



# Clearing House on abatement technologies

*Co-Chairs Presentation*

*Jean-Guy BARTAIRE (France) and Tiziano PIGNATELLI (Italy)*  
TFTEI Techno-Scientific Secretariat: *Nadine Allemand (France) and Carmen Mayer (Germany)*

---

4th TFTEI annual meeting – Brussels – 16 October 2018

1

## Clearing House on Control Technology Information



### **The TFTEI mandate**

*Create and maintain a regional clearing house of control technology information for emissions of SO<sub>2</sub>, NO<sub>x</sub>, VOCs, dust (including PM<sub>10</sub>, PM<sub>2.5</sub> and black carbon), heavy metals and POPs*

*with the aim of being a reference place for dissemination of information to the experts of the Parties*

*Technologies : end-of-pipe but also primary measures (raw material management, process)*

---

4th TFTEI annual meeting – Brussels – 16 October 2018

2

## Clearing House on Abatement Technologies



The main purposes of the CH are :

- Provide information such as:
  - **information on reduction techniques (SO<sub>2</sub>, NO<sub>x</sub>, PM, VOC, HM, POPs)**
  - **indicate where the information on adopted BATs is available:**
    - Guidance Documents adopted under the LRTAP Convention
    - Other BAT documents developed under specific legal frameworks
  - **provide information** on technologies
    - New information on technologies listed in BAT documents
    - Information on new technologies
    - Information on sources, which are new and/or not covered in BAT documents
- Provide an interactive platform for exchange of information from stakeholders (industry and administration) and the clearing house committee

---

4th TFTEI annual meeting – Brussels – 16 October 2018

3

## Clearing House on Control Technology Information



### Content

- a. **General information on reduction techniques** for SO<sub>2</sub>, NO<sub>x</sub>, PM, VOC, HM and POP  
Updated information on the different ways to abate emissions and on characteristics of reduction techniques
- b. Information on the **latest development on reduction techniques** both for general applications and for specific applications from reduction technique manufacturers and any other stakeholder
- c. **Operating experience and feedback** from plant operators, to take advantage of lessons learned, have information on decision making process, real life use of techniques and investments and operating costs

---

4th TFTEI annual meeting – Brussels – 16 October 2018

4

## Clearing House on Control Technology Information



### Clearing House Evaluation Committee (CHEC)

CHEC task consists in **reviewing the information** delivered through the exchange platform before incorporating it in the publicly available part of the clearing house website

A **guidance for delivering information** is developed in order to ensure a certain quality in information provided and guide the information provider.

---

4th TFTEI annual meeting – Brussels – 16 October 2018

5



### Criteria for analysis of information provided



Two criteria are used to assess the documents provided :

✓ **Is the technical solution really marketed?**

- Description of one (or more) case study.

*This allows to assess whether the solution is actually marketed*

- Provide the contact of at least one industrial user.

*This enables the secretariat to verify the information, if necessary*

- Provide a list (if possible exhaustive) of industrial references for the proposed technical solution

*This enables to evaluate the level of diffusion of the technical solution*

- Among this list, at least one reference whose commissioning is less than 5 years

*This enables to assess the recent / obsolete nature of the technical solution*

---

4th TFTEI annual meeting – Brussels – 16  
October 2018

6



## Criteria for analysis of information provided

Two criteria are used :

### ✓ Is the level of performance satisfactory?

The submitted document will:

- give the emission levels observed in the case study.

The secretariat of the CHEC will compare this level of emissions with

- the relevant ELV of the three most recent Protocols (and their amended versions): if the emission level is higher than this ELV, the technical solution will not be accepted by the CHEC (eliminary character)
- BAT-related emission levels or equivalent of documents that list BAT or equivalent (BREF and other non-EU equivalent documents): this will qualify the performance level of the technique

---

Current status of the clearing house

7



## Example of information provided by stakeholders in 2017

Babcock Wanson

- Ultra-Low-NOx-burner for boilers (steam generation) with gaseous fuels
- Important characteristics:
  - NOx emissions < ~ 60 mg/Nm<sup>3</sup> (3% O<sub>2</sub> dry)** (depending on the measurement and calculation norm)
  - Limited antagonism NOx/CO (CO < 5ppm)
  - Turn down ratio 1 to 12 (very low loads possible, avoiding of shut downs)
  - Low excess air (15%) over entire operating range
  - Power range 6 to 22 MW
- Technology:
  - Fuel staging combined with flame separation
  - Dual supply gas train
  - O<sub>2</sub> control system required
  - Gain in efficiency ~ 1 %
  - Development between 2013 and 2016, on the market since 2017

---

4th TFTEI annual meeting – Brussels – 16 October 2018

8



## Example of information provided by stakeholders in 2017



### PILLARD NANOxFLAM

- Ultra-Low-NOx-burner for boilers (steam generation) with gaseous fuels
- Important characteristics:
  - Two examples: 11,1 MW and 15 MW
  - NOx emissions < 50 mg/Nm<sup>3</sup> (3% O<sub>2</sub> dry)**
  - Varying CO levels (0-10 ppm)
  - Excess air in the range of 40-80%
- Technology:
  - Lean premix combustion
  - Manufacturer claims that lower excess air ratios (below 40%) cannot be realized without prompt increase of NOx emissions

4th TFTEI annual meeting – Brussels – 16 October 2018

9



## Examples of information provided by stakeholders



Reduction of NOx emissions - X

tftei.ctepa.org/en/industrial-sources/reduction-of-nox-emissions

Les plus visités Microsoft Office Accueil

TFTEI

Under the Convention on Long Range Transboundary Air Pollution

Clearing House Industrial sources Mobile sources Exchange Platform Useful Links TFTEI

### Reduction of NOx emissions

Click on "\*" to develop chapter

- Definitions and main sources
- Formation process in combustion
- General approaches to reduce NO<sub>x</sub> emissions from combustion sources
- Parameters to be considered for technical reason
- Information provided by industry and accepted by the Clearing House Evaluation Committee

Details

Information assessed by the CHEC and made publicly available

4th TFTEI annual meeting – Brussels – 16 October 2018

10



## Examples of information provided by stakeholders



The screenshot shows a web browser window displaying the TFTEI website. The page title is 'Reduction of NOx emissions'. The main content area is titled 'Information provided by industry and accepted by the Clearing House Evaluation Committee'. It lists several documents submitted for analysis, including 'NOx abatement primary measures' and 'NOx abatement secondary measures'. A callout box with a blue border and white background points to the 'Information provided by industry...' section, containing the text: 'Information assessed by the CHEC and made publicly available in 2017'.

4th TFTEI annual meeting – Brussels – 16 October 2018

11



## Analysis of information provided by stakeholders in 2018



- In 2018 two documents provided by stakeholders for analysis by the CHEC, in 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

4th TFTEI annual meeting – Brussels – 16 October 2018

12



## Status of the clearing house

- By October 2018,
  - ✓ Web pages on fixed sources almost complete
  - ✓ Web page on mobile sources in progress
- To be done in 2019,
  - ✓ New web page on wood combustion and good practices
  - ✓ Possible information on NH3 emission reduction techniques (still pending on decision of TFRN)
  - ✓ Possible translation into Russian (pending on available funds)

---

4th TFTEI annual meeting – Brussels – 16 October 2018

13



## Clearing House on Control Technology Information

<http://tftei.citepa.org/en/clearing-house>

Or from the main bar menu of TFTEI homepage

<http://tftei.citepa.org/en/>

*Thank you for your attention  
Jean-Guy Bartaire*




---

4th TFTEI annual meeting – Brussels – 16 October 2018

14