



Under the Convention on Long Range Transboundary Air Pollution

State of progress of the work plan implementation, TFTEI activities

TFTEI technical secretariat
Nadine Allemmand (CITEPA)
Carmen Schiel (KIT)

*TFTEI steering group meeting
16 October 2018 - Brussels, Belgium*

Agenda

- Reports on VOC emissions
 - Development of a “code of good practice for solid-fuel burning and small combustion installations based on BAT”
 - Report on costs of reduction techniques for
 - Cement industry
 - Aluminium industry
 - Development of the clearing house
 - Outreach activities
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Coating of passenger cars

Report

http://tftei.citepa.org/images/files/costs_reduction_techniques_large_users_solvents/TFTEI-VOC-car-industry-final.pdf

Report largely used as reference and sources of data to complement the chapter on car manufacturing in the draft BREF STS (issued by EU JRC IPTS)

Packaging Printing Sector

Plants

Solvent Consumption > 200t/a

Technologies

Printing: *Flexography, Rotogravure*
Laminating
Coating
(Cleaning Agents)

Primary
Measures

Substitution: Water-based inks, UV curing inks, solvent-based inks with lower solvent content
Better capture rate and management of solvents

Secondary
Measures

Oxidation: Recuperative (with or without catalyst)
Regenerative

Adsorption and Solvent Recovery

Report

Report finalized with hardly any industry collaboration,
focus of KIT on development of ERICCa_VOC

ERICCa_VOC

Implementation of ERICCa_VOC

- Implementation completed with comments from TFTEI technical secretariat and industry
- MS-Excel tool without VBA support
 - ⇒ Ensures compatibility
 - ⇒ Facilitates future adaptations
- Tool can be downloaded from the website:
<http://tftei.citepa.org/en/work-in-progress/costs-of-reduction-techniques-for-large-users-of-solvents>

Functions

- Cost calculation for primary and secondary VOC abatement measures (2°: oxidation and adsorption)
- Integrated contemplation or individual calculation of measures (e.g. only oxidation) possible
- Consideration of the solvent management plan is possible

Documentation

- Technical document

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Workplan 2018-2019



Following the recommendations of the Policy Review Group (PRG) of the LRTAP Convention

Item 2.3.8 -

Description - Integration of additional measures in the TFTEI Clearing House for Control Technologies, and *development of a code of good practice for solid-fuel burning and small combustion installations based on BAT*

Deliverables

Update of the TFTEI database; *draft code of good practice for solid-fuel burning and small combustion installations based on BAT*

To be submitted to WGSR_57 in May 2019

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Cement production

Request

- Update the TFTEI reports made in 2003 and in 2011 for the revision of the Gothenburg Protocol

Techniques considered

- ⇒ Primary measures
- ⇒ Secondary : Selective Non Catalytic Reduction (SNCR) and Selective Catalytic Reduction (SCR)

Pollutants

- SO₂
- Dust
- NO_x
- HM
- Cooperation with industry to collect investment for SNCR and possibly SCR (CEMBUREAU), for SO₂ and PM reduction techniques (update of documents developed in 2003 and 2011, Gothenburg Protocol revision)
- The work on cement is executed by CITEPA (Nadine Allemand and Etienne Feutren)

Costs

Organization

Report on Emissions of the Aluminium Industry

Request

- Provide a sector specific document with techno-economic information on the abatement of emissions to air from the aluminium industry

Industry overview

- Primary and secondary production
 - ⇒ Focus on primary
 - ⇒ Emissions of secondary production depend primarily on the fuel in use for smelting
- Processes:
 - Alumina production
 - Anodes production
 - Aluminium production

Pollutants

- **SO₂**
- **PAHs** (polycyclic aromatic hydrocarbons)
- **fluorides**
- **Dust**
- **NO_x**
- **HM**

Report on Emissions of the Aluminium Industry

Activities

- Meeting with representatives of Eurometaux and European Aluminium
- Literature survey

First insights

- BREF is a vast and up-to-date body of knowledge
 - Report will focus on summarizing/editing the most important BREF information, complemented with other references and information
- ⇒ **If there are areas of particular interest** (i.e. pollutants, production processes, etc.), **they can be covered in more detail**
- ⇒ An announcement as soon as possible would be helpful!

Organization

- The work on Aluminium is executed by KIT-DFIU (Carmen Schiel, carmen.schiel@kit.edu)

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Implementation and update of several web pages and updates of information

- Implementation of a web page on SO_x emission reduction with
 - Main sources of SO_x emissions
 - Sulphur content of fuels
 - General approaches to reduction SO_x emissions
 - Development of techniques (from information delivered by stakeholders)
- Reduction of dust emissions (including PM₁₀, PM_{2.5} and BC)
 - Definition and main sources
 - General approaches to reduce dust emissions
 - Main characteristics of reduction techniques
 - Information provided by stakeholders
- Reduction of POP emissions
 - Definition, impacts on human health and environment
 - Origin and formation processes
 - Abatement technologies

Current status of the clearing house

Implementation of a web page on Mobile Sources

- The mobile sources web page is currently under development

Structure

Road vehicles

- Mopeds and motorcycles
- Light duty vehicles
- Heavy duty vehicles (trucks, buses)

Non-road mobile machinery (NRMM)

- Handheld and non-handheld equipment (household, gardening, agricultural and forestry machinery)
- Industrial, construction, agricultural and forestry machinery
- Railcars, locomotives

Inland waterways

- Compression ignition engines (passenger ships, freight vessels)

Implementation of a web page on Mobile Sources

References

- Guidance Document on Emission Control Techniques for Mobile Sources
- Best Available Techniques for Mobile Sources in support of a Guidance Document to the Gothenburg Protocol of the LRTAP Convention - Technical Report

Further Information

- Links and further documents can be integrated
⇒ If you are aware of interesting reports, documents, websites, etc. please contact us

Information provided by stakeholders in 2018

- Two documents provided by stakeholders for analysis by the clearing house committee of October 2018:
 - ✓ Dry Injection of Sodium Bicarbonate Based Sorbent in flue gases for Air Pollution Control by Solvair
 - ✓ Thermal Oxydiser System for Pentane by Babcock Wanson

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Joint Meeting with EECCA-CG

- Joint meeting of the EECCA-CG and TFTEI in St. Petersburg in September 2018
- Presentation of
 - ERICCa-VOC
 - VOC Guidelines
 - Clearing house of control technologies
 - the Code of good practice for solid-fuel burning and small combustion installations in progress

Presentation at ExPPERTS Europe Conference

- The ExPPERTS Europe Conference took place in September 2018 in Wroclaw, Poland
- Aim: Exploring Power Plant Emission Reduction Techniques and Strategies
- Excerpt from the program:

Assessing emission control techniques in LCP: Techno-economic aspects and investment strategies

- Highlighting the 15 years of work for TFTEI/EGTEI (Task Force/Expert Group on Techno-Economic Issues under the LRTAP Convention): structure, achievements and future goals of the Task Force.
- Introducing ERICCA_LCP, a tool for the techno-economic assessment of emission control techniques for NOX, PM and SO2 in LCP.
- Exploring the perspective of policy and science: dealing with incomplete data and missing information.
- Deriving investment strategies based on existing or future policy schemes: conclusions for investors and policy makers.

Carmen Schiel, Research Associate, Karlsruhe Institute of Technology (KIT), Institute for Industrial Production (IIP)

- TFTEI was also prominently mentioned by Ian Hodgson from the EC

French participation to an OECD meeting on BAT

- The third OECD meeting on BAT in October 2018 in Paris, France
- Aim: examining and finalizing the first draft of the BAT Activity 3 report, with the working title: “Methodologies and Data for the Effectiveness Evaluation of BAT Policies”
- Preparing the possible next phase of the OECD work on BAT
- Reports developed by OECD: running from January 2016 to December 2018
 1. Activity 1: Policies on BAT or Similar Concepts Across the World, 2017
 2. Activity 2: Approaches to Establishing BAT Around the World, 2018
- Informal information of OECD on TFTEI activities delivered
- Possible invitation of OECD to the next Berlin Workshop in 2019

Publication in International Journals

- Infobox on TFTEI and the Clearing House in
 - International Environmental Technology

Infobox: TFTEI Clearing House

NO_x remains an important pollutant that causes severe harm to humans and the environment, even though in times of climate change, the focus of R&D shifted towards greenhouse gases. Therefore, the revised LCP BREF aims at further lowering the NO_x emission thresholds. New abatement technologies and strategies, as well as measuring and monitoring devices, regain importance to enable an economically and ecologically reasonable production. The Task Force on Techno-Economic Issues (TFTEI), working under the Convention on Long-range Transboundary Air Pollution (CLRTAP) provided information on the techno-economics of emission abatement for more than 15 years. TFTEI recently set up an information platform, the so-called "Clearing House", which aims at gathering the most recent information on new developments in the field. To increase the amount and quality of information, input from equipment manufacturers, plant operators and other experts in the field is highly appreciated at any time. For more information and contact details: tfei.citepa.org.

Eco physics' NO_x detectors / NO_x in the field of burners and boilers

<https://www.envirotech-online.com/article/air-monitoring/6/eco-physics-ag/peco-physicsrsquo-nosubxsub-detectors-nbspnosubxsub-in-the-field-of-burners-and-boilersp/2262>

- AWE International

NO_x Detectors in the Field

<https://www.aweimagazine.com/press-release/eco-physics-nox-detectors-in-the-field>

Thank you very much
for your attention!
Questions?

TFTEI Technical Secretariat

