



Costs of VOC emission reduction techniques for activities using solvents

Focus on activities (covered by the IED using) more than 200 t solvent per year

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TFTEI meeting - 24 June 2014

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Agenda



- The context and decision
- Proposal of organisation of the work

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An opportunity: EU STS BREF revision



- ❑ Surface treatment with Solvent (STS) BREF revision likely to start in Q4 2015
- ❑ A French mirror group established as soon as the information on the starting of the BREF revision available. Composed of different stakeholders: industrial operators from sectors using organic solvents, independent experts, equipment suppliers, local authorities.
- ❑ Co-chaired by ADEME and the French Ministry in charge of Ecology, Sustainable Development and Energy. Meetings on a regular basis
- ❑ Issue of costs raised by several stakeholders (e.g. operators from the automotive industry)
- ❑ France proposes to share this issue at the international level and to exchange information on cost data of VOCs abatement technologies through TFTEI in 2015, on the basis of the work carried out in 2003-2006 by EGTEI and used in the current BREF

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An opportunity: EU STS BREF revision



- ❑ Decision to start the work on costs from large solvent users in 2015 at the last TFTEI meeting in October 2014
- ❑ Fund available from ADEME for 2015 to start the work (but limited budget)
- ❑ Focus on some key activities necessary

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Industrial sectors considered by the current STS BREF and covered by TFTEI



	Sector / subsector of the current BREF	Covered by TFTEI
2.a	Heatset offset printing	Yes
2.b	Flexography and packaging gravure	Yes
2.c	Publication gravure printing	Yes
3	Manufacture of winding wire	Yes
4	Manufacturing of abrasives	No
5	Manufacturing of adhesive tape	Yes (Adhesive manufacturing)
6	Coating of cars (+light vans)	Yes
7	Coating of vans, trucks, and truck cabs	Yes
8	Coating of buses	Yes
9	Coating of trains	General Industry (trade coaters, general engineering, industrial equipment, heavy engineering)

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Industrial sectors considered by the current STS BREF and covered by TFTEI



	Sector / subsector of the current BREF	Covered by TFTEI
10	Coating of agricultural and construction equipment	General Industry (trade coaters, general engineering, industrial equipment, heavy engineering)
11	Coating of ships and yachts	No
12	Coating of aircraft	No
13	Coating of other metal surfaces	General Industry (trade coaters, general engineering, industrial equipment, heavy engineering)
14	Coil coating industries	Yes (coil coating)
15	Coating and printing of metal packaging	Yes
16	Coating of plastic workpieces	General industry : plastic components

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Industrial sectors considered by the current STS BREF and covered by TFTEI



	Sector / subsector of the current BREF	Covered by TFTEI
17	Coating of furniture and wood materials	Yes
18	Wood preservation (<i>solvent-using wood preservation</i>)	Yes
19	Manufacture of mirrors	No

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Characteristics of activities using solvents



- ✓ A huge number of different activities (coating of cars, coating of trucks, coating of plastic components, packaging printing, heatset web offset...),
- ✓ Different type of substrate painted or printed (metal, plastic, wood...)
- ✓ Different application techniques with application efficiencies ranging from 35% to more than 95%
- ✓ Different products containing solvents, with different concentrations of solvents,
- ✓ Different types of solvents used (hydrocarbons, oxygenated solvents, chlorinated solvents...)
- ✓ Emissions which can be captured through a chimney and treated with add on techniques
- ✓ Fugitive emissions much more difficult to be captured and treated

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Approach considered by TFTEI to represent a plant and estimate costs of reduction techniques



Packaging printing

Different products printed (paper, metal, plastic...),

Different printing equipments used

Different solvent based products used with different solvent concentrations

Stack emissions and fugitive emissions

Primary measures: low solvent inks, water based inks

Secondary techniques : oxidation, adsorption

Definition of one of several **reference installations** assumed to be representative of the activity

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Approach considered by TFTEI to represent the sectors



- In each sector considered and for each “**reference**” **installations** assumed to be representative of plants encountered in the sector, not equipped with abatement technique
- ✓ Determination of **applicable reduction measures**, both primary and secondary measures and their efficiency
- ✓ **Investment and operating costs** estimated in close collaboration with experts from industry
- ✓ **Annual Costs (Investment and operating costs) estimated for each combination :**

Ref plant – Primary measures - secondary measures

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Proposal of work

Selection of activities to be covered in 2015



- In a first step (2015 and 2016) :
 - ✓ Prioritize the work on largest plants consuming more than 200 t solvent/year (thresholds considered in annex I of IED directive)
 - ✓ Focus on activities considered by the BREF STS being the largest emitters
 - ✓ Work in close cooperation with industry associations

- Possibly in a second step (2017 and beyond) :
 - ✓ Consider the whole range of size of installations from the thresholds of annex VI of the Gothenburg Protocol (for memory, annex VI implements VOC ELVs for plants, from solvent consumption from 0.5 t/y; 2 or 5 t/y or even larger)
 - ✓ Consider other activities covered by annex VI of the Gothenburg Protocol

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Proposal of work

Proposal of activities to be covered in 2015



- Choice of activities covered in 2015 (to be validated with TFTEI experts)**
 - Based on an assessment of difficulties encountered to replace solvent (ADEME study made by CITEPA), rate of VOC emissions (in France), activities covered by annex VI of the Gothenburg Protocol
 - ✓ Car manufacturing (contact taken with ACEA and French car manufacturers)
 - ✓ Packaging printing industries (large used of solvents, different type of printing techniques used, inks with large content of solvents, fugitive emissions and stack emissions)
 - ✓ General Industry (trade coaters, general engineering, industrial equipment, heavy engineering) to represent sectors 8, 9, 10.
 - ✓ Industry : wood coating (according to the type of wood product produced, huge difficulty to reduce VOC emissions)

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Proposal of work

Approach for defining costs



Approach :

- ✓ Collect data on costs of equipment in reduction techniques from questionnaires in order to obtain updated data on costs and emissions associated to the reduction techniques in place
- ✓ Continue with the same approach used in 2003/2006 : REF plant, Primary and secondary measures but with a reduced number of reference installations, just 1
- ✓ Only provide an EXCEL tool for estimating country specific costs for one REF installation (not the whole sector)

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Proposal of work

Approach for defining costs



Collection of data

- ✓ Work in close cooperation with industry associations , paint, ink and reduction technique manufacturers,
- ✓ Through questionnaires to collect data and some interviews of the industry associations, paint, ink and reduction technique manufacturers,
- ✓ As far as possible , be able to collect a large number of examples in order to well describe the whole range of situations
- ✓ Data collected kept anonymous

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Proposed calendar



- Definition of activities to be covered (this meeting)
- Research of experts to work with the TFTEI TS (15 days after this meeting).
- Selection of possible plants receiving the questionnaire with industry associations
- Questionnaire to be sent abroad : 10 September (focus on largest plants and with different emissions levels and emission reduction techniques)
- Questionnaire filled and interviews of key industry associations by 10 December
- Data gathering and report by 30 March 2016
- 4 new activities in 2016/2017 to be defined early January 2016.

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Questions



- Choice of activities covered in 2015 ?
- Methodology used ? Do we continue with the TFTEI approach or do we only collect information through questionnaires and interviews and gather it in a report (more simple).
- Who is interested to support the technical secretariat with the questionnaire?

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Conclusions of the 24 session



- Focus on two activities : **car manufacturing and packaging printing**
- Focus on largest plants consuming more than **200 t of solvents per year**,
- Adapt the methodology to be used according to the activities.** Learn by doing for the organisation of the next activities
- Use the questionnaire approach to collect data (but be careful as operators have too many questionnaires and at least the Seville Bureau questionnaire to be filled), use also contacts with industry, suppliers of reduction equipment
- Support from industry received, with ACEA, ESIG and probably Intergraph
- Proposed calendar judged a little bit optimistic
- Share of the work between CITEPA (Car manufacturing) and KIT (Packaging printing)