Eurometaux
European Association of Metals

Main scientific and regulatory responses and commitments for the metals in the environment

2nd TFTEI annual meeting – Catania, 20 May 2016

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Se Al Cu Ni Pb Sn Zn Au Ag Pt Sb W Be Si Cr Co Mo Ge V Mn Ir Ru Rh Ta

Europe's non-ferrous metals industry

Driving EU economic growth and innovation

€120bn annual turnover

500 000 direct employees

3 000 000 indirect jobs along the EU value chain

47million tonnes of annual production

Representing **over a fifth** of global production

Non-ferrous metals: Endlessly recyclable

52% of base metals and alloys come from recycled sources

of the Earth's crust is made up of non-ferrous metals

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To cover:

1. Metal specificities in chemical management
2. IED: NFM BAT Conclusions & BREF improvement
3. IED & REACH
4. OECD – PRTR: diffuse sources

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CHAPTER 1

Metal specificities in chemical management

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Science as an ally

- Science is the basis of Eurometaux' technical advocacy in a number of Environmental and Health issues
- Eurometaux has been promoting 'science-based risk and hazard assessments'
  - ⇒ generating data & methodologies
  - ⇒ launching projects bringing in scientists, academics
  - ⇒ setting panels (HeTAP, ETAP) & supporting scientific conferences
  - ⇒ resulting in peer-reviewed publications (about 15 over the last 10 years)
    - ⇒ **Credibility & impact**
- Eurometaux has also used science as 'advocacy vehicle' for metal-specificities

SETAC

Metal specificities

Main activities in chemicals management
- Risk Assessment
- Classification
- Risk management
- Risk communication

If risk of chemical = properties of chemical x exposure to chemical

Metals having significant hazards, we should go for:
- No exposure/emissions
- Substitution
- Limited exposure

However, metals present specificities that make this complex/impossible, e.g.
- Natural occurrence → **Background**
- **Essentiality**
- **Bioavailability**
- Biomonitoring
- Interaction with environment (fate)

Metal specificities: Natural occurrence

Metals are naturally occurring constituents in the environment and vary in concentrations across geographic regions

Humans, other animals and plants have evolved in the presence of metals and are **adapted** to various levels of metals

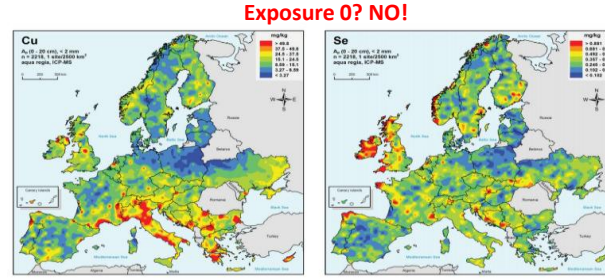
Many animals and plants exhibit geographic distributions that reflect variable requirements for and/or tolerance to certain metals

Care should be taken to understand and distinguish among **naturally occurring levels**, **current background levels** and **contributions to current levels from specific activities of concern**

Exposure 0? NO!

FOREGS Geochemical Atlas for Europe : http://weppi.gtk.fi/publ/foregsatlas/index.php

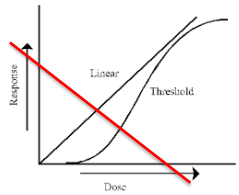
GEMAS Geochemical mapping of agricultural and grazing land soil : http://gemas.geolba.ac.at/

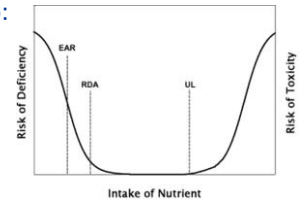


Metal specificities: Essentiality

Some metals (Fe, Zn, Cu, Mn, Cr, Mo, Se) are essential for maintaining proper health of humans, animals, plants and micro-organisms

Impact on dose-response relationship:





Exposure 0? NO!

Metal specificities: Bioavailability

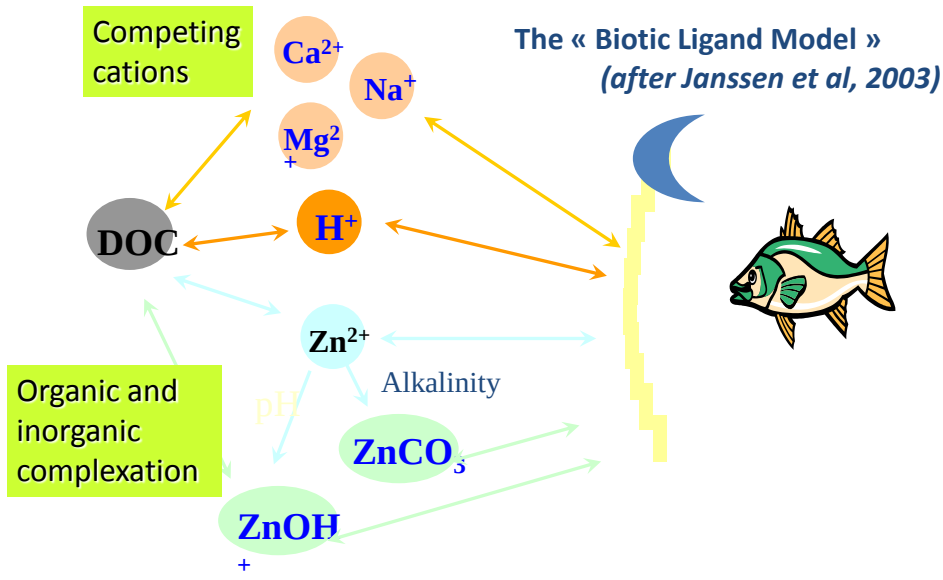
The toxicity of metals is associated to a large degree with the **release of** metal ions and their interaction with 'targets' (environmental organisms, human body): **bioavailability**.

Exposure to be regulated differently!

https://vimeo.com/125676240

Eurometaux' video released in 2015 explains how to consider bioavailability of metals when setting EQS

Backup slide: Bioavailability in waters



CHAPTER 2

IED: NFM BAT Conclusions & BREF improvement

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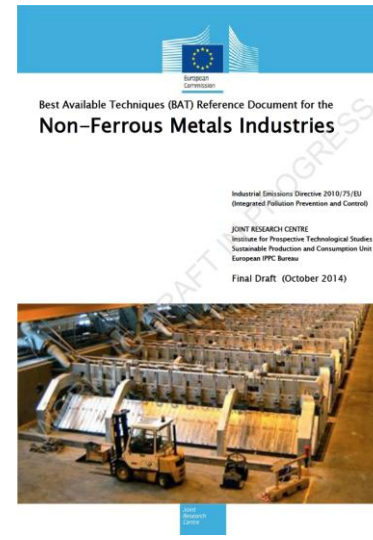
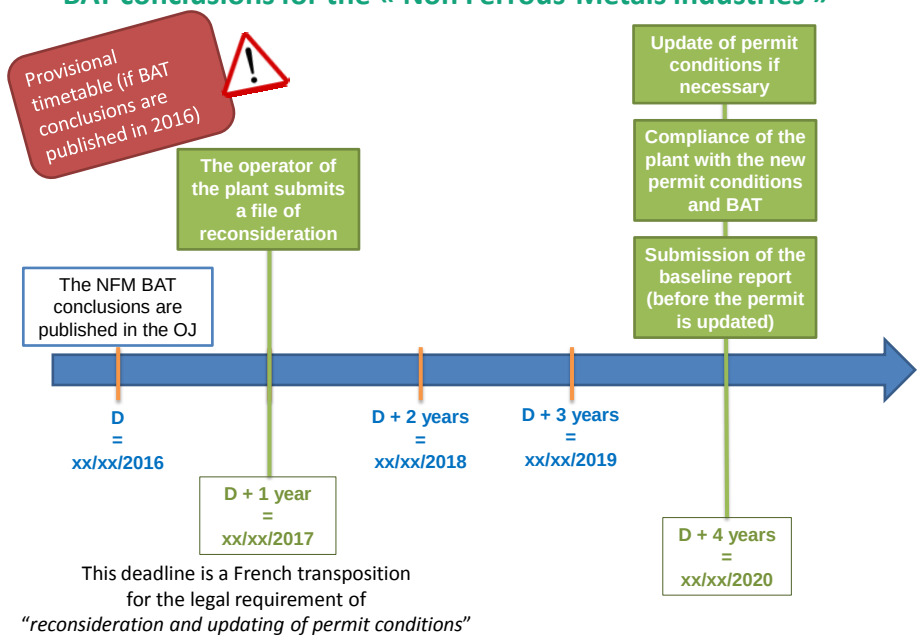
Publication of NFM BATC

- The final draft NFM BREF was made available on 9 October 2014
- 7th Article 13 Forum meeting provided its opinion on the final draft of the NFM BREF on 4 December 2014
- 9th Article 75 Committee meeting in December 2015 gave **positive opinion** on the NFM BAT Conclusions
- Member States had until 1 April 2016 to comment the translated versions
- Publication was initially foreseen in the 1st quarter of 2016 (May ?)



BAT conclusions for the « Non Ferrous-Metals industries »



This deadline is a French transposition for the legal requirement of *"reconsideration and updating of permit conditions"*

The Structure of the NFM BREF

Production of sulphuric acid from NFM plants

In the "**Concluding remarks and recommendation for future work**":

- The production of sulphuric acid from non-ferrous metals installations is within the scope of the LVIC-AAF BREF. … For the sake of consistency and to avoid overlaps the TWG during the final meeting decided that **production of sulphuric acid is removed from the scope of the NFM BREF**
- During the final TWG meeting, it was acknowledged that in the LVIC-AAF BREF (2007) Table 4.24 the upper end of the BAT-AEL range for SO2 emissions from the production of sulphuric acid from non-ferrous metals production in a double contact/double absorption plant needs to be corrected →

the value should be **770 mg/Nm³** instead of 680 mg/Nm³ (as a daily average)

"*The Commission is currently in the final stages of adopting the Implementing Decision with the BAT conclusions for the non-ferrous metals industries (NFM).*

- *Concerning the issue of SO_2 emissions from the production of sulphuric acid, we will point this out in **a message to the Member States experts represented in the IEEG once the BAT conclusions are published in the Official Journal***
- *The Commission will consider taking this issue forward in the context of the new BREF on, for which the preparatory work will start later this year. Common Waste Gas Treatment in the Chemical Sector (WGC)*

(**Aneta Willems**, HoU, European Commission, DG ENVIRONMENT, Unit C4 - Industrial Emissions)

The BREF Improvement work within the IEA

Industrial Emission Alliance: an industry forum (created in 2006) on **emission regulations** which covers now 20 industrial sectors, part of the Art.13 Forum

IEA sub-group on BREF improvement explores areas where the BREF process as well as the end product (the BAT Conclusions) can be "improved" →

Products:

- **BREF check list**
  - Lessons learned and guidance for industry → options for contributing in the most effective way to ongoing or future BREF revisions
  - Structure follows the main steps for drawing up and reviewing a BREF as in the so-called Guidance (Commission Implementing Decision 2012/119/EU)
  - It includes **general recommendations** on the BREF process, a glossary of abbreviations and a list of useful links (e.g. 'Support any position on derivation of BAT-AEL ranges with reliable and representative data')
- **IEA contribution to the Berlin workshop** (October 2014)
- "**Methodology for derivation of BAT AELs**" presented at the last IED Article 13 Forum meeting (10/2015)

Methodology for derivation of BAT AELs

We think a systematic approach for deriving suitable BAT AEL ranges is needed, because of

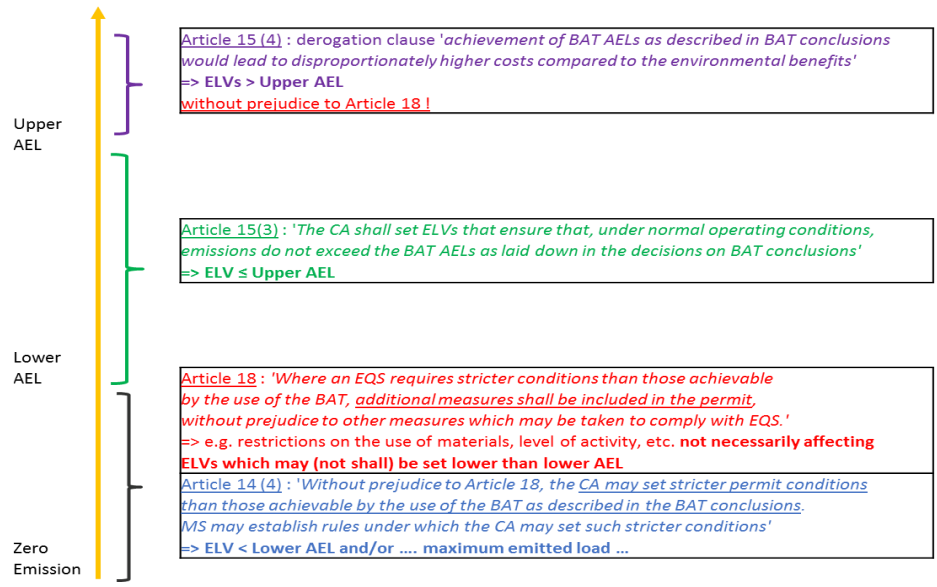
- Its legally binding nature and implication at permitting process level
- Lack of a clear methodology in deriving the draft BAT conclusions submitted to the TWG
- Lack of a common understanding in TWG about what BAT AELs are → lengthy and frustrating "negotiation" process at final TWG meeting

We propose a systematic approach which should help deriving in a straightforward way both ends of the BAT AEL range:

❖ The **upper end** should always be set on the basis of the maximum observed emissions of the plants applying BAT for the pollutant at stake

❖ The **lower end** should always be set above the lowest maximum observed emissions of the plants applying the BAT after discarding all performances that only occur under specific circumstances

Backup slide: IEA Methodology for derivation of BAT AELs



CHAPTER 3

IED & REACH

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Use of information generated by REACH/CLP and other legislation to ensure safe use of chemicals

- An attempt has been done to link REACH and IED, i.e.
  - Check whether REACH/CLP information could be used to support compliance under other legislations
  - Enhance common understanding of interactions
  - Enhance information use, reduce unnecessary work
  - Identify support needs and develop tools
- Case study on Ni plating, done by ECHA and Ni plating industry and presented to a group of industry, Member States, ECHA experts in November 2014 (http://echa.europa.eu/documents/10162/21771098/3.3_user_reach_data_en.pdf) and May 2015 (http://echa.europa.eu/documents/10162/21878363/enes_8_outcome_april_workshop_en.pdf)

  Why this case?
  - Typical process where chemicals are used
  - Wide range of chemical types and hazards, and process operations typical to many sites

Use of information generated by REACH/CLP and other legislation to ensure safe use of chemicals : case study (2)

Starting point:

- the **REACH exposure scenarios** (ES): 'cookbook' explaining how the substance should be produced and used (risk management measures, operational conditions)
- IED situation: application for a permit/baseline reports
- Hypothetical company

Question: can the information reported in the ES be used to apply/support application for a permit?

Conclusions:

There are potential ways to use REACH information in IED baseline reports, but there are barriers:

- Different terminologies used in the different regimes
- Traditional / Established working practices

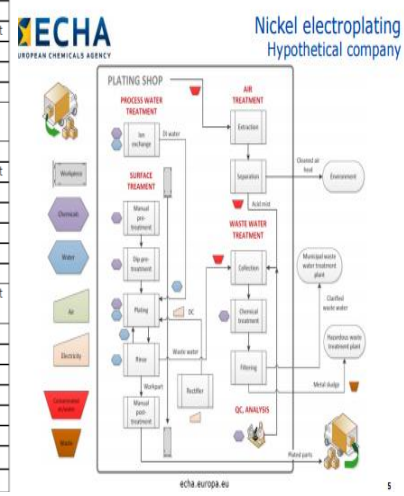
Need for more cooperation REACH-IED acknowledged

Specific follow-up with IED in relation to REACH data: not so clear yet how to carry this out? (dialogue ECHA / DG ENV / JRC)

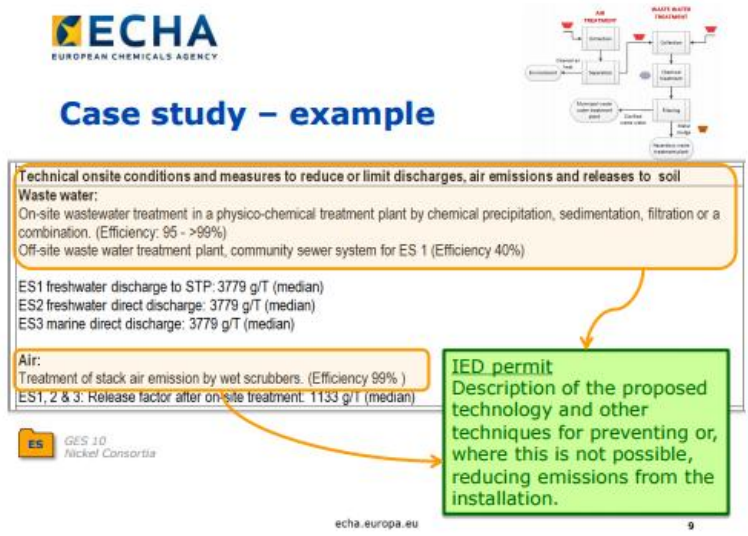
We are following this up as we would like to make use of the REACH data

Backup slide: the REACH exposure scenarios

Exposure scenario	Information use
ES title (short title)	
1. Title section	Workplace risk assessment
ES/use name	
Scope	
2. Conditions of use affecting exposure	
2.1 Environment contributing scenario	Worker's training IED permit application
Product (article) characteristics	
Amount used, frequency and duration of use (or from service life)	Workplace risk assessment
Technical and organisational conditions and measures	IED permit application
Conditions and measures related to sewage treatment plant	
Conditions and measures related to treatment of waste (including article waste)	IED permit application
Other conditions affecting environmental exposure	
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
2.2 Worker contributing scenario	Workplace risk assessment Worker's training
Product characteristics	
Amount used (or contained in articles), frequency and duration of use/exposure	
Technical and organisational conditions and measures	
Conditions and measures related to personal protection, hygiene and health evaluation	
Other conditions affecting workers exposure	
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
3. Exposure estimation and reference to its source	
3.1 Environment contributing scenario	



Backup slide: ECHA case study



CHAPTER 4

OECD PRTR & Diffuse sources metals

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Diffuse sources

Metals exist naturally, however emissions and potential accumulation from anthropogenic sources may alter their concentrations in the environment, relative to the natural background

Definitions:

- **Point sources** are defined as being channeled through structures and resulting in emission of substances at an identifiable point in space, e.g. **effluent emissions**, **stack emissions**
- **Diffuse emissions** are resulting from the use of substances in products that are exposed to environmental conditions, e.g. **building materials**, **material wear and corrosion**, **agricultural uses**, **household waste waters**.

  Diffuse emissions are usually dispersive in nature

For metals, diffuse sources can be very significant, linked to

- **Product releases** (e.g. corrosion, wearing of brakes)
- **Unintended impurities** (e.g. metals in fuel and inorganic fertiliser)

Diffuse sources, PRTR, commitments

OECD has debated recently about extending the PRTR schemes to include **product and non-point source releases** (**diffuse**) → make the pollutant registers possibly more relevant for risk prioritization and regional risk assessment

PRTR registers are increasingly used for **risk priority setting schemes** under chemical management programs to ensure a more risk based rather than a hazard based prioritization

Good quality **Diffuse Sources datasets** are therefore critical to:

- understand regional & continental backgrounds for chemicals management purposes
- help defining the most relevant appropriate **Risk Management Measures** if needed

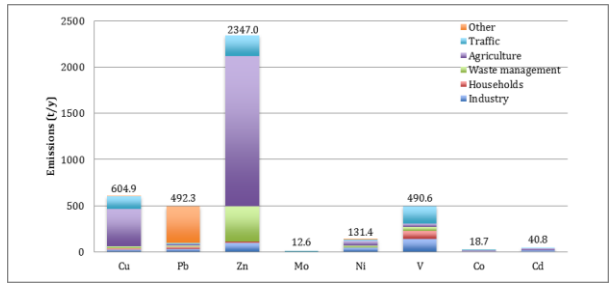
The metal sector committed to OECD to prepare and publish

- ✓ a summary of **metals diffuse sources knowledge** in a key peer review publication providing overviews, comparisons between different sources and drivers
- ✓ **horizontal fact sheets** by use

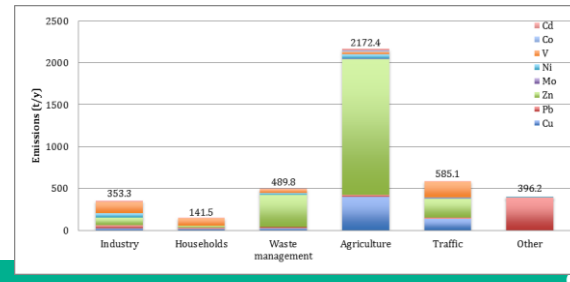
And to prepare a **template format to screen** new exposure information to assess **quality and relevance**

Diffuse sources: Deliverables up to now

- Overview of the total regional emissions for the **different metals**

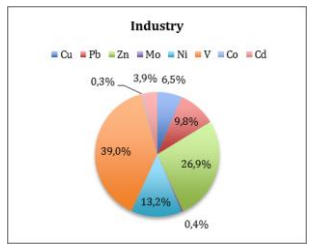


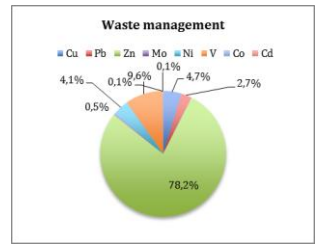
- Overview of the total regional emissions for the **different sources**

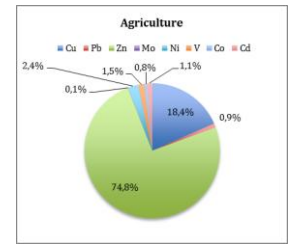


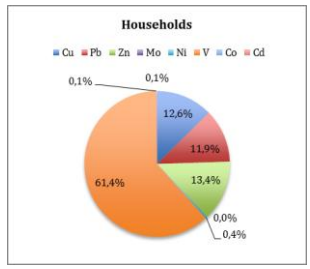
Summary on metals diffuse emission knowledge

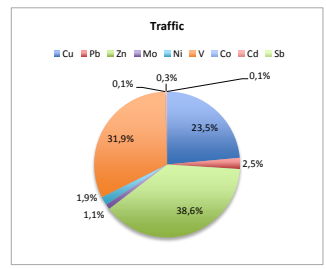
Metal emission loadings by source (examples)











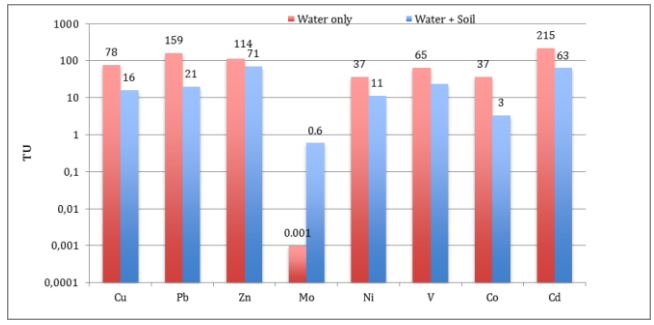
The compilation of emissions per source helps defining most relevant contributors and potential RMM if relevant

Diffuse sources: SETAC Nantes

Publication close to be finalised

Presentation in SETAC Nantes (26th Annual Meeting, 22-26 May 2016)

- Making the link between loadings (ton/year) and metal specific chronic environmental toxicity reference values (e.g. HC_5)
- The relevance load-impact results for risk-based prioritization approach will be further discussed



Overview of Toxic Unit Loadings:

- Metal differences rather limited except for Mo

OECD PRTR: BAT project

Why this OECD project?

- ✓ Bilateral discussions show there is appetite in exchanging information on policies aiming at **preventing and controlling industrial emissions**
- ✓ National or international approaches are often based on an appraisal of what is feasible using advanced available technologies – in the EU BAT
- ✓ In a globalised economy, such technologies might emerge and be implemented at different times in different countries
- ✓ OECD Member Countries and Partner Countries are key players regarding technological development

Objectives & timeline of the BAT project

- Support Countries developing or implementing policies based on BAT or similar concepts
- Information sharing would cover:
  - How national policies and legal systems are designed
  - How this has been applied to a selection of sectors of industry
  - Advanced techniques used
  - Effects on emission levels
- Enable an informed decision on whether there is added value in deepening this work

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3 years – each year a focus on one aspect / Activity

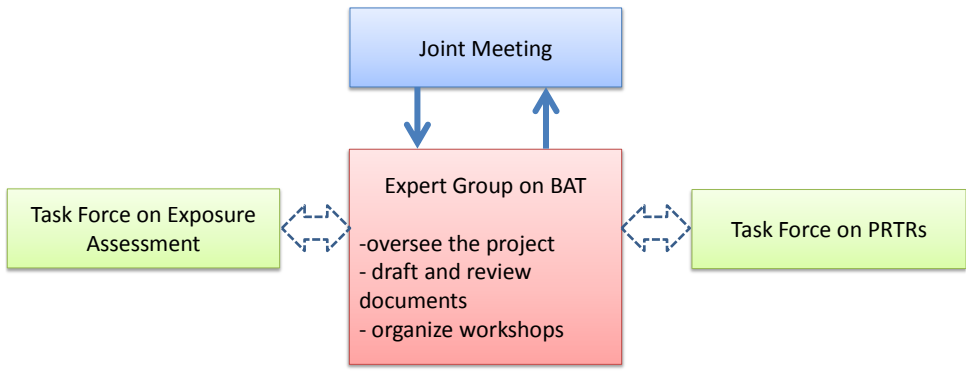
- Activity 1 (2016): Compiling information on **policies** using BAT across the world
- Activity 2 (2017): Compiling **experiences** on how information on advanced techniques is gathered, and how techniques are identified for developing BAT
- Activity 3 (2018): **Evaluating** policies using BAT by using emission data and other related information (e.g. PRTR information, monitoring data)

Each year information exchange, workshop, drafting of document

Expert Group on BAT

A new expert group established:

- under direct supervision of the Joint Meeting;
- close collaboration with the TFEA and TF-PRTRs



The TF were invited to provide comments on the organisation of the project and nomination of expert group

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