

Environment and Climate Regional Accession Network (ECRAN)

Regional Advanced Technical Training Programme on the EU Monitoring and Reporting Regulation

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I. Background/Rationale

The European Commission actively supports climate cooperation in the region of the Western Balkans and Turkey through the Environment and Climate Regional Accession Network (ECRAN). The Emissions Trading Working Group of ECRAN aims to provide the essential regulatory building blocks and to increase the technical capacity for a well-functioning future national or regional ETS system, which could be or is modelled in line with the EU ETS. This would pave the way for further cooperation and linking with the EU ETS.

The following results are expected for this Working Group:

- To improve technical understanding of the EU ETS implementing provisions in relation to monitoring, reporting, verification and accreditation (MRVA) in the beneficiary countries, among the target group of industry and aircraft operators, as well as the Competent Authorities and potential verifiers.
- To identify institutional, legal and procedural arrangements for a future national or regional ETS system, which could be modelled in line with the EU ETS.

Background to the Monitoring and Reporting Regulation

Successful implementation of an emissions trading system among others involves the implementation of a system for the monitoring and reporting of greenhouse gas emissions, and for the verification of annual emission reports. Such Monitoring, Reporting and Verification (MRV) systems form the backbone of any ETS system.

The Monitoring and Reporting Regulation (MRR) establishes the requirements for the monitoring and reporting of greenhouse gas emissions by installations in the EU ETS. These requirements are effective as from 1 January 2013, from the start of the third trading period. The MRR requirements are designed to ensure regular and precise monitoring and reporting of greenhouse gas emissions in the participating countries (i.e. the EU Member States and countries in the EEA plus Croatia). The annual procedure of ensuring the proper monitoring, reporting and verification (MRV) of the emissions, as well as all processes connected to these activities, are known as the "compliance cycle" of the EU ETS.

The ECRAN Emissions Trading Working Group 3 aims to support the EU candidate and potential candidate countries in the implementation of the EU ETS. One of its key activities is a <u>regional training</u> <u>programme</u> on the EU Monitoring and Reporting, and Accreditation and Verification Regulations (MRR and AVR). This regional training programme will support operators of industrial installations, aircraft operators, authorities and verifiers on the basis of guidance and templates that have been developed by the European Commission. The programme includes the following activities:

- Regional aircraft operators training (held in April 2014 in Istanbul, Turkey)
- Regional training on the MRR and the AVR (planned for Spring 2015 in Zagreb, Croatia). The main target groups are the competent authorities from the region.
- Regional trainings on the MRR. Technical trainings targeted mainly at the operators of stationary ETS-like installations (3 trainings of which this training is the first one).





II. Objectives of the training

General objectives

The regional advanced training programme aims to provide the authorities and operators of industrial installations in Turkey with an improved technical understanding of the EU Monitoring and Reporting regulation.

Specific objectives

Specific objectives include to:

- Support and speed up the preparation for and implementation of emissions trading in the candidate countries, with a particular focus on the monitoring and reporting requirements.
- Provide practical examples on developing a Monitoring Plan and writing emissions reports
- Facilitate the participants to gain practical experiences with developing a Monitoring Plan and writing emissions reports, by conducting practical exercise as well as identifying and answering plant-specific questions.

Results/outputs

The training will provide in-depth insights in the Monitoring and reporting regulation, and understanding of lessons learned. Furthermore it will provide practical examples on developing a Monitoring Plan and writing emissions reports to and optimally prepare for their tasks to develop the Monitoring Plan and emission reports for their own installations. The specific objectives and targeted results include:

- 1. Obtaining detailed knowledge on the Monitoring and Reporting (MR) regulation of the European Commission for stationary ETS like installations
- 2. Understanding on the implemented regulation for monitoring and reporting in Turkey
- 3. Understanding of the requirements of the Monitoring Plan and obtaining hands-on insights in how to complete the MP
- 4. Understanding the requirements of the Annual Emission Reports and obtaining hands-on insights in how to complete such a report





III. EU policy and legislation covered by the training

Background and overview of the EU ETS

The European Union greenhouse gas emissions trading scheme (EU ETS) was established under Directive 2003/87/EC and became operable as of 1 January 2005. Its aim is to achieve the cost-effective reduction of greenhouse gas emissions from industrial installations in the EU using an economic instrument that ensures that environmental objectives are reached in an economically efficient manner while providing for a flexible approach in reaching such objectives.

The EU emissions trading system (EU ETS) is a cornerstone of the European Union's policy to combat climate change and a key tool for reducing the industrial greenhouse gas emissions. The EU ETS was established under Directive 2003/87/EC and became operable as of 1 January 2005.

The EU ETS covers more than 11,000 power stations and industrial plants in all 27 EU Member States plus Croatia, Iceland, Norway and Liechtenstein, as well as all flights from airlines operating in the EU or flying into and/or out of the EU.

The EU ETS works on the "**cap and trade**" principle, meaning that there is a "cap", or limit, on the total amount of certain greenhouse gases that can be emitted by the factories, power plants and other installations in the system, as well as originating from flights and aircraft within, entering or flying outbound from the EU. Within this cap, companies receive emission allowances which they can trade as needed. The cap/limit on the total number of allowances available ensures that they have a value. The cap for the year 2013 has been determined at 2,039,152,882 allowances, i.e. just under 2.04 billion allowances.

The **cap** will decrease each year by 1.74% of the average annual total quantity of allowances issued by the Member States in 2008-2012. In absolute terms this means that the number of allowances will be reduced annually by 37,435,387. In 2020, emissions from sectors covered by the EU ETS will be 21% lower than in 2005. The annual reduction in the cap will continue beyond 2020. To achieve the target of a 40% reduction in EU greenhouse gas emissions below 1990 levels by 2030, set out in the <u>2030</u> framework for climate and energy policy, the cap will need to be lowered by 2.2% per year from 2021, compared with 1.74% currently. This would reduce emissions from fixed installations to around 43% below 2005 levels by 2030 (See later under <u>Structural Reform</u> of the European Carbon Market).

Within the cap, companies receive or buy emission **allowances** which they can trade with one another as needed. If the emission exceeds the number of allowances received, the installation must purchase allowances from others. Conversely, if an installation has performed well at reducing its emissions, it can sell its leftover allowances. The installations can also buy allowances that are regularly auctioned from 1 January 2013 onwards. They can also buy limited amounts of international credits from emission-saving projects around the world. However, as from 2013 only emission saving projects from the so-called "Least Developed Countries" are eligible for use. The limit on the total number of allowances available ensures that they have a value.

After each year a company must first submit an emission report summarising the GHG emissions emitted during the year. This report should be based on the emission monitoring practice and



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procedures laid down in the approved Monitoring Plan, and the total emissions verified by an accredited verifier. The next step is that the installation must surrender enough **allowances** to cover all its emissions in accordance with the verified emissions, otherwise penalties are imposed. If a company reduces its emissions to a level below the allowances received, it can keep the spare allowances to cover its future needs or sell the surplus to another company that is short of allowances. The flexibility that trading brings ensures that the emissions are cut where it costs least to do so.

Emissions can also be offset directly by buying and cancelling/deleting allowances.

The Directive currently applies to the following greenhouse gases and categories of activities, as listed in Annex I to the Directive:

- Carbon dioxide (CO₂) from:
 - power and heat generation;
 - energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals;
 - commercial aviation.
- Nitrous oxide (N₂O) from production of nitric, adipic, glyoxal and glyoxlic acids;
- Perfluorocarbons (PFCs) from aluminium production.

Phase 1 of the EU ETS 2005 – 2007

Phase one was a three-year pilot period of 'learning by doing' to prepare for the phase two, when the EU ETS would need to function effectively to help ensure that the EU and Member States would meet their Kyoto Protocol emission targets.

In phase one the EU ETS covered only CO₂ emissions from power generators and energy-intensive industrial sectors. Almost all allowances were given to businesses free of charge. The penalty for non-compliance was €40 per tonne.

The Phase one succeeded in establishing a price for carbon, in free trade of emission allowances across the EU and in creating the necessary infrastructure for monitoring, reporting and verifying actual emissions from the businesses covered. From the launch of the EU ETS in January 2005, national registries ensured the accurate accounting of all allowances issued.

In the absence of reliable emissions data, phase one caps were set on the basis of best guesses. In practice, the total allocation of EU ETS allowances exceeded demand by a sizeable margin and in 2007 the price of phase one allowances fell to nearly zero (phase one allowances could not be banked for use in phase two).

The generation of verified annual emissions data from the installations participating in the pilot phase filled this important information gap and created a solid basis for setting national caps for phase two.

Phase 2 of the EU ETS 2008 – 2012



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The three EEA-EFTA states – Iceland, Liechtenstein and Norway – joined the EU ETS at the start of phase two. At the same time, the scope of the system was marginally widened through the inclusion of nitrous oxide emissions from the production of nitric acid by a number of Member States.

The proportion of general allowances given away for free was lower than in the first trading period, i.e. set at 90%. The penalty for non-compliance was increased to €100 per tonne. Several Member States held auctions during phase two.

Businesses were allowed to buy CDM and JI credits (except for those from nuclear facilities and agricultural and forestry activities) totalling around 1.4 billion tonnes of CO_2 -equivalent. This possibility enlarged the range of cost-effective emission mitigation options available to businesses. The EU ETS became the biggest source of demand for such credits, making it the main driver of the international carbon market and the main provider of clean energy investment in developing countries and economies in transition.

Phase two coincided with the first commitment period of the Kyoto Protocol, which required the EU and Member States to meet their emission reduction target of 8%.

On the basis of the verified emissions reported during phase one, the European Commission tightened the cap by cutting the total volume of emission allowances by some 6.5% compared with the 2005 level. However, the economic crisis that began in late 2008 depressed the industrial production and its emissions, and the demand for allowances, by an even greater margin. This led to a large and growing surplus of unused allowances and credits which weighed heavily on the carbon price throughout the second trading period.

The aviation sector was brought into the EU ETS on 1 January 2012 through a revision of the EU ETS Directive adopted in 2008. For 2012 the cap on aviation allowances was set at a level 3% lower than the aviation emissions in the 2004-2006 reference period. In order to strengthen momentum towards reaching agreement on a global market-based measure to address aviation emissions, however, the Commission in November 2012 made a proposal to defer the application of the EU ETS to flights into and out of Europe during 2012.

As from 2012 the accurate accounting of all allowances was transferred from the national registries to a single Union Registry¹ operated by the Commission, which also covers the three EEA-EFTA states. From 2012 the Union Registry also includes accounts for aircraft operators.

During phase two the national and Union registries recorded:

- National allocation plans;
- Accounts of companies or physical persons holding those allowances;
- Transfers of allowances ("transactions") performed by account holders;
- Annual verified CO₂ emissions from installations;
- Annual reconciliation of allowances and verified emissions, whereby each company had to surrender enough allowances to cover all its verified emissions.

¹ The provision and requirements of the EU Registry are laid down in the Commission Regulation (EU) No 1193/2011 of 18 November 2011 establishing a Union Registry for the trading period commencing on 1 January 2013.





Phase 3 of the EU ETS 2013 - 2020

Croatia joined the EU-ETS at the start of Phase Three taking the number of countries in the EU ETS to 31. The third phase is significantly different from phases one and two and is based on rules that are far more harmonised between the Member States than before was practicable or possible. The main changes are:

- A single EU-wide cap on emissions applies, compared to 27 national caps in the 1st and 2nd trading period;
- Auctioning, and not free allocation, is now the default method for allocating allowances. In 2013
 more than 40% of allowances will be auctioned, and this share will rise progressively each year;
- For those allowances still given away for free, harmonised allocation rules apply which are based on ambitious EU-wide benchmarks of emissions performance;
- Some more sectors and gases are included.

Structural reform of the European Carbon market

At the start of the Third Phase, the EU ETS faces the challenge of a growing surplus of allowances, largely because of the economic crisis which has depressed emissions far more than anticipated.. In the short term this surplus risks undermining the orderly functioning of the carbon market; in the longer term it could affect the ability of the EU ETS to meet its objective of meeting the high and demanding emission reduction targets cost-effectively.

The Commission has therefore taken the initiative to postpone (or 'back-load') the auctioning of some allowances as an immediate measure. This 'back-loading' of auctions is being implemented through an amendment to the EU ETS Auctioning Regulation.

As back-loading is only a temporary measure, a sustainable solution to the imbalance between supply and demand requires structural changes to the EU ETS. The Commission proposes to establish a market stability reserve at the beginning of the next trading period in 2021.

The reserve would both address the surplus of emission allowances that has built up and improve the system's resilience to major shocks by adjusting the supply of allowances to be auctioned. It would operate entirely according to pre-defined rules which would leave no discretion to the Commission or Member States in its implementation.

The legislative proposal put forward in January 2014 at the same time as the <u>framework for climate</u> <u>and energy policies up to 2030</u> requires approval by the Council and the European Parliament before becoming legally binding.

Efforts to address the market imbalance would also be helped by an increase in the annual linear reduction factor which determines the EU ETS cap. To achieve the target of a 40% reduction in EU greenhouse gas emissions below 1990 levels by 2030, set out in its 2030 Framework for Climate and Energy Policy, the Commission proposes an increase in the linear reduction factor to 2.2% per year from 2021, from 1.74% currently.

Implementing provisions as regards Monitoring, Reporting, Verification and Accreditation



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Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council

The so called Monitoring and Reporting Regulation (**MRR**) establishes the requirements for the monitoring and reporting of greenhouse gas emissions by installations in the scheme pursuant to Directive 2003/87/EC. These requirements are effective as from 1 January 2013, from the start of the third trading period. This Regulation builds on the previous Commission Decision establishing monitoring and reporting guidelines (MRG 2004) that were revised in 2006 and implemented through Decision 2007/589/EC². These guidelines were applicable during the second period of the scheme (2008 to 2012). The new Monitoring and Reporting Regulation No 601/2012 provides detailed technical interpretation of the requirements set out in Article 14 and in Annex IV to the Directive. It aims at establishing basic monitoring methodologies to minimise the burden on operators and aircraft operators and facilitate the effective monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC.

The Regulation sets out the following 10 Annexes:

- Annex I sets out the minimum content of the Monitoring Plan for installations and for aviation emissions, (Art 12(1));
- Annex II sets the tier thresholds for calculation-based methodologies related to installations (Art 12(1));
- Annex III sets out the methodologies for aviation (Article 52 and Article 56);
- Annex IV sets out activity-specific monitoring methodologies related to installations listed in Annex I of the ETS Directive (Article 20(2);
- Annex V established the minimum tier requirements for calculation-based methodologies involving category A installations and calculation factors for commercial standard fuels used by Category B and C installations (Article 26(1));
- Annex VI presents the reference values for calculation factors (Article 13(1)(a));
- Annex VII specifies the minimum frequency of analyses (Article 35);
- Annex VIII specifies the measurement-based methodologies (Article 41);
- Annex IX indicates the minimum data and information which need to be retained by installations and aircraft operators (Article 66(1));
- Annex X specifies the minimum content of the Annual Reports (Article 67(3)).

The MRR requirements are designed to ensure regular and precise monitoring and reporting of greenhouse gas emissions in the participating countries (i.e. the EU Member States and countries in the EEA plus Croatia).

The annual procedure of ensuring the proper monitoring, reporting and verification (MRV) of the emissions, as well as all processes connected to these activities, are known as the "compliance cycle" of the EU ETS.

² Decision 2007/589/EC is repealed as from 1 January 2013. However, the provisions of the Decision will continue to apply to the monitoring and reporting and verification of emissions and, where applicable, activity data occurring prior to 1 January 2013





- Industrial installations and aircraft operators covered by the EU ETS are required to have an approved monitoring plan, according to which they monitor and report their emissions during the year. In the case of industrial installations, the monitoring plan forms part of the approved permit that is also required.
- Once the year has ended, the installations and the aircraft operators have to draft an emission report in which they report their emissions that have been monitored and recorded according to the requirements and procedures specified in the approved monitoring plan.
- A crucial next step in the emissions trading compliance cycle is the verification of emission reports prepared by the operators. The objective of verification is to ensure that emissions have been accurately monitored and reported in full accordance with the requirements of the MRR and that reliable and correct emissions data are reported according to Article 14(3) and Annex IV of Directive 2003/87/EC. The data in the annual emissions report must be verified before <u>31 March</u> each year by an accredited verifier (for the requirements on the verification, see next section).
- Once verified, operators must surrender the equivalent number of allowances by **30 April of the same year**. Common rules for the monitoring and reporting of emissions, as well as for the accreditation of verifiers and the verification of annual emissions reports are important for ensuring the quality of the annually reported emissions and the credibility of the data.

The table below summarises the common timeline of the annual ETS Compliance cycle for emissions in year N as specified in the MRR.

When?	Who?	What?
Not specified by MRR	Competent	Approve Monitoring Plan (aviation and
but common sense	Authority	installations) and issue permit (in case of
suggests before 31		installations)
December N-1		
1 January N		Start of the Monitoring period
By 28 February N	Competent	Allocation of allowances for free (if applicable)
	Authority	into the Operator's account in the Registry
31 December N		End of the monitoring period ³
31 March N+1 ⁴	Verifier	Finalise the verification of the emission report
		and issue verification report to the operator
31 March N+1 ⁵	Operators	Submit the verified annual emissions report

Table - Common timeline of the Annual ETS Compliance cycle for emissions in year N as specified in the MRR

⁴ According to Article 67(1) of the MRR, competent authorities may require operators or aircraft operators to submit the verified annual emission report earlier than by 31 March, but by 28 February at the earliest.







³ Although usually not considered part of the compliance cycle, it may be useful to note that by 31 December the operator has to submit information about changes to the installation's capacity, activity level and operation, if applicable. This is a new element based on Article 24(1) of the CIMs. This notification is applicable for the first time in December 2012.

When?	Who?	What?
31 March N+1	Operators/Verifier	Enter the verified emissions figure in the
		verified emissions table of the Union Registry
March – April N+1	Competent	Subject to national legislation, possible spot
	Authority	checks of submitted annual reports. Require
		corrections by the operator if applicable.
30 April N+1	Operator	Surrender allowances (amount corresponding
		to verified annual emissions) in Registry
		system
30 June N+1	Operator	Submit report on possible improvements of
		the Monitoring Plan, if applicable ⁵
(No specified deadline)	Competent	Carry out further checks on submitted annual
	Authority	emissions reports, where considered necessary
		or as may be required by national legislation;
		require changes of the emissions data and
		surrender of additional allowances, if
		applicable (in accordance with Member State
		legislation).

Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council.

This Regulation applies to the verification of greenhouse gas emissions and tonne-kilometre data occurring from 1 January 2013 and reported pursuant to Article 14 of Directive 2003/87/EC.

Verification provisions are legally provided for by Article 15, while the criteria for the verification are defined in Annex V to Directive 2003/87/EC.

In accordance with the principles of Annex V of Directive 2003/87/EC, the verifier should apply a riskbased approach with the aim of reaching a verification opinion providing reasonable assurance that the total emissions or tonne-kilometres are not materially misstated and the report can be verified as satisfactory. The level of assurance should relate to the depth and detail of verification activities carried out during the verification and the wording of the verification opinion statement.

The Regulation sets an overall framework of rules for the accreditation of verifiers to ensure that the verification of operator's or aircraft operator's reports in the framework of the EU ETS, to be submitted in accordance with the MRR (Commission Regulation (EU) No 601/2012) is carried out by verifiers that

⁵ There are two different types of improvement reports pursuant to Article 69 of the MRR. One is to be submitted in the year where a verifier reports improvement recommendations, and the other (which may be combined with the first, if applicable) every year for category C installations, every two years for category B, and every four years for category A installations. For categorisation, see Article 19 of the MRR. The CA may set a different deadline, but no later than 30 September of that year.







possess the technical competence to perform the entrusted task in an independent and impartial manner and in conformity with the requirements and principles set out in this Regulation.

All verification activities in the verification process are interconnected and should be concluded with the issuance of a verification report by the verifier containing a verification statement that is commensurate with the outcome of the verification assessment. Harmonised requirements for the verification reports and the performance of the verification activities are established to ensure that verification reports and verification activities in the Member States meet the same standards.





IV. Highlights from the training workshop

Reference is made to Annex I for the agenda, and Annex III for the presentations, exercises, templates and handouts. Below <u>only the highlights</u> are covered. The details can be found in Annex III.

Day 1

Seminar Opening and Introduction

The Seminar was opened by Ms Sukran Arcan of the Ministry of Environment and Urbanisation. She referred to the new Turkish legislation as regards MRV and presented the most frequently asked questions. The Ministry has now received approximately 600 Monitoring Reports for evaluation by the Ministry, and it is expected that up to 2400 Reports are still pending, based on the current estimation of roughly 1500 to 2000 ETS like installations in Turkey. Sector coverage includes the energy sector (combustion fuels >20MW) and industry sectors (coke production, metals, cement, glass, ceramic products, insulation materials, paper and pulp, chemicals over specified threshold sizes/production levels).

Entities must have annually submitted their monitoring plans by June 2014 (in 2014 it was delayed to October) to the Ministry of Environment and Urbanization. The first year for monitoring is 2015, with the first emission reports due in 2016.

Failing to comply with the Turkish MRV regulation is subject to the generic data reporting requirements and related sanctions under the Turkish Environmental Law No. 2872 and the Ministry has proposed an amendment to the Law to included specific provisions related to the Turkish MRV regulation.

Ms Nurdan Sirman of the Istanbul Chamber of Industry then welcomed the participants and indicated the importance and the timeliness of this Seminar for Turkey. The Chamber actively promotes the concept of "sustainable development" based on utilizing the resources effectively, decreasing waste, protecting human health and environmental quality, perceiving the concepts of economic development and environment protection as inseparable. The Turkish Chamber of Industry supports the implementation of the Turkish MRV legislation which provides a first step towards future GHG emission reductions from Turkish industry.

Ms Monique Voogt then provided a short introduction to ECRAN and the ETS Workgroup. The aims of the workshop were presented and the future planned activities under ECRAN were outlined. The speakers/facilitators were then introduced.

Monitoring and Reporting in the framework of the EU ETS- Dimitrios Zevgolis, DG Clima

Mr Zevgolis mentioned that monitoring and reporting of emissions is a cornerstone of the EU ETS. ETS has a twofold nature. On the one hand it is a market based instrument. On the other hand it is an instrument for achieving an environmental benefit. For both purposes it is needed to guarantee that the quantity of CO_2 emitted is equal to the quantity of CO_2 reported and this value is consistent among all the participants (principle: A tonne must be a tonne). In fact from a market perspective, the quantity of CO_2 reported is related to the allowances to be surrendered and for this reason it has a



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great impact on the overall functioning of the trading of the allowances. From an environmental perspective the goal is not to be achieved by individuals, but the whole group of EU ETS participants having to achieve the goal jointly. MRV is necessary for the oversight activities to ensuring that the goal set by the cap is reached, meaning that the anticipated emission reductions are delivered in practice. All this requires a considerable level of fairness between participants.

The MRV guarantees all this. The presentation outlined the compliance cycle, the important (deadline) dates, the general principles and the differences between and the main changes as compared to the Monitoring and Reporting Guidelines from 2007, which have been repealed with the Monitoring and Reporting Regulation⁶. An overview was also presented of the available guidelines and templates.

Implementation of the Monitoring and Reporting Regulation in Turkey - Sule Özkal, Ministry of Environment and Urbanization, Turkey

An overview was presented of the similarities and differences between EU ETS Directive and Turkish MRV Regulation. The main provisions are fully in line with the EU Regulations. However, the main differences include the exclusion of the aviation sector and the exclusion of the waste sector. Also the principle of unreasonable costs for complying with the monitoring requirements are not specified in Turkish legislation. As there are no Turkish verifiers yet accredited, the 2015 evaluation and verification will be done by the Ministry of Environment and Urbanisation. The requirements for Turkish operators were highlighted.

<u>The Monitoring and Reporting Principles - Nives Nared, Ministry of Agriculture and the</u> <u>Environment, Slovenia</u>

The EU ETS Compliance Cycle and the roles and responsibilities of various stakeholders were presented. The contents of the Monitoring Plan and the required monitoring approaches and the categorisation of installations were outlined. The auctioning platforms and the functioning of the Union Registry were briefly addressed. The monitoring principles were explained and include:

- **Completeness** Monitoring shall be complete and cover all process and combustion emissions from all emission source streams from activities as listed in Annex I
- **Consistency** *Monitoring should be comparable over time, use same monitoring methodology and data sets as approved by CA*
- **Transparency** *Obtain, record, complete and document monitoring data, incl. assumptions, references, activity data, emission and oxidation factor in a transparent manner*
- Accuracy Operators shall identify and reduce any possible source of inaccuracies

⁶ Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council

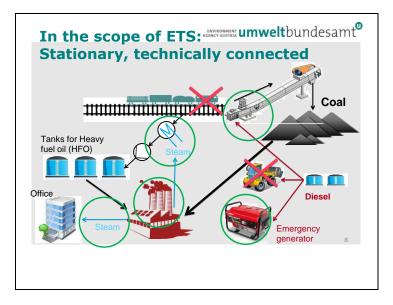




<u>Case study: preparing a Monitoring Plan for a combustion installation Christian Heller,</u> <u>Umweltbundesamt Austria</u>

The <u>three steps</u> for the operator to prepare the Monitoring Plan were outlined in detail. These include: *Step 1*: Description of the installation and its activities; *Step 2*: Categorisation of installations; *Step 3*: Emissions sources, source streams and their categorisation

A practical demonstration in the MP template was provided. As an example the case of a thermal power plant was presented. The scope of ETS type of activities related to the activities was discussed in plenary as well as the way how to categorise installations as per Article 19 of the MRR. The definition of emission sources as per Article 3(4) of the MRR was presented. The definition of emission points and measurement points and (the categorisation of) source streams were addressed as well.



The presentation was concluded with an interactive session with the audience on how to fill in the first parts of MP for specific installations.

Flow measurement and calculation of emissions - Charlotte Spitters, Dutch emissions authority

The minimum contents of the Monitoring Plan were presented, including the monitoring plan templates. The audience was then invited to fill in the Monitoring Plan for a case presented at the workshop (i.e. a thermal power plant and a chemical plant).

The standard methodology and mass balance methodology were presented in an interactive session with participants. The way how tiers have to be applied (accuracy requirements) were addressed including the CO_2 emission calculations. The exercise for participants included the standard methodologies to be applied for a thermal power plant and a chemical plant. The exercise included the application of tiers thresholds for uncertainty, for net caloric values, for emission factors and for oxidation factors. It was emphasize that for each major and minor source streams the highest tier available should be applied. For deminimis source streams the highest tier possible should be applied. Also the requirements for sampling and analyses and the frequency of analyses were presented.

Day 2





Reference is made to Annex I for the agenda, and Annex III for the presentations, exercises, templates and handouts. Below <u>only the highlights</u> are covered. The details can be found in Annex III.

<u>Role and actions of Competent Authorities in Monitoring and Reporting - Heidi De Prez, Walloon Air</u> <u>& Climate Agency</u>

The role of the Competent Authority CA in the compliance cycle was addressed. The following issues were highlighted: (1) Preparatory work; (2) Validation of Monitoring Plans & changes in Monitoring Plans; (3) The validation of annual emission reports and verification reports; (4) Validation of improvement reports; (5) Inspections and (6) International exchange of information and harmonisation of implementation

Monitoring Plan: derogations and exemptions - Christian Heller, Umweltbundesamt Austria

For major source streams the highest tier for Category B and C installations has to be applied (Art 26 MRR). Subject to satisfaction of the Competent Authority concerning technical feasibility or unreasonable costs one level lower tier may be applied for Category C installations and up to two tier levels lower for Category A and B installations. Where this is still technically not feasible, or would lead to unreasonable costs, the CA may allow the operator to apply a lower tier to a minimum of tier 1. Installations with low emissions may apply tier 1 unless a higher tier is possible without additional effort, e.g. if higher tier is applied anyway.

The way how unreasonable costs are determined was not demonstrated due to time constraints, However we have included a practical demonstration in the "tool for unreasonable costs" under separate cover on the website of ECRAN, see Annex III.

Also, the way how installations with low emissions are dealt with was explained (simplified monitoring plans and exemptions).

Experiences from an operator - Volkan Orhan Tekin, TÜPRAŞ-Türkiye Petrol Rafinerileri A.Ş.

The presentation included the experiences on preparing a monitoring plan by the TÜPRAŞ refinery. The practical implications and main choices were addressed. The new MRV requirements in Turkey implied new responsibilities and a new organisational structure including the distribution of tasks. Understanding of legislation was vital to address the challenges.

Investments were necessary to reach higher tiers and to increase the technical capacity of the staff responsible for preparing the Monitoring Plan.

<u>The verifier perspective - Goran Janekovic, Energy Research and Environmental Protection Institute</u> (Ekonerg)

Verification is confirming emission figures impartially, independently and objectively, and it is always done by competent persons. There are five principles of verification:

- Impartiality;
- Competence;
- Factual approach to decision making;
- Openness;
- Confidentiality.



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It was explained what the verifier does. He or she looks at the annual emission reports, monitoring plan and other supporting documents such as risk analysis, uncertainty assessment and procedures. Then relevant data needs to be checked, including measurements and production data, bills, database and other. It is important to visit the installation and have a site view of the current and actual situation. After applying criteria for conclusion on emission report, the verifier issues his own report. The presenter further discussed reasonable assurance, stating that the emission report has to be free from misstatements, and the level of assurance is in this case provided by the verifier. The materiality level is defined for installation categories, 5% for A and B category, and 2% for C category installations. Material misstatements are a reason for negative verifier's opinion. Both verifier and the operator have to identify risks, both inherent and control risks. An example of risk analysis was shown to the participants, with explanation of the process, type of risk, inherent risk, and control measures.

<u>The annual emission report and the improvement report - Tomas Aukštinaitis, Lithuanian Environ-</u> <u>mental Protection Agency</u>

There are times when some data relevant to determination of GHG emissions might not be available or missing. According to MRR in this situation the operator shall use an appropriate estimation method for determining conservative surrogate data for the respective time period and missing parameter. These estimation methods may be based according to historical data, data trends, data parameters correlation etc.

After data gaps have been closed by surrogate data in accordance to article 65 of MRR the following information must be submitted in annual emissions report:

- Source stream or emission source to which each data gap applies;
- Reasons for each data gap. Why or how they occurred (e.g. failure of measurement instrument);
- the starting and ending date and time of each data gap;
- the emissions calculated based on surrogate data;
- where the estimation method for surrogate data has not yet been included in the monitoring plan, a detailed description of the estimation method including evidence that the methodology used does not lead to an underestimation of emissions for the respective time period;

There are situations when using biomass is more economical for the operator and may result in biomass use rather than just natural gas or coal etc. For example in Lithuania biomass use for centralized heating was promoted and subsidize which resulted in strong GHG emission decrease in 2013. Although emission factor for combusting biomass is $0 \text{ t } \text{CO}_2/\text{TJ}$, relevant information on biomass use must be submitted in AER as memo items. This is just one example of memo item. Other memo items are related to CO_2 transfer etc.

So the information to be reported as memo items under the MRR requirements must at least contain the following information:

- amounts of biomass combusted (TJ), or employed in processes (t or Nm³);
- CO₂ emissions from biomass (t CO₂), where measurement-based methodology is used to determine emissions;



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- a proxy for the net calorific value of the biomass source streams used as fuel, where relevant;
- amounts and energy content of bioliquids (TJ) and biofuels combusted (t);
- CO₂ transferred to an installation or received from an installation (t CO₂);
- inherent CO₂ transferred to an installation or received from an installation (t CO₂);
- where applicable, the name of the installation and its identification code as recognized in accordance with Regulation (EU) No 389/2013:
 - i. of the installation(s) to which CO₂ is transferred;
 - ii. of the installation(s) from which CO₂ is received;
- transferred CO₂ from biomass (t CO₂).

To sum up a point on CO_2 transfer it should be noted that reporting requirements apply only if EU **ETS** installation is:

- receiving inherent CO₂,
- > exporting inherent CO₂ to another EU ETS installation,
- exporting inherent CO₂ to non EU ETS installation,
- receiving transferred CO₂,
- exporting transferred CO₂.

At the end a detailed demonstration was given of the Annual Emission Report and the Improvement Report.

Lessons learned on MRR in phase 3 - Heidi De Prez

Practical examples were given of the first lessons learned after 1 year of MRR in phase 3 ETS. The most important lessons learned as regards the Monitoring Plans, included the underestimation of the time needed for approval by the CA. It was mentioned that it is necessary to communicate a lot with operators to ensure compliance and avoid misstatements later. It turned out that the submission date deadlines were very difficult to respect for operators.

A list of (negative experiences) in the process of submitting the Monitoring Plans and Annual Emissions Reports were listed. The need to ensure communication between CA – national Accreditation Bodies, operators and verifiers is important.





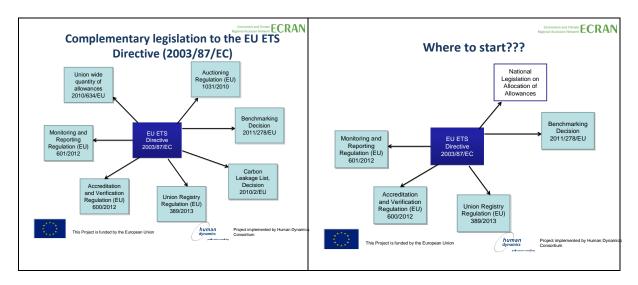




EU – ETS MRAV – formulation of actions plan for EU ETS implementation – Imre Csikós, ECRAN

A discussion on the potential steps towards full ETS implementation for Turkey countries was outlined. The following steps were addressed:

- <u>Step 1. Prepare an ETS Implementation Plan to determine:</u>
 - Required tasks, costs and associated staffing
 - Identify the list of activities (operators of stationary installations of Annex I and Aircraft operators)
- <u>Step 2. Designate the Competent Authority to implement/regulate:</u>
 - Auctioning (decide to work with own or existing platform)
 - Issuing of permits and allowances
 - National Implementation Measures (NIMs)
 - Monitoring, reporting, verification, accreditation
 - Registry work (Union Registry)
 - o Organise internal and external information streams including public access to information
- <u>Step 3. Develop necessary legislation :</u>
 - MRAV legislation and permitting legislation was already prepared by Turkey, but needs some supplements (as regards unreasonable costs, inclusion of aviation etc.)
 - Following that start developing legislation that regulates allocation and issuing of allowances (NIMs); Registry functioning; Transfer, surrender and cancellation of allowances; Use of credits (accept only credits from LDCs and not from nuclear installations and not from LULUCF and not from large hydropower); Auctioning (own platform or existing platform); Public participation and access to information.



- <u>Step 4: Determine Capacity Building requirements for implementation:</u>
 - For Authorities
 - For operators!
 - o Information campaigning to explain in simple terms to general public
- <u>Step 5: Assess the following:</u>
 - \circ $\;$ Installations that are considered carbon leakage prone
 - Installations that may receive emission allowances for free (based on efficiency benchmarking)



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- <u>Step 6. Consider Monitoring, Reporting, Verification and Accreditation as a first step:</u>
 - Prepare Guidance Materials (use the existing guidance and templates)
 - o Develop an IT based system (electronic reporting) (recommended for large market!)
 - o Establish Accreditation body to accredit verifiers
- <u>Step 7: Learn the actual trading</u>
 - o Consider as a first step to use monopoly money (to learn)
 - Establish a National Registry (modelled along the requirements of the Union Registry so that linking with the ITL though the EUTL is possible)
 - o Consider national or regional trading
- <u>Step 8. Set up compliance structures:</u>
 - \circ $\;$ Inspectorates to check verified emission reports
 - Ensure secure trading though national registries
 - Training of inspectorates

MRV (Monitoring, Reporting and Verification) is the backbone of the EU-ETS. It requires: (1) Precise, well-defined requirements on the monitoring, reporting and verification of emissions; (2) Adherence by the aircraft operators to the basic principles of MRV, i.e. Completeness; Consistency and Comparability; Transparency; Accuracy; Integrity of Methodology; Continuous Improvement; (3) A well-defined structure and format for the monitoring, reporting and verification of emissions and (4) Each actor in the Compliance Cycle plays its role as required and is aware of its own responsibility

An overview of the web links to the corresponding legislation and templates was provided







V. Evaluation

The following summary of the training evaluation report, developed on the basis of analysis of the training questionnaires can be given. A number of 43 participants filled the evaluation form. It shows that the expectations of the workshop were met.

Statistical information

1.1	Workshop Session	Regional Advanced Technical Training Programme on the EU Monitoring and Reporting Regulation
1.2	Facilitators name	As per agenda
1.2		
1.3	Name and Surname of Participants (evaluators) optional	As per participants' list

Your Expectations

Please indicate to what extent specific expectations were met, or not met:

My Expectations	My expectations were met			
	Fully	Partially	Not at all	
1. I have obtained detailed knowledge on the Monitoring and Reporting (MR) regulation of the European Commission for stationary ETS like installations.	 (63%)	 (37%)		
2. I have better understanding on the implemented regulation for monitoring and reporting in Turkey.	 (67%)	 (33%)		
3. I have now better understanding of the requirements of the Monitoring Plan and I have obtained hands-om insights in how to complete the Monitoring Plan.	 (68%)	 (29%)	l (3%)	
4. I have obtained better understanding of the requirements of the Annual Emission reports and I have obtained hands-on insights in how to complete such a report.	 (49%)	 (44%)	III (7%)	



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Aspect of Workshop	Excellent	Good	Average	Accepta ble	Poor	Unaccep table
1 The workshop achieved the objectives set	 (37%)	 (54%)	 (9%)			
2 The quality of the workshop was of a high standard	 (38%)	 (45%)	 (15%)	l (2%)		
3 The content of the workshop was well suited to my level of understanding and experience	 (33%)	 (55%)	 (12%)			
4 The practical work was relevant and informative	 (23%)	 (45%)	 (30%)	l (2%)		
5 The workshop was interactive	 (53%)	 (31%)	 (14%)	l (2%)		
6 Facilitators were well prepared and knowledgeable on the subject matter	 (59%)	 (36%)	ll (5%)			
7 The duration of this workshop was neither too long nor too short	 (30%)	 (47%)	 (16%)	ll (5%)	l (2%)	
8 The logistical arrangements (venue, refreshments, equipment) were satisfactory	 (44%)	 (46%)	 (10%)			
9 Attending this workshop was time well spent	 (40%)	 (47%)	 (11%)	l (2%)		

Please rate the following statements in respect of this training module:

Comments and suggestions

- General opinion of the participants is that the workshop was very well organised, with enough details and information. However, there were some suggestions of organising more workshops in Turkey, especially in other cities of Turkey besides Istanbul and Ankara, and that the operators should be included in these workshops as well.
- No comments on the facilitators except that they were helpful and knowledgeable;
- Comments were in general very good, with some suggestions, such as inclusion of uncertainty calculations and taxing, more examples on ETS in EU and in Turkey (including recommendations). According to the participants, more workshops should be organised in this field.

I have the following comment and/or suggestions in addition to questions already answered:



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Workshop Sessions:

- It would have been a plus if the local CA had displayed its own page and offered visual know-how on how to complete the MRV;
- More workshops must be planned in Turkey, also in another cities in Turkey;
- Before workshop, we should choose any participant from operators and try to do his/her facility monitoring plan;
- Thank you very much!!!
- As you know it is a new regulation in Turkey and/sp. This workshop is a valuable opportunity for me to see and learn the requirements, rules, procedures, system in EU. Thank you again.
- Sessions were very detailed and fulfilling;
- Apart from monitoring period, another training can be planned for reporting scope and details;
- That was very good...Source stream and the emission point has been very well with the examples...;
- Everything is great;
- It could be much more fruitful if it is done by round table.

Facilitators:

- Helpful and knowledgeable.

Workshop level and content:

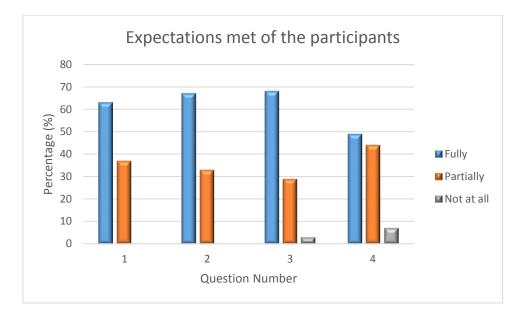
- For the next time please include uncertainty calculation and tax requirement details;
- More examples could be shown, what are the most encountered issues and problems during the verification and monitoring and reporting by the installations;
- More detailed info on trade system examples, the system in EU?
- What are the recommendations for Turkey for preparing for ETS?
- Good;
- Contents were the key points about companies which are obligatory and hard to understand;
- I saw some insufficient knowledge of my own;
- Use tools of member states;
- Very positive point networking, lots of very important presentations from a different point of view;
- As a verifier candidate, I got a lot of useful information in this workshop. Thank a lot for the organisation. I think, day by day with implementations, we are going to improve our knowledge, we will do our best about this issue;
- Training to be planned for annual emission report preparation;
- It is very beneficial and efficient workshop;
- There are too many presentations about MP. I already attended lot of workshops on MP. In addition to that, our liability already passed and we delivered our MPs. I expect more knowledge about Emission report. SO it was a perfect workshop for people/ plants which didn't prepare MP, but a little bit boring for me. However, thanks anyway!
- More time should be spent discussing the specific examples. More sectors can be evaluated in the presentations in terms of main differences;
- Calculation part in monitoring report should be compared with your sectors in practices and can be shown numerically;
- Thanks for this workshop, we need more workshops in our country for environment.

EXECTATIONS OF PARTICIPANTS





- 1. I have obtained detailed knowledge on the Monitoring and Reporting (MR) regulation of the European Commission for stationary ETS like installations.
- 2. I have better understanding on the implemented regulation for monitoring and reporting in Turkey
- 3. I have now better understanding of the requirements of the Monitoring Plan and I have obtained hands-om insights in how to complete the Monitoring Plan.
- 4. I have obtained better understanding of the requirements of the Annual Emission reports and I have obtained hands-on insights in how to complete such a report.



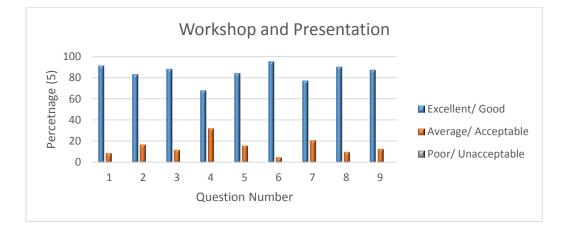






WORKSHOP AND PRESENTATION

- 1 The workshop achieved the objectives set
- 2 The quality of the workshop was of a high standard
- 3 The content of the workshop was well suited to my level of understanding and experience
- 4 The practical work was relevant and informative
- 5 The workshop was interactive
- 6 Facilitators were well prepared and knowledgeable on the subject matter
- 7 The duration of this workshop was neither too long nor too short
- 8 The logistical arrangements (venue, refreshments, equipment) were satisfactory
- 9 Attending this workshop was time well spent









ANNEX I – Agenda

Day 1 – Tuesday, 18 November 2014, Istanbul

Industi	Chair and Co-Chairs: The Ministry of Environment and Urbanisation and the Chamber of Industry Venue: Odakule building, Istiklal Avenue No 142, Beyoglu Istanbul								
Start	Finish	Торіс	Speaker	Sub topic/Content					
09:00	09:30	Registration							
09:30	09:40	Formal opening and word of welcome	Ms Sukran Arcan, Ministry of Environment and Urbanisation						
09:40	09:50	Welcome by Istanbul Chamber of Industry	Deputy General Secretary Nurdan Sirman, Istanbul Chamber of Industry						
9:50	10:00	ECRAN and the ambitions of this workshop	Monique Voogt, ECRAN	 Introduction to ECRAN and the ETS Workgroup Aims of the workshop and planned activities Introductions to speakers, trainers and audience 					
10:00	10:40	Monitoring and Reporting in the framework of the EU ETS	Dimitrios Zevgolis, European Commission, DG Clima	 The EU ETS Compliance Cycle and the importance of monitoring and reporting From the MRG 2004 and 2007 to the Monitoring and Reporting Regulation EC Guidance material 					
10.40	11.00	Coffee Break		•					
11:00	11:45	Implementation of the Monitoring and Reporting Regulation in Turkey	Şule Özkal, Ministry of Environment and Urbanization, Turkey	 MRV Regulation implemented in Turkey Similarities and Differences between EU ETS Directive and Turkish MRV Regulation The implementation process roles, responsibilities and capacity building Requirements for Turkish operators Planned ETS implementation in Turkey and the legislative framework adopted 					
11:45	12:30	The Monitoring and Reporting Principles	Nives Nared, Ministry of Agriculture and the	 The EU ETS Compliance Cycle and the roles and responsibilities of various stakeholders 					







12.30	13.30	Lunch Break	Environment, Slovenia	 Monitoring principles and requirements Distinguishing categories of installations, source streams and emission sources Monitoring methodologies Tier approach and uncertainties
13.30	14.00	Monitoring and	Monique Voogt,	Introduction to the suite of
13.30	14.00	reporting in practice: the guidance material	ECRAN	 Guidance material available Outlining the most relevant guidance material for the monitoring plans and the annual emissions report Overview of tools and exemplar cases and plans
14.00	14.50	Case study: preparing a Monitoring Plan for a combustion installation	Christian Heller, Umweltbundesamt Austria	 Explaining and practical demonstration in the MP template: Description of the installation and its activities The Flow Chart Categorisation of installations (Category A/B/C) Emissions sources, source streams and their categorisation
14:50	15:30	Practical exercises for other types of installations	Christian Heller, Umweltbundesamt Austria	Interactive session with the audience on how to fill in the first parts of MP for other specific installations
15.30	15.45	Coffee Break		
15:45	16:20	Flow measurement and calculation of emissions	Charlotte Spitters, Dutch emissions authority	 Standard methodology and mass balance methodology Accuracy requirements (application of tiers) CO2 emission calculations Laboratories and methods for analysis of calculation factors
16.20	17.00	Practical exercises	Charlotte Spitters, Dutch emissions authority	Interactive session with the audience; focusing on MP guidance template, section D
17:00	17:15	Wrap-up 1st day / outlook 2nd day	Monique Voogt, ECRAN	•







Day 2 – Wednesday, 19 November 2014, Istanbul

	Chair and Co-Chairs: The Ministry of Environment and Urbanisation and the Chamber of Industry									
Venue	Venue: Odakule building, Istiklal Avenue No 142, Beyoglu Istanbul									
Start	Finish	Торіс	Speaker	Sub topic/Content						
09:00	09:15	Registration								
09:15	09:30	Summary of 1st day; programme of 2nd day	Monique Voogt, ECRAN							
09:30	10:15	Role and actions of Competent Authorities in Monitoring and Reporting	Heidi De Prez, Walloon Air & Climate Agency	 Validation of monitoring protocols and annual emission reports International exchange of information Harmonisation of implementation 						
10:15	11:00	Monitoring Plan: derogations and exemptions	Christian Heller, Umweltbundesamt Austria	 Reasons for derogations: technical infeasibility and the unreasonable costs Exemptions and simplifications for smaller installations Practical example 						
11.00	11.15	Coffee Break								
11:15	11:50	Experiences from an operator	Volkan Orhan Tekin, TÜPRAŞ-Türkiye Petrol Rafinerileri A.Ş.	 Preparing a monitoring plan: practical implications, main choices and organisation of information 						
11:50	12:30	The verifier perspective	Goran Janekovic, Energy Research and Environmental Protection Institute (Ekonerg)	 A verifier's view on the Monitoring Plan and an Annual Emissions Report Steps in the verification process The concept of reasonable assurance and materiality Risk analysis Drafting the verification report 						
12.30	13.30	Lunch Break								
13:30	14:20	The annual emission report and the improvement report	Tomas Aukštinaitis, Lithuanian Environ- mental Protection Agency	 Reporting requirements on emission sources and source streams Annex X of reporting requirements: data gaps, memo items 						









14:20	15:00	Lessons learned on MRR in phase 3	Heidi De Prez, Walloon Air & Climate Agency	 The improvement report and follow-up actions Demonstration of the AER template and the IR template Practical examples of first lessons learned after 1 year of MRR in phase 3 ETS
15.00	15.15	Coffee Break		
15:15	16:00	Panel discussion and	Selection of	
15:15	16:00	Panel discussion and Q&A with audience	Selection of presenting experts	







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ANNEX III – Presentations (under separate cover)

Presentations and exercises as well as the handouts can be downloaded from:

http://www.ecranetwork.org/Climate/Emissions-Trading





