Environment and Climate Regional Accession Network ECRAN

Environment and Climate Regional Accession Network (ECRAN)

Workshop Report on Advanced Technical Training Programme on the EU Verification and Accreditation Regulation

20-23 April 2015, Zagreb, Sisak, Drnis

Enviroment and Climate Regional Accession Network ECRAN

ENVIRONMENTAL AND CLIMA REGIONAL NETWORK FOR ACCESSION - ECRAN

WORKSHOP REPORT

Activity No 3.3.B

REGIONAL ADVANCED TECHNICAL TRAINING PROGRAMME ON THE EU MONITORING AND REPORTING REGULATION

20-23 APRIL 2015, ZAGREB, SISAK, DRNIS, CROATIA

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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). 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 countries and potential candidates in the implementation of the EU ETS. One of its key activities is a regional training programme 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.

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II. Objectives of the training

General objectives

The advanced training programme aims to provide the government authorities in Turkey with an improved technical understanding of the EU Verification and Accreditation regulation.

Specific objectives

Specific objectives include to:

- Support and speed up the preparation for and implementation of emissions trading in Turkey;
- 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 provided in-depth insights in the Verification and Accreditation regulation, and understanding of lessons learned. Furthermore it provided on the job training located on an ETS installations and verifier office where lead ETS auditors perform at least two complete verification tasks to pass the practical knowledge to Turkish officials. The training included practical examples on planning and conducting a verification task for installations that have combustion and process emissions.

The specific objectives and targeted results include:

1. Obtaining detailed knowledge on the Verification and Accreditation (AVR) regulation of the European Commission;
2. Understanding of the requirements of the verification task, relations between the verifier and the operator, verifier and the accreditation institution, internal verification documentation and obtaining hands-on insights in how to complete the verification;
3. Understanding the requirements of the verification report and obtaining hands-on insights in how to complete such a report;
4. Competence, independence and impartiality requirements from the verifiers.

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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 2030 framework for climate and energy policies, 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 Structural Reform 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 procedures laid down in the approved Monitoring Plan, and the total emissions verified by an

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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 (CO_2) 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 (N_2O) 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 CO_2 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 credits from the flexible mechanisms (Joint Implementation - JI and the Clean Development Mechanism - CDM) (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 Registry[1] 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 CO_2 emissions from installations;
- Annual reconciliation of allowances and verified emissions, whereby each company had to

[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.

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surrender enough allowances to cover all its verified emissions.

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 were 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 would require structural changes to the EU ETS. The Commission proposed 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 2030 Framework for climate and energy policies required 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 as set out in its 2030 Framework for Climate and Energy Policies, the Commission proposed an increase in the linear reduction factor to 2.2% per year from 2021, from 1.74% currently.

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Implementing provisions as regards Monitoring, Reporting, Verification and Accreditation

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/EC[2]. 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).

[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

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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.

- 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 **31 March 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.

Table - 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 but common sense suggests before 31 December N-1	Competent Authority	Approve Monitoring Plan (aviation and installations) and issue permit (in case of installations)
1 January N		Start of the Monitoring period
By 28 February N	Competent Authority	Allocation of allowances for free (if applicable) into the Operator's account in the Registry
31 December N		End of the monitoring period[3]

[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.

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When?	Who?	What?
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
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 Authority	Subject to national legislation, possible spot 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 Authority	Carry out further checks on submitted annual 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 risk-based 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

[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.

[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.

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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 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.

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IV. Highlights from the training workshop

Reference is made to Annex I for the agenda and Annex III for the presentations.

Day 1 – Zagreb, Croatia, 20 April 2015.

Introduction to the workshop – Goran Janekovic

- it was pointed out that the training aims to provide the government authorities in Turkey with an improved technical understanding of the EU Verification and Accreditation regulation
- the training has to provide in-depth insights in the Verification and Accreditation regulation, and understanding of lessons learned and to provide on the job training located on two ETS installations in Croatia (thermal power plant and lime factory)

Introduction by Turkish delegation – Evren Türkmenoğlu

- expectations from the workshop were explained – the most was expected from the practical exercises on-site
- institutions responsible for the implementation of emission trading system in Turkey were presented and the work of organisational units of the Turkish Ministry of Environment and Urbanisation was explained

Monitoring, Reporting and Verification in the framework of the EU ETS – Madlena Ozanic

- the implementation of EU ETS in Croatia was described, including the preparation phase (2010 – 2012) prior to accession of the Republic of Croatia to the European Union
- details of the number of participants included in the EU ETS, number of installations excluded and number of installations that have received free allowances was presented
- legislative acts were presented for both the European Union and Croatia, including guidance, templates and tools
- the roles of competent authorities in Croatia was explained (Ministry of Environmental and Nature Protection, Environmental Protection Agency)
- particular challenges and lessons learnt for Croatia were presented

Implementation of the MRV Regulation in Turkey – Evren Türkmenoğlu

- emission trading system in Turkey was described: the system is in force since January 2015; framework by-law adopted in 2012, M&R legislation in 2014 and A&V legislation in 2015
- differences between EU and TR were presented: transition period of 3 years meaning not all tier requirements have to be met from the start and flexibility to use non-accredited labs for analysis, but with comparison measurements performed once a year by accredited lab
- additional rules for the verifiers in Turkey were presented: minimum number of man-days and minimum fee depending on installation category prescribed for verification task; apart from the accreditation certificate verification bodies have to apply for the licence from the Ministry; mandatory training and examinations for individual verifiers
- key policy design elements were presented: independence and impartiality, quality of verification

Verification in practice: the guidance material - Goran Janekovic

- the aim and objectives of verification were explained
- the role of ISO EN 14065 and relation to A&V regulation was explained
- verification cycle under EU ETS was described
- pre-contractual obligations of the verifier were described

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Verifier's documentation (replacing The Monitoring, Reporting, Verification and Accreditation Principles in original agenda) - Goran Janekovic

- internal documentation of the verifier was described (policies, manuals, procedures, working instructions, records and documented management system)
- external sources of information were explained (EU regulations, EU guidance, national legislative documents, ISO standards, EA and IAF documents, other documents like technical standards, manuals, guidance, catalogues)
- EU guidance was presented in more details (guidance documents for operators, verifiers and common documents)
- standardisation and accreditation bodies documents were presented in more details
- verification report was explained

Case study – preparing a verification plan for an installation (pre-contractual obligations to process analysis) - Goran Janekovic

- preparation of all the documents preceding the process analysis was explained in the form of a case study of simple combustion installation "Energy": the main elements of this fictive installation were presented
- the main elements of strategic analysis were described and those elements were applied to installation "Energy"
- the main elements of risk analysis were described and those elements were applied to installation "Energy"
- the main elements of verification plan were described and those elements were applied to installation "Energy"

Practical exercise (Risk analysis)- Goran Janekovic

- concepts of inherent risk, control risk, control activities, detection risk and verification risk were explained
- the elements of the inherent risk (impact, probability) were explained
- participants were given a task to perform a simple risk analysis for one source stream of installation "Energy" by filling in blank fields in printed worksheets
- possible solutions for activities in risk analysis worksheet were disclosed and discussed with participants

Assessment of uncertainties and materiality - Goran Janekovic

- the concept of uncertainty was explained
- possible routes for performing uncertainty assessment for activity data were described
- different sorts of evidence for compliance for activity data, calculation factors, measurement based methodology and fall-back approach were presented
- the concept of materiality and both aspects of materiality (quantitative, qualitative) were explained
- the connection between materiality and detection risk was explained

Practical exercise (Uncertainty and materiality) - Goran Janekovic

- participants were given a task to perform a simple uncertainty assessment for activity data of source streams of installation "Energy" (Exercise 1-3)
- participants were given a task to perform a simple uncertainty assessment for calculation factor (NCV) of source stream "Fuel oil" of installation "Energy" (Exercise 4)
- participants were given a task to perform a materiality analysis for source streams of installation "Energy" (Exercise 5)

Presentation on Accreditation process for verifiers - Goran Janekovic

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- general process of accreditation for verifiers and phases of the process were described
- application phase, assessment phase, decision on accreditation and surveillance phase were described in more details

Day 2 – Sisak, Croatia, 21 April 2015.

Introduction of the installation, TE SISAK (coal-fired power plant) – Ivana Roksa

- emission sources, emission points and source streams of the installation were presented
- tiers for activity data and calculation factors were described for major source streams
- the content of the monitoring plan and supporting documents was explained
- procedure and data flow for determination of values for activity data (consumption) and each calculation factor (net calorific value, emission factor and oxidation factor) was described for natural gas, fuel oil and diesel oil

Verifier's view on the installation – Goran Janekovic

- overview of the installation and the monitoring plan from the verifier's point of view was presented and the main elements of the monitoring were discussed with participants

Review of the internal verification documentation - Goran Janekovic

- main elements of the strategic analysis, the risk analysis and the verification plan for TE Sisak were presented using verifier's own document templates; inputs from strategic analysis for the risk analysis were explained, as well as inputs from the strategic analysis and risk analysis to the verification plan
- each element of the strategic analysis, the risk analysis and the verification plan was discussed with participants
- special focus was put on possible incidents and control activities for the measurement of activity data for natural gas and fuel oil and also on determining net calorific value and emission factor for natural gas and fuel oil

Day 3 – Sisak, Croatia, 22 April 2015.

TE Sisak on-site verification practice - Goran Janekovic

- site visit plan was described stating main points of verifier's interest in the process analysis according to verification plan
- site visit was performed including inspection of auxiliary boilers' room, main boiler room, machine room, control room, diesel engines and fuel tanks
- findings of the site visit were reviewed and discussed with participants

Day 4 – Drnis, Croatia, 23 April 2015.

Introduction of the installation, GIRK Kalun (lime factory) – Tihomir Kosor

- company and the installation were presented
- calculating CO2 process emission from raw material (limestone, dolomite) was described including determination of activity data, emission factor and conversion factor

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- calculating CO2 combustion emission from fuels (solid fuels including biomass and waste, liquid fuels including waste) was described including determination of activity data, emission factor, net calorific value, biomass fraction , oxidation factor
- determining activity data by continuous metering and metering based on purchased quantities and stock changes was presented
- data flow, procedures and risk analysis were explained

Verifier's view on the installation – Goran Janekovic

- overview of the installation and the monitoring plan from the verifier's point of view was presented and the main elements of the monitoring were discussed with participants

Review of the internal verification documentation - Goran Janekovic

- main elements of the strategic analysis, the risk analysis and the verification plan for GIRK Kalun were presented using verifier's own document templates; inputs from strategic analysis for the risk analysis were explained, as well as inputs from the strategic analysis and risk analysis to the verification plan
- each element of the strategic analysis, the risk analysis and the verification plan was discussed with participants
- special focus was put on possible incidents and control activities for the measurement of activity data for raw material (limestone and dolomite) including weighing the quantity of raw material, determining the content of limestone and dolomite in raw material and also on determining emission factor and conversion factor
- part of the internal verification documentation was shown to the participants and was explained

GIRK Kalun on-site verification practice - Goran Janekovic

- site visit plan was described stating main points of verifier's interest in the process analysis according to verification plan
- attention was focused on process emissions and elements of monitoring process emissions from lime production
- site visit was performed including inspection of raw material weighing instrument, control room, lime kiln, storage for solid fuels, weighing belt, liquid fuel tanks
- findings of the site visit were reviewed and discussed with participants

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V. Evaluation

In Annex IV provides the training evaluation report is included, developed on the basis of analysis of the training questionnaires can be given. A number of 7 participants filled the evaluation form. It shows that the expectations of the workshop were met.

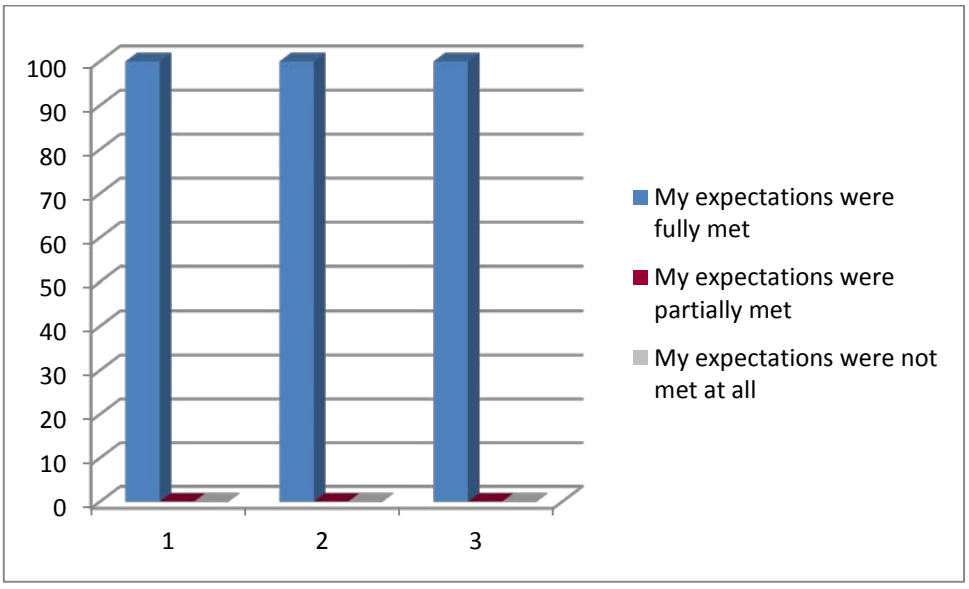
All participants confirmed that they have fully obtained:

- Detailed knowledge on the Verification and Accreditation (AVR) regulation of the European Commission
- Understanding of the requirements of the verification task, relations between the verifier and the operator, verifier and the accreditation institution, internal verification documentation and obtaining hands-on insights in how to complete the verification
- Understanding of the requirements of the verification report and hands-on insights in how to complete such a report

In terms of quality of the workshop facilitators, sessions, logistics, all participants indicated their overall satisfaction and mentioned that attending the mission was time well spent.

EXECTATIONS OF PARTICIPANTS

1. Obtaining detailed knowledge on the Verification and Accreditation (AVR) regulation of the European Commission
2. Understanding of the requirements of the verification task, relations between the verifier and the operator, verifier and the accreditation institution, internal verification documentation and obtaining hands-on insights in how to complete the verification
3. Understanding the requirements of the verification report and obtaining hands-on insights in how to complete such a report



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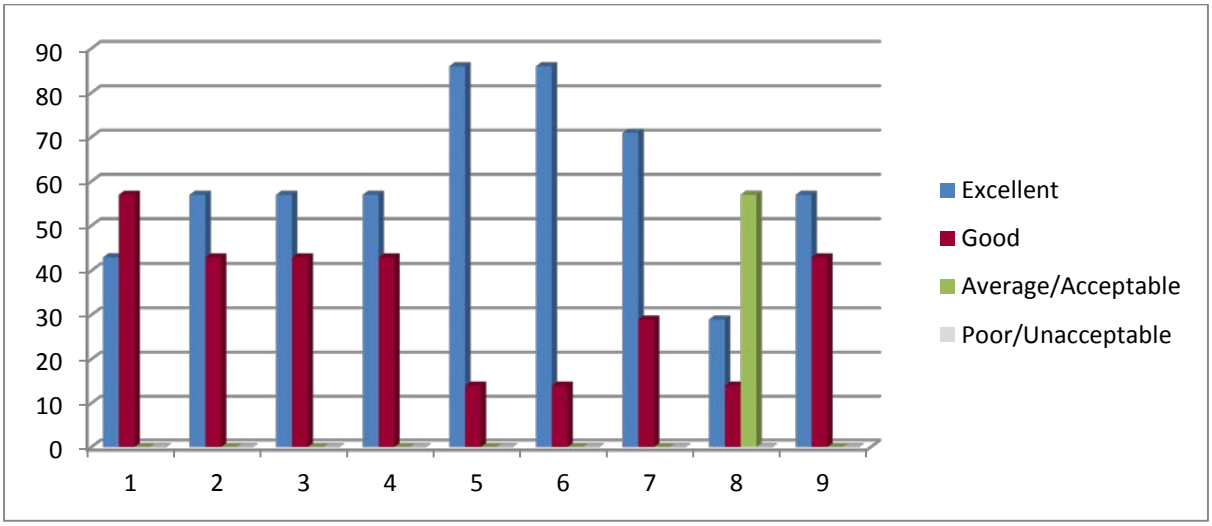
WORKSHOP AND PRESENTATION

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



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ANNEX I – Agenda

Day 1 – Monday, 20 April 2015

09:00	Formal opening and word of welcome (MS representative)
09:30	Introduction by Turkish Delegation
10:00	ECRAN and the ambitions of this workshop
10:30	**Monitoring, Reporting and Verification in the framework of the EU ETS**
11:00	Break
11:30	**Implementation of the MRV Regulation in Turkey**
12:00	**The Monitoring , Reporting and Verification and Accreditation Principles in EU**
12:30	Lunch Break
13:30	Verification in practice: the guidance material
14:00	**Case study: preparing a verification plan for an installation (pre-contractual obligations to process analysis)**
14:30	Practical exercises
15:00	Break
15:30	**Assessment of uncertainties and materiality**
16:00	**Practical exercises**
16:30	**Presentation on Accreditation process for verifiers**
17:00	Wrap-up 1st day / outlook 2nd day
Stay overnight in Zagreb	

Day 2 – Tuesday, 21 April 2015

08.30	Travel to installation 1 for on the job training Thermal Power plant Sisak Ulica braće Bobetko 40, 44010 Sisak Contact person: TE Sisak: Mrs. Ivana Roksa, ivana.roksa@hep.hr, +385 44 514 071 (office), +385 99 815 2238 (mobile)
10:00	Welcome by the operator / verifier
11:30	Introduction to the Installation (Presentation by the operator)
12:00	Verifiers view on the installation
13.00	Lunch break
14:30	Review of the internal verification documentation
15:30	Review of the internal verification documentation
17:00	Wrap-up
Stay overnight in Sisak	

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Day 3 – Wednesday, 20 April 2015

09:00	Installation 1 on-site verification practice
13:00	Lunch Break
14:00	*Travel to Installation 2, transfer from Sisak to Drniš* Venue: *Lime factory GIRK Kalun* *Stjepana Radića 5 HR - 22320 Drniš* Contact person: GIRK Kalun: Mr. Tihomir Kosor, t.kosor@kalun.hr, +385 22 888 878 (office), +385 98 169 8940 (mobile).
17:00	*Stay overnight and check in Drniš (near Sibenik)*

Day 4 – Thursday, 2 April 2015

09:30	Welcome by the operator / verifier
	Introduction to the Installation (Presentation by the operator)
	Verifiers view on the installation
	Coffee break
	Review of the internal verification documentation
	Review of the internal verification documentation
12:30	Lunch Break
13:30	Installation 2 on-site verification practice
17:00	*Travel back from Drniš to Zagreb* Remaining questions and answers to be addressed travel back to Zagreb. *Dinner and stay overnight in Zagreb.*

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ANNEX II – Participants

First Name	Family Name	Institution Name	Country	Email
Hasan	Güven	Ministry of Environment and Urbanisation	Turkey	hasan.guven@csb.gov.tr
Mahmut	Şahin	Ministry of Environment and Urbanisation	Turkey	mahmut.sahin@csb.gov.tr
Evren	Türkmenoğlu	Ministry of Environment and Urbanisation	Turkey	evren.turkmenoglu@csb.gov.tr
Mustafa Fırat	Nazik	Turkish Accreditation Agency	Turkey	mfnazik@turkak.org.tr
Goran	Janekovic	Energy Research and Environmental Protection Institute (Ekonerg)	Croatia	goran.janekovic@ekonerg.hr
Tihomir	Kosor	Girk KALUN	Croatia	t.kosor@kalun.hr
Ivana	Roksa	Termoelektrana Sisak	Croatia	ivana.roksa@hep.hr
Ana	Juras	Ministry of Environmental and Nature Protection	Croatia	Ana.Juras@mzoip.hr
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Imre	Csikos	ECRAN	Netherlands	imre.csikos@ecranetwork.org
Sinem	Tatar	Ministry of Environment and Urbanisation	Turkey	sinem.tatar@csb.gov.tr
Damla	Duvan	Turkish Accreditation Agency	Turkey	darat@turkak.org.tr
Tekin	Altug	Turkish Accreditation Agency	Turkey	taltug@turkak.org.tr

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ANNEX III – Presentations (under separate cover)

Presentations and exercises as well as the hand-outs can be downloaded from:

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

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ANNEX IV – Evaluation

Statistical information

1.1	Workshop Session	Advanced Technical Training Programme on the EU Verification and Accreditation Regulation
1.2	Facilitators name	As per agenda
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. Obtaining detailed knowledge on the Verification and Accreditation (AVR) regulation of the European Commission	IIIII II (100 %)		
2. Understanding of the requirements of the verification task, relations between the verifier and the operator, verifier and the accreditation institution, internal verification documentation and obtaining hands-on insights in how to complete the verification	IIIII II (100 %)		
3. Understanding the requirements of the verification report and obtaining hands-on insights in how to complete such a report	IIIII II (100 %)		

Workshop and Presentations

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

Aspect of Workshop	Excellent	Good	Average	Acceptable	Poor	Unacceptable
1 The workshop achieved the objectives set	III (43 %)	**IIII (57 %)**				
2 The quality of the workshop was of a high standard	**IIII (57 %)**	III (43 %)				
3 The content of the workshop was well suited to my level of understanding and experience	**IIII (57 %)**	III (43 %)				
4 The practical work was relevant and informative	**IIII (57 %)**	III (43 %)				
5 The workshop was interactive	**IIIII I (86 %)**	I (14 %)				
6 Facilitators were well prepared and knowledgeable on the subject matter	**IIIII I (86 %)**	I (14 %)				
7 The duration of this workshop was neither too long nor too short	**IIIII (71 %)**	II (29 %)				
8 The logistical arrangements (venue, refreshments, equipment) were satisfactory	**II (29 %)**	I (14 %)	II (29 %)	II (29 %)		
9 Attending this workshop was time well spent	**IIII (57 %)**	III (43 %)				

Comments and suggestions

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

Workshop Sessions:

- well organised
- logistical organisation was weak and interpreters were not knowledgeable on the subject

Facilitators:

- very helpful

Workshop level and content:

- fine, but some of the content could have been in English (i.e. risk analysis – written)
- more detailed approach may have been added especially in process analysis for the following
  - data flow activities
  - check control activities (case by case, in real situation, not all of them of course)
  - test sampling (real case, not all of them, but what is doable on site of the operator)

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