The environmental, social and economic imperatives for metals recycling

An Industry Perspective

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The global EU context

→ EU 2020 and resource Efficiency Strategy
  ✓ Every product that will be produced and used in EU will need to demonstrate an « acceptable » sustainability footprint over its entire life cycle!
  ✓ What is « Sustainability Footprint »?
    × Combination of toxicity, carbon intensity, resource intensity, water intensity and ... socio-economic value
    × Methodology?
  ✓ Circular Economy
  ✓ Direct market implications
  ✓ Competition between materials
<table>
<thead>
<tr>
<th>Material structure</th>
<th>Wood/Paper</th>
<th>Plastic</th>
<th>Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber (e.g. cellular)</td>
<td>Recycling degrades structure</td>
<td>Molecular hydrogen-carbon</td>
<td>Recycling (limited by contamination)</td>
</tr>
<tr>
<td>Material renewal</td>
<td>Degradation</td>
<td>Combustion</td>
<td>Dispersion</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>Landfill</td>
<td>Degradation</td>
<td>Combustion</td>
</tr>
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<td>Combustion</td>
<td>Dispersion</td>
<td>Landfill</td>
<td>Elements are permanent (subject to dispersion and other losses)</td>
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<td></td>
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<tr>
<td>Time scale</td>
<td>Days to decades</td>
<td>Days to years</td>
<td>Theoretically unlimited</td>
</tr>
</tbody>
</table>

**Competition between materials**

**Different Life Cycles**

Different Life Cycles and characteristics lead to different optimization strategies:
- Paper and Wood: focus on resource
- Plastics: focus on product value
- Metals: focus on material
  - Assets: Durability and Recyclability
Non Ferrous Metals essential to a sustainable society

- Without non-ferrous metals, no modern life... and no transition to a low carbon & resource efficient economy!
- Waste are resources that should not be wasted!
- As metals can be recycled again and again without losing their properties metals can be considered as a real asset if they are properly recycled
- There is a huge potential to recycle more metals but different challenges need to be addressed along the entre recycling value chain

Recycling addresses key strategic objectives such as resource efficiency, access to raw materials and job creation

Recycling Potential

Recycling rates range between 1% and up to 95%

The « urban mine » offers a huge potential for more recycling

Drivers for recycling:
- Value
- Volume
- environment
Some metals do not fall in these categories!

Great Recycling potential especially for technology metals! EU Industry can recycle more provided it has a secured access to raw materials at competitive prices!
Recycling Value Chain Challenges

1. Recyclability of products – design for recycling is too often poor or nonexistent!
2. Suboptimal end-of-life collection
3. Quality recycling for all steps of the value chain
4. Landfilling of post-consumer goods
5. Shortage of secondary raw material due to exports to non-European countries partly due to illegal or dubious shipments of waste
6. Level playing field worldwide & quality recycling
7. Technological and economic hurdles to recycle increasingly complex products
8. Transparency across the value chain and better enforcement of legislation

⇒ The efficiency of the whole recycling chain very much depends on the efficiency of each step
Let us optimize…

- **Recyclability of finished products** > inclusion of recyclability criteria in product policies + enhanced understanding of value chains’ challenges and interactions – **There is no demand problem for metals!**
- **Suboptimal end-of-life collection schemes** > separate collection at source + quality targets for all steps of value chain + clearer objectives and transparency for collection schemes including EPR
- **Quality recycling for all steps of the value chain** as percentage and/or as quality standards as relevant (not necessary for all waste streams)
- **Landfilling of post-consumer goods** > **diversion of waste from landfill** – progressive ban of post-consumer goods from landfilling as aspirational target provided it is supported by measures to support quality recycling

Let us optimize…

- **Shortage of secondary raw material** due to exports to non-European countries partly due to illegal or dubious shipments of waste > stricter enforcement of Waste Shipment Regulation including link with certification of recycling facilities (over 25% of illegal shipments)
- **Lack of level playing field worldwide & quality recycling** > mandatory certification scheme of recycling facilities incl. environmental, health and safety and efficiency criteria defined in quality standard for relevant waste streams
- **Technological and economic hurdles to recycle increasingly complex products** > more support to innovation
- **Transparency across the value chain and better enforcement of legislation** > enhanced cooperation across the value chain
System Innovation

- Support to recycling starts with a good analysis of the recycling flows
- There is a joint responsibility along the value chain to ensure that sound recycling takes place!
- Innovation is key to support new recycling business models and technological improvements
- Eurometaux leads on a project to certify the recycling facilities and is part of other projects of the WEEE 2020 programme
For more information

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Thank you for your attention

Questions?