

Minutes of the first meeting on the updating of the VOC emission control cost methodology for the packaging printing industry according to the 2015/16 TFTEI workplan

Organizational matters

Date:

27.10.2015, 11:00-14:30

Location:

Intergraf offices, Avenue Louise 130A – 1050 Brussels

Participants:

- John Dixon: Flexible Packaging Europe (FPE), Director Regulatory Affairs
- Sante Conselvan: FTA Europe, President
- Beatrice Klose: Intergraf, Secretary General and FTA Secretary-General
- Laetitia Reynaud: Intergraf, Policy Advisor, Economic and Environmental Issues
- Nadine Allemand: CITEPA, TFTEI Technical Secretariat
- Carmen Mayer: KIT, TFTEI Technical Secretariat

Content

- Introduction of all participants and their engagement in the current project
- Presentation of TFTEI Technical Secretariat and its current VOC project. Main content:
 - Updating of the cost data for VOC emission reduction in two sectors – one is the packaging printing industry
 - Original documents were prepared by CITEPA in the framework of EGTEI in 2003 and can be downloaded from the TFTEI website (<http://tftei.citepa.org/documents/voc-emission-reduction-in-certain-sectors>)
 - Due to limited resources the update shall focus on plants with a solvent consumption $\geq 200\text{t/a}$
- Materials considered: (focus on flexible packaging with “complex” made of)
 - Plastics
 - Metals
 - Papers
 - Other packaging materials
- Most important printing technologies:
 - Rotogravure ($\approx 50\%$ of all FPE member plants but with a slightly declining share, strong on long runs, higher capacity per press)
 - Flexography ($\approx 30\%$ of all FPE member plants with rising share, many technical improvements over the last decades especially in terms of printing quality, lower total investments, better applicability of water based inks, often shorter runs with more setting-up interruptions)
 - UV, digital, etc. are hardly relevant for the packaging printing sector and only used for exceptional applications (samples, very short runs, special materials,...)

- Additional relevant technologies:
 - Coating (closely related to printing, as it can often be regarded as a very thick printing layer. Usually in-line with printing)
 - Laminating (can be in-line with printing or separately, within FPE ≈50% of all products are laminated)
 - Adhesives (100% solid (which is economically and environmentally favored but not always technically feasible), solvent-, or water-based)
 - Wax
 - Extrusion
 - Coextrusion (of films and coatings)
- Most commonly applied inks:
 - Solvent-based inks (with high or low solvent contents)
 - Water-based inks
 - (UV curing inks are hardly used in this sector)
 - ⇒ According to the experience of the participants, the selection of inks is primarily depending on the technological feasibility, the available installations (company history) and on costs. Low-solvent or water-based inks are hardly applied primarily as a VOC emission reduction measure, this is at most a positive side effect
 - ⇒ Furthermore, there are various side effects to be considered when applying water-based inks, such as possible ground water emissions and other cross media effects
 - ⇒ The composition of solvents depends mostly on the waste solvent treatment. In case of recovery, single-solvent is favored whenever possible; in case of incineration mixed solvents are common. However the type of reduction technique used is not the driver. The main driver is the type of substrates to be printed and the speed of the machines.
- Secondary solvent reduction measures:
 - Oxidation (regenerative oxidation is the most relevant and the most reasonable technology)
 - Solvent recovery (widely spread especially in Italy, less common in northern Europe)
 - Other secondary measures are hardly relevant for this sector
- Possible reference installations: Two reference installations are favored for the cost calculation within the TFTEI project. The reference installations do not have to be existing plants but can also be imaginary installations that represent typical installations of the regarded sector.
 - One flexography and one rotogravure plant
 - One with coating and one with laminating facilities
 - One solvent recovery and one solvent incineration plant
- Other important information
 - The packaging printing industry in general is characterized by many starts and stops and many setup interruptions
 - Unit of activity could be m² for printing processes, but as laminating, coating etc. shall be regarded as well, this might not be suitable for all applications. Cost per mass of solvent abated might be more reasonable, but this issue could also be discussed with plant operators.

- Possible sources of further information
 - Plant operators
 - Manufacturers of VOC abatement equipment
 - Ink manufacturers
 - Consultants, such as EPM (Environmental Project Management)

Next steps

- Drafting of a synopsis sheet with the main contents of the project and the investigation goals (TFTEI technical secretariat)
 - ⇒ Sheet shall be spread by FPE and FTA among plant operators to organize plant visits
 - ⇒ Goals of the plant visits:
 - Gathering data (technical parameters and cost data)
 - Getting information about typical applications (for the definition of reference installations)
 - Getting information about cross-media effects and other monetary or non-monetary influences
- Carmen Mayer (KIT), as responsible member of the TFTEI technical secretariat for the updating of the packaging printing sector, plans to visit about 2-4 plants in order to receive current data. These visits are scheduled to take place in the first quarter of 2016.
- Depending on the number of visits and the amount and quality of the collected data, an additional questionnaire might be spread among plant operators, in order to improve data quality and to insure confidentiality for data of specific plants (by publishing only average or range values).