

Für Mensch & Umwelt

Umwelt   
Bundesamt

**Twinningproject: Support to the Israeli Ministry for Environmental Protection in improving and modernizing environmental regulatory and management tool for the Israeli industry – Regulatory tolls for SMEs, Resource Efficiency, Eco-Management and Audit Scheme**

**Mission to Tel Aviv April 2017**

**BAT-Conclusions for the Non-Ferrous Metals Industries and their consideration in the TA Luft review**

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# 4. Examples for prospective changes of TA Luft (3)

National Transposition of TA Luft relevant BVT-conclusions with AEL (associated emissions levels):

- Until 2014 TA Luft committee/Ministry of environment/German Conference of Environment Ministers → **11 executive recommendations** → TA Luft review  
<http://www.lai-immissionsschutz.de/servlet/is/26513/>
- Since early 2014: **general sectoral administrative regulations by the Federal Environment Minister** (according to § 48 Federal Immission Control Act) → TA Luft review
  - ✓ Chlor-Alkali-Elektrolysis [http://www.verwaltungsvorschriften-im-internet.de/bsvwvbund\\_01122014\\_IGI25013931.htm](http://www.verwaltungsvorschriften-im-internet.de/bsvwvbund_01122014_IGI25013931.htm)
  - ✓ Pulp and Paper and Refining of Mineral Oil and Gas are in the legislative procedure (13th ordinance has to be amended too)

No. 5.1 Requirements to provide precaution against harmful effects – General –

## Content and meaning

- Transposition of BAT-conclusions into German regulation/law and expression that the new single general administrative regulations have priority to the TA Luft (problematic: transposition deadline is one year by law)
- Derogations according to Article 15 (4) due to technical characteristics are possible by case to case examinations, substantiated reasing and reporting obligations

## 4. Examples for prospective changes of the TA Luft (18)

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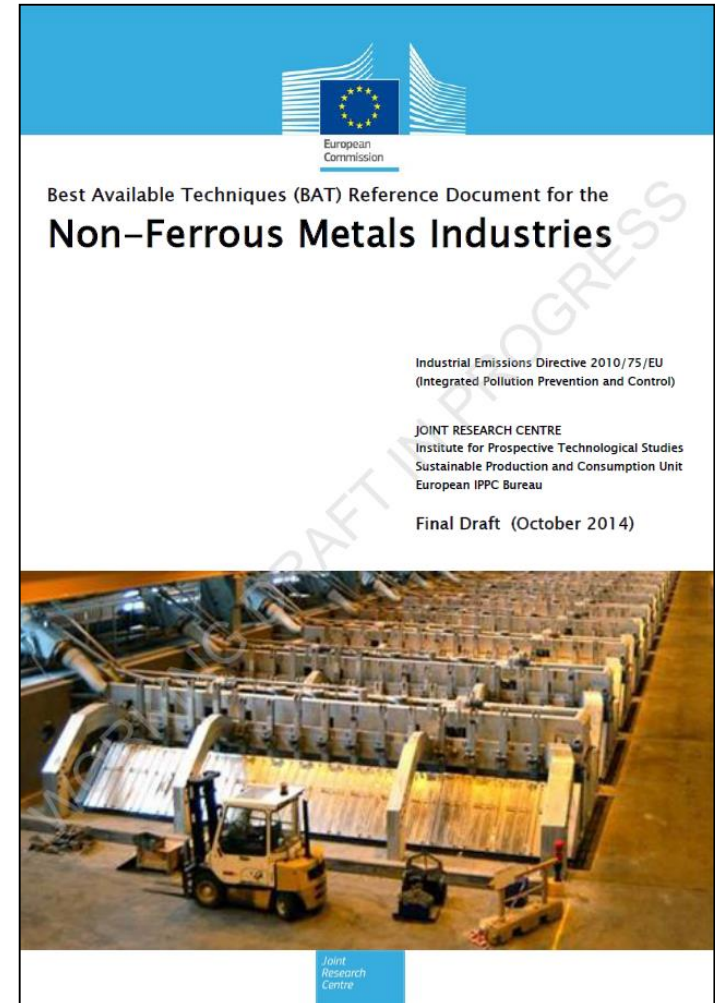
### No. 5.4 Special provisions for certain types of installations

- Transposition of BAT conclusions into national regulations:
  - ✓ **General no setback**
  - ✓ Usually the upper end of the BAT-AEL range is used for the recommendations or administrative regulations
  - ✓ Deviations from the upper BAT-AEL value only in well-justified cases

# Non-Ferrous Metals Reference Document

## REVISION OF THE BAT REFERENCE DOCUMENT AND NATIONAL IMPLEMENTATION

<i>REF.</i>		
	<i>December 2001</i>	<i>Publishing of first NFM-BREF</i>
	September 2007	Start of the revision Kick-Off Meeting
	March 2014	Final Meeting
	<b>30. June 2016</b>	<b>Publishing of BAT conclusions Official Journal of the EU</b>
	Mid 2017?	Transposition of BAT conclusions into TA Luft

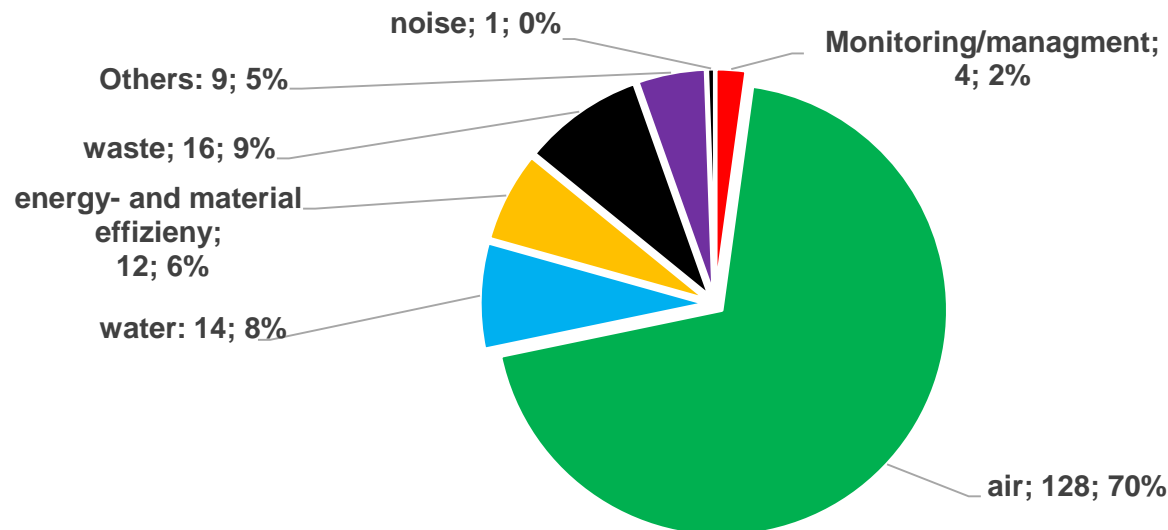


# Das BVT Merkblatt Nichteisenmetallindustrie

- BAT conclusions for 8 subsectors for the production of:
  - copper
  - aluminium and production of carbon and graphite electrodes
  - lead and tin
  - zinc and cadmium
  - precious metals
  - ferro-alloys
  - nickel und cobalt
  - electrographite and hart-burnt coal
  
- No BAT conclusions for refractory metals and alkaline and alkaline earth metals
- Improved database compared to the first NFM BREF

# NFM-BREF

## OVERALL 184 BAT CONCLUSIONS FOR:



- 70% air related conclusions
- 66 BAT-conclusions with BAT-AEL
- Overall **132 BAT-AEL**, thereof **47 for water and 85 for air**
- Much higher differentiated requirements compared to TA Luft and 39 annex to waste water ordinance

# Amendments in the TA Luft

**Overall due to BAT conclusions 11 No. (sections) in the TA Luft had to be amended:**

- **5.4.3.1b** Installations roasting, smelting and sintering of NFM-ores
- **5.4.3.3a** Installations for the Production of Non-ferrous Crude Metals except Aluminium and Ferro-alloys
- **5.4.3.3b** Installations for the Production of Ferro-alloys in Electrothermal or Metallothermal Processes
- **5.4.3.3c** Installations for the Production of Aluminium from Ores in Electrolytic Processes with Preburnt Discontinuous Anodes
- **5.4.3.3d** Installations for the Production of Aluminium from Secondary Raw Materials

# Amendments in the TA Luft

- **5.4.3.4.1a/2a** Installations for Smelting, Alloying or Refining of Non-ferrous Metals except Aluminium
- **5.4.3.4.1b/2b** Smelting installations for Aluminium
- **5.4.8.3.1** Anlagen zur thermischen Aufbereitung von Stahlwerksstäuben für die Gewinnung von Metallen oder Metallverbindungen im Drehrohr oder in einer Wirbelschicht
- **5.4.8.10d** Anlagen zur Behandlung von **Aluminiumsalzschlacken**
- **5.4.4.7a** Installations for the Production of Carbon (Hard-burnt Coal) or Electrographite Materials by Baking or Graphitizing
- **5.4.4.7b** Installations for the Production of prebaked Anodes for the Aluminium electrolytic process



# Amendments in the TA Luft (Examples)

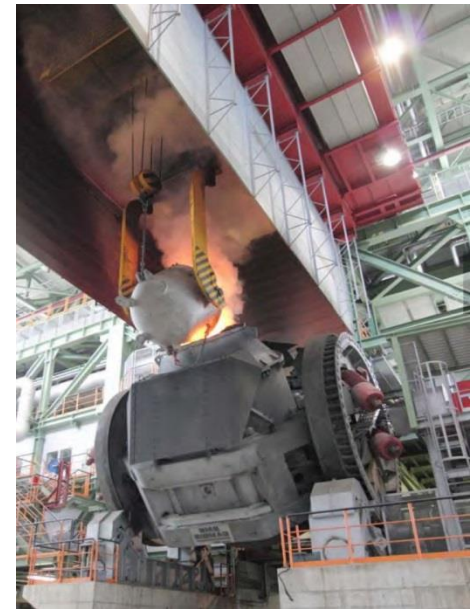
## General

BAT-conclusion	Current TA LUFT	New requirements TA LUFT
<p>BAT 10: At least yearly measurements for all pollutants with BAT-AEL</p>	<p>No. 5.3.2: single measurements – repeated measurements shall be conducted every three year, and for emissions limited by mass flow only every five years</p>	<p>No. 5.3.2: <b>Yearly measurements</b></p>
<p>BAT 2, 21-23, 55, 75, 108, 150-152, 163: <b>Requirements for energy efficiency</b></p>	<p>-</p>	<p>Nr. 5.2.11.2: <b>Measures to reduce energy consumption including electrical energy and for an efficient energy use</b></p>

# Amendments in the TA Luft (Examples)

## Diffuse emissions

- 48 BAT-conclusions (26%) for the prevention and reduction of diffuse emissions
- Targeted measures related to processes, e.g. Capture hood/enclosure of furnaces, charging and tapping points, extraction of storage- and production buildings, closed and extracted conveyors/feeders
- BAT for diffuse emissions are often considered by No. 5.2.3 of the TA Luft by general requirements
- An additional special provision was included if needed by the following wording:
- **CONSTRUCTIONAL AND OPERATIONAL REQUIREMENTS**  
Waste gases shall be collected at the point of origin, e.g. at the point of *loading, smelting, refining and casting*, and fed into a waste gas purification facility.



Quelle: Aurubis AG

# Amendments in the TA Luft (Examples)

- No. 5.4.3.3a Installations for the Production of Non-ferrous Crude Metals except Aluminium and Ferro-alloys (1)

Pollutant	BAT-AEL [mg/m <sup>3</sup> ]	Current TA LUFT [mg/m <sup>3</sup> ]	New requirements TA LUFT [mg/m <sup>3</sup> ]
<b>Total Dust</b> (BAT 40 secondary copper smelter and converter, BAT 96, 97 Production of lead)	<b>2 - 4</b>	<b>5</b>	<b>4</b> Applies for installations for the production of lead and secondary copper smelter and converter  For all other types of installations in No. 5.4.3.3.a still applies <b>5 mg/m<sup>3</sup></b>
<b>SO<sub>2</sub></b> (BAT 49)	Primary copper <b>50-500</b>	Existing installations <b>0,5 g/m<sup>3</sup></b> Apart from that applies No. 5.2.4 <b>0,35 g/m<sup>3</sup></b>	<b>500</b> For existing installations for the production of primary copper
	Scodary copper <b>50-300</b>		<b>300</b> For installations for the production of secondary copper

# Amendments in the TA Luft (Examples)

- Nr. 5.4.3.3a Installations for the Production of Non-ferrous Crude Metals except Aluminium and Ferro-alloys (2)

Pollutant	BAT-AEL	Current TA LUFT	New requirements TA LUFT
<b>Dioxins/ Furans</b> (BAT 48, 99, 146)	<b>0,1 ng/m<sup>3</sup></b>	<b>0,4 ng/m<sup>3</sup></b> (0,1 ng/m <sup>3</sup> shall be sought)	<b>0,1 ng/m<sup>3</sup></b> For the sum of Dioxins and Furans  (0,1 ng/m <sup>3</sup> shall be sought for the sum of Dioxins, Furans and polychlorinated Biphenyls)
<b>Arsenic</b> (BAT 37, 38, 39, 40, 43)	<b>0,05 mg/m<sup>3</sup></b> (in footnote to the dust BAT-AEL)	In copperworks No. 5.2.7.1.1 applies with the stipulation that As and As-compounds do not exceed 0,4 g/h or <b>0,15 mg/m<sup>3</sup></b> - in anode furnaces <b>0,4 mg/m<sup>3</sup></b>	In copperworks No. 5.2.7.1.1 applies with the stipulation that As and As-compounds do not exceed <b>0,05 mg/m<sup>3</sup></b>

# Amendments in the TA Luft (Examples)

## Nr. 5.4.3.3c Installations for the Production of Aluminium from Ores in Electrolytic Processes with Preburnt Discontinuous Anodes

Pollutant	BAT-AEL [mg/m <sup>3</sup> ]	Current TA LUFT [mg/m <sup>3</sup> ]	New requirements TA LUFT [mg/m <sup>3</sup> ]
<b>Total Dust</b> (BAT 66, 67)	<p><b>2 - 5</b> For elektrolytic cells</p> <p><b>2 - 10</b> For auxiliary processes (storage, transport, recovery)</p>	<b>10</b>	<p><b>5</b> For elektrolytic cells</p> <p><b>10</b> For auxiliary processes (storage, transport, recovery)</p>
<b>SO<sub>2</sub></b>	<b>2,5-15 kg/t Al</b>	<p>No special requirements; the general requirement in No. 5.2.4 <b>0,35 g/m<sup>3</sup></b> applies</p>	<p>The general requiremnt in No. 5.2.4 <b>0,35 g/m<sup>3</sup></b> still applies + <b>15 kg/t Al</b> Sulfur dioxide emssions can be calculated batchwise, with the help of a mass balance according to the sulfur content in the anodes used by the electrolytic cells.</p>

# Amendments in the TA Luft (Examples)

- Nr. 5.4.3.3d Installations for the Production of Aluminium from Secondary Raw Materials and Nr. 5.4.3.4.1b/2b Smelting installations for Aluminium

Pollutant	BAT-AEL [mg/m <sup>3</sup> ]	Current TA LUFT [mg/m <sup>3</sup> ]	New requirements TA LUFT [mg/m <sup>3</sup> ]
<b>Total Dust</b> (BAT 68, 80, 81, 82)	<p><b>2 – 5</b> general</p> <p><b>2 – 25</b> using exclusively non-contaminated material, free of colors, plastics, oil or lubricants, für Schmelzöfen</p>	<b>10</b>	<p><b>5</b> general</p> <p><b>10</b> using exclusively non-contaminated material, free of colors, plastics, oil or lubricants, für Schmelzöfen</p>
<b>TVOC</b> (BAT 83)	<b>10 – 30</b>	<b>50</b> General requirement from No. 5.2.5	<b>30</b> But: for continuous measuring half-hour average values of 3 times the set mass concentration shall be tolerated

# Amendments in the TA Luft (Examples)

- 5.4.4.7a Installations for the Production of Carbon (Hard-burnt Coal) or Electrographite Materials by Baking or Graphitizing and 5.4.4.7b Installations for the production of prebaked Anodes for electrolytic process

Pollutant	BAT-AEL [mg/m <sup>3</sup> ]	Current TA LUFT [mg/m <sup>3</sup> ]	New requirements TA LUFT [mg/m <sup>3</sup> ]
<b>TVOC</b>  (BAT 183)	<b>10-40</b>	<b>50</b>  General requirement from No. 5.2.5  <b>0,15 g/m<sup>3</sup></b> für Altanlagen zum Brennen (in Ringöfen)	<b>40</b> <b>50</b> <b>for No. 5.4.4.7b</b> <b>(General requirement in</b> <b>No. 5.2.5)</b>
<b>Benzo(a)pyrene</b> (BAT 178, 179, 180, 181)	<b>0,001- 0,01</b> general  <b>0,005- 0,015</b> Baking and rebaking processes	<b>0,05</b>  Sum of substances in class I No. 5.2.7.1.1	<b>0,01</b> general  <b>0,015</b> For the process of baking and rebaking

# Conclusions

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- The transpositions in the TA Luft
- Compared to TA Luft the BAT conclusions are much higher differentiated; thus the transposition into TA Luft reflects a higher degree of aggregation; nevertheless, the amended requirements in the TA Luft are more precise and specified
- Yearly measurements lead to a more accurate monitoring but increases the effort for authorities and the costs for operators
- By the amended and added requirements for channeled and diffuse emissions a significant reduction of dust emissions can be expected; which will lead to a decrease in heavy metals emissions the same time
- A decrease in TOC emissions and Dioxins and Furans can be expected as well.



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