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Enhancing environmental protection inspection for efficient control of air quality monitoring and of the system of greenhouse gas emission allowance trading in order to achieve better air quality in the Republic of Croatia

REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

EKONERG

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4. INSPECTION RESPONSIBILITES RELATED TO THE OBLIGATIONS OF INSTALLATION OPERATORS AND AIRCRAFT OPERATORS

OVERVIEW

- **Environmental protection inspection responsibilities related to the EU ETS**
  - In accordance with the penal provisions of the Air Protection Act
- **9 inspected areas**
  - Legal requirement
  - Supervised person
  - Control of the implementation of regulations in phases
    - Preparation of inspectional supervision
    - Performance of inspectional supervision
    - Activities following the performed inspectional supervision

INSPECTED AREAS (1)

4.1 Performance of activities emitting greenhouse gases without a greenhouse gas emission permit

4.2 Notification of the Ministry regarding planned changes to the installation

4.3 Notification of the Ministry regarding a planned change of installation operator or a planned amendment of the plan for monitoring greenhouse gas emissions from the installation

4.4. Notification of the Ministry regarding the planned date of the cease of operation in the installation

INSPECTED AREAS (2)

4.5 Submission of a verified report to the Agency within the prescribed deadline

4.6 Notification of the Ministry regarding the partial cease of operation

4.7 Obtaining approval from the Ministry on the plan for monitoring and reporting greenhouse gas emissions from aircrafts

4.8 Opening an account in the Union Registry

4.9 Monitoring greenhouse gas emissions and submitting a verified report by 1 March of the current year for the previous calendar year

4.7 OBTAINING APPROVAL ON THE PLAN FOR MONITORING AND REPORTING EMISSIONS FROM AIRCRAFTS (1)

- **Legal basis**
  - Air Protection Act
    - Article 93(1)—approval of the plan for monitoring and reporting greenhouse gas emissions from aircrafts
    - Article 132(1) and (4)—inspectional supervision
    - Article 146—penal provisions
- **Supervised person**
  - Aircraft operator

4.7 OBTAINING APPROVAL ON THE PLAN FOR MONITORING AND REPORTING EMISSIONS FROM AIRCRAFTS (2)

- **Preparation of inspectional supervision**
  - Activity emitting greenhouse gases
    - Annex I of the Regulation (OG 69/12, 154/14)
  - Plan for monitoring and reporting greenhouse gas emissions from aircrafts
  - Approval of the plan for monitoring and reporting greenhouse gas emissions from aircrafts
  - Correspondence between the aircraft operator and the Agency
  - Correspondence between the aircraft operator and the Ministry

4.7 OBTAINING APPROVAL ON THE PLAN FOR MONITORING AND REPORTING EMISSIONS FROM AIRCRAFTS (3)

- **Performance of inspectional supervision**
  - Investigation of facts
    - Does the aircraft operator have an approved plan for monitoring and reporting greenhouse gas emissions from aircrafts?
    - Has the aircraft operator submitted a plan for monitoring and reporting greenhouse gas emission from aircrafts to the Ministry for approval?
    - Has the Ministry issued an approval of the plan for monitoring and reporting greenhouse gas emissions?
    - Is the plan for monitoring and reporting greenhouse gas emissions from aircrafts in the process of being assessed by the Agency?

4.7 OBTAINING APPROVAL ON THE PLAN FOR MONITORING AND REPORTING EMISSIONS FROM AIRCRAFTS (4)

- **Activities following the performed inspectional supervision**
  - The aircraft operator has an approved plan for monitoring and reporting greenhouse gas emissions
    - Document it in the record
  - The aircraft operator does not have an approved plan for monitoring and reporting greenhouse gas emissions—they have submitted the monitoring plan to the Ministry for approval—the monitoring plan is in the process of being assessed by the Agency
    - Document it in the record

4.7 OBTAINING APPROVAL ON THE PLAN FOR MONITORING AND REPORTING EMISSIONS FROM AIRCRAFTS (5)

- **Activities following the performed inspectional supervision**
  - The aircraft operator does not have an approved plan for monitoring and reporting greenhouse gas emissions—they have not submitted the monitoring and reporting plan to the Ministry for approval
    - Document it in the record
    - Order, by virtue of a decision, removal of irregularities in performed activities within an appropriate deadline **(Article 132(1))**
    - If action is not taken in accordance with the decision, enforce the decision by the pronouncement of a coercive fine **(Article 132(4))**
    - Indictment **(25th subparagraph of Article 146(1) and Article 146(2))**

4.8 OPENING AN ACCOUNT IN THE UNION REGISTRY (1)

- **Legal basis**
  - Air Protection Act
    - Article 103(3)—opening an account in the Union Registry
    - Article 132(1) and (4)—inspectional supervision
    - Article 146—penal provisions
- **Supervised person**
  - Installation operator
  - Aircraft operator

4.8 OPENING AN ACCOUNT IN THE UNION REGISTRY (2)

- **Preparation of inspectional supervision**
  - Unique installation/aircraft operator identification code
    - Greenhouse gas emission permit/plan for monitoring greenhouse gas emissions (installation operator)
    - Plan for monitoring and reporting greenhouse gas emissions from aircrafts (aircraft operator)
  - Correspondence between the installation operator/aircraft operator and the Agency
    - Request to open an account in the Union Registry

4.8 OPENING AN ACCOUNT IN THE UNION REGISTRY (3)

- **Performance of inspectional supervision**
  - Investigation of facts
    - EU Transaction Log (EUTL) website
      - Does the Union Registry contain an account for the relevant installation/aircraft operator?
    - Has the installation operator/aircraft operator submitted a request to open an account in the Union Registry?

4.8 OPENING AN ACCOUNT IN THE UNION REGISTRY (4)

- **Activities following the performed inspectional supervision**
  - The installation operator/aircraft operator has an account opened in the Union Registry
    - Document it in the record
  - The installation operator/aircraft operator does not have an account opened in the Union Registry but has submitted a request to open an account
    - Document it in the record

4.8 OPENING AN ACCOUNT IN THE UNION REGISTRY (5)

- **Activities following the performed inspectional supervision**
  - The installation operator/aircraft operator does not have an account opened in the Union Registry and has not submitted a request to open an account
    - Document it in the record
    - Order, by virtue of a decision, removal of irregularities in performed activities within an appropriate deadline **(seventh subparagraph of Article 132(1))**
    - If the installation operator/aircraft operator dos not take action in accordance with the decision, enforce the decision by the pronouncement of a coercive fine **(Article 132(4))**
    - Indictment **(26th subparagraph of Article 146(1) and Article 146(2))**

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (1)

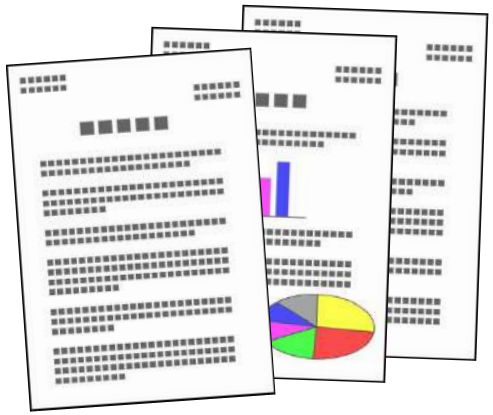
- **Legal basis**
  - Air Protection Act
    - Article 108(1) and (2)
    - Article 112(10)

    } Monitoring greenhouse gas emissions and submitting a verified report to the Agency

    - Article 132(1), (3) and (4)
    - Article 138(5)

    } Inspectional supervision

    - Article 146—penal provisions
- **Supervised person**
  - Installation operator
  - Aircraft operator



4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (2)

- **Preparation of inspectional supervision**
  - Most recently approved version of the monitoring plan
  - Emissions report for the relevant reporting period
  - Verification report for the emissions report for the same period
  - Correspondence between the installation operator/aircraft operator and the Agency
    - Notification on the submission of the verified annual report and the verification report to the Agency

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (3)

- **Performance of inspectional supervision**
  - Investigation of facts
    - Has the installation operator/aircraft operator prepared the annual emissions report?
    - Has the installation operator/aircraft operator submitted the annual report to be verified by the authorised verifier?
    - Has the installation operator/aircraft operator submitted the verified annual report and the verification report to the Agency by 1 March of the current year for the previous calendar year?
    - Has the installation operator/aircraft operator performed the monitoring of greenhouse gas emissions for the relevant period?

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (4)

- **Activities following the performed inspectional supervision**
  - The installation operator/aircraft operator has performed the monitoring of emissions and has submitted the verified annual report and the verification report to the Agency within the prescribed deadline
    - Document it in the record

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (5)

- **Activities following the performed inspectional supervision**
  - Installation operator/aircraft operator has performed the monitoring of emissions, but has not submitted the verified annual report and the verification report to the Agency within the prescribed deadline
    - Document it in the record
    - Order, by virtue of a decision, removal of irregularities in performed activities within an appropriate deadline **(Article 132(1))**
    - If action is not taken in accordance with the decision, enforce the decision by the pronouncement of a coercive fine **(Article 132(4))**
    - Indictment **(27th subparagraph of Article 146(1) and Article 146(2))**

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (6)

- **Activities following the performed inspectional supervision**
  - The installation operator/aircraft operator has not performed the monitoring of emissions
    - Document it in the record
    - Ban, by virtue of a decision, the performance of activities emitting greenhouse gases until the conditions are met **(second subparagraph of Article 138(5))**
    - If the installation does not take action in accordance with the decision, propose the withdrawal of the emission permit to the Ministry **(Article 138(6))**
    - Indictment **(27th subparagraph of Article 146(1) and Article 146(2))**

4.9 MONITORING GREENHOUSE GAS EMISSIONS AND SUBMITTING A VERIFIED REPORT TO THE AGENCY (6)

- **Activities following the performed inspectional supervision**
  - The operator of an installation excluded from the EU ETS has not performed the monitoring of emissions
    - Document it in the record
    - Order, by virtue of a decision, the removal of defects and irregularities in performed activities **(Article 132(3))**
    - If the installation does not take action in accordance with the decision, enforce the decision by the pronouncement of a coercive fine **(Article 132(4))**
    - Indictment **(27th subparagraph of Article 146(1) and Article 146(2))**

CONCLUSION

- **Outline of inspection responsibilities related to the EU ETS**
  - In accordance with the penal provisions of the Air Protection Act
    - 9 inspected areas
  - Related to the obligations of the installation operators and aircraft operators
- **Outline of the control of the enforcement of EU ETS-related regulations**
  - Preparation of inspectional supervision
  - Performance of inspectional supervision
  - Activities following the performed inspectional supervision

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5. INSPECTION RESPONSIBILITIES RELATED TO VERIFICATION ACTIVITIES

OVERVIEW

- **Environmental protection inspection responsibilities related to the EU ETS**
  - In accordance with the penal provisions of the Air Protection Act
- **14 areas of inspection**
  - Legal requirement
  - Supervised person
  - Control of the implementation of regulations in phases
    - Preparation of inspectional supervision
    - Performance of inspectional supervision
    - Activities following the performed inspectional supervision

AREAS OF INSPECTION (1)

5.1 Including irregularities into the verification report

5.2 Advising the installation operator or aircraft operator to obtain the necessary approval of the monitoring plan from the Ministry

5.3 Notifying the installation operator or aircraft operator on a timely basis and requesting relevant corrections of the identified misstatements or non-conformities

5.4 Documenting and marking all misstatements or non-conformities in the internal verification documentation

AREAS OF INSPECTION (2)

5.5 Fully documenting the verification process in the internal verification documentation

5.6 Independent review of the internal verification documentation and the verification report

5.7 Preparing and compiling the internal verification documentation

5.8 Issuing a verification report to the installation operator or aircraft operator

5.9 Establishing, documenting, implementing and maintaining a competence process

AREAS OF INSPECTION (3)

5.10 Assembling a verification team

5.11 Establishing, documenting, implementing and maintaining one or more procedures for verification activities

5.12 Keeping records, including records on competence and impartiality of personnel

5.13 Ensuring impartiality and independence

5.14 Delivering information to the Accreditation Body

LEGAL BASIS AND SUPERVISED PERSON

- **Legal basis**
  - Commission Regulation No 600/2012
  - Air Protection Act
    - Article 132(3)—inspectional supervision
    - Article 147—penal provisions
- **Supervised person**
  - Verifier

PREPARATION OF INSPECTIONAL SUPERVISION

- **Requesting the necessary documentation**
  - For a specific installation operator/aircraft operator
    - Emissions report for a specific reporting period
    - Verification report for the emissions report for the same reporting period
    - Internal verification documentation
    - Correspondence between the verifier and the installation operator/aircraft operator
  - Correspondence between the verifier and the Accreditation Agency
  - Documentation of the quality system for verification activities

PERFORMANCE OF INSPECTIONAL SUPERVISION (1)

5.1 Including irregularities into the verification report

- Article 7(5) of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier included irregularities into the verification report if he/she had identified that the installation operator/aircraft operator does not meet the requirements of Commission Regulation No 601/2012, even if the competent authority has approved the relevant monitoring plan?
- Documents:
  - official letter from the Ministry on the assessment of the emissions report and the verification report
  - verification report
  - internal verification documentation

PERFORMANCE OF INSPECTIONAL SUPERVISION (2)

5.2 Advising the installation operator or aircraft operator to obtain the necessary approval of the monitoring plan from the Ministry

- Article 7(6) of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier advised the installation operator/aircraft operator to obtain the approval of the monitoring plan from the competent authority?
- Documents:
  - internal verification documentation
  - verification report
  - correspondence between the verifier and the installation operator/aircraft operator—evidence that the verifier had provided the advice

PERFORMANCE OF INSPECTIONAL SUPERVISION (3)

5.3 Notifying the installation operator or aircraft operator on a timely basis and requesting relevant corrections of the identified misstatements or non-conformities

- Article 22(1) of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier notified the installation operator/aircraft operator on a timely basis and requested relevant corrections if he/she identified misstatements or non-conformities in the course of the verification?
- Documents:
  - verification report
  - internal verification documentation
  - correspondence between the verifier and the installation operator/aircraft operator—evidence that the verifier had sent the notification

PERFORMANCE OF INSPECTIONAL SUPERVISION (4)

5.4 Documenting and marking all misstatements or non-conformities in the internal verification documentation

- Article 22(2) of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier documented and marked in the internal verification documentation all misstatements or non-conformities that the installation operator/aircraft operator corrected in the course of the verification?
- Documents:
  - emissions report (all versions)
  - verification report
  - internal verification documentation

PERFORMANCE OF INSPECTIONAL SUPERVISION (5)

5.5 Fully documenting the verification process in the internal verification documentation

- Article 24 of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier ensured that the verification process is fully documented in the internal verification documentation?
- Documents:
  - internal verification documentation

PERFORMANCE OF INSPECTIONAL SUPERVISION (6)

5.6 Independent review of the internal verification documentation and the verification report

- Article 25 of Commission Regulation No 600/2012
- Investigation of facts
  - Did the verifier submit the internal verification documentation and the verification report to an independent reviewer prior to the issuance of the verification report?
- Documents:
  - report on the independent review of the verification documentation
  - internal verification documentation

PERFORMANCE OF INSPECTIONAL SUPERVISION (7)

5.7 Preparing and compiling the internal verification documentation

- Article 26 of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier prepared and compiled the internal verification documentation?
- Documents:
  - internal verification documentation

PERFORMANCE OF INSPECTIONAL SUPERVISION (8)

5.8 Issuing a verification report to the installation operator or aircraft operator

- Article 27 of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier prepared a verification report and issued it to the installation operator/aircraft operator for each emissions report that was subject to verification?
- Documents:
  - information on planned verification activities for the following year
  - verification report
  - correspondence between the verifier and the installation operator/aircraft operator—evidence that the verifier had delivered the verification report to the installation operator/aircraft operator

PERFORMANCE OF INSPECTIONAL SUPERVISION (9)

5.9 Establishing, documenting, implementing and maintaining a competence process

- Article 35 of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier established, documented and implemented and does he/she maintain a competence process to ensure that all personnel entrusted with verification activities are competent for the tasks that are allocated to them?
- Documents:
  - the verification activities quality system document which defines the process of training and evaluation of the competence of the staff that takes part in the verification

PERFORMANCE OF INSPECTIONAL SUPERVISION (10)

5.10 Assembling a verification team

- Article 36 of Commission Regulation No 600/2012
- Investigation of facts
  - Does the verifier assemble a verification team for every verification engagement?
- Documents:
  - internal verification documentation
  - the verification activities quality system document which prescribes the competence criteria for the verification team as a whole

PERFORMANCE OF INSPECTIONAL SUPERVISION (11)

5.11 Establishing, documenting, implementing and maintaining one or more procedures for verification activities

- Article 40 of Commission Regulation No 600/2012
- Investigation of facts
  - Has the verifier established, documented, implemented and does he/she maintain one or more procedures for verification activities?
- Documents:
  - one or more procedures of the quality system for verification activities
    - preliminary activities, preparation of verification, verification and the issuing of the verification statement
  - one or more procedures of the quality system in accordance with the requirements of Annex II of the Regulation
    - procedures in case of an appeal, procedures in case of a complaint

PERFORMANCE OF INSPECTIONAL SUPERVISION (12)

5.12 Keeping records, including records on competence and impartiality of personnel

- Article 41 of Commission Regulation No 600/2012
- Investigation of facts
  - Does the verifier keep records, including records on competence and impartiality of personnel?
- Documents:
  - quality system records:
    - competence record
    - record on ensuring impartiality of personnel
    - record on safeguarding the confidentiality of information
    - report on preliminary activities, strategic analysis, risk analysis, verification plan, internal verification report, verification report, report on the independent review of the verification

PERFORMANCE OF INSPECTIONAL SUPERVISION (13)

5.13 Ensuring impartiality and independence

- Article 42 of Commission Regulation No 600/2012
- Investigation of facts
  - Does the verifier perform verification activities independently of the installation operator/aircraft operator?
- Documents:
  - verification activities quality system document which prescribes the rules and measures for avoiding conflict of interest and ensuring impartiality, independence and objectivity in decision-making
    - procedure/process for ensuring the impartiality of the verification

PERFORMANCE OF INSPECTIONAL SUPERVISION (14)

5.14 Delivering information to the Accreditation Body

- Article 76 of Commission Regulation No 600/2012
- Investigation of facts
  - Did the verifier deliver the information on planned verification activities for the following calendar year to the Accreditation Agency by 15 November?
- Documents:
  - correspondence between the verifier and the Accreditation Agency—evidence that the verifier delivered the information

ACTIVITIES FOLLOWING THE PERFORMED INSPECTIONAL SUPERVISION

- **If the verifier operates in accordance with Commission Regulation No 600/2012—if defects or irregularities in the performance of activities have not been identified**
  - Document it in the record
- **If the verifier does not operate in accordance with Commission Regulation No 600/2012—if defects or irregularities in the performance of activities have been identified**
  - Document it in the record
  - Order, by virtue of a decision, removal of defects and irregularities in performed activities **(Article 132(3))**
  - If no action is taken towards the removal of defects and irregularities ordered by the decision, enforce the decision by the pronouncement of a coercive fine **(Article 132(4))**
  - Indictment **(37th–50th subparagraph of Article 147(1) and Article 147(2))**

CONCLUSION

- **Outline of inspection responsibilities related to the EU ETS**
  - In accordance with the penal provisions of the Air Protection Act
    - 14 areas of inspection
  - Related to verification activities
- **Outline of the control of the enforcement of EU ETS-related regulations**
  - Preparation of inspectional supervision
  - Performance of inspectional supervision
  - Activities following the performed inspectional supervision

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PERFORMANCE OF INSPECTIONS IN OTHER EU MEMBER STATES

OVERVIEW

- **Presentation of practices in other EU member states**
  - Belgium
  - Netherlands
  - Czech Republic
  - Republic of Ireland
  - Cyprus
  - Finland
  - Hungary
- **Short outline of practices in Croatia**
- **Detailed presentation of practices in the Netherlands**

EUROPEAN COMMISSION CONCLUSIONS (2016)

- **Inspections are a weak spot in the EU ETS implementation**
  - Only few member states carry out systematic inspections
- **Few member states have inspectors who are specifically trained on EU ETS issues**
- **The assessment by the European Court of Auditors is conveyed**
  - On-site inspections of installations are currently very limited
  - Implementation of a coherent control framework is recommended
- **Enforcement of regulations—few penalties are imposed**

BELGIUM—FLEMMISH REGION

- **Criteria for the selection of installations for inspection (220 installations)**
  - Inspection intervals: C—1 year, B—2 years, A—4 years
  - Conformity audits—is the monitoring plan in accordance with the regulations and does it reflect the actual state?
- **Preparation for inspection**
  - Risk analysis, identifying weak or doubtful points in the monitoring plan and deviations from the regulations
  - Use of records of temporary and permanent changes to the methodology
  - Preparation of the inspection plan—in the first audit all chapters are checked and in the second the status of remarks from first audit and procedures

THE NETHERLANDS

- **Criteria for the selection of installations for inspection (450 installations)**
  - Risk analysis—ranking according to 2 criteria: complexity and emissions level
  - Inspection intervals: 1 year, 3 years, 8 years, never
- **Preparation for inspection**
  - Monitoring plan, additional documents, notifications
  - Comparison to the previous years, comparison to similar installations
  - Selection of one or two source streams for a detailed examination
- **Most frequent irregularities**
  - Omitted source streams
  - Calculation errors
  - Accuracy levels difficulties

CZECH REPUBLIC

- **Criteria for the selection of installations for inspection (340 installations)**
  - Inspectorate—5 areas: air, water, waste, nature, forests
  - Generally: legal requirements, former commitments, environmental impact
- **Checklist**
  - Validity and scope of the emissions permit, notifications on changes
  - Monitoring and reporting according to the regulations, cooperation with the national administrator for the Union Registry
- **Gathered experiences**
  - Inspectors are not fully acquainted with the regulations
  - The competent Ministry also performs compliance checks (to a lesser extent) on free allocation-related issues among other things

REPUBLIC OF IRELAND (1)

- **Criteria for the selection of installations for inspection (100 installations)**
  - Installation size, number of emission points
  - Number or irregularities, notifications, metering equipment failures
  - Complexity of activity, range of fuels and materials
- **Checklist (3 EU ETS inspectors)**
  - Very detailed, includes emission sources, source streams, measurements
  - Focus on completeness checks and control of methodology and procedure implementation
- **Activities**
  - Preparation of a report—prescribed measures and deadlines, possible follow-up site visit
  - Checking the implementation of recommendations—verifier, competent authority, inspection

REPUBLIC OF IRELAND (2)

- **Types of inspectional supervision preformed in 2016 and 2017**
  - Regular inspection (7, 4 of which were aircraft operators)
  - New installation in the EU ETS (6)
  - The operator submitted a change to the permit/monitoring plan (3)
  - Significant capacity increase (2)
  - Check on methodology for determining activity data (2)
  - Cease of installation operation, decrease of capacity below the threshold (3)
  - witness audit—during the operation of the verification body (2)

CYPRUS

- **Criteria for the selection of installations for inspection (12 installations)**
  - Not needed considering the number of installations
  - 3 sectors in all (November, 2016)
- **Checklist**
  - Developed separately for each sector
  - Each has 4 tables with questions: permit, monitoring plan, emissions report, verification report
- **Gathered experiences**
  - Time-consuming process
  - Control of the implementation of the monitoring plan is the most demanding
  - Inspectors don't have enough knowledge and experience

FINLAND

- **Criteria for the selection of installations for inspection (600 installations)**
  - Not yet defined (November, 2016)
  - Few performed inspections
  - No performance of coordinated inspectional supervision
- **Findings, experiences**
  - No serious irregularities were identified
  - Non-compliant monitoring plan, risk analysis and controls
- **Activities**
  - After the inspection a report on the findings is prepared
  - The report is delivered to the operator as well as the verification and the accreditation body if necessary

HUNGARY

- **Criteria for the selection of installations for inspection (160 installations)**
  - Big emitters (categories B and C)
  - Emitters with the oldest or the newest permits
  - Installations where verifiers have found irregularities
- **Checklist**
  - Permit, emissions monitoring plan
  - Calibration documents, sampling, laboratory reports
  - Emission sources, emission calculation
- **Activities**
  - Advisory approach
  - 30 days to amend the monitoring plan

SHORT OVERVIEW FOR CROATIA

- **Criteria for the selection of installations for inspection (50 installations)**
  - Regular inspectional supervision according to the annual inspection plan
  - IRAM—operator assessment and determining the frequency of on-site visits
- **Preparation for inspection**
  - Checking the permit, the monitoring plan, results from previous inspections, historical data
- **Checklist**
  - Prepared by the coordinator
  - Based on EC guidelines for EU ETS inspection
- **Gathered experiences**
  - No serious infringements have been identified so far

PRACTICES IN THE NETHERLANDS

- Questionnaire with 10 thematic question was formulated
- Dutch experts in collaboration with the competent authority described the practices of inspectional supervision in the EU ETS

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EUROPEAN UNION EMISSIONS TRADING SYSTEM

Topics/questions:

1. OBJECTIVES OF INSPECTION IN EU ETS

What are the main objectives of inspection in EU ETS in your country? What is the driving force behind setting those objectives since there are no EU legislation and no harmonized rules for EU ETS inspection on the EU level yet?

2. CONTROL OF INSTALLATIONS

What is the level and depth of inspection control (checking general requirements, e.g. existence of documentation vs checking data)? What is actually done on the site (installation site) – e.g. checking installation boundaries, laboratory analysis, instrument calibration, measurement data, procedures, control activities, etc.?

3. CONTROL OF AIRCRAFT OPERATORS

What are the main differences in performing inspection controls of aircraft operators compared to installations, except for the obvious physical differences?

4. CONTROL OF VERIFIERS

What approach is taken by inspection body (bodies) in your country regarding control of verifiers? What is the level and depth of inspection control (checking general requirements, e.g. existence of documentation vs checking data and internal verifier documentation, particularly

OVERVIEW OF PRACTICES IN THE NETHERLANDS (1)

- **Objectives of inspection**
  - Fair and transparent implementation of the EU ETS
  - Fair treatment and equal conditions for all participants
  - “A ton of CO2e emitted is a ton of CO2e reported”
  - Proper use of the third pillar—inspectional supervision
  - Public service as opposed to verification as a private service
  - Additional assurance for the competent authority that the regulations are properly enforced
  - Strategy: Dutch Compliance & Enforcement Strategy

OVERVIEW OF PRACTICES IN THE NETHERLANDS (2)

- **Level and depth of inspection control**
  - Implementation of a control plan that contains inspection elements
  - When possible and necessary, a specific inspection plan for the installation is formulated
  - The plan is based on the information from the monitoring plan, the emissions reports (a few of the most recent), trend analysis, details on production processes...
  - For complex installations—a multi-year plan with different focuses
  - An approach efficient for the inspector and the installation/aircraft operator
  - Plan elements
    - The contents of the monitoring plan and reference documents
    - Monitoring and reporting in line with the monitoring plan
    - Obligations with respect to changes in free allocation

OVERVIEW OF PRACTICES IN THE NETHERLANDS (3)

- **Differences in approach to installations and aircrafts**
  - Treated in the same manner, same procedure, same inspectors
  - Main difference—there is an independent source to control emissions—European Control Support Facility (has detailed flight information)
  - Other differences
    - Slightly different criteria—due to the nature of emissions, but the amount of emissions is also a key indicator
    - On-site visits—particularly if the head office is in a different country

OVERVIEW OF PRACTICES IN THE NETHERLANDS (4)

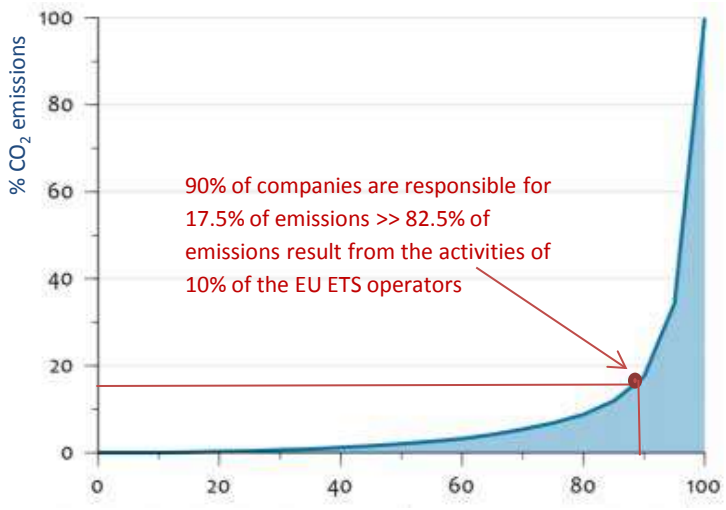
- **Control of verifiers**
  - Emissions reports are assessed along with the verification report
  - On a selection of reports more detailed checks are applied (based on EC guidelines)
  - Assessment of verification reports
    - Number of days spent on site
    - Verification statement
    - Outstanding issues (misstatements, non-conformities, non-compliance)
    - Checks against improvement reports
    - Assessment of internal verification documentation in some cases
  - Risk-based approach in the selection of reports to be inspected
  - Conservative estimation of emissions (material misstatements)

OVERVIEW OF PRACTICES IN THE NETHERLANDS (5)

- **Selection of operators and verifiers**
  - Since 2009 a risk-based approach is used for the selection of reports to be inspected
    - Number of companies on the rise
    - Requests from the industry and politicians to lessen the administrative burden of compliant companies
  - 65 indicators, 24 of which are based on expert judgement
  - Weighing factors are applied to the indicators
  - Two groups: high-risk companies and other companies
  - List consists of 80% high-risk companies and 20% other companies (random selection)

OVERVIEW OF PRACTICES IN THE NETHERLANDS (6)

- **Selection of operators and verifiers—next phase**
  - A—every year
  - B—every 3 years
  - C—once in a trading period
  - D—only if randomly selected



OVERVIEW OF PRACTICES IN THE NETHERLANDS (7)

- **PREPARATION FOR INSPECTION—INFORMATION SOURCES**
  - Internal tool for risk analysis
  - Monitoring plans
  - Amount of emissions
  - Internal tool for assessing monitoring plans and emissions reports
  - Verification report and, if relevant, the improvement report
  - Notifications on changes to the monitoring plan
  - Data on results from earlier inspections
  - Information from the review of NIMS data
  - All relevant correspondence with the operator
  - Information from internal consultations

OVERVIEW OF PRACTICES IN THE NETHERLANDS (8)

- **Training of inspectors**
  - Dedicated team for inspections
    - 1 coordinator
    - 8 inspectors
    - 1 legal expert
    - 1 support member (communication, improvements)
  - Inspectors specialized for the EU ETS
    - Trained for EU ETS inspections
    - Most of the training is done “on the job” by joining more experienced colleagues
    - Other training as necessary, but focused

OVERVIEW OF PRACTICES IN THE NETHERLANDS (9)

- **Contracting external experts**
  - Formerly done for special purposes
    - e.g. for uncertainty analysis
  - Due to the narrow specialisation of EU ETS inspectors, it was difficult to find appropriate experts
  - All inspections are now performed exclusively by NEa experts
  - They use in-house tools developed in the agency

OVERVIEW OF PRACTICES IN THE NETHERLANDS (10)

- **Checking data used in free allocation**
  - Control of changes in capacity is included in the regular inspection
  - NEa is responsible for submitting this data to the EC so it's not part of the activities of the inspectors
    - Change in the carbon leakage status
    - Change in the level of production
    - Applications for free allocation from new entrants
  - NEa has proposed to the EC the introduction of a system for monitoring, reporting and verification of the free allocation data
    - In that case inspectors could be actively involved in the control of that data

OVERVIEW OF PRACTICES IN THE NETHERLANDS (11)

- **Communication**
  - Continued communication with operators
  - Communication with National Accreditation Bodies
    - Sharing reviews and findings from inspections with respect to the work of verifiers
    - Annual meeting with the NAB and verifiers—discussion on the identified issues
  - Communication with the Central Bureau of Statistics and the Central Planning Bureau
    - NEa reviews and corrects data on emissions at a national level using its installation-level expertise
  - Communication with regional competent authorities and their inspectorates
    - A copy of inspection letters with inspection findings is sent
    - Not significant lately

OVERVIEW OF PRACTICES IN THE NETHERLANDS (12)

- **NEa recommendations**
  - Formulate a strategy
    - How the inspectors should support compliance with regulations
    - How the inspectional work should be organised
  - Emphasis on the importance of a structured and consistent approach to organising work
    - Efficiency, focus on the most important elements
  - Inspectors should be separated from the staff that supports operators in their compliance
    - Independence, good quality inspectional supervision
  - Inspectors should have sufficient technical expertise
    - In-depth knowledge on process technologies is preferred

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Enhancing environmental protection inspection for efficient control of air quality monitoring and of the system of greenhouse gas emission allowance trading in order to achieve better air quality in the Republic of Croatia

REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

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DETERMINING THE LEVEL OF ACCURACY FOR SOURCE STREAMS
- practical exercises -

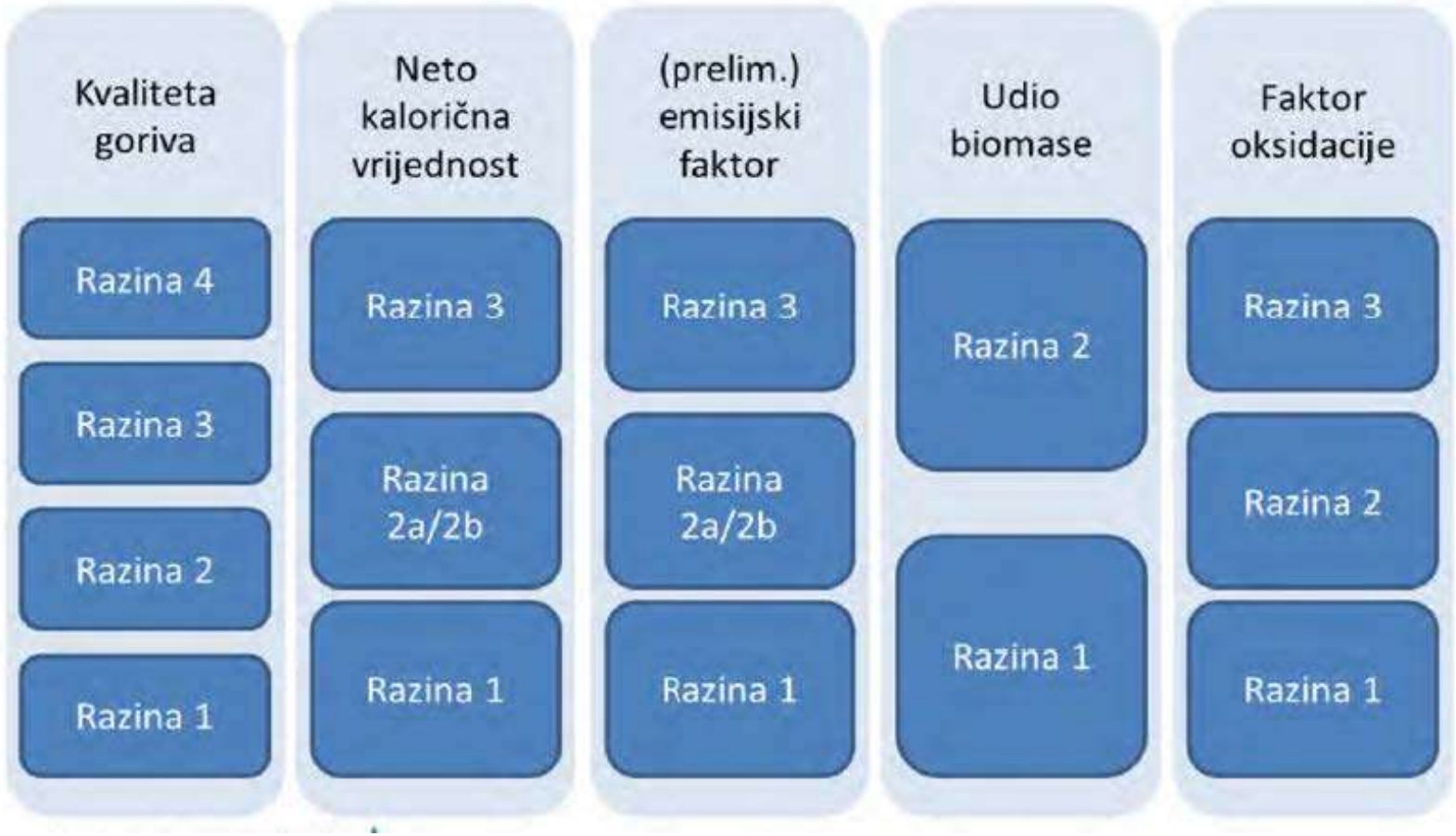
OVERVIEW

- **Description of the exercise**
- **Task**
- **Overview of the results**

DESCRIPTION OF THE EXERCISE

- Group work
- Each group shall receive three tasks in which it is necessary to determine the level of accuracy for the given source streams
- The purpose of the exercise is to determine the level of accuracy for activity data and calculation factors (NCV, EF, OF, CF)

DESCRIPTION OF THE EXERCISE



EXERCISE 1

- **Task:**
  - default values:
    - category B installation
    - source stream type: “Other gaseous and liquid fuels”
    - source stream category: major source stream
  - It is necessary to determine the required levels of accuracy for activity data and calculation factors (NCV, EF, OF)

OVERVIEW OF THE RESULTS FROM EXERCISE 1

- **Solution:**
  - required accuracy levels:
    - activity data—4
    - NCV—3
    - EF—3
    - OF—1

EXERCISE 2

- **Task:**
  - default values:
    - category A installation
    - source stream type: “Production of lime”
    - source stream category: major source stream
  - It is necessary to determine the required levels of accuracy for activity data and calculation factors (NCV, EF, CF)

OVERVIEW OF THE RESULTS FROM EXERCISE 2

- **Solution:**
  - required accuracy levels:
    - activity data—1
    - NCV—/
    - EF—1
    - CF—1

EXERCISE 3

- **Task:**
  - default values:
    - category C installation,
    - source stream type: “Commercial standard fuels”
    - source stream category: de-minimis
  - It is necessary to determine the required levels of accuracy for activity data and calculation factors (NCV, EF, OF)

OVERVIEW OF THE RESULTS FROM EXERCISE 3

- **Solution:**
  - required accuracy levels:
    - activity data—4
    - NCV—2a/2b
    - EF—2a/2b
    - OF—1

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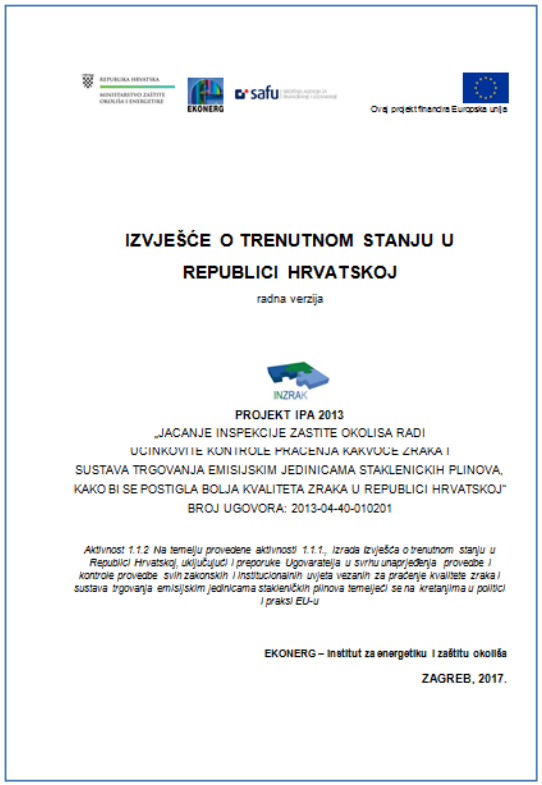
POSSIBLE LEVELS OF CONTROL IN THE INSPECTION

CONTENT

- **Possible levels of control**
- **Examples of control of operators**
- **Examples of control of verification bodies**
- **Practice in other countries**
- **Conclusion**

REPORT ON THE CURRENT STATE IN CROATIA

- **One of this project's deliverables**
- **Gives an analysis of the state and recommendations**
- **Presentation of the recommendations**



Ovaj projekt financira Europska unija

IZVJEŠĆE O TRENUTNOM STANJU U REPUBLICI HRVATSKOJ

radna verzija

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PROJEKT IPA 2013

„JACANJE INSPEKCIJE ZASTITE OKOLISA RADI UCINKOVITE KONTROLE PRACENJA KAKVOCE ZRAKA I SUSTAVA TRGOVANJA EMISIJSKIM JEDINICAMA STAKLENICKIH PLINOVA, KAKO BI SE POSTIGLA BOLJA KVALITETA ZRAKA U REPUBLICI HRVATSKOJ"

BROJ UGOVORA: 2013-04-40-010201

Aktivnost 1.1.2 Na temelju provedene aktivnosti 1.1.1., Izrada izvješća o trenutnom stanju u Republici Hrvatskoj, uključujući i preporuke Ugovaratelja u svrhu unaprjeđenja provedbe i kontrole provedbe svih zakonskih i institucionalnih uvjeta vezanih za praćenje kvalitete zraka i sustava trgovanja emisijskim jedinicama stakleničkih plinova temeljeći se na kretanjima u politici i praksi EU-u

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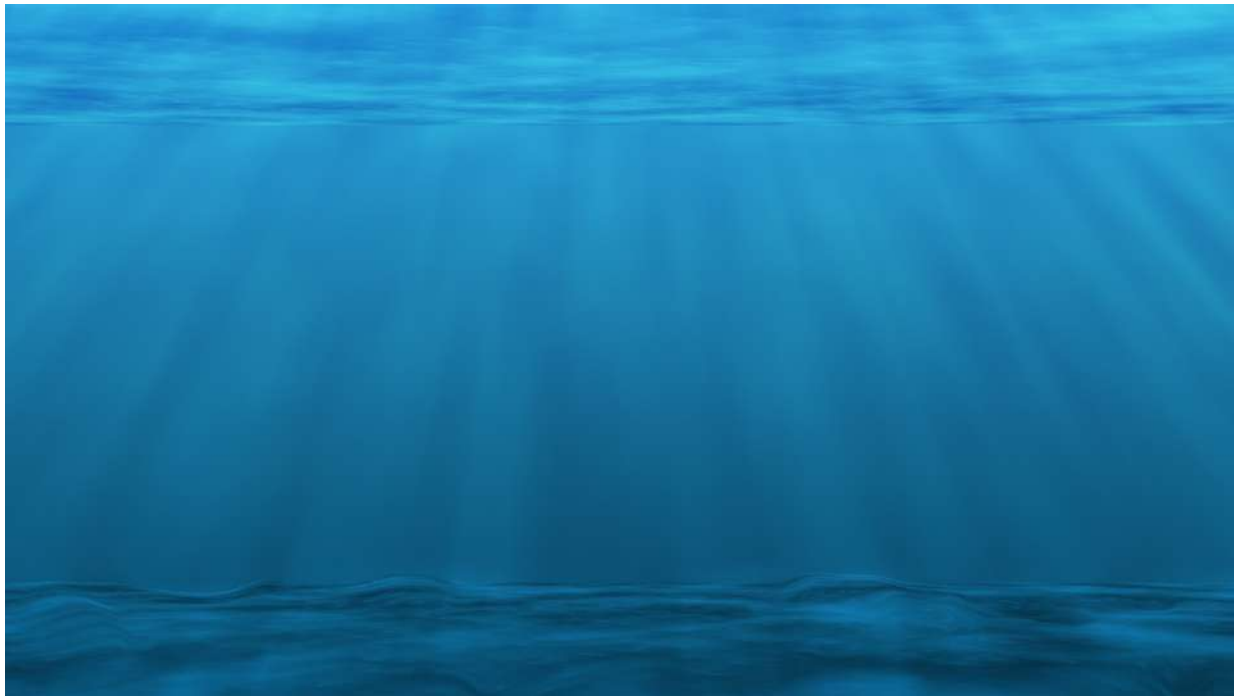
ZAGREB, 2017.

RECOMMENDATION FROM THE REPORT ON THE CURRENT STATE

- **Define the necessary level of control of inspection**
  - Can be shallow or deeper



POSSIBLE LEVELS OF CONTROL

- **No control**
  - Not an option – Contractor's opinion

- **„shallow"**
  - Control of the existence of necessary documentation
  - Control of performance of underlying obligations
- **„deeper"**
  - Control of data
  - Control of data sources (invoices, lab reports, measuring instruments)

EXAMPLES OF CONTROL - OPERATORS

- **Please rate the level of the following activities of inspectors:**

- **Checking whether the installation operator has a greenhouse gas emission permit**
- **Checking for the existence of the notification of planned changes to the installation**
- **Checking the category of the installation**
- **Checking the annual fuel consumption data**
- **Inspection of greenhouse gases emitted from the installation**

EXAMPLES OF CONTROL – VERIFICATION BODIES

- **<u>Please rate the level of the following activities of inspectors:</u>**

- **Checking whether irregularities were included in the verification report**
- **Checking whether an independent review of internal documentation and the verification report was carried out**
- **Checking whether inaccuracies and non-conformities were documented in the internal documentation**
- **Checking the issuing of a verification report to the installation operator or aircraft operator**

PRACTICE IN OTHER COUNTRIES (1)

- **Belgium – Flemish Region**
  - The state of the emission monitoring plan is determined

- **The Netherlands**
  - Detailed inspection of data
- **Czechia**
  - Checking of the permit, notification on changes

- **France**
  - Comparing data from the report with data from other sources
  - Review of data from verification reports

PRACTICE IN OTHER COUNTRIES (2)

- **Republic of Ireland**
  - Comprehensive preparation for inspection
  - Detailed inspection of infrastructure

- **Cyprus**
  - Review of documents according to control lists

- **Finland**
  - Review of a limited data set from operators' reports

CONCLUSION

- **Inspection in Croatia pursuant to existing regulation**
  - Rated as „shallow" inspection for operators
  - For verifiers - mixed
- **Should it be deeper?**
  - Political decision– level of ambition
  - Depends on the technical competence level of inspectors
- **Recommendation**
  - Not at this moment – conditions have not been met
  - If yes – conduct personnel training
  - Highly specialized knowledge is needed (like in verification)
  - Realistically – not all inspectors, not all 15 inspectors, but 2-3 inspectors

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CHECKING DATA FROM THE REPORT AGAINST THE SITUATION ON THE GROUND

- practical exercises -

CONTENTS

- **introduction about the method of checking**
- **exercise description**
- **task**
- **review of results**

INTRODUCTION ABOUT THE METHOD OF CHECKING

- **„situation on the ground" is described in the Monitoring Plan**
- **Emissions Report follows the methodology from the Monitoring Plan**
  - otherwise there would be non-compliance
- **correctness of the Emissions Report is determined in combination with the valid Monitoring Plan**
  - otherwise the review would not be effective
- **information in the Emissions Report can also point to irregularities**
  - for example, a source stream missing from the source stream list

INFORMATION IN THE EMISSIONS REPORT

- is based on a defined methodology
- focus on checking of the data entered

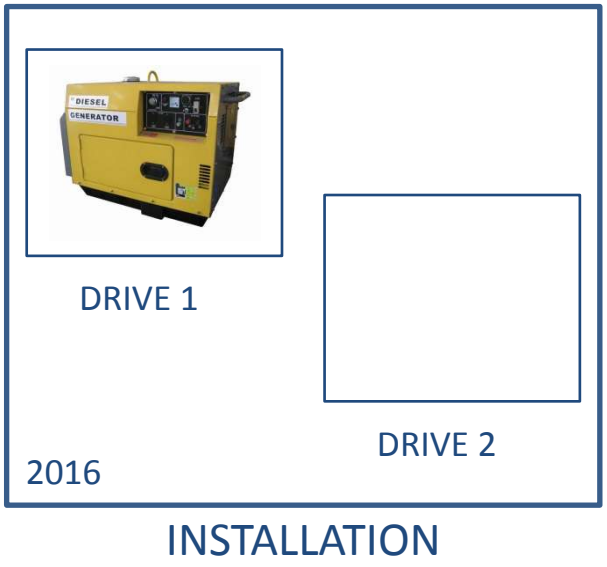
1	F1. Kruto – Antracit; Ugljen					Izgaranje		Fosilni CO2:	85.000,0	t CO2e
	Izgaranje: Kruta goriva							*CO2 iz biomase:*	*0,0*	*t CO2e*
	Detaljne upute za unošenje podataka u ovom alatu mogu se pronaći na vrhu ovog lista.									
i. PA:	Temelje li se PA na zbrojenim izmjerenim količinama (tj. ne na kontinuiranom mjerenju)?						TRUE			
ii. PA:	Početak:	5.000,00	Završetak:	1.000,00	Uvoz:	30.000,00	Izvoz:	0,00		
		Razina	**Opis razine**		**Jedinica**		**Vrijednost**		**pogreška**	
iii. PA:		4	± 1,5%		t		34.000,00			
iv. (prelim) EF:		3	Lab. analize		tCO2/TJ			100,00		
v. DOV:		3	Lab. analize		GJ/t			25,00		
vi. OF:		1	OxF=1		-		100,00%			
vii. PretvF:										
viii. Udio_C:										
ix. Bio_C:										
x. neodrživ. BioC:										
	Razine vrijede od:	1.1.2017.		do:	31.12.2017.		Broj iz Kataloga otpada (ako je relevantno):	nije primjenjivo		
							ID koji se koristio u Planu praćenja za ovaj tok izvora:	F1		
Komentari:	nije primjenjivo									

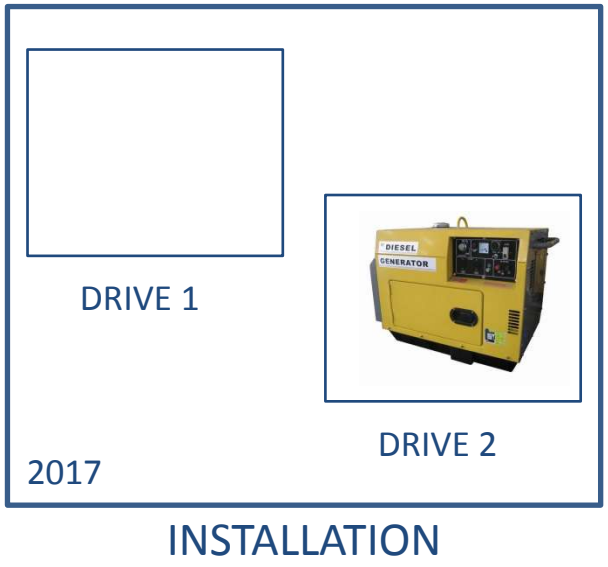
EXERCISE DESCRIPTION

- **joint participation and commenting**
- **various situations will be displayed graphically on slides**
  - 5 situations
- **state on the ground must be compared to the description in the Emissions Monitoring Plan on the basis of which the Emissions Report was made**
  - determine whether the data in the Monitoring Plan/Emissions Report is accurate

TASK 1

- **determine correctness –is the emissions source stationary**
  - the operator did not show diesel generator CO_2 emissions in the Emissions Report
  - diesel generator is not always located in the same part of the Installation (drive)
  - determine whether the operator acted correctly



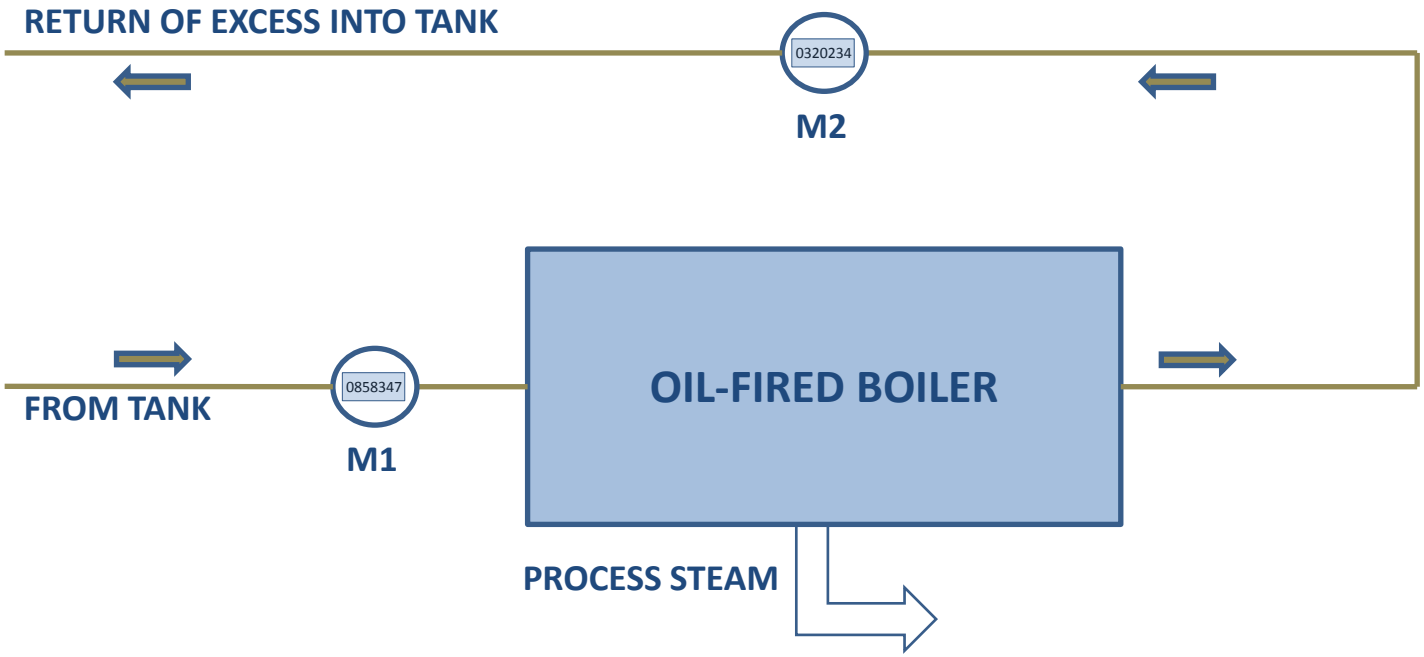


TASK 1 ANSWERS

- **emission source (diesel generator) is a stationary source**
  - regardless of it not always being in the same location
  - while it is working, the source is stationary
- **what needs to be done**
  - the diesel generator must be defined in the Monitoring Plan as an emission source
  - generator's emissions must be monitored and stated in the Emissions Report

TASK 2

- **correctness of determination of consumption of fuel oil**
  - operator calculates consumption with the flow meter M1
  - meter M2 is not defined in the Emissions Monitoring Plan

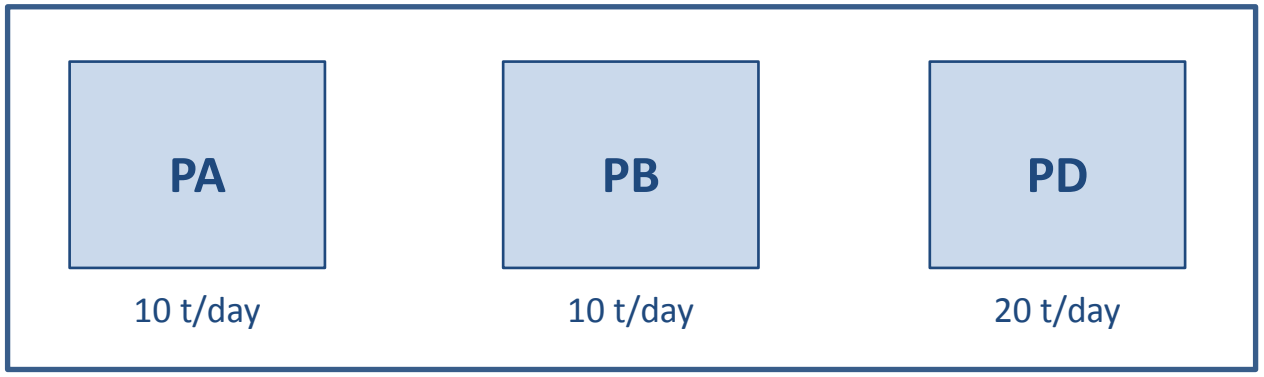


TASK 2 ANSWERS

- **consumption of fuel oil is not calculated correctly**
  - consumption calculated on meter M1 is greater than actual consumption
  - part of the fuel is double-calculated
  - calculation must also include the amount measured on M2 meter
- **what needs to be corrected**
  - M2 flow meter needs to be defined in the Monitoring Plan
  - Define the formula for fuel consumption determination: $\mathbf{Q = Q_1 - Q_2}$
  - Redefine the uncertainty of fuel oil amount determination

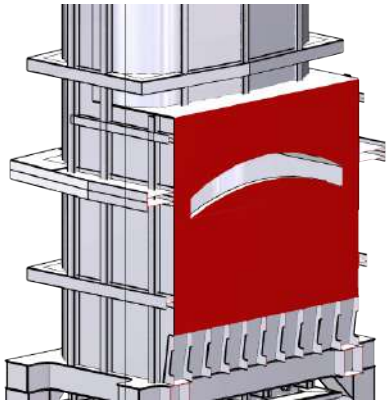
TASK 3

- **determine the accuracy of the emission source description**
  - 3 shaft furnaces for clinker production are defined in the Emissions Monitoring Plan: PA, PB and PC
  - capacity of all the furnaces is 10 t/day
  - the following situation exists on the ground



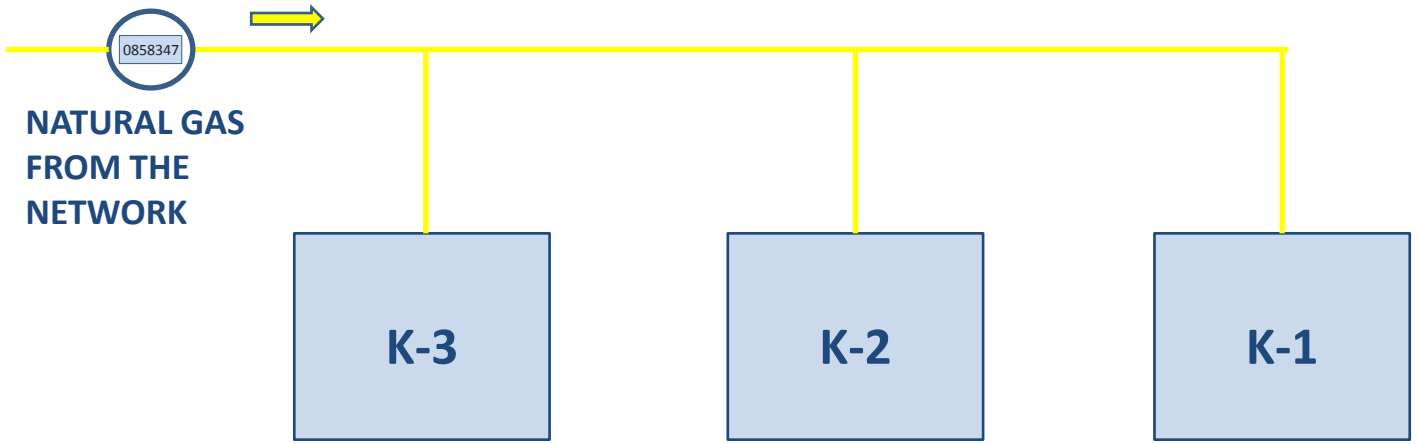
TASK 3 ANSWERS

- **state in the Monitoring Plan does not correspond to the state on the ground**
  - PC furnace was replaced with PD furnace
  - furnace capacity and total installation capacity was not shown correctly
- **what needs to be corrected**
  - state correct furnace data (schematic, ...) in the Monitoring Plan
  - additional question: how does this change reflect on the CO_2 emission amount?



TASK 4

- **determine correctness of the emission source coverage**
  - 2 natural gas boilers are defined in the Monitoring Plan : K-2 and K-3
  - there is also a third boiler K-1, but it is not in use because it has been written off
  - the following state exists on the ground

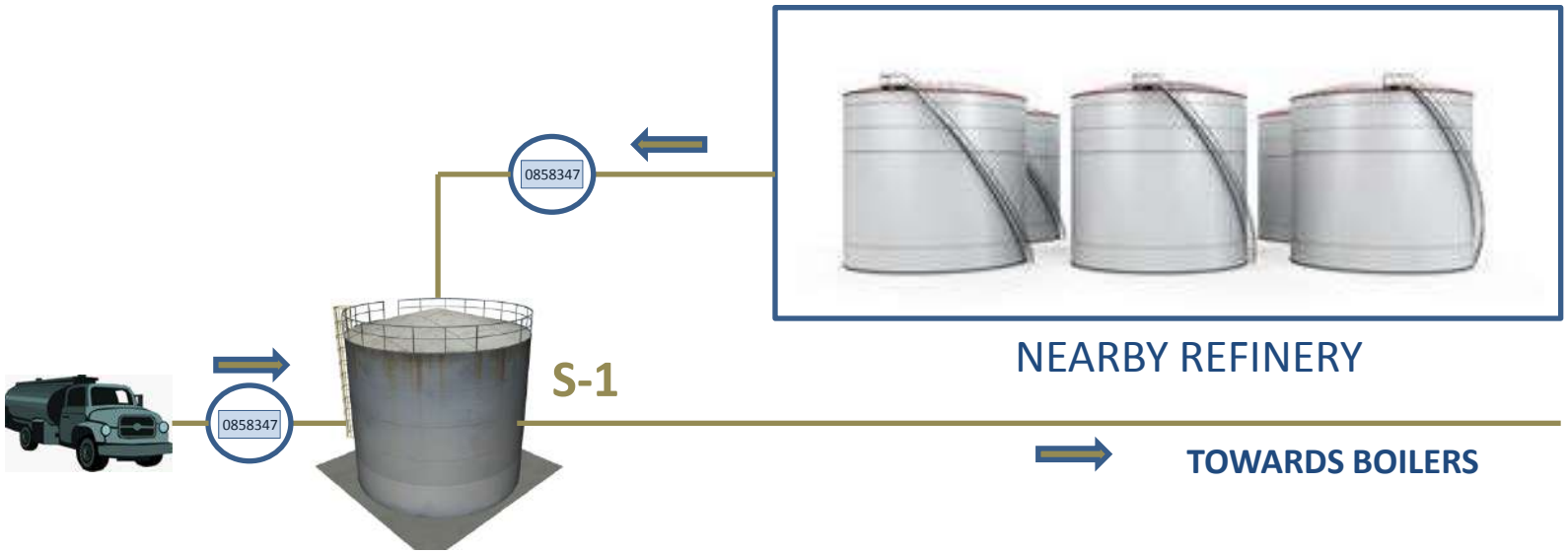


TASK 4 ANSWERS

- **state on the ground is not correctly described in the Monitoring Plan**
  - the „old" boiler K-1 is technically still in operation
  - how can the operator prove that K-1 will not be in use anymore
- **what needs to be corrected**
  - correct the emission source description in the Monitoring Plan, or
  - physically disable the operation of the K-1 boiler
  - additional question: how does this change reflect on the CO_2 emission amount?
  - the question when is the total capacity of K-2 and K-3 lower than 20 MW, and the total capacity of K-1, K-2 and K-3 greater than 20 MW is especially interesting

TASK 5

- **determine accuracy of determination of fuel oil consumption**
  - it is defined in the Monitoring Plan that fuel oil is supplied into tank S-1 through auto-tanks
  - the following state was found on the ground



TASK 5 ANSWERS

- **state on the ground is not correctly described in the Monitoring Plan**
  - the filling of S-1 tank is not only possible through an auto-tank but also through a direct pipeline from a nearby refinery
  - it is possible that the incoming amount is greater than the amount shown, if only the amount from auto-tanks is calculated
- **what needs to be corrected**
  - correct the description of the calculation of incoming fuel oil amounts
  - define the formula for determination of fuel consumption: $\mathbf{Q = Q_{tanks} + Q_{refinery}}$
  - redefine the uncertainty of determination of fuel oil amount
  - additional question: how does this change reflect on the CO_2 emission amount?

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COMPARISON OF DATA FROM THE EPR WITH DATA FROM A VERIFIED EMISSIONS REPORT

- practical exercise-

CONTENTS

- **exercise description**
- **task**
- **review of results**

EXERCISE DESCRIPTION

- **group exercise**
- **the purpose of the exercise is to compare data from the EPR (Environmental Pollution Registry) base with data from the verified Emissions Report**
  - using data from the EPR base
  - using data from the EUTL base

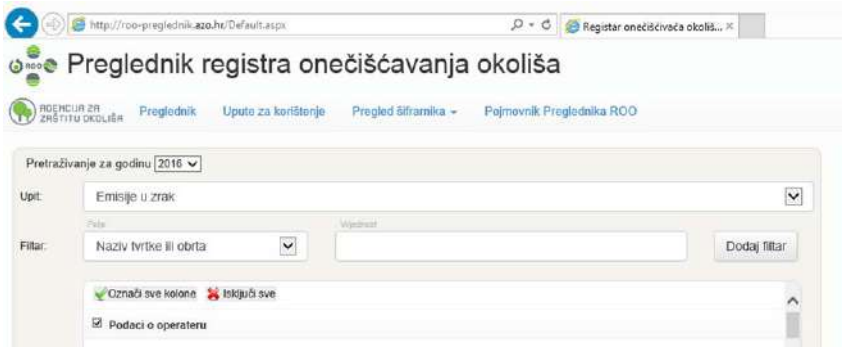
EXERCISE

- **task:**
  - in the EPR form, find a piece of data that is in the verified Emissions Report
  - download data on verified emissions from the EUTL base

http://ec.europa.eu/environment/ets/welcome.do?languageCode=en

  - EPR forms can be found on the website

http://roo-preglednik.azo.hr/Default.aspx



OVERVIEW OF RESULTS

- **answer:**

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INZRAK

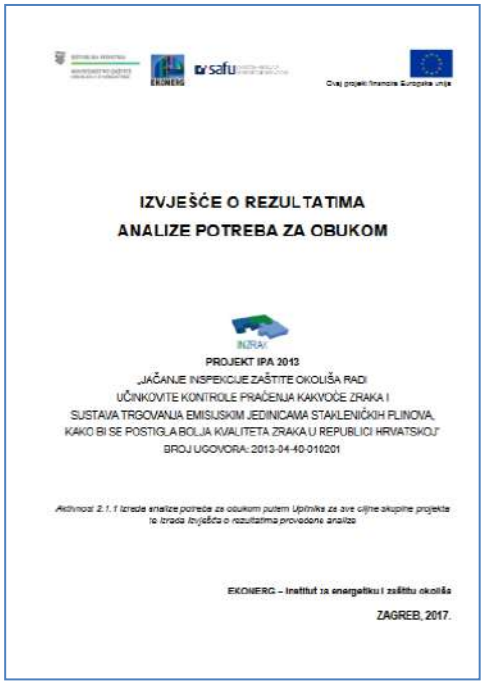
MAKING PROCEDURES FOR RISK IDENTIFICATION

CONTENTS

- **risk identification and mitigation**
- **risk types**
- **control procedures**
- **procedure types**
- **conclusion**

NEED FOR TRAINING ANALYSIS

- **survey conducted**
  - between 25 August and 6 September 2017
- **report prepared**
  - basis for the training program
- **questionnaires contain additional topics**
  - proposals from training participants



IZVJEŠĆE O REZULTATIMA
ANALIZE POTREBA ZA OBUKOM

PROJEKT IPA 2013
„JAČANJE INSPEKCIJE ZAŠTITE OKOLIŠA RADI
UČINKOVITE KONTROLE PRAĆENJA KAKVOĆE ZRAKA I
SUSTAVA TRGOVANJA EMISIJSKIM JEDINICAMA STAKLENIČKIH PLINOVA,
KAKO BI SE POSTIGLA BOLJA KVALITETA ZRAKA U REPUBLICI HRVATSKOJ"
BROJ UGOVORA: 2013-04-40-010201

Aktivnost 2.1.1 Izrada analize potreba za obukom putem Upitnika za sve ciljne skupine projekta te izrada Izvješća o rezultatima provedene analize

EKONERG – Institut za energetiku i zaštitu okoliša
ZAGREB, 2017.

RISK IDENTIFICATION AND MITIGATION

- **risk assessment analysis**
  - mandatory supporting document of the Monitoring Plan
  - serves as evidence that the proposed control activities and procedures are commensurate with the inherent risks and control risks identified
  - Article 12, Paragraph 2, Item b of Regulation 601/2012
- **control activities and procedures**
  - form the operator's control system
  - Article 58, Paragraph 2 of Regulation 601/2012
  - risk assessment
  - written procedures for risk mitigation

RISK TYPES

- **definitions pursuant to Article 3, Items 9 and 10 of Regulation 601/2012**
- **inherent risk**
  - susceptibility to material misstatements before control activities
- **control risk**
  - susceptibility to material misstatements that were not prevented or corrected on a timely basis by the control system
- **for both risks**
  - misstatement is related to a parameter in the Emissions Report
  - individually or when aggregated with other misstatements

CONTROL PROCEDURES

- **decribed in the Minitoring Plan**
  - not an integral part of the Monitoring Plan
  - submitted to the competent authority for approval
  - given to the competent authority for insight upon request, control by verifiers
- **activities with the procedure**
  - establishment, documenting, implementation and maintenance
- **prescribed content elements**
  - Article 12, Paragraph 2, Subparagraph 2 of Regulation 601/2012

PROCEDURE TYPES

- ensuring high quality measuring equipment
- ensuring quality of IT systems used for data handling
- segregation of data handling duties from control activities
- internal data checks and validation
- corrections and corrective actions
- control of processes given over to external service suppliers
- record-keeping and document-keeping

RISK IDENTIFICATION PROCEDURES

- **such specific procedures are not prescribed in Regulation 601/2012**
  - control procedures are prescribed
  - established based on risks identified
- **risk analysis**
  - first step in risk management
- **conclusion**
  - process the risk analysis – next lecture
  - describe the risk identification method

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Enhancing environmental protection inspection for efficient control of air quality monitoring and of the system of greenhouse gas emission allowance trading in order to achieve better air quality in the Republic of Croatia

REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

EKONERG

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RISK ANALYSIS
– practical exercises –

OUTLINE

- Risk assessment
- Description of the exercise
- Task
- Overview of the results
- Analysis of the results

RISK ASSESSMENT

- **Risk as a result of an incident**
  - Risk = impact x probability
- **Impact of the incident**
  - The scope of the outcome of the incident [ton of CO_2]
- **Probability of the incident**
  - The probability that the incident will occur in a reporting year [%]
- **Possible gradation of risk**
  - Grades: e.g. very low, low, medium, high, very high
  - It is necessary to establish the limits of each grade

DESCRIPTION OF THE EXERCISE

- The installation of “Cement d.d.” is a new participant of the EU ETS
- The installation operator submits for approval the monitoring plan that needs to contain the results of the risk analysis

- It necessary to conduct a risk analysis for possible incidents that could lead to errors in the calculation of emissions

TASK

- **Task**
  - Identify the priorities for the implementation of control activities for the mitigation of misstatement risks
  - Possibly suggest a control activity for risk mitigation
- **Default values**
  - Annual emissions from the installation
  - 3 specific incidents
  - For each incident: impact and probability
  - The installation uses coal as fuel

DEFAULT PARAMETERS

- **Annual emissions from the installation = 500,000 t of CO_2**

INCIDENT	Error in the measurement of the scale for raw materials	Erroneous choice of location for coal sampling for the determination of the EF	Error in the transcription of data on the amount of coal from the invoice of the supplier
IMPACT	5% of emissions	2% of emissions	10% of emissions
PROBABILITY	1/20	1/5	1/100
RISK	?	?	?

- **Rank the incidents according to the quantified risks**

POSSIBLE CONTROL ACTIVITIES

- **Error in the measurement of the scale for raw materials**
  - ?
- **Erroneous choice of location for coal sampling for the determination of the EF**
  - ?
- **Error in the transcription of data on the amount of coal from the invoice of the supplier**
  - ?

RESULTS OF THE TASK

INCIDENT	Error in the measurement of the scale for raw materials	Erroneous choice of location for coal sampling for the determination of the EF	Error in the transcription of data on the amount of coal from the invoice of the supplier
IMPACT	5% of emissions	2% of emissions	10% of emissions
PROBABILITY	1/20	1/5	1/100
RISK	**1,250**	**2,000**	**500**

- **Order of the incidents according to the quantified risks**
  1. Erroneous choice of location for coal sampling
  2. Error in the measurement of the scale for raw materials
  3. Error in the transcription of data on the amount of coal

POSSIBLE CONTROL ACTIVITIES

- **Error in the measurement of the scale for raw materials**
  - Regular calibration, inspection, scale maintenance
- **Erroneous choice of location for coal sampling for the determination of the EF**
  - Revision of the sampling plan, analysis of the impact of sampling on the results
- **Error in the transcription of data on the amount of coal from the invoice of the supplier**
  - Control of the other person, correlation of amount data to the amount of emissions from coal, comparison to previous years

ANALYSIS OF THE RESULTS

- **It is important to identify the actual incidents that can cause misstatements and errors**
- **Very low risks do not require control activities**
- **The severity of the risk depends simultaneously on:**
  - the scope of the outcome
  - the probability of the incident
- **Example:**
  - risk of accidents when travelling by car and by plane

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INSPECTIONAL SUPERVISION OF A BRICK FACTORY PARTICIPATING IN THE EMISSIONS TRADING SYSTEM

OUTLINE

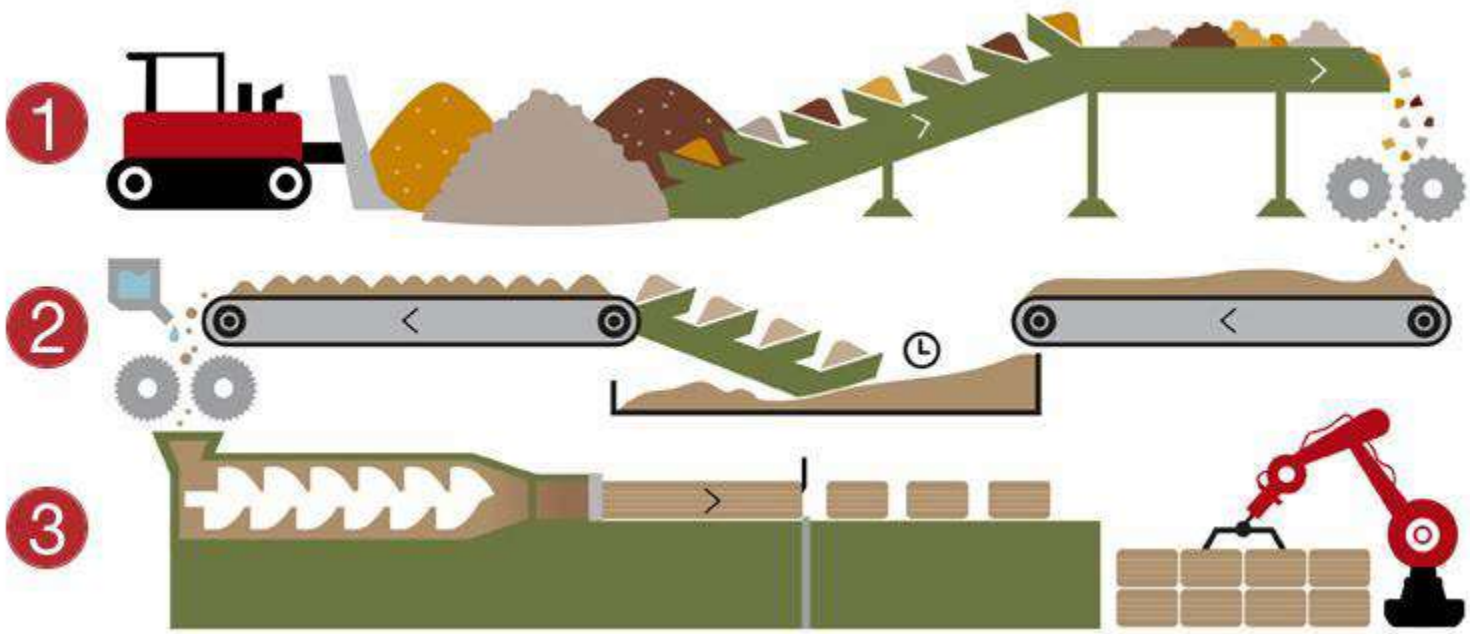
- Approach
- Technological process
- Installation category
- Emission sources
- Source streams
- Metering instruments
- Methodology for determining the emissions

APPROACH TO THIS SUBJECT

- **Example of an analysis of a specific type of installation**
- **Main portion of inspectional supervision**
  - Demonstrated through practical exercises and simulation of supervision
  - Equal for all installations (e.g. control of the permit, activities, notification on planned changes, submission of the report...)
- **Separate description of the particularities of the brick factory**
  - Description of the technological process
  - Installation category
  - Methodology for determining CO_2 emissions
  - Possible emission sources
  - Possible source streams

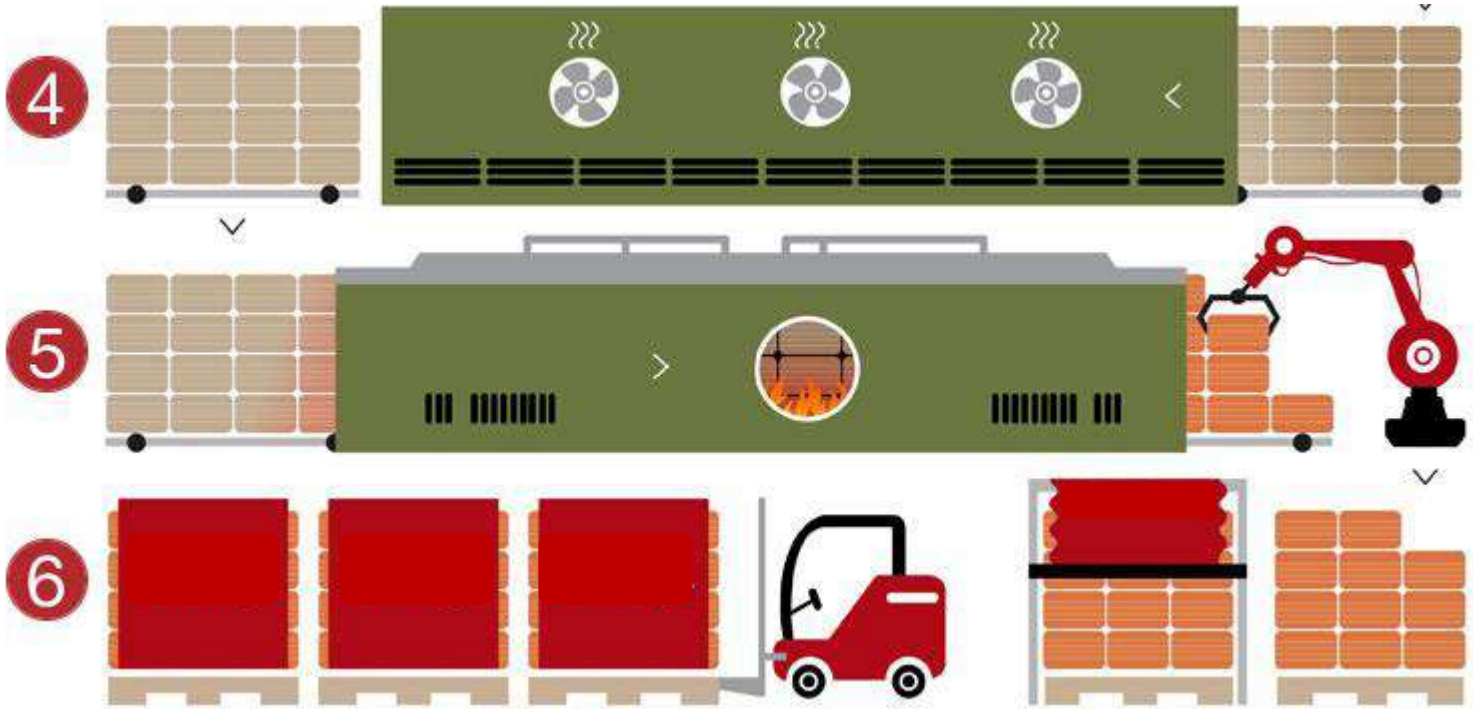
TECHNOLOGICAL PROCESS (1)

- **From clay to the raw product**



TECHNOLOGICAL PROCESS (2)

- **From raw to finished product**



INSTALLATION CATEGORY

- **Most often: A category**
  - Less than 25,000 t of CO_2 annually
  - Fulfilled criteria for exclusion (equivalent measures)
- **In Croatia**
  - Approximately 10 installations are brick manufacturers (brick factories)
  - Excluded installations: 2 out of 5 are brick factories
  - Annual emissions between 5,000 and 10,000 t of CO_2

POSSIBLE EMISSION SOURCES

- **Tunnel kiln**
  - Greatest emission source
- **Dryer**
  - Tunnel, chamber
- **Steam generator**
  - Steam for shaping clay
- **Heating boilers**
  - For working spaces, offices
- **Other – very low emissions**
  - Packing station (product wrapping), heaters, diesel generator, acetylene tanks, propane-butane tanks...

POSSIBLE SOURCE STREAMS

- **Fuel source streams**
  - Most often natural gas
  - Liquefied petroleum gas
  - Petroleum coke
  - Coal
  - Sawdust (biomass)

- **Raw material source streams (clay)**
  - Carbonates in the raw material, usually calcium carbonate ($CaCO_3$)

METERING INSTRUMENTS

- **Flow meter**
  - Natural gas
  - Liquefied gas

- **Scale**
  - Product scale (measures in kg)
  - Coke, coal and sawdust scale (measures in t)

METHODOLOGY FOR DETERMINING CO_2 EMISSIONS

- **Calculation methodology**
  - Standard methodology
  - Mass balance method and measuring based method are not used

$$EMISSION = EMISSION_{fuel} + EMISSION_{clay}$$

- **$EMISSION_{fuel}$ – combustion**
  - Activity data, emission factor, net calorific value
  - (oxidation factor = 1)
- **$EMISSION_{clay}$ – process**
  - Activity data, emission factor
  - (conversion factor = 1)

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COMPLIANCE AND FAMILIARITY WITH NORMS

OUTLINE

- **HRN EN ISO 14065:2013**
- **HRN EN ISO/IEC 17025:2017**

HRN EN ISO 14065:2013 - IMPLEMENTATION

Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition

- **Implementation of prescribed principals and requirements for the validation or verification of greenhouse gas emissions**
  - Regardless of the greenhouse gas programme – other programmes besides the EU ETS
  - Impartiality
  - Competency
  - Empirical approach in decision-making
  - Responsibility
  - Confidentiality

Balance between principles

HRN EN ISO 14065:2013 – COMPETENCIES AND PROCEDURES

- **Competencies of verification bodies required for the performance of verification**
  - Requirements regarding the necessary knowledge, expertise, information and data auditing, specific competencies
- **Procedures, processes and measures for verification activities**
  - The verifier establishes, documents, implements and maintains procedures and processes for verification activities
  - Principles of security and confidentiality

HRN EN ISO 14065:2013 – IMPLEMENTATION OF PROCEDURES

- **Establishment and implementation of procedures and processes**
  - Communication with the operator and other relevant parties
  - Measures for preserving the confidentiality of data obtained
  - Documentation of processes for addressing appeals
  - Documentation of processes for addressing complaints (including the indicative time frame)
  - Process for issuing a revised verification report
  - Procedure or process for contracting other organisations for the performance of verification activities

HRN EN ISO 14065:2013 – MANAGEMENT SYSTEM

- **Implementation and maintenance of a documented management system**
  - Management system policy
  - Control of documents
  - Control of records
  - Internal audits
  - Corrective actions
  - Preventive actions
  - Management review

HRN EN ISO/IEC 17025:2017 – MANAGEMENT SYSTEM

General requirements for the competence of testing and calibration laboratories

- **Competence for the performance of testing, calibration and sampling**
- **Management system requirements**
  - Guidance and management with regard to quality
  - Control of documents
  - Documented processes regarding the review of requests, tenders and contracts
  - Policy and processes for handling complaints
  - Policy and processes for the supervision of nonconforming work
  - Increasing the efficiency of the system – policy and objectives regarding quality, assessment results, data analysis, corrective and preventive actions...
  - Identifying necessary improvements – sources of nonconformities

HRN EN ISO/IEC 17025:2017 - RECORDS AND AUDITS

- **Quality records**
  - Requirement of the management system
- **Technical records**
  - Created during the process of testing or calibration
  - Reporting on results

- **Internal audits**
  - Conducted in one year cycles
  - Audit programme focused on all the elements of the management system, including testing and/or calibration
  - Responsibility – person responsible for quality
  - Competence for implementation
  - Performance and recording of corrective actions, review of effectiveness

HRN EN ISO/IEC 17025:2017 – TECHNICAL REQUIREMENTS (1)

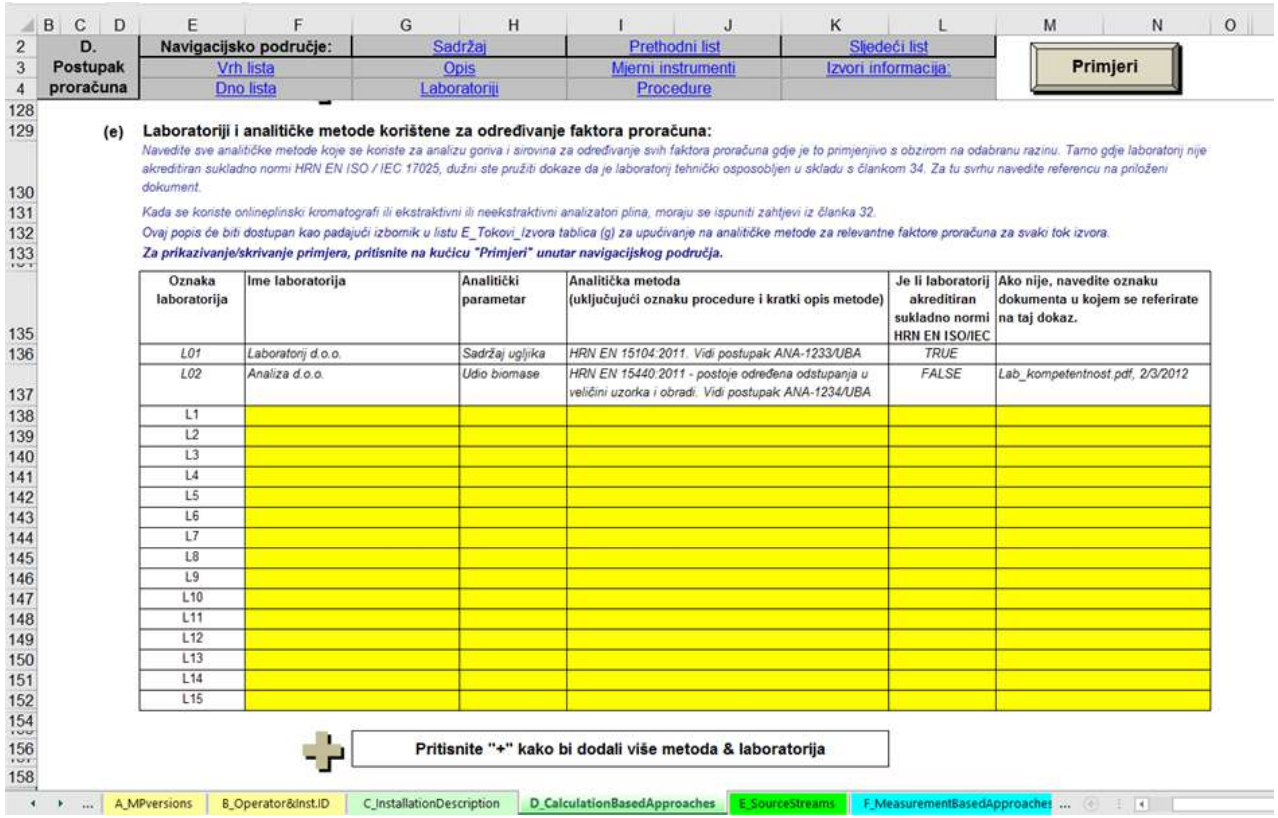
- **Human resources**
- **Infrastructure**
- **Standardized testing methods**
  - Possible use of non-standardized methods – validation necessary
- **Equipment**
  - Correct performance of sampling, measuring and testing
  - Requires accuracy of the equipment for testing, calibration and sampling
  - Authorised personnel, consulting instructions on use and maintenance
  - Ensuring metrological traceability – SI system
  - Programme and procedures for equipment calibration
  - Sampling plan and procedures
  - Quality management procedures – control of testing and calibration

HRN EN ISO/IEC 17025:2017 - TECHNICAL REQUIREMENTS (2)

- **Control of the quality of testing and calibration results**
  - Certified reference materials, internal quality control
- **Reporting on the results of sampling, testing or calibration**
  - Accurately, clearly, unambiguously and objectively
    - In accordance with the instructions in the testing and calibration methods
  - Basic and additional data
  - Sampling data
  - Calibration data
    - Conditions for the performance of calibration
    - Measurement uncertainty
    - Proof of metrological traceability
  - Reports on the results must be stored in the laboratory

HRN EN ISO/IEC 17025:2017 – IMPLEMENTATION

- **Article 34 of Regulation 601/2012**
  - Use of laboratory



D. Postupak proračuna	Navigacijsko područje:	Sadržaj	Prethodni list	Sljedeći list	Primjeri
	Vrh lista	Opis	Mjerni instrumenti	Izvori informacija:	
	Dno lista	Laboratoriji	Procedure		

(e) Laboratoriji i analitičke metode korištene za određivanje faktora proračuna:

Navedite sve analitičke metode koje se koriste za analizu goriva i sirovina za određivanje svih faktora proračuna gdje je to primjenjivo s obzirom na odabranu razinu. Tamo gdje laboratorij nije akreditiran sukladno normi HRN EN ISO / IEC 17025, dužni ste pružiti dokaze da je laboratorij tehnički osposobljen u skladu s člankom 34. Za tu svrhu navedite referencu na priloženi dokument.

Kada se koriste onlineplinski kromatografi ili ekstraktivni ili neekstraktivni analizatori plina, moraju se ispuniti zahtjevi iz članka 32.

Ovaj popis će biti dostupan kao padajući izbornik u listu E_Tokovi_Izvora tablica (g) za upućivanje na analitičke metode za relevantne faktore proračuna za svaki tok izvora.

Za prikazivanje/skrivanje primjera, pritisnite na kučicu "Primjeri" unutar navigacijskog područja.

Oznaka laboratorija	Ime laboratorija	Analitički parametar	Analitička metoda (uključujući oznaku procedure i kratki opis metode)	Je li laboratorij akreditiran sukladno normi HRN EN ISO/IEC	Ako nije, navedite oznaku dokumenta u kojem se referirate na taj dokaz.
L01	*Laboratorij d.o.o.*	*Sadržaj ugljika*	*HRN EN 15104:2011. Vidi postupak ANA-1233/UBA*	*TRUE*	
L02	*Analiza d.o.o.*	*Udio biomase*	*HRN EN 15440:2011 - postoje određena odstupanja u veličini uzorka i obradi. Vidi postupak ANA-1234/UBA*	*FALSE*	*Lab_kompetentnost.pdf, 2/3/2012*
L1					
L2					
L3					
L4					
L5					
L6					
L7					
L8					
L9					
L10					
L11					
L12					
L13					
L14					
L15					

Pritisnite "+" kako bi dodali više metoda & laboratorija

A_MPversions | B_Operator&Inst.ID | C_InstallationDescription | D_CalculationBasedApproaches | E_SourceStreams | F_MeasurementBasedApproaches

Emissions monitoring plan
Sheet D. Calculation process

SOME EXAMPLES OF OTHER WORKING STANDARDS

- **HRN EN 459-2**
  - Determination of CO_2 in lime (e.g. determining the conversion factor)
- **HRN ISO 10381**
  - Soil sampling (e.g. for determining the content of carbonates in clay)
- **ISO 1928**
  - Determining the net calorific value of solid mineral fuels
- **EN 15440**
  - Determining the biomass content in mixed waste
- **ASTM D4868**
  - Determining the net calorific value of liquid fuel

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