

Key business messages

Sustainable Materials Management

OECD Global Forum

Mechelen, 25-27 October 2010

BIAC appreciates the opportunity to participate in the OECD Global Forum on Sustainable Materials Management (SMM), which will be held in Belgium on 25-27 October 2010. BIAC has been an active participant in OECD work in this area and fully supports the transition towards a more sustainable and resource-efficient economy. An integrated strategy on the sustainable management of both primary and secondary resources is necessary to achieve progress. Business needs to be an integral part of these discussions and looks forward to working further with the OECD to assist with policy developments in the future. BIAC proposes that the following areas be given due consideration in order to move SMM forwards:

1. Establish a clear knowledge base to work from
2. Foster integrated policy approaches
3. Encourage research and innovation
4. Optimise policy instruments
5. Avoid a strict target based-approach
6. Facilitate access to primary and secondary resources
7. Work towards closing material loops
8. Create a level playing field

1. Establish a clear knowledge base to work from

The OECD has already contributed greatly to improving our understanding of SMM and has organised several meetings which served to enhance our knowledge base and common understanding of SMM. BIAC recommends that this work be continued to ensure that a clear understanding of the extent of the challenges to be addressed is acquired through all areas of society.

Topics to be addressed include, but are not limited to: the global availability of resources; the need to improve statistics on both primary and secondary resources, paying special attention to data on imports and exports of materials for manufacturing and the materials contained in manufactured goods that are traded, as well as cataloguing trade flows of second hand goods, wastes and scrap; key trends on the use of resources; skills and capacity; and policy obstacles. Policy makers, business and society at large need to be clear about the challenges ahead and what we are trying to achieve through SMM. The OECD Global Forum on SMM provides a key opportunity for an exchange of views on the challenges to be addressed.

2. Foster integrated policy approaches

A major concern is that SMM could be seen only as an environmental issue and so only be integrated into the broad environmental agenda, thereby not meeting its full potential to address global material focussed issues. Integrating the issue into the mainstream policy agenda (including through the involvement of economic, trade and finance ministries) should be pursued to ensure that SMM is treated in a comprehensive manner.

BIAC would also like to stress that for SMM policy to be successful, it needs to follow a lifecycle approach that factors in environmental aspects, social issues and economic costs. It must take into consideration the risk of shift of burdens and recognise the interdependencies between, for example, using more of a specific material in certain applications to allow for savings of another material in other applications. An integrated policy on the efficient use of natural resources is required to boost the availability of natural resources and close materials flows.

OECD should also align its strategy on materials with other policy domains, like energy, climate and agricultural policy, as this will help to prevent it from pursuing clashing objectives and ensure that it always strives for the most positive environmental outcome, acting in a cost-effective manner at all times. BIAC recognises the benefit to highlight the linkages between ongoing SMM work and the OECD Green Growth Strategy, as there are common factors between the two.

3. Encourage research and innovation

Innovation and technology are crucial for achieving real progress towards green growth and should be an important cornerstone of any SMM strategy. Business believes that resource efficiency and SMM should be an integral part of research and innovation strategies wherever possible. The OECD, through its horizontal Innovation Strategy, which was

submitted to the May 2010 OECD Ministerial Council Meeting, has provided high-level policy advice on how to address innovation requirements in a truly cross-cutting manner. Using innovation to address key environmental challenges, including SMM, should be an integral part of future work on how to put these recommendations into practice.

Greater attention needs to be paid towards the use of more efficient resources from the beginning, i.e. the material selection and design stage, as well as through the subsequent phases of manufacture and product use, bearing in mind that it is through the creation and spread of modern technologies and new resource-efficient processes across the lifecycle that the biggest positive changes can emerge. Due attention needs to be paid to ensuring that promising research and development reaches the market and is translated into commercial applications.

4. Optimise policy instruments

The nature of SMM has led to a number of ‘soft’ policies (like voluntary agreements). BIAC does not agree with the general statement that these mechanisms are less effective than ‘hard’ policies (regulatory instruments, market based approaches). Voluntary agreements can take into account the specific characteristics of different sectors and materials. In BIAC’s view, to address a specific environmental challenge, all policy options should be assessed according to their economic effectiveness and environmental efficiency, bearing in mind that optimising the choice of policy instruments used may differ depending on sector and region. The key focus should be on defining the objectives and the most effective ways of achieving a more resource-efficient economy.

However, BIAC would like to caution against the use of excessive ‘hard’ policies. This is particularly applicable in the context of fragile economic recovery. While business understands the need to advocate improvements in SMM, the imposition of overly strict regulatory instruments is likely not the best way to achieve it.

Policies must strike a balance and should encourage SMM where feasible *without* the outcome that additional cost burdens lead to resources being diverted from investments in innovation or force investment to countries where environmental regulation is less stringent. Green ‘taxes’ which are poorly designed or mainly created as a revenue raising measure will not be effective in working towards encouraging SMM.

We also need to think about how regulation is used. Too often it can focus on micro-managing technical issues rather than encouraging companies to actually make their processes more sustainable. Well-managed businesses should see their regulatory charges reduced.

There is potential to optimise policy by building on the foundation of past private sector SMM initiatives. The various reasons for the success and failure of previous schemes could be outlined. This, with close involvement of the private sector, could help identify policy that would support the future implementation of SMM practices.

5. Avoid a strict target-based approach

The OECD has already carried out some analysis on opportunities and challenges of setting and pursuing targets. In BIAC's view, target-based SMM policy approaches must be considered with great care as the concept of resource efficiency cannot be restricted to a simple numerical target. A lack of sufficient indicators from which to measure SMM policy has already been identified. Furthermore, restricting the concept of SMM to a strict numerical figure could have direct impacts on other policy objectives.

There is a need for further objective analysis on the benefits and disadvantages of using targets and what exactly they are designed to measure. A distinction should be made between hard targets, soft targets, voluntary targets, and broader objectives, and the pros and cons of these in different sectors and circumstances should be carefully analysed. A one-size-fit-all approach must be avoided, and careful consideration must be given to implications on growth, innovation and resource availability in addition to environmental considerations. BIAC recommends that there should be a transparent and inclusive discussion, involving the business community from different sectors, on the pros and cons of targets *before* policy recommendations are made.

6. Facilitate access to primary and secondary resources

Our economies are highly dependent on a range of natural resources, which are essential for the manufacture of a wide range of products. Global demand for natural resources is rising quickly, and securing access to natural resources is a key policy concern for many countries.

Industry-wide concerns about raw materials security have been increasing in recent years, as commodity prices have become increasingly volatile, and access to certain raw materials has become a serious issue for a number of businesses. At the same time, market distortions and unfair trade practices have aggravated the strained market and need to be urgently addressed. Raw materials security is high on BIAC's agenda and has recently been taken up by the OECD Trade Committee, focusing on the impact of export restrictions.

A sound investment environment for producers and open markets without trade distortions are key requirements for the availability of raw materials in sufficient amounts and qualities at reasonable prices. Socially responsible exploitation of natural resources should not be held back by red tape, inefficient regulation or competitiveness distortions.

SMM also highlights the need to have secure access to secondary resources (i.e. waste for recycling). Ensuring raw materials security also requires a well-functioning recycling sector, which is also often confronted with the impacts of trade distorting measures.

Accordingly, the creation of fair framework conditions for all economic actors involved in the waste management of products (including the manufacturers) is needed to ensure that markets for primary and secondary materials can operate freely. We need to facilitate a market where companies that cannot reuse their waste can sell it to those who can use it. The OECD should further encourage its member countries to take affirmative action against

restrictions on exports of primary materials as well as improving enforcement of the rules on exports of end-of-life goods and wastes under OECD Council Decision C(2001)107/Final.

Finally, BIAC supports landfill reduction policies to establish a sound basis for SMM. As long as landfills are the reference in a country to discard used products, SMM policies will most likely fail. The wider economy benefits from a worldwide increase in recycling activities.

7. Work towards closing material flows

Industry has undertaken major efforts in closing material flows. These efforts should be supported by policymakers who should create an enabling policy framework for business to engage in efficient productive processes and to close material loops. Challenges that remain with respect to closing material flows more efficiently need to be addressed. Such challenges include, but are not limited to, lack of available technologies, regulatory limitations, and public perception issues.

Besides landfill reduction policies, consumers and governments need to be fully aware of the importance of selectively collecting used items. Following on from collection, the SMM aspects of increasing the refurbishment and reuse of goods as well as optimising waste flows need further consideration.

8. Create a level playing field

SMM performance in non-OECD countries may vary considerably across least developed, developing or rapidly industrialising countries. Whilst consumption of primary and secondary raw materials, manufactured goods and reused goods in developing and rapidly industrialising countries is increasing, the trade in these goods from OECD to such non-OECD countries can in some cases raise both environmental protection and public health concerns.

There are often large SMM differences between OECD and non-OECD countries. In this context, the OECD could explore the role of global operating standards to ensure that both the extraction of primary materials (including preparation for use in downstream industries) and the recycling of materials (from collection through to placement back into the economic circuit) encompass the need to protect the environment and public health, while also meeting economic and technical efficiency.

Future OECD work on SMM

BIAC actively supports fact-based, objective OECD analysis on SMM. As a multi-disciplinary organisation with economic focus and excellent analytical capacity, the OECD can make a major contribution to advancing the knowledge about the challenges and opportunities presented by SMM. In BIAC's view, the following areas deserve particular consideration:

- SMM is currently being addressed in the Working Group on Waste Prevention and Recycling. We encourage the OECD to address SMM in a truly cross-cutting way,

benefiting from the expertise it has in other areas, such as trade, investment, taxation, and innovation.

- The OECD has an important role in fostering the right framework conditions for open and properly functioning raw materials markets. This includes fact-based analysis of the range of existing trade distortions affecting the movement of raw materials. BIAAC welcomes work in this area which is now being undertaken by the OECD Trade Committee.
- Policy makers must recognise the important role that domestic recycling industries play in the area of secure supply of raw materials and SMM. The OECD could help identify barriers, such as the implications of “waste management” oriented legislation and bureaucratic burdens. We also encourage the OECD to share experience in the area of scrap collection and recovery structures with key emerging economies.
- In view of the implications that stringent target setting can have, there is a need for further objective analysis on the pros and cons of using targets *before* policy recommendations are made. Such analysis should be carried out in close cooperation with industry.
- To address large SMM differences between OECD and some non-OECD countries, the OECD could explore the role of global SMM operating standards for industry that encompass the need to protect the environment and public health as well as meeting economic and technical efficiency.

ANNEX

Comments on the case studies submitted by sector experts

Aluminium case study

- The use of 2006 industry data limits the value of the document in presenting the contemporary aluminium industry.
- The paper spends considerable effort and focus on a comparison of two models of the industry - a European model and a World model for both the refinery and smelter segments of the industry. How does this feed into the thesis being developed in the paper and its findings/conclusions? Do the changes in global production since 2006 impact on the assumptions? The paper should consider the changes and movement within the industry in the subsequent three years which are arguably the most dramatic in terms of structural shifts ever witnessed by the industry (since the fall of the Soviet Union).
- The paper fails to cover adequately the subject area of the global flow of materials within the aluminium sector. For instance, there is no reference to nepheline which is used as an alternative feed stock (in place of bauxite) for the production of a significant share of the Russian alumina.
- The paper would be more balanced by the use of the term "bauxite residue" rather than the slang "red mud" (for example, refer para 3 of the Executive Summary). In the same paragraph "and CO₂" should be added after the word "perfluorocarbons" for accuracy.
- While the aim of the paper refers to production and use, the Executive Summary (page 2, para 2) starts to introduce uncertainty as to whether the paper is dealing with capacity or production – and this occurs elsewhere in the paper.
- The Executive Summary (page 2, last para) appears to overlook other factors for reducing CO₂ within a smelter which do not come from plant/technology-based efficiency improvements but come from the introduction of different potroom management processes. Replacement/retirement of old plant will also deliver an increment of efficiency to the global smelter fleet.
- Tables 1-3 covering production of bauxite alumina and aluminium demonstrate the problem of the reliance of outdated material (2006): IAI reported production data combined with data reported by the China Non-Ferrous Metals Industry Association provide a guide to how significant the regional shift has been since 1996: West Europe accounted for 12.6% of the reported global production in 2006 compared to 10% in 2009; the North American share declined from 16% to 13% over the same (short) period; on the other hand, China grew from 28% to 36% - and this year China is projected to produce around 40% of global primary aluminium.

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- This shift has a very material change on the sector, principally through the energy source for the electricity consumed in the smelting phase of the process.
 - Similarly, on alumina production the geographic shift will influence the global flow of materials – and, again, it is the change in China that causes the largest impact on the outcomes: in Table 2 (page 9), China is reported as producing 13.7 million tonnes of alumina accounting for 19% of global production in 2006 – this compares to 23 million tonnes reported by CNIA for 2009 and H1/2010 data suggest an annual production around 28 million tonnes for 2010, double the 2006 level and estimated to be in the order of 35% of global production.
 - Section 3.1.1.2 Alumina indicates correctly that not all alumina is used to produce aluminium and refers to use in refractory products; this could be extended to refer to metallurgical grade and to chemical grade alumina (around 5 million tonnes annual production).
 - Section 3.1.1.3 makes reference to recent smelter capacity developed in the ME-Gulf region (referencing 2006 production) and smelters being built in Iceland – and to the shifts in production that could come from the relative cost of energy in different locations. This is where the current situation overwhelms the relevance of the paper – and shows the paper to have been developed in a static 2006 world without taking the opportunity to describe the changes and movement within the industry in the subsequent three years which are arguably the most dramatic in terms of structural shifts ever witnessed by the industry (since the fall of the Soviet Union).
 - Section 3.1.2.1 Bauxite Mining (page 13, last para): it is questionable whether bauxite mining requires a large support network compared with that of other mining operations (open-cut versus underground) – and the level of overburden is relatively small compared with many other open-cut mining operations.
 - Section 3.1.2.2. Alumina Production (page 17, para 1, bullet 1) add the word “solution” after “caustic soda”
 - Figure 7 (page 22): the inputs do not total one tonne – and thus do not create one tonne of anode; it is not clear what sea water is used for in the production of anodes under the “World” model; also, the difference in the level of steel inputs should be reviewed, along with the levels of solid waste (landfill) from the two alternative models (5.3 kg vs. 24.5 kg).
 - Figure 11 (page 26) “Anode paste” is misleading and could just read “Anode”.
 - Section 3.1.2.3.3 Industry Performance Goals (page 34): It is suggested that the paper should report performance against the goals established by the IAI. Our most recent reports are available on our website.
 - Table 6 (page 38): for China, the apparent consumption of aluminium in China is now in the order of 11-12 kg per capita (up from the 6.63 kg shown in Table 6 for 2006, reflecting the significant changes over the last few years.

Additional detailed comments from IAI were submitted to the OECD Secretariat.

Comments on the wood fibres case study

CEPI members are very interested in the SMM approach, and in particular the suggestions for SMM made by the Belgian presidency of the EU Environment Council on 13 July 2010 in Ghent, aiming at the efficient and responsible use of materials and calling for remedy of the current fragmented policy structure on waste, natural resources, raw materials, integrated product policy, eco-design and sustainable consumption and production, as well as better integration of SMM with other policy areas. In contrast, the OECD report on Wood Fibres does not seem to reach the same level of vision and focuses primarily on the past instead of aiming towards the future. CEPI would like to make the following general remarks about the study:

Scope, system, product group and functional units: Despite the title “Wood Fibres”, the study focuses on the pulp and paper industry only, omitting the fibre flows in other industries and between those industries. In addition, the study has not defined any functional units, without which all input, output and environmental impact lose significance. To avoid this, SMM should be closely aligned with life-cycle management and LCA methodology as developed by the EU and UNEP. The study may also benefit from a clarification of its scope and system boundaries.

Data: Data is often out of date.

Environmental aspects: Environmental cross-media effects are not considered, e.g. closing the water loop is likely to increase the need for energy and chemicals, as well as impact occupational health and safety aspects.

Water definition: Water use is measured in the study as “intake” when the “impact of water consumption” would be more appropriate.

Hypothesis and robustness: The study suggests “substantial opportunities”, however, these opportunities are not assessed systematically but seem to be picked subjectively from various sources. Impacts are not assessed nor is there a verification of the status as to whether the listed technologies are actually available or compatible. On the other hand, it is not clear what the opportunities could be in Europe where, for example, 94% of the paper mills already apply CHP technology.

In addition, the study concludes rather obscurely by stating “...weak enforcement of regulated practices...”. We can see no support of this in the document and disagree with such a statement since the paper industry is one of the most regulated sectors in Europe and complies with its legal obligations.

The European paper industry is, however, willing to support the development and active implementation of a policy framework based on the SMM approach, covering the full life-cycle of products and manufactured goods, from the harvesting of raw materials to product design, manufacture, consumption and end-of-life, from cradle to cradle. Here SMM can be an approach for the efficient and environmentally responsible use of materials, independent of whether they are raw materials, products or waste.

Comments on the plastics case study

- Scope and Objectives of the Plastics Case Study:
 - In general, the case study focuses on end-of-life issues instead of the full life cycle.
 - The study is limited in that it excludes a major plastics market segment – packaging.
 - The study does not include an analysis of the use phase of plastics in the life cycle, which needs to be included along with a feedstock analysis. The sustainability benefits and sustainable materials management analysis of plastics in many cases are reflected in the use phase.
- Full life cycle and sustainability findings for plastics as for sustainable materials management
 - A comprehensive product sustainability report conducted in June 2010 on plastics (Source: “The Impact of Plastics on Life Cycle Energy Consumption and Greenhouse Gas Emissions in Europe”, Denkstatt GmbH, Hietzinger Hauptstrasse 28, 1130 Vienna, Austria, prepared for Plastics Europe by authors Harald Pilz, Bernd Brandt, Roland Fehringer) covered over 85% of all plastics applications in Europe (173 plastic products in 32 case studies) with a focus on energy use and climate change effects from the whole life cycle of the products assessed.
 - The study followed the principles of ISO 14040 and was peer reviewed by two independent reviewers.
 - Key findings are as follows:
 - Overview of Denkstatt Study
 - The study included 173 plastic products across all plastic applications in Europe
 - 46 million tonnes of plastics were consumed in the EU 27+2 in 2007
 - The study examined energy used throughout the entire life cycle of the plastic products
 - Packaging products examined: milkshake and cream containers, a condensed milk portion pack, a liquid washing agent bottle, a jam catering pack and a still mineral water bottle.
 - Plastics meet society’s needs better than the materials they replace. Substitution of plastics where feasible (based upon 2007 scenario) would:
 - Generate 3.7 times more mass (impacting waste management)
 - Result in 61% more GHG (greenhouse gas emissions)
 - Lead to 57% more energy being consumed
 - Plastics and energy efficiency results include:

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- Plastic products enable energy savings of 2.300 million GJ per year equating 50 million tonnes of crude oil – that is 194 very large oil tankers
 - Plastic products prevent GHG emissions of 120 million tonnes per year which equals the total CO₂ emissions of Belgium (in 2000) or 38% of the EU15 Kyoto target on the reduction of GHG emissions
 - The carbon footprint of an average EU 27+2 consumer amounts to about 14 tonnes CO₂ per capita, a mere 1.3% - or 170 kg – stem from plastic products
 - Substituting plastic products with alternative materials would increase energy consumption by 57% (across the total life-cycle of plastic products) and increase greenhouse gas emissions by 61%
- Plastics packaging and energy efficiency results include:
 - Approx. 190 million tonnes of CO₂ emissions can be saved through plastic packaging
 - Only 1 to 3 % of the weight of a packaged product comes from plastic packaging
 - Plastic packaging saves 27 million tonnes of oil that would be consumed if heavier alternatives were used. This equates the crude oil consumption of the entire Belgian and Dutch car fleet (25 million cars)
 - Packaging is the application where plastics allow for the highest energy savings
 - Compared to alternatives, plastic packaging applications not only need less energy during the production phase but also enable significant energy savings during the use phase
 - Wrapping fresh foods in plastics instead of alternatives prevents 10% of food losses and saves a further 22 million tonnes of CO₂ emissions.
- Plastics – efficient use of oil and natural gas
 - Europe
 - Plastics production accounts for just 4% of oil and gas use
 - Remaining 96% of oil and gas use are:
 - Transportation – 45%
 - Heating, electricity and energy production – 42%
 - Chemical and petrochemicals industry – 5%
 - Other non-energy uses – 4%
 - United States (Source: U.S. EIA – Energy Information Administration)
 - Plastics production accounts for 4.6% of total U.S. petroleum production (liquid petroleum gases – LPG; and natural gas liquids – NGL)
 - In addition, 1.5% of total U.S. natural gas consumption were used as feedstock
 - A “carbon balance” of the total plastics market in the EU27+2 shows that the estimated use phase benefits (reduction of GHG emissions enabled by plastics products) were roughly 5-9 times higher than the emissions from production and recovery of all plastics in 2007.

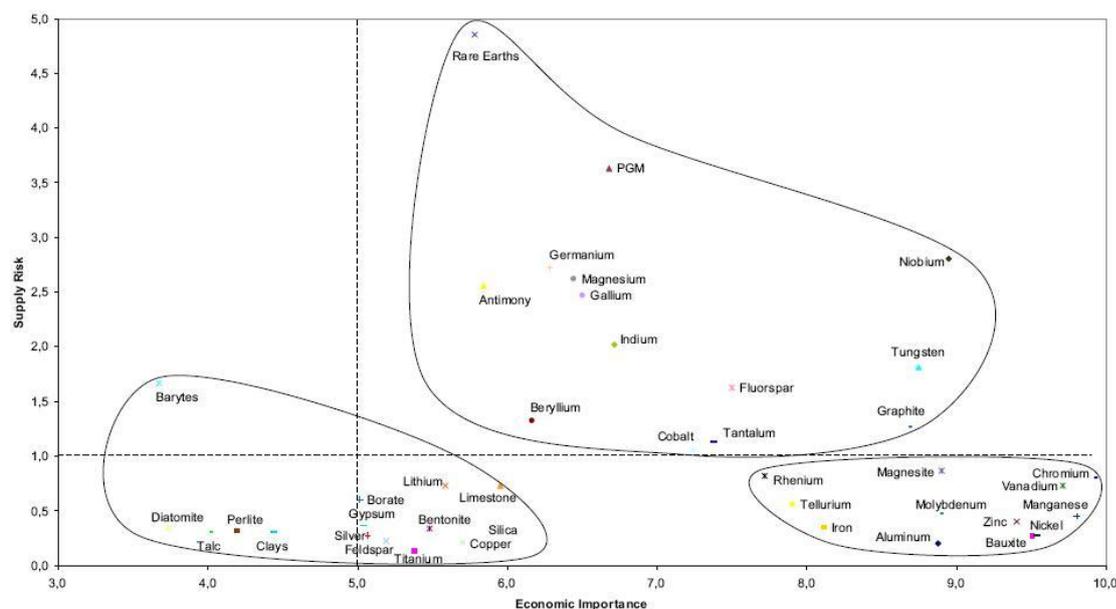
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- The potential for increasing the use benefits up to 2020 is much higher than the additional emissions from the growth of plastics. In 2020 the estimated use benefits could be 9-15 times higher than the emissions from production and waste management in 2020. This “carbon balance” shows the huge importance of proper understanding of the so called interdependencies.
 - Conclusions
 - The plastics case study does not fully capture the full life cycle and use phase analysis of plastics
 - Comprehensive life cycle study (Denkstatt report) demonstrates sustainable materials management of plastics in numerous applications

An integrated strategy on the sustainable management of both primary and secondary resources is a key element of SMM policy that OECD should incorporate – plastics demonstrate SMM throughout its life cycle and value chain and clearly show the material interdependencies, therefore a broad holistic approach is a must in SMM.

Comments on the Critical Metals and Mobile Devices case study

BIAC acknowledges the considerable efforts made in compiling the Critical Metals and Mobile Devices Case Study and the wealth of data contained therein.

Since the study was published in its current form, the EU has brought forth a list of 14 critical materials illustrated below, BIAC reiterates the EU industry comments after that publication that such a list will change with time and circumstance and so studies on determining critical materials should be repeated at intervals.



Consideration of “What makes a Critical Metal?” demonstrates *inter alia* the need for SMM policies to be complimentary and coherent with trade policies. The OECD Trade Committee work on “Export Restrictions and Trade in Raw Materials” is important in that respect.

As studies by the OECD carry much authority, the following few edits are requested in order to maintain the quality of the case study:

Paragraph 41, last sentence should be deleted as it is not coherent with later sections on recycling nor with the other SMM case studies showing the environmental benefits of recycling plastics and aluminium.

Paragraph 82, 3rd sentence, should be deleted as it is unreasonable to state manufacturers should be held accountable for material or metal selection decisions in their products based on the risks from “illegal” practices in the informal recycling sector.

Paragraph 47, Paragraph 83 and Figure 19 appear to contradict in determining the dominant phase, whether component manufacture and assembly or use.