

# **What environmental requirements will be mandatory for galvanizing plants in the future?**

***The EU regulatory framework is created now!***



**Annikki Hirn, Nordic Galvanizers**

## **Who set the requirements for industrial plants?**

- On local level – local authorities – with requirements based on national regulations
- From now on: Common rules/techniques and information transformation on EU-level
- Decide what is the **Best Available Technique (BAT)** for different processes
- Create a **BREF: Best Available Technique Reference Document**
- **The old BREF is from 2007,** and was voluntary for the EU member states....

**Aim: Knowledge transformation, better performance, less environmental impact**

# **Batch galvanizing is a part of The Ferrous Metal Processing BREF**

- **A BREF is a technical document from the European Commission**
- **Aim: to determine the best available techniques for a specific industry process**
- **Also: identify the environmental performance that can be achieved by using the BAT (best available technique) for the sector**

**The BREF for Ferrous Metals Processing cover the following areas:**

**Cold rolling**

**Hot rolling**

**Wire drawing**

**Hot Dip Coating**

**Batch galvanizing**



# The work....

The work is led by the European IPPC Bureau, which has its offices in Seville, Spain

Each BREF has a technical working group (TWG), which provide data, exchange information and give comments on the draft – national environmental authorities takes part, EGGA is present, also some national associations

NG has contact with national authorities (Sweden, Denmark, Finland)

The IPPC Bureau analyzes and compiles the work and create the draft BREF


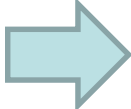
The BAT conclusions in the final BREF are formally adopted by the EU commission and are after that official

**Previously the BREF has been a guide line, now it will become mandatory**



# Who is covered by the Directive? nordic GALVANIZERS

- All galvanizing plants that galvanize two tons or more per hour
- Have pickling baths larger than 30 m<sup>3</sup>

 Almost all will be covered  The content in it is important

## Key environmental issues for the FMP BREF:

- CO/CO<sub>2</sub> emissions
- Energy consumption/efficiency
- Water consumption
- Materials consumption
- If CMR or SVHC or prioritized substances in the WFD are present
- Additional KEI – zinc emissions in run-off water – **(collect data from plant with such equipment – no obligation)**



- **CMR = carcinogenic, mutagenic and reproductive inhibiting**
- **SVHC = Substances of Very High Concern**
- **There are no CMR or SVHC substances in the galvanizing process**
- **Lead and nickel are prioritized in the WFD**

## **Next step in the BREF work:**

- **Create a questionnaire to collect more data from the plants**
- **Selecting plants - the best - the worst or “in the middle“ ?**





# Plants for data collection

The procedure for submitting plants for the data collection (using the questionnaire) has been discussed

- Plants for inclusion in the data collection needed to be **'well-performing'**
- Later in the process, some plants may be referred to as **'best performing'**
- Plants using **specific best available techniques would be termed 'reference plants'**

# **EGGA want as many plants as possible to participate...**

- It was agreed to try to get the widest participation possible in the data collection by member plants – because the BAT-AELs (BAT Associated Emission Levels) would be set on the basis of the data collected
- For inclusion in the data collection, plants should be ‘well-performing’ but this did not require those plants to be ‘reference plants’.



## **Also very small plants must follow the directive...**

- **Why apply the '30 m<sup>3</sup> tank volume' threshold to batch galvanizing?**
- **The approach to this issue in the FMP BREF revision may improve or worsen this situation**
- **Murray Cook would take care to make the EGGGA position clear to EIPPCB – i.e., that EGGGA does not agree with the application of this threshold to batch galvanizing plants**
- **But...it is important that also small plants take part in the data collection now – since we don't know what will happen with the**
- **'30 m<sup>3</sup> tank volume' threshold -**



## **Swedish plants for data collection:**

DEFAB Degerfors Förzinknings AB  
Gallac Produktion AB  
JIWE Varmförzinkning AB  
ProZink AB  
Södertälje Varmförzinkning AB  
Vadstena Varmförzinkning AB

## **Danish plants for data collection:**

DOT (Køge)  
Nordvestjysk Galvanisering A/S

## **Finnish plants for data collection:**

Caverion



# Examples from the "List of BAT candidates (mainly from the existing BREF)

318	BREF Section	BATCH GALVANIZING
319	C.4.1	Storage and Handling of Raw Materials and Auxiliaries
320		<i>No information submitted.</i>
321	C.4.2	Degreasing
322	C.4.2.1	Minimization of Oil and Grease Input
323	C.4.2.2	Optimized Bath Operation
324	C.4.2.3	Maintenance and Cleaning of Degreasing Baths
325	C.4.2.4	Continuous Biological Degreasing of the Degreasing Bath ('Biological Degreasing')
326	C.4.2.5	Utilization of Oily Sludge and Concentrates
327	C.4.2.6	Reduction of Carry-over to the Pickling Baths
328	C.4.3	Pickling and Stripping
329	C.4.3.1	Optimized Bath Operation and Control
330	C.4.3.2	Minimising Spent Pickle Liquor by use of Pickling Inhibitors
331	C.4.3.3	Activated Pickling
332	C.4.3.4	HCl Recovery from Spent Pickle Bath
333	C.4.3.4.1	Evaporative Recovery (HCl)
334	C.4.3.5	External Regeneration of Spent HCl Pickle Bath
335	C.4.3.5.1	Fluidised Bed Process and Spray Roasting
336	C.4.3.6	Separated Pickling and Stripping
337	C.4.3.7	Reduction of Zinc to Iron Ratio
338	C.4.3.7.1	Pre-treatment for Increased Reuse Options
339	C.4.3.8	Recovery of Spent Mixed Pickle Liquor by Solvent-extraction
340	C.4.3.9	Reuse of Spent Mixed Pickle Liquors
341	C.4.3.9.1	Iron Removal and Reuse as Flux
342	C.4.3.9.2	Zinc Removal from Hydrochloric Acid Pickling Baths
343	C.4.3.10	Treatment of Waste Acid by Neutralisation
344	C.4.3.11	Acid Bath Operation Range



# Things that will be measured / analyzed

## *Emissions to air*

To collect information and data about

- HCl from pickling
- Dust from the galvanizing kettle
- NOX from combustion
- Acid fumes/aerosols/mists from pickling



## ***Emissions to water***

**To collect information and data about Cr VI taking into account e.g. the type of discharge (i.e. direct or indirect)**

**Not to include any other additional parameters in the information and data collection**



**To collect information and data with the aim to updating BAT conclusions, and further investigate within the TWG on whether to define BAT-AEPLs (BAT Associated Environmental Performance Level) for:**

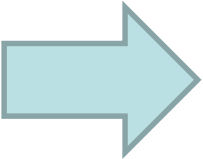
- spent pickle liquor**
- spent degreasing solution (alkaline or acidic) / flux**
- oily sludge from degreasing**
- Zn-containing residues (zinc ash, bottom dross - i.e. hard zinc)**
- filter dust**

**Not to include dioxins/furans in the filter dust in the data collection, but to collect information on techniques that ensure efficient degreasing and therefore avoid dioxin/furan formation**





## ***EIPPCB Milestones agreed at the TWG Meeting (November 2016)***



<b>BREF review milestones</b>	<b>Timing/deadline</b>
TWG members submit proposals for well-performing plants for data collection	31 January 2017
TWG members and EIPPCB provide description and technical descriptions of BAT candidates	Before end of Q1 2017
Development of questionnaires by the TWG	After KoM – end of Q2
Release of questionnaire for the data collection	Q2 2017
Collection of information and data (4 months)	October 2017
<b>Release of first draft of the revised BREF</b>	<b>Tentatively: Q2 2018</b>
Commenting period on the first draft	Tentatively: Q3 2018
Final TWG meeting	Tentatively: Q2 2019
Final draft delivered to the IED Article 13 forum meeting	Tentatively: Q3 2019

# Benefits?

**Same - or almost same - requirements on the galvanizing plants in all countries in Europe**

**Will probably cause needs for investments in some countries – i.e. raised costs for production**

**And hopefully:**

- **Better environment**
- **Better for the workers in the plants**
- **Fairer conditions – more equal conditions for galvanizing in whole Europe...**

