



**SUEZ ENVIRONNEMENT's contribution to
the consultation on the preparation of a new Communication on Raw Materials**

September 2010

As a supplier of solutions in water and waste management, SUEZ ENVIRONNEMENT's mission is to help public authorities and industrialists locally in their task of organizing water supply, wastewater and solid waste management, to meet today's heightened environmental and sanitary expectations. In this context, our activities increasingly move towards the supply of raw materials for recycling and energy recovery purposes, as well as towards the partnering with industries to create eco-design solutions.

In the European Union, SUEZ ENVIRONNEMENT operates 278 sorting centers, 99 composting platforms, and 85 recovery facilities for electrical and electronic waste. In 2008, these activities lead to the production of 12 million tons of secondary raw materials from recyclable waste, thus saving the EU approximately 2.8 million tones of CO2 equivalent.

Based on its expertise in secondary raw materials, SUEZ ENVIRONNEMENT very much subscribed to the analysis developed by the European Commission in the 2008 Raw Materials Initiative, and to its conclusion that "resource efficiency, recycling, substitution and the increased use of renewable raw materials should be promoted in view of easing the critical dependence of the EU on primary raw materials, reduce import dependency, and improve the environmental balance, as well as meeting industrial needs for raw materials."

Based on this guiding principle, SUEZ ENVIRONNEMENT would like to contribute to the consultation on the preparation of a new Communication on Raw Materials, both on the overall strategy outlined by the European Commission, and on the specific policy area of "Resource efficiency & recycling". We indeed believe that **the Resource efficiency & recycling policy area deserves much more attention and detailed analysis than has been devoted to it so far**, and we offer several policy recommendations in this regard.

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1. Assessment of the overall strategy outlined in the Raw Materials Initiative

➤ **Policy area "Defining critical raw materials":
A satisfactory methodology with still room for improvement**

SUEZ ENVIRONNEMENT is in general agreement with the methodology proposed, although we note that other country reports on material security (for example, Material Security – Ensuring Resource Availability for the UK Economy, Technology Strategy Board, 2008; Lanthanide Resources and Alternatives, UK Department for Transport, 2010) have used different methodologies to assess material scarcity and criticality. There are multiple sources for deciding which metals are critical - US EPA in the US and Fraunhofer Institute in Germany being just another two of many.

As a consequence, the lists of critical materials differ slightly from study to study. For example, the UK study places gold at the top of the critical security list, which also includes silver and tin in the top eight. Iron is in the top ten list of "material risk" materials.

We would have preferred if the EC study had **separated out materials that were critical on the basis of "material risk" and materials that were critical on the basis of "supply risk"**. The

strategies deployed to deal with these separate risks are different (essentially, political/trade versus environmental/fiscal), and a more nuanced discussion of appropriate policy instruments would have been possible.

Another shortcoming of the study lies in the fact that it does not appreciate the interdependence of primary and secondary materials in mining. PGMs and rare earths are essentially contaminants, by-products of other principal extractive materials. For example, ruthenium is a by-product of platinum mining, while cobalt is heavily dependent on copper and nickel mining. This is why we believe that in the criticality assessment, **metals should be grouped according to their common provenance and/or shared modes of extraction or origin, rather than considered separately and in isolation.**

Because the critical materials are by-and-large extracted and traded in very small quantities relative to the principal materials such as copper, iron and nickel (total annual quantity of ruthenium mined in South Africa, Russia and the Americas is less than 30 tonnes), the international mass flows of the 14 critical materials identified in the EC study is extremely difficult to track with any degree of certainty. Furthermore, given the types of products they are typically used in (EEE, in very low concentrations) **there is considerable leakage of material in products discarded at the end of the consumer chain, which currently goes unrecorded.**

We return to this issue in our response to policy area "Resource Efficiency and Recycling".

Finally, **we do not advocate the stockpiling of the critical raw materials in question.** Not only will this create price distortions in the market, but this practice does not allow for the fact that rapid technological development in new products and smart materials has resulted, and will undoubtedly result in the future, in **rapidly shifting prioritisation of raw materials.** Again referring to ruthenium, demand rose by 45% in 2006 alone, as a response to a new technique for digitally encoding hard disks. It is entirely possible that another new technique or a substitute material in a few years time will render the use of ruthenium in this particular application obsolete, lowering its demand to the point of non-criticality.

➤ **Policy area "Trade":
The emphasis should be placed on shared stewardship of scarce resources**

While we accept the importance of this external pillar of the RMI, we cannot but note that **the EC study's conclusions underestimate the challenge of sustainable supply of raw materials from global markets.** Globally, production and manufacturing has been relocating from the EU to other parts of the world, as a consequence of lower wage bills (China), allied to ready availability of highly educated labour (India), and other factors. As these countries raise their GDP, stimulate domestic demand in the consumer products containing the critical materials, and themselves engender global economic aspirations, their call on their own natural resources will increase. The decline of production and manufacturing capacity, especially in the EU-15, follows a shift to component manufacture outside of the EU, and assembly within the EU. These are some of the fundamental structural issues that the EU needs to address.

While unfair trade practices are undoubtedly detrimental to the global economy and need to be addressed in forums such as the WTO, **we strongly support the line taken in the third axis of the trade pillar, namely the shared stewardship of scarce resources between resource-rich and resource-poor countries.** This approach chimes with shared-initiative approaches taken in other arenas – notably climate change. The Clean Development Mechanism is one such approach, the general principles of which can be designed to address the particular issue of resource scarcity.

As an aside, it may be noted that mining and extraction of materials such as ruthenium, rhodium, indium and gallium incur a heavy environmental penalty – for example the mining of rhodium incurs greenhouse gas emissions of 32,000 tonnes of CO₂ equivalents per tonne of material (compared to 3 tonnes for mining of copper), principally because of its low concentration in the ore relative to the energy required to extract this material.

➤ **Policy area "Development":
The EU can contribute to capacity-building and good governance**

In line with our response to the previous questions on trade, **we strongly support the policy of cooperation with resource-rich countries on raw material issues.** We have highlighted above the opportunities for imaginative policy instruments to be developed and built around minimising the environmental damage associated with mining of these materials.

Developing country aspirations (for example, exemplified in the African Mining Vision) are in step with governance and CSR norms generally accepted elsewhere. **The EU can contribute to capacity-building and good governance in these regions by facilitating the delivery of this and similar Visions in other regions.** International mining concerns have well-developed CSR programmes that the EU could use as exemplars of good practice.

We do not consider it appropriate that wood (in the sense of wood as a raw material for manufacture) should be included within the framework of the development policy. Wood is a renewable resource, and its conservation and sustainable management is already addressed within the ambit of climate change.

➤ **Policy area "Regulatory framework":**
The challenge is to disseminate the good practices already in place within the EU-15

SUEZ ENVIRONNEMENT supports the general thrust of the framework developed in the EC report. It should be said that **within the EU-15 land use planning and permitting for mining and extractive industries are mature, highly regulated and tightly controlled activities.** The challenge is to ensure that similar good practice is disseminated across the EU-27, a challenge not dissimilar to the rollout of EU Directives in other arenas.

We do not see the need for an EU Geological Service. Land use planning is necessarily a national issue, and provided that a mechanism for inter-country cooperation is established, creating an additional level of administration will merely add bureaucracy without adding value.

We do not advocate extending the proposed EU regulatory framework to wood and/or recovered paper. As a raw material, wood is qualitatively different from the materials considered in the RMI.

➤ **Policy area "Skills, R&D and innovation":**

SUEZ ENVIRONNEMENT is of the view that important gaps in the raw materials sector related research, development and innovation need to be bridged if the EU wants to achieve its objective of securing a reliable and sustainable access to raw materials. It seems to us that **the priority should be given to:**

- **Critical material substitution**
- **Less energy-intensive raw materials extraction techniques**
- **Smart manufacturing techniques that use less of the critical material**
- **Smart design for easier disassembly and recycling**

As far as waste management is concerned, production and manufacturing techniques are changing at a rapid pace - new techniques, new materials, new combinations of materials, are constantly being invented and used in new applications. In turn the waste presented to waste management treatment plants is changing - e.g. nanosilver is going through conventional treatment plants and appearing in wastewater: this is a new arrival in the waste input, and new techniques may have to be developed to capture these types of new contaminants in the wastes that we process.

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Based on this guiding principle, SUEZ ENVIRONNEMENT believes that time has now come for the European Commission to take action to strengthen the transition towards a circular economy, where waste becomes a resource. As a first step, a limited number of clearly identified bottlenecks should be unlocked (1). But in order for the European Union to succeed in this challenging transition, a comprehensive policy for the development of secondary raw materials should be set up (2).

2. The critical importance of resource efficiency and recycling

SUEZ ENVIRONNEMENT believes that **the Resource efficiency & recycling policy area deserves much more attention and detailed analysis than has been devoted to it so far.**

In a study examining the occurrence and recovery of gold and palladium in WEEE (Substance Flow Analysis of the Recycling of Small WEEE, P Chancerel, PhD thesis, Technical University Berlin, 2010) a tonne of used WEEE devices was found to contain an average of 22.2 grammes of gold. After treatment only 25% of the gold was located in fractions from which the precious metals were reclaimed. 40 per cent of the gold reported to the ferrous metals fraction, which was subsequently melted in a steel production process. Significant amounts of precious metals were lost in the recovery processes for iron.

The investigation also showed that only 25% of the palladium and 11% cent of the silver ended up in precious metals recovery after treatment. Parts of the precious metals were either discharged as dust in the exhaust or deposited onto the surfaces of other output fractions.

These losses and leakages of precious metals out of the material and economic cycle were highly relevant from an economic standpoint. For example, the gold losses of 16 grammes per tonne were valued at 520 US dollars, assuming a gold value of 893 US dollars per ounce.

Extrapolating these findings to the other critical materials listed in the EC study (almost all of which relate to WEEE and related products), it is clear that resource efficiency and recycling are fundamental to the sound and sustainable stewardship of scarce resources, and for the EU should prioritise over even the trade and development policy areas, as these activities are totally under the control of the EU and its Member States.

As a first step, a limited number of bottlenecks identified in the consultation certainly need to be unlocked. But in order for the European Union to succeed in this challenging transition, a comprehensive policy for the development of secondary raw materials should be set up.

➤ **Unlocking a limited number of clearly-identified bottlenecks**

In its consultation questionnaire, the European Commission identifies three major bottlenecks to the uptake of secondary raw materials (policy area: resource efficiency & recycling – questions 27-29): illegal shipments of valuable waste, lack of reliable statistics on secondary raw materials, and problems in the specific area of recovered paper.

✓ **Better enforcing the Waste Shipment Regulation**

SUEZ ENVIRONNEMENT is of the view that illegal exports of end-of-life vehicles and electronic equipment outside Europe, apart from constituting an environmental leakage, also constitute a material leakage detrimental to the European economy, and should thus be fought.

But rather than reviewing the Waste Shipment Regulation, which is widely recognized as satisfactory, the focus should be placed on its enforcement. SUEZ ENVIRONNEMENT urgently calls for awareness raising, training, and strengthening of Member States' enforcement authorities. Establishing a European Waste Implementation Agency is also an option which we consider worth exploring.

In order to avoid leakage of valuable resources in waste, it is also important to work upstream, both on a better implementation of the Extended Producer Responsibility, and on raising awareness of and training EU citizens.

✓ **Setting up a common statistical framework allowing for better organization and planning**

SUEZ ENVIRONNEMENT considers comprehensive statistics to be crucial, as they are a prerequisite to any strategic planning exercise. The main shortcoming of the existing statistical framework lies in its fragmentation. **SUEZ ENVIRONNEMENT thus recommends that the European Union should set a common framework within which to coordinate the collection of data and setting of targets related to waste prevention and recycling, and also to secondary raw materials production and trade.** We consider this common methodology framework as a necessary first step before the setting up of material flow accounting at the EU level.

It is only with such a comprehensive statistical framework that the European Union could be able to perform strategic planning linking up key waste streams with key materials.

➤ **Setting up a comprehensive policy for the development of secondary raw materials**

As we have indicated above, this policy area warrants a far higher priority than has been accorded by the EC study on RMI. Based on the guiding principle set out in the 2008 statement on the RMI that “resource efficiency, recycling, substitution and the increased use of renewable raw materials should be promoted”, SUEZ ENVIRONNEMENT believes that **the time has now come for the EC to take action to strengthen the transition towards a circular economy, where waste becomes a secondary resource.** Apart from its benefits in terms of resource supply, this transition to a circular economy shows great potential in terms of CO2 savings and green jobs.

While unlocking the bottlenecks identified in questions 27-29 would certainly serve the development of secondary raw materials, SUEZ ENVIRONNEMENT fears that it might not be enough to operate such a strategic shift as the transition towards a circular economy. **The target of the EU should be the reduction of the use of primary raw materials hand in hand with the optimal use of materials derived from unavoidable waste.**

We offer our policy recommendations under three headings.

✓ **Increasing quality and confidence in secondary raw materials**

The supply of high quality secondary raw materials is a pre-condition to making them a more attractive prospect in the market place. To this end, **SUEZ ENVIRONNEMENT believes that common minimum standards for recycling should be developed.**

The ongoing process of definition of end-of-waste (EoW) criteria is in this regard very welcomed. The availability of clear and common criteria for how waste becomes a product will provide legal certainty to the industry and should thus stimulate the demand for SRM. It is all the more true that it should result in lowering the administrative burden linked to the waste status of these materials in the current situation.

However, the European Commission should be aware of three elements which might hinder the success of such an initiative:

- ✓ In order to ensure integrity of the products following the EoW process, the corresponding controls will need to be put in place. **Enforcement of the EoW criteria** will indeed require special attention, especially in a context where the existing environmental inspections framework fails to ensure adequate implementation of the waste shipment regulation.
- ✓ For waste flows not covered by a EU initiative for the definition of EoW criteria, or for those flows on which no agreement should be found, Member States will be allowed to adopt their own criteria. This might hamper the uptake of a market for these specific flows. SUEZ ENVIRONNEMENT thus recommends that **the EU should at least provide guidance on quality recycling for these flows that are not covered by the EoW initiative.**
- ✓ It cannot be denied that the application of the REACH regulation to recovered substances can help increasing the quality and confidence in SRM. However, the European Commission should ensure that **the financial burden put on recyclers as a result of REACH should not contradict initiatives at EU level to boost recycling.**

✓ **Avoid distortions of competition between primary and secondary raw materials**

The European Environmental Agency recently called for the EU to implement “ecosystem pricing” of goods and services, stating, “the current price of goods and services does not reflect their impact on the ecosystems that sustain them”.

In the long run, the inclusion of the overall life-cycle costs in the price setting process can pave the way for an efficient uptake of sustainable thinking in all consumption, and above it production schemes.

SUEZ ENVIRONNEMENT thus recommends that methods should be set at the EU level for the evaluation of the environmental burdens associated to primary resource extraction, procurement and conversion to allow for fair competition between primary and secondary raw materials.

✓ **Supporting the demand for secondary raw materials**

Should the EU decide to implement ambitious targets as regards resource efficiency, ensuring fair competition between primary and secondary raw materials might not be sufficient to change established consumption and production patterns. **A pro-active policy would need to be put in place in order to support the demand for secondary raw materials.** SUEZ ENVIRONNEMENT suggest that this resource efficiency policy could encompass the following actions:

- ✓ Introduce **mandatory green public procurement targets**. Based on equal performance, it should be mandatory to give preference to secondary raw materials in public procurement.
- ✓ **Extend the scope of the Eco-design directive to all products**, and not only to energy related ones.
- ✓ **Reward industry for reducing their environmental footprint** through the use of recycled materials.
- ✓ **Offer fiscal incentives on “green” products for consumers**. VAT reduction, special loans or bonus schemes can help encourage sustainable buying behaviors and must be supported.