EiiF Feedback:

Industrial emissions – EU rules updated

Main Recommendations:

The horizontal Energy Efficiency BREF must become mandatory (including SMEs).
If not, industry will continue to consider it irrelevant and the EU goals will not be met.

The Energy Efficiency BREF must be updated and improved.
The European Industrial Insulation Foundation (EiiF) is a European non-profit foundation registered in Switzerland in 2009.

The 60 EiiF members have operations across the world, employ over 70,000 people and have an aggregated annual turnover of about EUR 14 billion.

Article 2 - Purpose of the Foundation

• The Foundation engages itself, exclusively and irrevocably, on a non-profit basis for the deployment of sustainable insulation systems in industrial plants and in the industrial environment with the aim of saving energy, reducing CO$_2$ emissions [...].
EiiF – Consultation: Industrial emissions – EU rules updated

• The EiiF strongly supports the initiative to update EU rules on industrial emissions. We encourage this initiative in its aim to ensure industry uses techniques that create a more sustainable EU economy, and a cleaner environment that improves public health.

• Our expertise lies in the very specific field of industrial insulation, a cross-cutting BAT delivering multiple benefits to industry: process and safety needs, cost reductions, energy savings and connected emission reductions urgently needed for a transition to a low carbon industry.
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- However, contrary to the building sector, the energy efficiency and emission reduction potential of insulation in industry is not used today. The consequences are largely untapped energy and emission reduction potentials.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>250°C</td>
<td>18°C – 22°C</td>
<td>18°C – 22°C</td>
</tr>
<tr>
<td>Heat loss (AGI Q101)</td>
<td>150 W/m²</td>
<td>&lt; 10 W/m²</td>
<td>&lt; 4 W/m²</td>
</tr>
<tr>
<td>Insulation thickness</td>
<td>100mm</td>
<td>100mm</td>
<td>350–500mm</td>
</tr>
</tbody>
</table>
According to an **Ecofys study**, specifically on the industrial insulation potential (Climate protection with rapid payback, 2012), and latest figures investigated by EiiF (based on the 2017 emission data provided by the EEA), the **annual reduction potential of industrial insulation** sums up to **50 Mt CO₂** and an energy saving potential of **600 PJ**. These potentials are equivalent to the emissions of at least 15 million cars and the energy consumption of about 10 million households.

In fact, industrial insulation could annually **reduce about 1% of Europe’s CO₂ emissions** (or about 5% of EU industry emissions), thus offering a cleaner environment to European citizens.
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- Furthermore, investments in industrial insulation give **rapid payback** - see EE-BREF page 153:

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**Achieved environmental benefits**

Table 3.10 shows heat losses from uninsulated steam lines at different steam pressures.

<table>
<thead>
<tr>
<th>Distribution line diameter (mm)</th>
<th>Approximate heat loss per 30 m of uninsulated steam line (GJ/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steam pressure (barg) 1</td>
</tr>
<tr>
<td>25</td>
<td>148</td>
</tr>
<tr>
<td>50</td>
<td>248.50</td>
</tr>
<tr>
<td>100</td>
<td>897</td>
</tr>
<tr>
<td>200</td>
<td>1625</td>
</tr>
<tr>
<td>300</td>
<td>2321</td>
</tr>
</tbody>
</table>

Table 3.10: Heat loss per 30 m of uninsulated steam line
Adapted from [123, US_DOE]

A reduction of energy losses through better insulation can also lead to a reduction in the use of water and the related savings on water treatment.

**Cross-media effects**

Increased use of insulating materials.

**Operational data**

No data submitted.

**Applicability**

As a baseline, all piping operating at temperatures above 200 °C and diameters of more than 200 mm should be insulated and in good condition. Often insulation should be checked on a periodic basis (e.g., prior to turnaround via IR scans of piping systems). In addition, any surfaces that reach temperatures of higher than 50 °C where there is a risk of staff contact, should be insulated.

**Economics**

It can give rapid payback. But time depends on energy price, energy losses and insulation costs.

**Driving force for implementation**

Easy to achieve compared to other techniques. Health and safety.
Against this background we see a great opportunity in the enforcement of EU rules on industrial emissions.

- **We therefore recommend the following suggestions for the IED’s revision:**

1. The horizontal Energy Efficiency BREF must become mandatory (including SMEs).

   - If not, industry will continue to consider it irrelevant and the EU goals will not be met.
2. The Energy Efficiency BREF must be updated and improved:

a) **Insulation specific:**

   Mandatory minimum requirements for insulation defined by maximum heat loss rates similar to the existing building insulation standards must be introduced:

   - With the lately released VDI 4610 energy classes for industrial insulation an effective tool is now available.
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➢ Today the EE-BREF is too vague and in particular misses out the huge energy efficiency potential of insulating equipment at temperature levels below 200 °C:

- “As a baseline, all piping operating at temperatures above 200 °C and diameters of more than 200 mm should be insulated and good condition of this insulation should be checked on a periodic basis [...]”
  (Page 153, Chapter 3, Steam pipes)

- “ensuring insulation is optimized” (Page vi/Executive Summary)
  ➔ No guidance at all.

- “An optimum insulation thickness which relates energy consumption with economics should be found in every particular case” (Page 132, Chapter 3, Combustion)
  ➔ No guidance at all.
b) **General:**
The structure and formatting must be corrected to transfer the BREF into a motivating, user-friendly document.

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**Economics**
It can give rapid payback, but time depends on energy price, energy losses and insulation costs.

**Driving force for implementation**
Easy to achieve compared to other techniques. Health and safety.

**Examples**
Widely applied.

**Reference information**
[29, Maes, 2005], [16, CIPEC, 2002]
3. The duration of the general process for developing and reviewing BREFs is too long and too complex. For the EE-BREF the process took almost 6 years and the revision every 8 years has not happened. The current BREF process makes it furthermore impossible to introduce innovations and younger best practices in due time.

- A more efficient process would enable the IED to ensure that industry uses more and new innovative techniques creating a more sustainable EU economy.

- We propose to change the BREF process to enable a duration of not more than one year, and a revision every 4 years.
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- We strongly encourage DG Environment on the revision of the Industrial Emissions Directive and offer any support we can give to ensure industry uses the insulation BAT in its best way to create a more sustainable EU economy, and a cleaner environment that improves public health.
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