



Event Report

**EPPA Regional Workshop on Industrial Emissions Directive –
Current Status, New Developments**

9 – 10 June 2020

Live video conference



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NIRAS **umweltbundesamt^U**

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1 Introduction

The regional workshop

The regional workshop on “Industrial Emissions Directive – Current Status, New Developments” took place on 9-10 June 2020, via live video conference. The workshop was organized in cooperation with TAIEX, and under the EPPA project work programme, activity 4.4 “Industrial Emissions Directive capacity building”.

The participants of the workshop came from the relevant authorities of the EPPA beneficiaries. They represented the relevant Ministries (with the environment portfolio) and other institutions with industrial emission inspection responsibilities (Environment Agencies, Inspection Services and one hydrometeorological institute). Details are available in the list of participants.

Civil society was represented by NGOs from the beneficiaries, namely: Co-PLAN Institute for Habitat Development (Albania), Center for Ecology and Energy (Bosnia and Herzegovina), Green Home (Montenegro), Eko-svest (North Macedonia), Institute for Development Policy - INDEP (Kosovo*), Kados Kadikoyu Friends of Science Culture and Art Association (Turkey).

EU Delegations’ representatives in Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, and Serbia also attended.

The speakers represented EU Member States’, EU institutions’ and other countries’ experience. There were experts from Serbia, Austria (regional administrations and Umweltbundesamt – an EPPA implementing consortium member), Ireland, and the EC. Details are available in the agenda.

The presentations are available in both the TAIEX website¹ and in the EPPA project website.

The Industrial Emissions Directive

The pollutant emissions from industrial installations are regulated mainly by the Industrial Emissions Directive (IED) which was adopted on 24 November 2010. The Directive is based on a Commission proposal which originated from an extensive review of the policy, recasting seven previously existing directives (including in particular the IPPC Directive). The IED entered into force on 6 January 2011 and had to be transposed by Member States by 7 January 2013.

With IED, achieving a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT) is aimed. Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate with a permit, granted by the authorities in the Member States. This permit should contain conditions set in compliance with IED principles and provisions.

The pillars that the IED is based are: (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation.

2 Objectives of the training and expected results

The aim of the workshop was to provide advice and guidance on the Industrial Emissions Directive (Directive 2010/75/EU) and its implementation. The workshop built on the current state of implementation in the EPPA beneficiaries and the previous workshop², which was held on 19-20 November 2019, in Ankara. Special emphasis was placed on topics such as enforcement, inspections, permitting and emission monitoring.

3 Highlights from the workshop

3.1 Opening speech and introduction to the workshop

Ms. Madalina Ivanica welcomed and the participants and expressed her hopes that the workshop will address the beneficiaries needs in terms of capacity building for the IED. She noted the available expertise

¹ <https://webgate.ec.europa.eu/TMSWebRestrict/resources/js/app/#/library/detail/70586>

² <https://eppanetwork.eu/regional-workshop-on-industrial-emissions-directive-in-eppa-countries-current-status-new-development/>, <https://webgate.ec.europa.eu/TMSWebRestrict/resources/js/app/#/library/detail/69644>



of Member States experts to help participants with any issue they might be facing. Ms. Madalina Ivanica encouraged the audience to use the opportunity to engage with the experts and peers from the region. Mr. Mihail Dimovski showed his satisfaction at the beneficiary involvement in workshop. The agenda development took into consideration the needs expressed during the first workshop in November 2019 and in the training needs assessment. Mr. Mihail Dimovski then introduced the project context, including other activities connected to air quality management.

Mr. Christian Nagl introduced the workshop objectives and how the agenda sought to achieve them. The agenda focused on current developments regarding the IED, namely the monitoring and reporting of industrial emissions, the application of the polluter pays principle, and discussions and exchange of experiences.

3.2 Current status of the implementation of the IED - Progress achieved since November 2019 IED workshop, positive examples, lessons learned, future activities

The session gave the beneficiaries the opportunity to discuss their current status in terms of transposition and implementation of the IED and highlight the main challenges they see ahead to achieve both those goals.

3.2.1 Albania

Ms. Rovena Agalliu briefed the audience on the status of transposition of the IED, at around 70%, listing the main dispositions transposed so far, the competent authorities and further transposition planned for this year (BATs and permitting). She went into detail regarding a new law (52/2020), that will change the environmental permitting system in Albania. The new system only has 2 levels of environmental permits: type A and B permits, thus eliminating type C environmental permits. Recently, the National Environmental Agency was restructured and put in charge of inspection of thematic control related to IED requirements. Albania applied a Regulatory Impact Assessment to the new law for environmental permits, which identified the advantages for operators, businesses and the enforcement authorities of the new legal framework.

In parallel, Albania amended its Penal Code to include dispositions related with the environmental crimes directive, waste management, shipments of waste, dangerous activities, protection of flora and fauna, ozone depleting substances, etc.

Ms. Rovena Agalliu identified other positive examples of reform. One of them is a law from 2019 regarding environmental impact assessments procedures mandating the process to be done electronically. The new procedure aims to improve the efficiency in communication regarding the irregularities/lack of documentation, speed processing time and serve as an archival database for the EIAs.

Another positive example, under the program “Supporting Albanian Negotiation in Environment, Chapter 27” (SANE27) is the survey of IED installations. 14 have been identified, all of them holding a permit, and there is work in progress with another 8 installations. Within the same programme, Albania started preparing for its screening process. The IED section is already prepared and reviewed.

In terms of future, IPA 3 programming includes objectives to support the implementation of IED through further regulatory framework development and improved administrative capacities (monitoring and inspection). After approval of the changes in the environmental permitting system, the focus of the ministry responsible for the environment, and its subordinate institutions, will be the control and monitoring of large industrial pollutants. One-year transitional period is forecasted for the review of environmental permit types and conditions.

3.2.2 Bosnia and Herzegovina

Ms. Suada Numić (Federation of Bosnia and Herzegovina) informed the audience that the entity is adapting a new law on environmental protection, which will also serve as the foundation to accelerate approximation. Since the last workshop on the topic of IED, there was significant progress in IED’s transposition through the development of a specific rulebook (with UNDP support). It was noted that



financing administrative capacity for permitting and enforcement, as well as the reconversion of industrial installations to achieve IED compliance, will be a challenge.

Ms. Ranka Radić (Republika Srpska) informed the entity has a law on environmental protection which is harmonized with the IED at 48% (according to the last available progress report). In 2017, additional harmonization was achieved with a rulebook to prevent air pollution (amended later to better regulate LCPs, IED and Energy Community Treaty obligations). The entity does not yet have a polluter pays principle regulation. It is expected the law on environmental protection will be further amended to continue transposing the IED.

3.2.3 Kosovo*

Mr. Adem Tusha listed the legal mechanisms in Kosovo* transposing the IED. They include the law on environment protection, the law on integrated pollution prevention and control, and derivative administrative instructions for implementation. The Ministry of Economy and Environment is preparing a supplementing law in IED, with technical assistance from TAIEX, which should lead to full transposition, while addressing implementation gaps. Mr. Adem Tusha noted there are 42 identified IPPC installations in Kosovo*. 12 already have permits, while 13 are in progress. There are 12 issued permits, while another 30 are in the process of being issued. Some of the activities in Kosovo* are cement, thermal power, oil plants, recycling of used oils, municipal waste, sanitary landfills, clay blocks production, exploitation of ferronickel ore etc.

3.2.4 Montenegro

Ms. Dragana Raonic informed the meeting that in March 2019 a law on industrial emissions partially transposed the IED. Full transposition will be achieved with secondary legislation. Currently, there are already 6 bylaws, 5 rulebooks and 1 decree. In 2019 the Ministry completed an initial inventory of operators and plants falling under the IED and submitted it to the Nature and Environmental Protection Agency of Montenegro for further development and use in permitting and enforcement. The country has been investing in growing its administrative capacities to implement IED requirements.

Mr. Vladan Dragutinović informed that the Agency issued 4 IPPC permits so far. In addition, one permit was issued by Secretariat for Spatial Planning and Environmental Protection of Podgorica under previous legal arrangements. The agency is now the exclusive permit issuer in Montenegro. The 4 permits issued were for municipal waste landfills, one thermal power plant and one steel plant.

Due to the change in law in 2019, it is necessary to revise the integrated permits. The process is ongoing. In addition, Mr. Vladan Dragutinović stated that Montenegro still needs to develop a final list of all IED facilities.

3.2.5 North Macedonia

Mr. Nazim Aliti presented a quick review of the current situation in North Macedonia regarding IPPC permits. The number of installations that have submitted applications to for obtaining the A-IPPC permit is 173, and the number of installations that have submitted applications for obtaining the B -IPPC permit is 25. At the level of the country, 461 IPPC A and B IPPC permits have been issued in total. 201 A-IPPC and B-permits were issued by MoEPP and Municipalities have issued 260 B-IPPC permits.

3.2.6 Serbia

Mr. Nebojsa Redzić presented the legal framework in Serbia transposing the IED. The Law on Integrated Prevention and Control of Environmental Pollution is ready and it is expected all relevant by-laws will be completed in 2021.

Since the last IED workshop took place there are 5 new issued permits in Serbia, 2 on local, 1 on province and 2 on national level. However, permitting should continue. Of the estimated 227 installations that require a permit, only 39 have it (17%). The process is facing a number of problems. The permitting authorities are faced with incomplete applications, operators often have financial constraints, do not keep proper documentation or simply do not take the requirement seriously. On the regulatory side, the



change of legislation raises its own problems of continuity, the legal deadlines are short, and the administrative capacity is lacking.

One of the responses was a draft DSIP Implementation Plan for the Industrial Emissions Directive. The document defines the measures to be taken by the competent authorities and operators to ensure the implementation of IED, with a transitional period.

The National Emission Reduction Plan (NERP) was adopted by the Government on 30 January 2020. It covers 12 emission sources, i.e. installations in accordance with LCP/IED that belong to the “network energy” sector. There is an “Opt-out” mechanism (not to operate more than 20,000 hours from 01.01.2018 to 31.12.2023). The Ministry of Mining and Energy reports annually to the Energy Community on NERP implementation and also emission projections for scenarios taking into account ongoing investments for which financing is secured (first and second report were submitted).

The Negotiating Position for Chapter 27 - Environment and Climate Change, with all relevant annexes, was adopted by the Government on January 21, 2020, and on 22 January 2020 submitted to the European Council. It has 1650 pages. With this, Serbia has taken a major step within the process of accession to the European Union.

The Environmental Protection Agency (SEPA) is responsible for meeting the IED reporting requirements and the reporting process through the European Environment Information and Observation Network (EIONET). The reports are submitted annually to the European Environment Agency (EEA) with data from the previous year. SEPA has been working to establish a complete reporting system for the IED, for instance, by the issuance of a rulebook on development and submission of the reports as required by the Industrial Emissions Directive and E-PRTR. The purpose of the rulebook is to define responsibilities, management, organization, data sources, format and frequency of data collection, preparation of data, deadlines and submission of information to the reporting authority and further to the EEA according to the specific reporting requirements under the Industrial Emission Directive and E-PRTR Regulation. At the moment, the major monitoring and reporting gaps are the non-availability of a permit database and an inspections database.

3.2.7 Turkey

Mr. Onder Gurpinar presented that Turkey is harmonizing with IED chapters 1 and 2 through technical assistance. The draft legislation was subject to a regulatory impact assessment. The project in question recommended the creation of an implementation calendar for the existing installations. Turkey has identified 1022 installations for which it is trying to understand the status, gaps, time and financing needed to achieve compliance. The country has taken a sectoral approach: cement, metals, waste, chemicals and minerals. The result of the survey will feed into a national plan for implementation, which will include legislation development and a concrete implementation calendar.

3.3 The Industrial Emissions Directive – its recent evaluation and possible ways forward

Mr. Cosmin Codrea presented the recent evaluation of the IED and possible ways forward. The IED currently regulates around 52 000 agro-industrial installations in several sectors: energy industries, mineral industries, waste management, metal industries, chemical industries, and others like intensive livestock farming. The IED has a significant impact in regulating and reducing pollution as shown in the chart below.



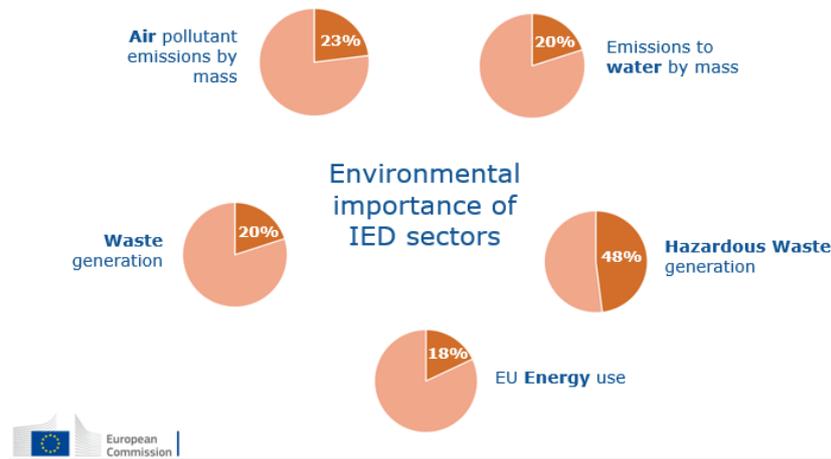


Figure 1 - Environmental importance of IED sectors

The IED evaluation was launched in May 2019. It involved an inter-service steering group from the EC and it put emphasis in stakeholder consultations via focus groups, surveys, interviews, and public consultations, which received ample input and participation. The evaluation is expected to be published soon as a Commission Staff Working Document with the study report in annex.

The evaluation was structured around 5 main criteria. Below are some of the main, preliminary conclusions per criterion.

In terms of effectiveness:

- The IED has overall been effective. It has contributed to reducing emissions and the related impacts on human health and the environment and has covered most of the important sectors although a number of polluting agro-industrial activities do not fall within its scope.
- The collaborative process to develop BREFs and identify BAT has been effective and has implicitly addressed costs. By involving experts from Member States, industry and environmental NGOs it has resulted in a high degree of consensus on the measures adopted.
- It has made a limited contribution to innovation and has been less effective at addressing circular economy, including water efficiency issues.
- BREFs have supported BAT-based permitting in Member States with a limited use of derogations reducing the distortions in the market.
- It has helped improve access to information on the environmental performance of industrial activities and strengthen enforcement and access to justice and led to simplification.
- Implementation is also key. Specific attention is needed in relation to access-to-information provisions and provisions affecting stringency, for example how BAT conclusions are implemented in permits, compliance assessment and derogations.

In terms of efficiency:

- The overall benefits of implementing BAT conclusions have been shown to substantially outweigh all the costs. There is no part of the IED where costs have been identified as disproportionate.
- There has been continuous improvement of the BREF process. There is limited evidence on overall administrative costs or their possible increase or decrease. No unnecessary administrative costs have been identified. There are mixed impacts on EU competitiveness, but no evidence is available that these are significant. There is no evidence of excessive burden.
- The IED has improved environmental sustainability. The effect on social and economic sustainability is less clear.

In terms of relevance:

- The IED is still relevant to the needs, problems and issues of the EU.
- The IED is able to respond to new or emerging environmental issues, but there are limitations due to the nature and time of the processes.
- The IED has not contributed greatly to the decarbonisation of industry and there are divergent views about whether it is relevant for this.



In terms of coherence:

- There is a high degree of coherence internally and with other policy instruments.
- The IED is internally coherent, but nonetheless, several aspects, could be further clarified. The IED is largely coherent with other environmental and wider EU policies and supports at least to some extent their delivery. There is scope for greater contribution in some areas.

In terms of EU added value, there is significant added value of the IED at EU level.

The IED will be revised in 2021, as part of the European Green Deal, and taking into account the evaluation made. It is expected the revision will have 8 areas of focus:

- There may be sectors outside the IED scope that cause high pollution and for which the IED could be an appropriate policy instrument (for instance, aquaculture, mining, cattle, mixed farms, farms slightly below the threshold)
- Comparability of Member States' implementation of EU requirements, including BAT conclusions, into permits and verification
- Contribution to reducing industry emissions to water
- Elaboration of BAT conclusions
- Public access to information, participation in decision making and access to justice
- Contribution to the circular economy
- Interaction with industry decarbonisation efforts
- Coherence with other EU legislation

3.4 Monitoring of industrial emissions – overview

Ms. Ilse Schindler and Ms. Gertraud Moser presented the IED monitoring requirements as defined in BAT conclusions. They started by highlighting the monitoring conditions that should be part of a permit in article 14 and the monitoring requirements as established in article 16 (use of BAT conclusions)³.

Ms. Ilse Schindler and Ms. Gertraud Moser went into detail on the JRC Reference Report on Monitoring (ROM) summarising information on the monitoring of emissions to air and water from IED installations, thereby providing practical guidance for the application of the Best Available Techniques (BAT) conclusions on monitoring in order to help competent authorities to define monitoring requirements in the permits of IED installations⁴. They explained, through examples, the monitoring recommendations for several pollutants. Refer to the presentation for details.

3.5 Monitoring concept Styria

Mr. Ulf Steuber presented the audience how monitoring and inspection is done in the Province of Styria (Austria). In particular, he focused on what documents and information inspection services request from operators to check compliance.

There are 100+ IED installations in Styria. The inspection process starts 6 months before the site inspection to allow for coordination between the authorities and operators. All inspections start with a request for the installation's plan according to the permit and a certification that the installation, and the operation of the installation, is in compliance with the law and the permits.

The inspection then focused on topics. For noise, the experts usually decide at the first inspection what kind of documentation will have to be provided depending on the nature of the installation. If there are noise restrictions in the permit these will be checked for implementation and an official monitoring unit will make the necessary control measurements of ambient noise.

For air emissions, the installation has to provide a plan of all emission points and the latest verification of compliance with the applicable emission limit values for each emission point. For air quality, the

³ Supporting documents for permit writing authorities regarding the application of BAT conclusions for monitoring requirements: https://eippcb.jrc.ec.europa.eu/reference/BREF/ROM/ROM_2018_08_20.pdf

⁴ <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/jrc-reference-report-monitoring-emissions-air-and-water-ied-installations-industrial#:~:text=This%20JRC%20Reference%20Report%20on,help%20competent%20authorities%20to%20define>



installation should provide information on fuels used and other air emission documents. The information provided is checked against measurements performed by an official monitoring unit.

For water as wastewater management, installations must provide a plan of water usage and evidence of compliance with ELVs based on self-monitoring and the 2 most recent results of external monitoring.

Waste management compliance is assessed based on the valid waste management concept for the installation. Fire, lightning, and explosion protection are checked against the respective disaster preparedness plans.

The risks of flooding in relation to the activities and dangerous materials within the installation are assessed by an official monitoring unit. If the inspection services find that dangerous parts of the installation might be subject to flooding, they may order that appropriate preventive measures are taken. Inspections also take into account chemical storage and management, for which installations must have a list with maximum stock quantities and location, indication of H-rates and manipulation quantities per year (baseline report), and safety data sheets and data of suppliers.

Soil management is inspected only for intensive rearing of poultry or pigs. The installations should provide information through a manure calculator, a list of owned and rented areas, and a list of where animals are kept.

Finally, installations are also expected to provide information about their environmental management system. If the system is certified, it is sufficient to provide declarations of conformity and audit reports. If it is not, then the installation has to provide, as indicated in BAT, the commitment of management, definition of environmental policies, planning and establishing the necessary procedures, implementation of the procedures, etc.

3.6 Monitoring concept Linz

Mr. Herwig Marhold presented the IPPC inspection procedures in the city of Linz (Austria). Linz is the capital of Upper Austria, with app. 210.000 inhabitants. It is the biggest agglomerated industrial area in Austria. There are app. 40 IPPC-plants for the production of steel, bulk chemicals (ammonia, nitric acid, urea, fertilizer, pesticides), fine chemicals, and pharmaceutical products. The local government maintains a Department for Environment and Engineering with 40 technical experts in areas such as air, noise, waste, water, plant safety and construction. In addition, there are ten employed legal experts in the Department for Legal Affairs.

Inspections are always done by teams (technical and legal experts). There is an annual inspection plan designed on several criteria, including the environmental impact of the plant (substances, process technology, waste gas / wastewater treatment techniques) and time since last inspection. The city does app. 10 – 12 inspections per year.

The technical experts (air, waste, water) determine the general issue of inspection: current production or productions (multi-purpose plants), storage or emission treatment. In addition, each expert defines special points of interest depending on legal requirements (e.g. gaseous emissions from production or storage). The requirements (permit, BREF), complete documentation (process, equipment, substances) and history (dossier) are basics for planning. The plant manager is asked to prepare a summary of all



monitoring reports (e.g. of the last year or since the last inspection). This information is imported into a checklist, which contains the following sections:

- EMAS-Certificate or ISO 14000, documentation of self-control on legal compliance (Austrian law)
- Production data and production capacity
- Waste management and documentation
- Control of legal compliance (e.g. EU-directives, legislation, permit)
- Changes of the production method or the production equipment (since last inspection)
- Monitoring of emission reduction equipment. Monitoring of storage equipment
- Olfactory control of emissions
- Control of Incident List
- Safety valves (response pressure, vent off amount, substances, blow-down system)
- BAT-compliance, IPPC-conformity
- List of taken reports

Once all the planning and preparation is completed a physical inspection takes place. The inspection team will visit the plant, checking the equipment, seeing how the work is done, climb chimneys or roofs, following waste gas pipes from source to gas treatment, meeting with plant manager, and technicians. It is important to note that inspection is teamwork between plant management and the inspection team. Finally, the collected information is combined in the inspection report. The principle points are: monitored emission data vs. emission ceilings, used equipment vs. documented equipment, aggregation of all observations, conclusions and policies. The inspection report is given to the legal authority.

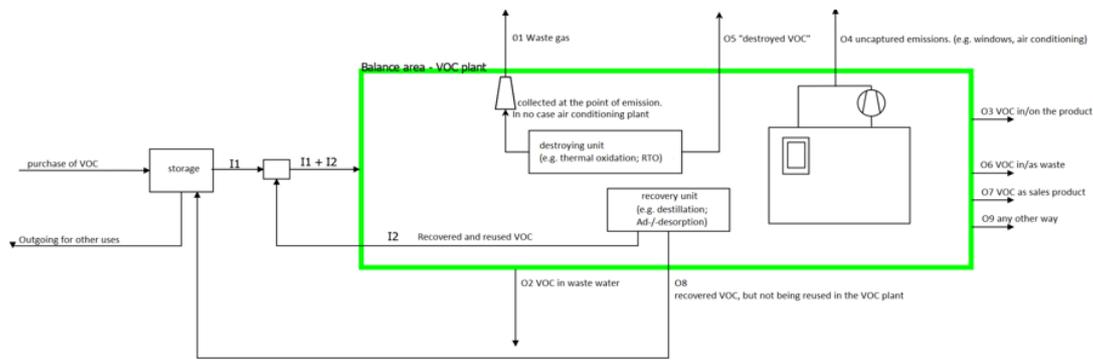
3.7 Surface treatment using solvents – BAT conclusions

Ms. Gertraud Moser presented the key findings of BAT conclusions for surface treatments using organic solvents. Given the complexity of the topic she presented some examples in broad strokes (without all information of the BAT conclusions (e.g. techniques, footnotes, parameters, etc.). Those examples included monitoring solvent mass balances, emissions in waste gases, emissions to water, energy management and energy efficiency, water use and wastewater generation, coating of vehicles, etc. Refer to the presentation for details.

3.8 VOC Monitoring concept and solvent budget in Vorarlberg

Mr. Günther Amann presented the calculation of VOC budgets in the Province of Vorarlberg (Austria). The Province has approximately 400 000 inhabitants, and around 40 VOC plants over the threshold, while 5 are “solvent IPPC plants”.





Mass balance (In = Output)

$$I1 + I2 = I2 + O1 + O2 + O3 + O4 + O5 + O6 + O7 + O8 + O9$$

$$\Rightarrow I1 = O1 + O2 + O3 + O4 + O5 + O6 + O7 + O8 + O9$$

$$F = I1 - O1 - O5 - O6 - O7 - O8 \quad \text{fugitive limit [\%]} = F / I1 + I2$$

$$\text{or } F = O2 + O3 + O4 + O9$$

Figure 2 - Mass balance of VOC

A proper calculation of mass balance will have input (I) equal to output (O), excluding storage, recovered and reused VOC. It is the fugitive limit that corresponds to emissions. In order to understand the formula and the graph above, it is important to note the key:

- I1 is VOC input
- I2 is recovered and reused VOC
- O1 is waste gas
- O2 is VOC in wastewater
- O3 is VOC in the product
- O4 is uncaptured emissions (windows, air conditioning, etc.)
- O5 is destroyed VOC through thermal oxidation, or RTO
- O6 is VOC in/as waste
- O7 is VOC as sales product
- O8 is recovered VOC, but not reused
- O9 is any other way

The fugitive limit, or VOC emissions are the sum of O2 (VOC in wastewater), O3 (VOC in the product), O4 (uncaptured emissions), and O9 (other ways), and I2 (recovered and reused VOC).

It is important to accurately monitor and calculate the amount of destroyed mass flow (O5). It is a measure subject to frequent mistakes because of the use of wrong chemical information regarding the organic compounds undergoing oxidation. There are 3 methods to determine O5: short term measurements with extrapolation, long term measurements with extrapolation and continuous measurements. The accuracy grows with each measurement method, but so do the costs. The decision has to be made based on the percentage of O5 in the total inputs and RTO capacity. The O5 measurements can have great impact on the compliance with fugitive emissions limits, especially because in some plants it can go up to 80% of all inputs, and therefore be key for policy effectiveness. Test, continuous measurements made over 3 days show that short term, or even long-term periodic observations, based on which extrapolation is made, can be misleading. Such temporary measurements can be made at peak or low emission times, therefore giving a skewed representation of actual median emission levels.

In conclusion, accurate mass balances might require the systematic use of continuous measurements even when they are below the IED threshold. Every installation case is unique and with different financial constraints, and therefore the experts, authorities and operators have to work together to find way to create accurate measurements and reporting.

3.9 Reporting of industrial emissions under PRTR, EIONET

Ms. Brigitte Winter presented the Austrian practices regarding the reporting of industrial emissions under PRTR. She started with the legal background in the EU and Austria. Austrian law includes the use of an electronic register called EDM for PRTR purposes. The PRTR, as it was transposed in Austria, seeks to grant public access to environmental data on releases and waste transfers (www.prtr.at), to provide for public information and participation. PRTR, however, cannot be used to evaluate the environmental performance of installations, for inspections and to implement measures for emission reduction. The system records offsite transfers in the form of hazardous and non-hazardous waste and pollutant releases to air, water and land. There are 65 activities covered by PRTR reporting obligations, grouped in 9 sectors⁵ with 91 pollutants⁶, including GHG (e.g. CO₂, CH₄, N₂O, SF₆), other gases (e.g. NO_x/NO₂, CO, SO₂), heavy metals, pesticides, chlorinated organic substances, other organic substances, inorganic substances.

There are about 280 facilities that need to report in Austria. They are those facilities where activities listed in Annex I of the EU PRTR Regulation are carried out, where the capacity thresholds for the Annex I activity are exceeded, where the annual pollutant releases and transfers to air, water and soil exceed the Annex II pollutant thresholds, and where the annual waste transfers exceed the threshold of 2 t/a for hazardous waste and 2,000 t/a for non-hazardous waste.

Data is reported by the operators into the electronic system where it is verified and validated by the competent authority in a first step and then by the Environment Agency Austria (Umweltbundesamt). The validated data is then sent to the EC for the EU PRTR website⁷, and used in Austria to report to the national public via a dedicated PRTR website⁸. The data is validated by Umweltbundesamt for consistency with other reporting obligations, consistency across the years and consistency across facilities with the same activity by a team of about 20 experts from different departments (air, waste, water, agriculture). Consistency checks are also done with other reporting obligations. For air quality management the cross validation is made with emissions trading data for CO₂, data reported according to LCP-Directive, and data reported under the Waste Incineration Directive.

When there are consistency errors, the Umweltbundesamt experts call operators to clarify inconsistencies. If needed Umweltbundesamt requests operators to improve its report and resubmit it. If operator does not resubmit, a consistency error is registered in the ePRTR. Competent authorities are responsible for follow-up. After resubmission, the QA/QC cycle starts again.

EIONET is the European Environment Information and Observation Network. It is a partnership network of the European Environment Agency (EEA) and its 38 members and cooperating countries. EIONET hosts both publicly accessible information and information only accessible by logged in users. E-PRTR & LCP Integrated Data Reporting is also available⁹.

3.10 Plausibility checks of reported emissions, examples from Styria

Mr. Ulf Steuber presented how the Province of Styria does plausibility checks of reported emissions through inspections. The checks are made in 3 stages: preparation, report check and site visit.

In the preparation stage, inspectors look at the relevant permits, the permitted emission points, the applicable legal requirements, and the measurement requirements. In the report checking stage, inspectors will evaluate if there are measurement reports for the relevant emission sources, if the monitoring organization information is complete, if the measurements requirements are fulfilled, if the measurements match with ELVs, and any other issues that might be present in the permit.

The last stage is the site visit. The inspectors will check if the system matches the permits, in its components and in its entirety, if the measurements reports match reality and if measures are taken correctly.

⁵ Energy, metals, minerals, chemicals, waste and wastewater management, paper and wood production/processing, livestock and aquaculture, food and beverages, and others.

⁶ 60 pollutants to air, 71 pollutants to water, 61 pollutants to soil

⁷ <https://prtr.eea.europa.eu>

⁸ www.prtr.at

⁹ https://cdr.eionet.europa.eu/help/eprtr_lcp



3.11 Reporting, plausibility checking, public participation in Ireland

Mr. Leo Sweeney presented Ireland's experience with reporting under IED and its public participation mechanisms.

The purpose of environmental reporting is to fulfil its accountability regarding environmental efforts in their activities, to promote communication of organizations and to provide useful information to decision making of interested parties. Environmental reporting has two fundamental functions, external (or social) function and internal function, which promotes environmental efforts in organizations' activities.

Environmental reporting can have several objectives. The first objective of reporting on regulation activities is to inform the public how the competent authorities are protecting the quality of the environment by ensuring compliance with environmental rules. Reports should also inform the public about enforcement activities and the actions taken in a case of non-compliance, in particular the enforcement actions taken by the competent authority to ensure compliance in future. The second objective of reporting is to evaluate the work done by the environmental regulator and the way financial and human resources were used. The third objective of reporting is to provide feedback on the effectiveness of legislation in protecting the environment and whether the rules are adequately formulated so that compliance can be enforced. A fourth objective of reporting is to evaluate environmental regulatory activities nationally and provide the government or the central level feedback on how the environmental have managed to fulfil their responsibilities. Such reporting is not a subject of this paper. A fifth objective of reporting is to fulfil national and European legal reporting requirements under the IED.

Three primary pieces of legislation dealing with reporting requirements under IED include:

- Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
- Recommendation 2001/331/EC providing for minimum criteria for environmental inspections in the Member States (RMCEI)
- Directive 2010/75/EU on industrial emissions – reporting requirements (IED)

The RMCEI provides essential guidance for the planning and reporting of inspections. It defines inspection which includes checking and promoting compliance as well as routine and non-routine site visits and audits; deals with reporting of inspection activities; specifies that the key objective is to report on the level of compliance; provides for investigations of serious accidents, incidents and occurrences of non-compliance; specifies that reports and conclusions should be in writing and available on a readily accessible database to the public; Member States should report to the Commission on environmental inspection activities in general. In this regard, IMPEL has prepared a series of guidance documents on the RMCEI regulation, and published a Reference Book for Environmental Inspection.

The IED sets out specifying reporting requirements related primarily to air emissions under the following Articles:

- Article 55 Reporting and public information on waste incineration plants and waste co-incineration plants – deals with the making available to the public of permit application as well as the functioning, monitoring and level of emissions related to incineration plant >2 tons or more per hour.
- Article 62 Reporting on compliance – requires operators with data enabling the regulator to verify compliance with either emission limit values in waste gases, fugitive emission limit values and total emission limit values, permitted derogations or specified operations using VOCs.
- Article 72 Reporting by Member States – A15(4) allows the permitting authority under certain specific circumstances, to set less strict emission limit values in the permit than the emission levels associated with the best available techniques. Member States are required to report derogations granted to the Commission. Report also required on certain categories of



combustion plant to establish an annual inventory of the sulphur dioxide, nitrogen oxides and dust emissions as well as energy input.

Mr. Leo Sweeney then gave an example of how IED is reported in Ireland¹⁰. The website of the Environment Protection Agency includes a webpage for every IED permit application. On those pages it is possible to read the entire documentation package associated with the permit, namely the applicant's documents, EPA documents, Third Party documents, and law enforcement documents. The public also has the option to submit information or complaints about the permit or its enforcement. Every permit includes a chapter on the reporting requirements.

Moreover, the EPA provides aggregate compliance information to the public¹¹ and access to various reports related to IED activities¹². The Agency developed a system to rank industrial and waste licensed sites in order of priority for enforcement. The National Priority Sites List is used to target enforcement effort at the poorest performing sites in order to drive improvements in environmental compliance. The list is public causing the installations in the list to make efforts to drop out of the list as soon as possible. Mr. Leo Sweeney concluded that all IED permitting and enforcement information should be made available to the public in line with the requirements of Aarhus Convention. Public participation in environmental decision-making processes should be ensured, namely by making provisions for the public to make comment, observation, complaints etc. There should a focus on electronic reporting (online) and availability to the public. Finally, annual reporting of environmental information is preferable to intermittent reporting (other than incidents).

3.12 Plausibility checks of reported emissions, examples from Linz

Mr. Gerald Binder presented the city of Linz experience with the checks of reported emissions. He explained each one of the components of the plausibility check:

- Assessing the conditions for plausibility checks (normative regulations, permits, reporting requirements, etc)
- Creation and use of a regulation catalogue and checklists for Authority experts
- Use of the Linz Air Quality Monitoring Network to provide an alert system and for data comparison. The monitoring includes both data from ambient air quality monitoring as well as from emission monitoring.
- Inspection bodies and experts must be technically qualified; the inspection bodies should be accredited.
- For emission monitoring it is important that the emission sources are properly assessed, and the sampling points are properly defined. This is important for accurate and reliable measurements. In addition, individual emission measurement should use standard reference methods
- There should quality assurance and calibration of the automated monitoring systems as well as quality assurance for data acquisition and handling.
- The results of the plausibility checks are put in report format for the relevant authorities.

3.13 Polluter pays: example from Serbia

Mr. Nebojsa Redzic presented the implementation of the polluter pays principle in Serbia.

The whole system of fees for environmental protection is prescribed by the law on fees for the use of public goods. This law regulates fees for the use of public goods, as follows: payer, basis, amount, method of determination and payment, affiliation of income from fees, as well as other issues of importance for determining and paying fees for use of public goods. The only matter that is not regulated by this law is the method of data collection and this issue is regulated for each fee separately.

¹⁰ Example: <http://www.epa.ie/terminalfour/ippc/ippc-view.jsp?regno=P0207-04>

¹¹ <https://www.epa.ie/industrialwastedata/2019overview/>

¹² <https://www.epa.ie/enforcement/>



There are 2 types of fees: those under the polluter pays principle¹³ applicable to emissions of SO₂, NO_x and PM, waste, direct wastewater discharge and environmental protection and improvement. The second category of fees are under extended producer responsibility¹⁴ applicable to ozone depleting substances, plastic bags, special waste streams, packaging, and indirect wastewater discharge.

Fee description	Fees paid by	Nr of entities paying the fee	Fee - unit of calculation and amount/unit	Total amounts collected in 2018	Beneficiary of the fee collected
Emissions of SO ₂ , NO _x , PM	IPPC facilities and asphalt production plants	204	The amount of emissions in tons (t) SO ₂ : 77.7 EUR NO _x : 62.2 EUR PM: 124.4 EUR PM (asphalt fac.): 1204.1 EUR	49.6 ME	60% National level, 40% Local Self-Governments
Waste generation and disposal	IPPC facilities and public utility services	206	The amount of produced or disposed hazardous waste in tons (t) Hazardous landfilled waste: 13.2EUR		60% National level, 40% Local Self-Governments
Direct wastewater discharge	All facilities which discharge wastewater	Around 1100	The amount of discharged wastewater in cubic meters (m ³) and the amount of pollution in discharged wastewater in kilograms (kg)	?	100% National
Environmental protection and improvement	All facilities which pollute environment	?	The amount of pollution, ie the degree of negative impact on the environment that occurs by performing activities.	?	100% Local Self-Governments

Table 1 - Polluter pays fees in Serbia (2019 data, unless otherwise stated)

The fees are calculated by multiplying the emission by the value per unit. Emissions are calculated from activity data which are collected in Serbian National Register of Pollutant Sources (PRTR registry). There are two institutions involved. Serbian Environmental Protection Agency (SEPA) does the activity data reporting, validation and report preparation. The MoEP does the fee calculation, invoice preparation and ensuring payment.

There are conditionalities that may reduce the fee (through a later refund). That conditionality assumes the operator is engaging to reduce pollution and is therefore rewarded with a reduced fee. The conditions are:

- if it obtains an integrated permit;
- if the funds for which the return is made, ie the fee is reduced, are used for the implementation of the program of adjusting the operation of the existing plant to the prescribed conditions;
- if, on the basis of the inspection report on emission measurement, it is determined that the environmental pollution has been reduced below the prescribed limit values, ie the amount of waste produced or disposed of has been reduced.

SEPA uses an information system called NRIZ to collect the relevant information. It is one of the most important subsystems of the environmental information system in the Republic of Serbia, which is, according to the current legislative, lead by SEPA. This information system was developed in the SEPA with financial help of the Kingdom of Norway. All data is collected in NRIZ. There is no alternative method for submitting data, what is not in NRIZ IT system it is not submitted. It is bilingual – Serbian, English.

¹³ polluter pays principle is enacted to make the party responsible for producing pollution responsible for paying for the damage done to the natural environment.

¹⁴ extended producer responsibility (EPR) is a strategy to add all of the environmental costs associated with a product throughout the product life cycle to the market price of that product.



Based on the stored data it is possible to create dozens of analytical reports which are, according to requests, submitted to interested parties.

There are however problems with companies submitting the data late, incorrectly, or not at all. SEPA follows up with the companies directly. When compliance is not forthcoming, SEPA passes information of the companies to inspectors for a level up enforcement push. The last step are misdemeanour or criminal procedures.

Mr. Nebojsa Redzic noted from his experience that companies that pay a polluter pay fee simply calculate the amount of the fee in the value of the product, so that the fees are not the burden of the company, but of the end customer. Consequently, the data shows only small changes through the years, meaning companies do not reduce their emissions or waste amount.

Future steps to improve the polluter pays system in Serbia will have to:

- Expand the list of pollutants
- Expand the list of activities
- Increase the amount of the fee (if it is not high enough because there is no incentive effect to reduce emissions)

At the end, and following questions from the audience, Mr. Nebojsa Redzic clarified that the fees collected can be used in 21 activities defined in the law for environment. At the moment, a significant part of the fees are being reinvested in the recycling system.

3.14 Discussion among participants, exchange of experience, specific questions to speakers

The workshop concluded with a session of Q&A and discussion based on the topics presented previously. One question arose regarding the emission measurement points in facilities that can have hundreds of emission points. As a reply, it was suggested that the best approach is to find the most polluting emission points, usually the ones that are associated with the heaviest parts of the production process in question. Should the points have similar levels of emissions, the operator should differentiate the points where clean vs. contaminated air is expelled. In addition, inspection and permitting services should encourage operators to reduce the number of emission points over time. One way can be to force the monitoring of many emission points, which will carry high costs for the operator.

A second question arose regarding stack heights, especially if there was any particular standard used in member States. In Austria and Ireland, stack height is determined by the surrounding area topography and predominant meteorological conditions.

A third question was raised about how member states deal with inspection planning based on risk criteria. In the Irish example, inspection planning is guided by risk: the greater the risk, the greater resources for enforcement are devoted to it. The risk-based approach informs the entire enforcement effort. There are 5 pillars to the system: 1) complexity of activity, 2) nr, type and volume of emissions, 3) surrounding environment sensitivity, 4) operator quality of management (compliance levels, complaints, incidents, accidents, etc), and 5) compliance history. The results of an evaluation based on the criteria aforementioned list installations in 3 risk ratings (which are now defined as classes, as the term “risk” is deemed to be misleading in this context): high, medium, low. Based on that information, the inspection planning is determined annually, and always subject to change the following year. Ireland also developed a priority enforcement list, which marks operators that need special enforcement attention. The Irish system is proportional, transparent, works well, and it is accepted by the operators. It has shown to be a driver for environmental improvement and compliance with permit conditions.

There was one final question regarding the required minimum monitoring frequency for PCDD/F (dioxins and furanes) for ferro-alloy. According to the BAT conclusions of non-ferrous metal industries the monitoring frequency is once a year.

4 Conclusions

The workshop achieved its goals by providing a better understanding of the challenges and tasks connected with the implementation of the IED and by offering EU Member States experience with the IED in terms of enforcement, inspections, permitting, emission monitoring/reporting, and the application of the polluter pays principle.



The beneficiaries' presentations regarding their progress with the transposition and implementation of the IED showed that, in general, further regulatory framework development and improved administrative capacities (monitoring and inspection) are needed. For some, there is also concern with the economic burden that will be put on the industrial sector to reconvert to cleaner production processes. The issue is also present with energy production, a sector still highly dependent on old thermal power plants.

In terms of enforcement, most beneficiaries are still developing accurate inventories of installations that need IED permits and some are looking into business needs in terms of achieving better compliance. As a consequence, there are a large number of IED permits to be issued by the beneficiaries to achieve full regulatory control over industrial emissions. Monitoring and reporting infrastructures already exist, but they will need further development to handle effectively and efficiently a fully regulated industrial sector. On the side of operators there is a need to raise their awareness and capacities to deal with the permitting process and, later, compliance to the issued permits.

Finally, in terms of future policy developments, the results from the recent EC evaluation of the IED show the directive has been fit for purpose and it constitutes a relevant, and effective, mechanism to control industrial pollution. Nevertheless, the results achieved are not as impactful as desired in terms of environmental preservation. The directive will likely be revised to improve its environmental governance effects. The main revisions might include new industrial sectors, contributions to circular economy, contributions to decarbonization, among other, more technical aspects.

Workshop outputs

The workshop's main outputs were:

- Review of the state of alignment with the IED, and its implementation, in EPPA beneficiaries
- Enhanced understanding of the challenges and tasks connected with the implementation of the IED
- Enhanced exchange of experiences, and knowledge, between the beneficiaries and EU Member states regarding the IED, especially enforcement, inspections, permitting, emission monitoring/reporting, and the application of the polluter pays principle.

5 Evaluation

The participants were asked to evaluate the workshop by TAIEX using an online survey after the event. The evaluation results are presented below in a summary table.



Evaluation Type	Question / Expert name / Comment	No. Responses	Expert Score	Yes / Excellent	No / Good	Partially / Satisfactory	Do not know / Poor
Workshop - participant - A. Questions	1. Was the workshop carried out according to the agenda	31		28 (90%) Yes	2 (6%) No	1 (3%) Partially	Do not know
Workshop - participant - A. Questions	2. Was the programme well structured?	31		29 (94%) Yes	No	2 (6%) Partially	Do not know
Workshop - participant - A. Questions	3. Were the key issues related to the topics addressed?	31		28 (90%) Yes	No	3 (10%) Partially	Do not know
Workshop - participant - A. Questions	4. Did the workshop enable you to improve your knowledge?	31		27 (87%) Yes	No	4 (13%) Partially	Do not know
Workshop - participant - A. Questions	5. Was enough time allowed for questions and discussions?	31		28 (90%) Yes	No	3 (10%) Partially	Do not know
Workshop - participant - A. Questions	7. Do you expect any follow-up based on the results of the workshop (new legislation, new administrative approach, etc.)?	31		25 (81%) Yes	6 (19%) No	Partially	Do not know
Workshop - participant - A. Questions	8. Do you think that further TAIEX assistance is needed (workshop, expert mission, study visit, assessment mission) on the topic of this workshop?	31		28 (90%) Yes	3 (10%) No	Partially	Do not know
Workshop - participant - B. Expert ratings	Mr. Amann, Guenther - Speaker MS	27	87.96%	15 (56%) Excellent	11 (41%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Mr. Binder, Gerald - Speaker MS	28	85.71%	13 (46%) Excellent	14 (50%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Mr. Sweeney, Leo - Speaker PP	28	88.39%	15 (54%) Excellent	13 (46%) Good	Satisfactory	Poor
Workshop - participant - B. Expert ratings	Mr. Redzic, Nebosja - Speaker CC	26	83.65%	12 (46%) Excellent	11 (42%) Good	3 (12%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Ms. Moser, Gertraud - Speaker MS	27	87.03%	14 (52%) Excellent	12 (44%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Ms. Winter, Brigitte - Speaker MS	28	86.6%	14 (50%) Excellent	13 (46%) Good	1 (4%) Satisfactory	Poor



Workshop - participant - B. Expert ratings	Mr. Marhold, Herwig - Speaker MS	28	85.71%	13 (46%) Excellent	14 (50%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Ms. Schindler, Ilse - Speaker MS	28	84.82%	12 (43%) Excellent	15 (54%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - B. Expert ratings	Mr. Steuber, Ulf - Speaker MS	28	88.39%	16 (57%) Excellent	11 (39%) Good	1 (4%) Satisfactory	Poor
Workshop - participant - C. Logistic Ratings	1. Conference venue	18		15 (83%) Yes	2 (11%) No	1 (6%) Partially	Do not know
Workshop - participant - C. Logistic Ratings	2. Interpretation	16		14 (88%) Yes	1 (6%) No	1 (6%) Partially	Do not know
Workshop - participant - C. Logistic Ratings	3. Hotel	9		3 (33%) Yes	5 (56%) No	1 (11%) Partially	Do not know
Workshop - participant - C. Logistic Ratings	4. Flight	9		3 (33%) Yes	5 (56%) No	1 (11%) Partially	Do not know
Workshop - participant - C. Logistic Ratings	5. Catering	9		3 (33%) Yes	5 (56%) No	1 (11%) Partially	Do not know
Workshop - participant - D. Comments	online meetings is no more sufficient						
Workshop - participant - D. Comments	Workshop could be better streamlined in line with the agenda and be more focused on the topics.						
Workshop - participant - D. Comments	The workshop was very helpful.						
Workshop - participant - D. Comments	I would like to know if there are experiences from other countries regarding the fee for the license, whether it is charged for issuance, for possession or on other grounds.						
Workshop - speaker - A. Questions	1. Did you receive all the information necessary for the preparation of your contribution?	4		4 (100%) Yes	No	Partially	Do not know
Workshop - speaker - A. Questions	2. Has the overall aim of the workshop been achieved?	4		3 (75%) Yes	No	1 (25%) Partially	Do not know



Workshop - speaker - A. Questions	3. Was the agenda well structured?	4	4 (100%) Yes	No	Partially	Do not know
Workshop - speaker - A. Questions	4. Were the participants present throughout the scheduled workshop?	4	1 (25%) Yes	No	3 (75%) Partially	Do not know
Workshop - speaker - A. Questions	5. Was the beneficiary represented by the appropriate participants?	4	3 (75%) Yes	No	1 (25%) Partially	Do not know
Workshop - speaker - A. Questions	6. Did the participants actively take part in the discussions?	4	1 (25%) Yes	1 (25%) No	2 (50%) Partially	Do not know
Workshop - speaker - A. Questions	7. Do you expect that the beneficiary will undertake follow-up based on the results of the workshop (new legislation, new administrative approach etc.)	4	Yes	No	Partially	4 (100%) Do not know
Workshop - speaker - A. Questions	8. Do you think that the beneficiary needs further TAIEX assistance (workshop, expert mission, study visit, assessment mission) on the topic of this workshop?	4	4 (100%) Yes	No	Partially	Do not know
Workshop - speaker - A. Questions	9. Would you be ready to participate in future TAIEX workshops?	4	4 (100%) Yes	No	Partially	Do not know
Workshop - speaker - C. Logistic Ratings	1. Conference venue	2	Yes	No	2 (100%) Partially	Do not know
Workshop - speaker - C. Logistic Ratings	2. Interpretation	2	2 (100%) Yes	No	Partially	Do not know
Workshop - speaker - C. Logistic Ratings	3. Hotel	1	Yes	No	1 (100%) Partially	Do not know
Workshop - speaker - C. Logistic Ratings	4. Flight	1	Yes	No	1 (100%) Partially	Do not know
Workshop - speaker - C. Logistic Ratings	5. Catering	1	Yes	No	1 (100%) Partially	Do not know
Workshop - speaker - D. Comments	A lot of the questions don't go together with a video conference. For doing a video conference in my opinion video and audio signal should be tested with each participant in advance. Sometimes it was very hard to hear them. I would also prefer that the cameras are on. The disadvantage of a video conference is, that it is very clinical and if the videos are of, this problem increases. Nevertheless I know the reason for that advise: low data transfer rates...					
Workshop - speaker - D. Comments	it was a Webinar, direct communication with beneficiary is different than in face to face meeting					
Workshop - speaker - D. Comments	Workshop Programme should be sent earlier. Timetable for Duries of Speakers should be done					



Endnotes

* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.



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