are covered by the ETS sectors? (excluding the aviation sector)	✔	✔	✔	✔	✔	✔	✔
What was the expected and actual development in GHG emissions in the ETS sectors from 2008 to the latest available year?	✔	✔	✔	✔	✔	✔	✘
What methodology was used by the government to establish the national allocation plan?	✔	✔	✔	✔	✔	✔	✔
In which sectors have allowances been allocated free of charge, partially free of charge and in which sectors were they auctioned? Please state the reasons given.	✔	✔	✔	✔	✔	✔	✔
What was the quantity of allocated emissions allowances?	✔	✔	✔	✔	✔	✔	✔
How many allowances were reserved for new entrants in the ETS sectors?	✔	✔	✔	✔	✔	✔	✔

Questions	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
What was the difference between the allocated and actual emissions?	✔	✔	✔	✔	✔	✔	✔
Was the allocated quantity of allowances lower than the expected emissions?	✔	✔	✔	✔	✔	✔	✔
How adequate was the methodology used to derive the projection of GHG emissions?	✔	✔	✔	✘	✘	✔	✘
How has Research & Development funding affected technology investments?	✘	✔	✘	✘	✔	✔	✘
How many tonnes CO_2 were the ETS sectors intended to reduce from 2008–2012?	✔	✘	✔	✔	✔	✔	✔
How many tonnes CO_2 did the ETS sectors actually reduce compared with the NAP expectations from 2008 to the latest year available? (tonnes)	✔	✔	✔	✔	✔	✔	✔
If equipment is not used as originally intended and operators thus have lower emissions, can authorities cancel these allowances and allocate them to other companies? How many cases related to unused equipment are found in the audit?	✘	✔	✔	✔	✔	✔	✔
Do policy planning documents and normative acts state any obligations for operators to use profits from selling allowances for emissions reductions (e.g. in public service sectors)?	✘	✔	✔	✔	✔	✔	✔
If yes, is there adequate control that these profits are used for emissions reductions and do not get absorbed by operations?	✘	✘	✔	✔	✔	✔	✔
How do operators use profits from selling allowances?	✘	✘	✔	✔	✔	✔	✘
How have the operators achieved their emission reductions, e.g. by technology investment, reduced activity or other means?	✔	✘	✘	✔	✔	✔	✔
B – Implementation and administration of CDM / JI programmes							
Who is responsible?	✔	✔	✘	✔	✔	✔	✔
To what extent does this organisation function properly?	✘	✔	✘	✘	✔	✔	✔
To what extent are the personnel resources and competences sufficient and adequate?	✘	✔	✘	✘	✘	✔	✘
What are the national procedures for selling credits?	✘	✔	✘	✘	✔	✔	✘
What are the national procedures for buying credits?	✔	✔	✘	✘	✔	✔	✔
To what extent are the procedures effective and transparent?	✘	✔	✘	✘	✔	✔	✔

Questions	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
How many JI projects is your country hosting?	✔	✔	✘	✔	✔	✔	✔
To what extent does a risk management system exist and get applied, i.e. for economic risks related to whether money is spent wisely or risks related to the fact that emissions reducing targets are not met?	✔	✔	✘	✘	✔	✘	✔
To what extent is the risk profile of the portfolio taken into account in the planning of purchases?	✔	✔	✘	✘	✔	✘	✔
What are the national criteria for selecting projects, countries, etc.?	✔	✔	✘	✔	✔	✔	✔
How many CDM / JI credits have been purchased or sold: contracted and delivered?	✔	✔	✘	✔	✔	✔	✔
How many of the credits are bought through funds?	✔	✔	✘	✘	✔	✔	✔
Are planned credits achieved in the quantities planned and on time?	✔	✔	✘	✔	✔	✔	✔
How are the budgeting procedures for buying credits?	✔	✔	✘	✘	✔	✔	✔
Are all administrative costs for credits visible in the budget?	✔	✔	✘	✘	✔	✘	✔
What is the price of 1 tonne of CO_2, with and without administration costs? Distinguish between direct purchase, second-hand credits and purchase through funds	✔	✘	✘	✘	✔	✔	✔
Are there different credit prices for funds and direct projects?	✔	✘	✘	✘	✔	✔	✔
What is the alternative cost, i.e. the price of domestic measures?	✔	✘	✘	✘	✔	✔	✔
Are the prices of domestic measures determined by sector?	✔	✔	✘	✘	✔	✔	✔
What is the amount of CDM / JI purchases compared to domestic reductions?	✔	✔	✘	✘	✔	✔	✔
Do JI projects comply with UN / EU regulations?	✘	✔	✘	✔	✔	✔	✔
C – Registry systems on emissions trading – Operation, measurement and reporting							
How does the registry ensure that all relevant emitting operators are identified and registered in the registry?	✘	✘	✔	✔	✔	✔	✘
To what extent does the competent authority ensure that operators are issued an appropriate GHG emissions permit that states the operator's monitoring and reporting requirements?	✘	✘	✔	✔	✔	✔	✘

Questions	Denmark	Finland	Latvia	Lithuania	Norway	Poland	Sweden
How does the registry ensure that all relevant operators are given the correct number of allowances?	✘	✘	✔	✔	✔	✔	✘
Does the registry have procedures to ensure the accurate accounting of the issuance, holding, transfer, surrender and cancellation of allowances?	✘	✘	✔	✔	✔	✔	✘
Identify and describe identified problems impeding the proper functioning of the registry.	✘	✘	✔	✔	✔	✔	✘
How does the fee system support the purpose of the registry?	✘	✘	✔	✔	✔	✔	✘
To what extent does the registry make non-confidential information publicly available on the internet?	✘	✘	✔	✔	✔	✔	✘
How is the reporting process organised in order to secure timely, valid and reliable reporting both at operator level and country level?	✘	✘	✔	✔	✔	✔	✘
To what extent does the competent authority evaluate and verify reporting by operators?	✘	✘	✔	✔	✔	✔	✘
How is the reporting process organised in order to secure timely, valid and reliable reporting both at operator level and country level?	✘	✘	✔	✔	✔	✔	✘
Is the reporting adequate?	✘	✘	✔	✔	✔	✔	✘
To what extent does the competent authority sanction infringements by operators?	✘	✘	✔	✔	✔	✔	✘
How does the registry oblige with security standards?	✔	✘	✔	✔	✔	✔	✘
Have there been fraud attempts (for example false documentation, phishing, resale of quotas, VAT fraud) in relation with the ETS in the country ? Please describe which kind	✔	✔	✔	✔	✔	✔	✘
Is VAT collected by normal or reverse charge system?	✔	✔	✔	✔	✔	✔	✘
How has this criminal activity been detected and acted upon?	✔	✔	✘	✔	✔	✔	✘
To what extent does the national registry administration support appropriate investigation by authorities and cooperation with other national and international authorities?	✔	✘	✘	✔	✔	✔	✘

8 Partners

Country	Supreme Audit Institution	Contact Person (s)
Denmark	Rigsrevisionen	Mr Bjørn Olsen Ms Birgit Degnbol
Estonia	National Audit Office of Estonia	Ms Airi Andresson
Finland	National Audit Office of Finland	Dr. Vivi Niemenma
Latvia	State Audit Office of the Republic of Latvia	Mr Jānis Salenieks
Lithuania	National Audit Office of Lithuania	Ms Vaida Barizienė
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Sweden	Swedish National Audit Office	Ms Madeleine Nyman Mr Fredrik Engström

9 Audit Criteria

9.1 Relevant UNFCCC and EU legislation and audit criteria

The Parties to the Kyoto Protocol have agreed to detailed rules for emissions trading, CDM / JI and accounting. Most of these are based on decisions under the so-called Marrakesh Accords. The decisions lay down the basic definitions, objectives and obligations for the Parties. The Parties to the UNFCCC and the Kyoto protocol have also agreed to guidelines for reporting of emissions inventories, including formats, methods and requirements for quality control.

The EU has adopted several directives and regulations building on the UNFCCC and Kyoto Protocol framework. Most important is the ETS directive from 2003. The directive has been amended several times. The directive establishes definitions, coverage, general allocation rules, linkages to the Kyoto mechanisms, rules for monitoring and reporting, basic principles for trading, the necessary administrative arrangements and penalties. The ETS directive also is the basic legislation for the registry, but the EU has also established a specific regulation for registries systems.

The registry regulation establishes the requirements for software and hardware, administrative requirements as well as functional and technical specifications. Article 14 of the EU ETS Directive requires the Commission to adopt guidelines for the monitoring and reporting of greenhouse gas emissions under the ETS. Members are requested to ensure that operators of installations monitor and report their greenhouse gas emissions in accordance with these guidelines.

All the participating countries in the cooperative audit have in addition to the international regulations and obligations established national targets and legislation.

Common audit criteria:

1. The Kyoto Protocol and the relevant decisions of the Marrakesh Accords
2. The relevant EU directives
3. The registry regulation
4. UNFCCC monitoring and reporting guidelines
5. The EU monitoring and reporting guidelines

9.2 UNFCCC legislation

UNFCCC 09-05-1992, no. 1 multilateral

Kyoto Protocol to the UNFCCC 11-12-1997 no. 3 multilateral and relevant decisions of the Marrakesh accords

Decision 12/CMP.1 Guidance relating to registry systems under Article 7, paragraph 4, of the Kyoto Protocol

Decision 13/CMP.1, Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol

Decision 14/CMP.1 Standard electronic format for reporting Kyoto Protocol units

Decision 15/CMP.1 Guidelines for the preparation of the information required under Article 7, of the Kyoto Protocol

Decision 19/CMP.1 Guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol

Decision 20/CMP.1 Good practice guidance and adjustments under Article 5, paragraph 2, of the Kyoto Protocol

Decision 21/CMP.1 Issues relating to adjustments under Article 5, paragraph 2, of the Kyoto Protocol

Decision 22/CMP.1 Guidelines for review under Article 8 of the Kyoto Protocol

Decision 24/CP.8 Technical standards for data exchange between registry systems and the Kyoto Protocol

Decision 25/CMP.1 Issues relating to the implementation of Article 8 of the Kyoto Protocol – 2 (Confidential Information)

Kyoto Protocol Reference Manual on Accounting of Emissions and Assigned Amount

9.3 EU legislation

Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC and Directive 2004/101/EC and Directive 2009/29/EC

Decision 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse emissions and implementing the Kyoto Protocol and Commission Decision No 2005/166/EC of 10 February 2005 laying down rules implementing Decision No 280/2004/EC

Commission Regulation (EC) No 2216/2004 of 21 December 2004 for a standardised and secured system of registries, amended by Commission Regulation (EC) No 916/2007 and Commission Regulation (EC) No 994/2008 version applicable until 31.12.2011

Commission Regulation (EU) No 920/2010 of 7 October 2010 for a standardised and secured system of registries, repealing Regulations (EC) No 2216/2004 and (EC) No 994/2008 from 01.01.2012; article 78 in force following publication in 17.10.2010
Commission Decision 2006/780/EC of 13 November 2006 on avoiding double accounting of GHG emissions reductions

Commission Decision 2007/589/EC of July 2007 establishing guidelines for the monitoring and reporting of GHG emissions

9.4 National audit criteria

1. National climate targets
2. Principles for internal control and good management in ministries and their agencies
3. National legislation
4. National Allocation Plan
5. National policy documents

10 References

The European Environment Agency, *Annual European Union greenhouse gas inventory 1990–2010 and inventory report 2012.* Technical report No 3/2012, Copenhagen, 27 May 2012.

Europol, *Carbon credit fraud causes more than 5 billion Euros damage for European taxpayer.* Europol press release 9 December 2009.

European Commission, *Commission prepares for change of the timing for auctions of emission allowances.* News article, 25 July 2012.

European Commission, *Green Paper on greenhouse gas emissions trading within the European Union.* Brussels, 8.3.2000.

European Commission, *The EC Staff Working Document (2012) 234 final,* 25.7.2012.