

Metals Sector Risk Management Support Program
RECYCLING and AUTHORISATION a first impact assessment to define mitigation measures

Introduction

Recycling is a growing part of the core business of the EU metals sector and includes thousands of collectors, sorters and medium to large-scale smelter-refiner recyclers. It drives also the innovation in the sector by the development of technically complex and safe recuperation technologies while ensuring a high level of protection for man and environment.

Aim: an assessment of the potential vulnerability of the metal recycling sector for Authorisation under REACH to determine mitigating measures.

Objectives:

It is believed that REACH Authorisation of metal substances could affect recycling specifically and significantly. However the relevance, extent and impact of the different steps of the Authorisation process have never been investigated and form the main objectives of this study. Emphasis would be on the additional or differential impact due to Authorisation on manufacturing and use, from recycling compared to the use of materials manufactured from primary materials.

This Eurometaux project is part of the overall strategy on RMM and has as objectives to:

1. Identify types of material flows that would become of concern to the recycling of non-ferrous metals, due to Authorisation
2. Identify what specific economic or technical considerations may be relevant for justifying exemptions or a particular way of addressing these concerns under the REACH Authorisation scheme
3. Identify pilot cases for further Socio-Economic Impact investigation to confirm the relevance and extent of the concern
4. Develop initial thoughts for mitigating effects to reduce the impact of Authorisation on recycling of material resources like metals.

Means and steps:

1. Defining and clarifying the legal scope of Authorisation on recycling
2. Identification of types of materials use in recycling that could potentially be vulnerable to Authorisation
3. Identification of areas of concern for the metal recycling sector in general
4. An initial assessment of potential vulnerabilities of the major metal commodity recycling flows
5. First estimation of secondary streams that can be potentially affected as well as their scale
6. Arguments in favour of limiting / preventing additional impact of Authorisation on the recycling of secondary streams
7. Identification of potential mitigation factors to prevent/limit the impact of Authorisation on the recycling of secondary streams
8. Suggested way forward for industry to further clarify the impact and scale

Status and results summary

1. Defining and clarifying the legal scope of Authorisation on recycling

Earlier work and discussions with the Commission (see reference on assessment made by Eurometaux) clarified that:

- Authorisation does not apply as long as a waste remains a waste, in the process wherein it is used
- Waste versus non-waste status (cf. the Waste Framework Directive 2008/98/EC) can be different between countries except for materials with EU criteria determining when scrap ceases to be waste
- When a non-waste Authorisation is applicable for “any use of a substance listed on Annex XIV” on its own or in a mixture unless it is an Intermediate use, an impurity unintentionally present and that has no functional

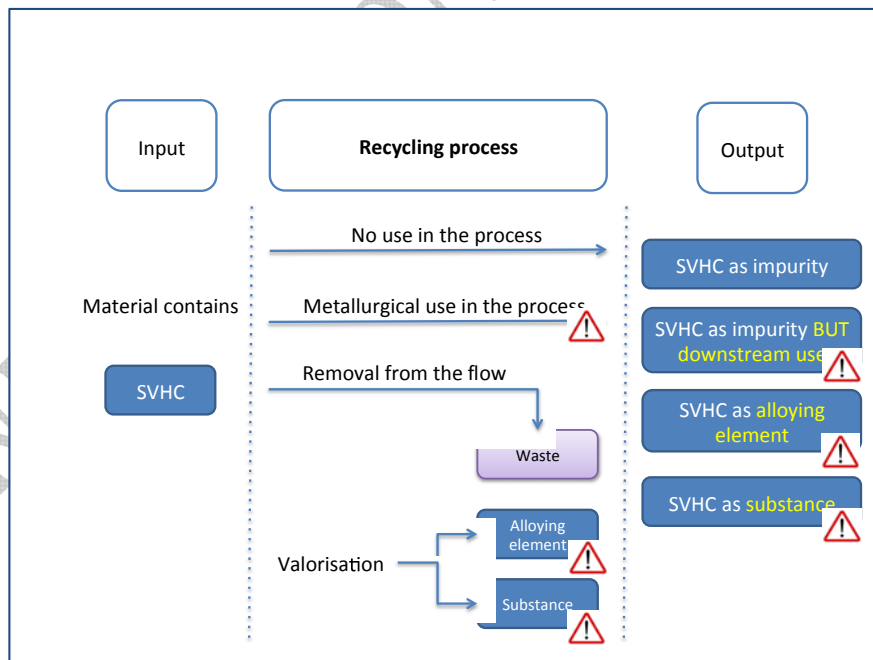
use in the material, an Article or in any case were the concentration of the substance remains below the generic or specific concentration limit

2. Identification of potential types of materials use in recycling that can be vulnerable to Authorisation

- a) The **recycling of metal compounds** (such as oxides, chloridic and sulphidic materials etc.) or **complex UVCB substances** (such as flue dusts, slags, etc.):
 - include processes that change the chemical speciation of the Annex XIV substance (e.g. from an oxidic to a chloridic to the metallic phase) and transform it to another substance. Their *use in refinement processes* can be considered as intermediates and therefore mostly excluded from Authorisation.
 - Authorisation becomes relevant for the final output from the refinement process - the refined metal or the salt produced in the same way as for primary materials.
- b) The **recycling of metallic scrap**:
 - does often not imply intermediate stages given the material is melted for the production of semi-finished or finished products,
 - more complex pyrometallurgical recycling of scrap (smelting and refining) involve several changes of speciation during the different refining steps (oxidation, reduction). They are exempted from Authorisation if part of the manufacturing but not necessarily if a *use in refinement*
- c) **Waste recovery direct into an article** is exempted from Authorisation (e.g. waste smelting to manufacture clinkers)

3. Identification of areas of concern for the metal recycling sector in general

What uses: The scheme below summarizes when an Annex XIV substance/material in a recycled stream for use, can be potentially impacted by Authorisation



How

affected:

- **The output effect:** the use of the outcome materials that are on Annex XIV and fulfil the authorisation criteria are affected in approximately the same way as primary materials
- **The input effect:** the cost impact on the recycler can also significantly affect the input side of the recycling process given as an indirect mechanism whereby the recycler becomes more selective in the materials bought for recycling resulting in the more contaminated or complex streams not being recycled and the added value margin for the recycler decreasing

5. First estimation of secondary streams that can be potentially affected as well as their scale

Metal materials recycling streams handled by representative recycling companies for the major metal commodities were analysed in some detail to define the generic and selective impacts of Authorisation as well as to identify the potential scale of the issue, recognising the function, in the final products, of the metal(s) / metal compound(s) potentially on Annex XIV in the future.

Indicative table of value chains potentially impacted based on assumptions of potential SVHC status in the future and SCLs:

Recycling chain	Issue	Implications regarding Authorisation? (*)	EU tonnage
Lead alloy production, use and recycling value chain			
Lead scrap	Recycling of lead scrap (bearings etc.)	For arsenic, If arsenic is used as a functional alloying element For Lead metal	Thousands of tons >>Thousands of tons
...			
Copper alloys production, use and recycling value chain			
Copper alloys (brass, bronze, cupro-nickel, die castings)	Recycling of radiators e.g.	For lead, arsenic and beryllium if separated for use as metal or present in alloy as functional alloying element	Thousands of tons
...			
Tin production, use and recycling value chain			
Tin scrap	Recycling of lead-tin alloys	For lead and possibly cadmium if separated for use	Thousands of tons
...			
Nickel and cobalt-containing chemicals production, use and recycling value chain			
Rechargeable battery recycling	Recycling of Cd and Ni or Co-containing chemicals	For cadmium if separated for use For other CMR metal salts if recovered and manufactured	Thousands of tons
...			
Aluminium alloys production, use and recycling value chain			
Aluminium scrap	Recycling of Pb-containing scraps (Pb contained above 0,03%)	For lead If is used as alloying element.	5,9 Mt
...			
Precious metals production, use and recycling value chain (under review)			
...			
...			

(*) Important to check/indicate if the substance is present as an impurity or as an intentional part of the alloy.

6. Arguments in favour of limiting/preventing additional impact of Authorisation on the recycling of secondary materials in the metal sector

- The contribution of recycling "to the circular economy"
- Reduced energy consumption and climate impact
- International competition for resource access including recyclables, is exclusively financially driven
- The composition of the input materials of (both primary and) secondary materials can't be changed meaning that SVHC impurities must be eliminated through disposal or receiving a valuable use
- An Authorisation scheme on recycling could result in "country shopping" depending on the difference in implementation on the waste regulation
- Losing recycling companies and competitive knowledge in innovative recycling technology
- ...

It is therefore more than recommendable to search for mitigation measures to make the recycling sector not more vulnerable to Authorisation than the primary sector.

Potential strategies and suggestions for mitigation

Measures suggested for consideration (short or long term):

- a. First and upmost: assessing systemically the issue/impact of Authorisation on recycling *from the start of the RMM process*:
 - i. When: during the RMO phase in advance of the screening for new inorganic substances for potential SVHC candidates
 - ii. How: a more holistic approach including a qualitative assessment for specific concerns (access to raw materials, impact on the circular economy, impact on disposal and recycling/resources policies?)
 - iii. Aim: define the most appropriate RMM tool that considers all these aspects
- b. As a policy measure consider if the **prioritization scoring** can in one or another way value recycling by for example not including them in the volume scoring. **Exempting the recycling phase** could be a valid other option but may require change of the legal text. A more liberal interpretation of art 58§ 2 may be a way forward
- c. When any of the previous steps would have excluded recycling from authorisation:
 - i. consider a **simplified Authorisation** regime for metal scraps recycling when the use for recycling would fall under Authorisation
 - ii. A scheme for **"Fast Track Authorisation"** in case of valuation of byproducts in safe uses, to prevent that they be exported and the articles/products are imported?

Next steps

The next steps associated with this study includes:

- a) Completion of the inventory of generic and commodity stream impacts (Aluminium, Precious metals, Cobalt, ...)
- b) Socio-Economic Impact assessment for 3 specific cases estimating on a quantitative basis the impact of Candidate and/or Annex XIV Listing :
 - Differential impact of Authorisation for the use of an SVHC and Annex XIV substance manufactured by a primary and a secondary smelter
 - Impact on the selection and availability of recyclables for a recycler using secondary materials containing substances on the SVHC list and Annex XIV
 - Assessment of the impact of Authorisation for materials on Annex XIV for use in the recycling sector
- c) Further activity to define relevant options for mitigation measures
- d) Communication activities: outcome of the study results and suggested mitigation measures

PMC Secretariat recommendation

- Contribute to the inventory of generic and commodity stream impacts
 - o Select a company
 - o EM offers to allocate one day to review the main stream impacts on precious metals (as done for tin and other metals)
- Engage in the effort led by EM to advocate on the mitigation of impact of Authorisation on recycling
- Timing: March 2015
- Budget: no budget required

FOR APPROVAL: PMC involvement in EM project on Authorisation and recycling