



# cobalt

awareness . learning . dialogue



## Opening conference report “Exploring solutions for future action”

Report from the COBALT Opening Conference “Industry and Society’s needs for sustainable management of raw materials in Europe: Exploring solutions for future action”



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# 1 Executive summary

The **COBALT project** addresses key challenges on the route towards more sustainable management of raw materials, including issues of raw materials supply and use. Supporting the work and objectives of the European Innovation Partnership on Raw Materials (EIP), COBALT provides a platform for involving different stakeholders across the entire value chain of raw material supply and use. In this context, the **opening conference** aimed to **initiate (and foster existing) debate, networking and exchange** on a more sustainable raw materials management in the EU among a multitude of actors from industry and business (including SME and larger businesses), civil society, geological surveys, policy making (EU, national and regional level) and academia.

The debate and exchange that took place during the 1.5-day conference highlighted that

- a) sustainable raw materials management means prioritising different issues according to differing perspectives present in the discourse,
- b) of which some appear to gain wider stakeholder buy-in at present than others,
- c) but where looming trends, e.g. of increasing resource scarcities and increasing environmental degradation, will likely demand shift in priorities in the future
- d) so that therefore an inclusive and respectful dialogue is needed to openly debate critical issues, to involve differing perspectives and to form new partnerships in order to take sustainable raw materials policy implementation forward.

In this context, the European Innovation Partnership (EIP) on Raw Materials was considered a crucial means to foster sustainable management of European mineral resources to reduce import dependencies and increase competitiveness of the European economy, by both increasing recycling and substitution as well as by more sustainably using domestic mineral resources. Other perspectives prioritised fighting growing social inequalities and respecting planetary limits at the global level by reducing virgin material consumption within Europe, both of domestic and foreign sources, in the context of globally sustainable development.

Mining activities and their social as well as environmental impacts in a local context were among the rather contentious and emotional topics addressed. Exemplified by concerns raised in the case of the Rosia Montana gold mine in Romania, participants called for improving social and environmental standards and their compliance for mining activities. This seemed well in line with current activities under the EIP on Raw Materials to tackle more socially and environmentally sustainable, alternative mining technologies and frameworks.

During the conference discussions, a circular economy emerged as one mutually shared hot topic for further action. While fostering the use of secondary raw materials through recycling and urban mining practices seemed much more within reach of joint action in the shorter term, the issues on planetary boundaries and reducing consumption of primary raw materials seem to require a longer-term debate.

In this light, future COBALT activities will continue to engage with stakeholders to create European and regional dialogues and explore future avenues for collaboration on these crucial issues – firmly believing that such respectful debate and exchange will substantially contribute to forming partnerships and aligning priorities to achieve a more sustainable raw materials management in Europe.



## 2 The COBALT opening conference

### 2.1 Overall aim and scope of the COBALT project

The **COBALT** project addresses key challenges on the route towards more sustainable management of raw materials, including issues of raw materials supply and use. The project is embedded in the broader policy context of the Europe 2020 Strategy and its Innovation Union and Resource Efficiency Flagship Initiatives as well as the Raw Materials Initiative. More specifically, COBALT is supporting the work and objectives of the European Innovation Partnership on Raw Materials (EIP).

In the project context, the debate on sustainable raw materials management is framed around raw materials which are in the focus of the EIP on Raw materials: These include non-energy, non-agricultural raw materials (i.e. including metallic minerals, industrial minerals, construction materials, wood, natural rubber). Within this focus, the project integrates both raw materials with high environmental and social impacts, and a list of 14 economically important raw materials identified by the European Commission.

Overall, COBALT provides a platform for involving different stakeholders across the entire value chain of raw material supply and use, mainly business and industry (e.g. industry associations and SMEs), CSOs (e.g. consumer associations and environmental NGOs), EU and national level policy makers, national geological surveys, and public and private research organisations etc..

The project's activities (European-wide conferences and workshops as well as regional workshops) have the following objectives

- mobilising public awareness on raw material issues and promote raw material substitution, replacement and recycling;
- facilitating European and regional dialogues on raw materials between civil society and industry in order to ensure mutual learning, awareness and partnership building;
- identifying shortages of skills that would enable more sustainable management of raw materials and develop strategies for addressing these shortages

COBALT is a project funded by the European Commission under FP7. The project runs from May 2013 until April 2015.

As the global economy grows and the demand for raw materials is skyrocketing worldwide, the European Union has acknowledged the importance of raw materials supply for our economy and society. Consequently, it initiated several policy strategies dealing with the political challenges regarding the issue of raw materials and resource efficiency: The Europe 2020 "Resource Efficiency Flagship Initiatives", "Raw Materials Initiative" as well as the "Roadmap to a Resource-Efficient Europe" are key policy documents shaping the European policy framework on raw materials and resource efficiency.

In this regard, resource-efficiency and sustainable raw material supply are essential for securing growth and jobs. Furthermore, they provide economic opportunity to improve productivity and boost competitiveness by developing new products, minimise waste, change consumption patterns and optimise production processes.



## 2.2 Main purpose of the opening conference

Within the context of the COBALT project, the opening conference aimed to initiate (and foster existing) debate, networking and exchange on a more sustainable raw materials management in the EU among a multitude of actors from industry and business (including SME and larger businesses), civil society, geological surveys, policy making (EU, national and regional level) and academia.

The debate and exchange shall help exploring and discussing needs, opportunities and strengths related to sustainable raw materials supply and use in Europe.

### Box 1. Aims of the COBALT opening conference

#### **More specifically, the opening conference strove to**

- address potential solutions along the value chain from extraction to consumption and recycling at end of product life;
- identify how industry and civil society can be best supported to
  - meet the challenge of complexly interwoven international value chains,
  - and changing global material demands, and
  - respond to social and environmental needs in relation to raw material management.

The main features of the opening conference are presented in Table 1 below. Please find the Agenda of the opening conference in Annex II – COBALT Opening Conference Agenda.

**Table 1. Features of the COBALT opening conference**

1. An update on the European raw materials policy framework, in particular as regards the European Innovation Partnership for raw materials;
2. Expert views on the challenges of existing and future global trends in raw materials management;
3. Expert presentations on the interlinkages between raw materials management and development, on future socio-economic challenges, on the role of exploration and data availability, and in the context of research and innovation;
4. Stakeholder panel discussions on sustainable raw materials management in the EU from environmental and consumer, resource processing, and Member State perspectives;
5. Interactive Working Groups for gathering the conference participants views on
  - i. How to successfully implement the European Innovation Partnership on raw materials
  - ii. Changes in international material use patterns and corresponding opportunities along value-chains
  - iii. Learning from existing best practice along value-chains
  - iv. EU consumer needs for household appliances and raw material awareness
  - v. Skills and training for sustainable raw materials management.



## 2.3 Main findings from Session 1: Introduction and opening to the topic of sustainable raw materials

In their introduction to the COBALT opening conference, **Andre Martinnuzzi** and **Andreas Endl** (Institute for Managing Sustainability, Vienna University of Economic and Business) highlighted that along the supply chain there are many challenges and opportunities facing sustainable raw materials management in Europe, e.g. fostering security of supply by increasing sustainable use of primary, and improving the use of secondary raw materials in Europe. Furthermore, they argued for engaging in a sustainable development approach by for example (i) taking a life cycle perspective by considering both production and final consumption systems, and (ii) going beyond security of supply, addressing the fundamental issue of the limits ecological boundaries impose on raw materials use. In this context, the COBALT project sets out to support the European Innovation Partnership on Raw Materials (EIP), a centerpiece of European raw materials policy, and its implementation by

- establishing an multi-stakeholder dialogue,
- facilitating exchange of different perspectives in a respectful, open debate
- feeding in findings to the EIP's processes.



focusing political efforts.

The welcome video address by Environment Commissioner **Janez Potocnik** underlined the necessity of securing Europe's strong industrial base for wealth and job creation in the long term through identifying efficiencies along the raw materials value chain. Therefore, Commissioner Potocnik urged Policy-makers and stakeholders to concentrate their efforts where innovative solutions can make a significant difference. In this context, he emphasised the timeliness of the COBALT project in establishing a debate that will lead to discussions of relevant areas for sustainable raw materials management and hence will certainly help





**Mattia Pellegrini**, DG Enterprise and Industry, put the following objectives of the EIP into context of innovation delivering solutions for the EU's raw materials needs:

- Reduce import dependency
- Improve supply conditions from European and other sources
- Push Europe to the forefront in raw materials sectors
- Provide alternatives in supply
- Mitigate negative environmental and social impacts



Based on ongoing and planned activities under the EIP's strategic implementation plan he expects the COBALT project to considerably contribute to (some of) these objective by (i) mobilising public awareness on raw material issues; (ii) identifying shortages of skills and developing strategies that would enable more sustainable use of raw materials; (iii) and by facilitating European and regional dialogues on raw materials that can help promoting raw material substitution, replacement and recycling.

**Fraser Thompson**, McKinsey Global Institute, in his video message provided input on resource trends, science and implications for Europe based on the report: *Resource Revolution: Meeting the world's energy, materials, food, and water needs*. The prospects of looming scarcities for many resources act as an important driver for increasing material efficiency (e.g. improving end-use steel efficiency) and closing material cycles (e.g. fostering recycling and substitution of materials). But in order to successfully and at sufficient scale enact such activities, dedicated leadership of political and business leaders, including the demonstration of best practices, were found essential to galvanise change. As such change will require technological, institutional, organizational and social innovations, it is important to early on develop enabling new talents and skills. Finally, designing effectively supporting policies needs an understanding of the key binding constraint(s) preventing change – so the interventions must be tailored to the main barrier(s).

The discussion after the presentations revealed a wide scope of what a more sustainable raw materials management will need: on the one hand encompassing the need to foster existing efforts towards improved recycling and greater substitution of scarce or hazardous materials, and on the other hand responding more pronouncedly to planetary boundaries, and considering shifts in production and consumption patterns towards less use of primary raw materials.

These views were taken up and further elaborated by the panelists in their contributions during the following Session 2.



## 2.4 Main findings from Session 2: Panel discussion: Viewpoints on sustainable raw materials management in the EU

The panel discussion featured perspectives from environmental and consumer organisations, from the metal processing sector and from a EU Member State. The four panellists were:

- Magda Stoczkiewicz, Friends of the Earth Europe (FoEE), Director
- Flavio Biondi, ADICONSUM (Consumer Association of Italy)
- Guy Thiran, Eurometaux, Director General
- Zbigniew Kamienski, Sherpa for the EIP on raw materials to Grażyna Henclewska, Undersecretary of State in the Polish Ministry of Economy

Each panellist was asked to provide a brief statement dealing with the following two questions:

1. From your perspective, what are the two most important issues to tackle for a more sustainable raw materials management?
2. Who do you think are the main stakeholders needed to tackle the two issues? And what is needed for a good collaboration?

**Magda Stoczkiewicz** addressed the need to consider a sustainable Europe as a whole and to ask the question how much of the planetary resources Europe can use to stay within planetary boundaries and to allow future generation to enjoy the life they are leading. In this context, the measurement of resource use in Europe is key. Measurement should be based on consumption, because Europe is a net importer of many raw materials and goods. Hence impacts of raw material extraction and production are occurring outside Europe, but triggered by Europe's consumption. In addition, she expressed the view that a coherent policy strategy is missing in the EU: DG Environment works on resource efficiency, DG Enterprise on raw materials and DG Mare on marine resources. But there is no one joint, coherent strategy, encompassing all these elements. And in this context, we should acknowledge that first and foremost we need to reduce resource consumption as much as possible to achieve sustainability. However, the discussion is presently focused on security of supply and on recycling, while the planetary view and also a focus on the consumers and their demands are missing. This is to some extent based on the fact that a reduction of primary material use is not in the interest of economic growth and production.





**Flavio Biondi** highlighted that from the perspective of a national consumer organisation the protection of individual and collective consumers takes centre stage in his organisation's daily work. Through giving advice and assistance to consumers, carrying out education and running information and awareness campaigns on various consumer-related issues, Adiconsum helps gathering consumer feedback and reporting problems. Although raw materials have not been a priority in Adiconsum's work, it may increasingly become

one in the future as consumers are becoming more and more aware of raw material needs in purchased products as well as health and environmental impacts associated with producing, using and disposing a product. In this context, Adiconsum is well prepared to work with companies to establish and foster a new era of relations with consumers. By better informing consumers about the characteristics of the product (i.e. from raw materials extraction to the finalised product; and about its degree of sustainability for the environment and for the people) more sustainable products from companies can receive greater value among customers.



From the perspective of the metals industry, **Guy Thiran** pointed out that non-ferrous metals are almost ubiquitous in the lifestyles of modern Europeans and that this also applies to many future technologies needed to fight climate change, such as Photovoltaics, electric mobility and wind turbines. Hence, making raw materials management more sustainable does need to take into account the various functions metals are put to use for. Since many metals have characteristics making them fit for building a sustainable society, for instance durability and recyclability, existing

metal stocks, both geologic and anthropogenic, need to be optimised along the value chain and over the entire life time. This means continuing the efforts for improving recycling whilst ensuring both the quantity and quality needed for products. In this context, he called for focusing on securing access to raw materials (primary and secondary), to allow for free and fair trade and to foster product eco-design, which puts emphasis on durability and recyclability of products. Guy Thiran concluded that this will require the involvement of all actors along the value chain, increasing transparency and knowledge management along the value chain as well as building partnerships for innovation, such as the EIP.



Taking on a Member State's perspective, **Zbigniew Kamienski** welcomed that the European Commission acknowledged the role of industry in the context of calling for a reindustrialisation of Europe. In this context, access to raw materials is crucial, as is improving and spreading technologies to decrease the dependence of raw materials from outside the EU. This must also encompass bringing beneficial recycling technologies to the market, incorporating recycling at all stages of the production processes and ensuring that markets for recycled products are established. Furthermore, he



highlighted the need to better align industrial policy with raw materials, energy and climate policy. Consequently, this ensures that making businesses and industries more sustainable goes hand in hand with fostering their competitiveness in the context of a reindustrialisation of Europe, e.g. by fostering the recycling sector and reducing supply dependencies. Better integration in his view would help making best use of synergies and not ignoring potential trade-offs between the impacts of these different policies. In particular, the national context as regards the structure of the economy needs to be considered and regulations must provide a stable framework for businesses and industry to invest in eco-innovation.

In the ensuing discussions among the panelists and with the audience it became clear that fostering sustainable raw materials management should be a step-wise process that allows for different approaches and paces being taken according to national differences within the EU, but working towards the same overall objective or vision. Such a step-wise procedure will need to be including both low-hanging fruits and more ambitious approaches: i.e. building on efforts and structures already put in place (such as efforts towards improving recycling and substitution), but also (pro)actively further developing these in partnership spirit which also allows for controversy and addressing challenging issues.

What such challenges will and might be, was discussed during the following Session 3.



## 2.5 Main findings from Session 3: Identifying challenges for sustainable raw materials management for EU policy, society and business

From the more than 150 registered participants, only 80 showed up on Day 1 with some 30 leaving after lunch and, therefore, not being available for the working groups. Using a pick-the-ticket approach we had prepared an equal number of tickets for all working groups before lunch and asked all participants to choose their preferred working group and pick the corresponding ticket. With only roughly 50 participants reconvening after lunch, two working groups (Working Group 2 “Changes in international material use patterns and the corresponding opportunities along value-chains” and Working Group 3 “Learning from existing best practice sustainable raw materials management along value-chains”) were merged into one under the new name of “Opportunities and best practice on sustainable raw materials management along value-chains”. Two other working groups received too little interest from participants. Therefore, only two working groups took place:

1. Working group 1, with 20 participants
2. Working group 2, with 30 participants

The following part outlines the main results of the working groups 1 and 2<sup>(1)</sup>. Each working group has been introduced by expert views on the respective topic and facilitated by COBALT team members. Please see Annex III – Planned outline of the five working groups for the full outlines of the planned working groups.

### Working Group 1: Complementing the policy framework – how to successfully implement the European Innovation Partnership on raw materials

**Working Group 1 “Complementing the policy framework – how to successfully implement the European Innovation Partnership on raw materials”** explored prospective steps for a range of diverse EIP Strategic Implementation Plan action areas (outlined below). Participants in this working group (i) prioritized individual actions in the respective action areas, (ii) identified most important next implementation steps, and (iii) specified concrete roles of different stakeholders therein. Background information on the SIP and its action areas <sup>(2)</sup> have been provided in a short presentation



<sup>1</sup> Due to lack of participants for working group 4 and 5, participants have been asked to join working group 2 and 3, which was merged into one working group.

<sup>2</sup> The international cooperation pillar has not been addressed due to a decreased number of participants.



by Mr Slavko Solar (DG Enterprise and Industry) and by printouts of the original SIP parts. Please find below the results of WG 1 for different action areas discussed:

Action area n. I.1: Improving R&D&I coordination in the EU		
1 <sup>st</sup> ranked action: “3) Collaboration between Industry and Academia” <sup>(3)</sup>		
	Implementation Steps	<ul style="list-style-type: none"> <li>• Collaborative-focused projects (CFPs) in the European Commission 8<sup>th</sup> Framework Programme “Horizon 2020”</li> <li>• R&amp;D&amp;I partnering events organized in small WGs</li> </ul>
	Stakeholder roles	<p><i>Not specified</i></p> <p><i>Not specified</i></p>
Action area n. I.3: Innovative extraction of raw materials		
1 <sup>st</sup> ranked action: “1) Automated and 3) Alternative mining” <sup>(4)</sup>		
<i>Implementation steps and stakeholder roles same as defined for actions above</i>		
Action area n. II.1: Minerals Policy Framework		
1 <sup>st</sup> ranked action: “2) fitness check on EU policies on the non-energy extractive industries and development of a minerals policy scoreboard” <sup>(5)</sup>		
	Implementation Steps	<ul style="list-style-type: none"> <li>• Platform to facilitate data collection on effects</li> <li>• Recommendations on how to address cumulative effects of EU policies and legislation</li> </ul>
	Stakeholder roles	<ul style="list-style-type: none"> <li>• European Commission and Member States carry out assessment</li> <li>• Industry provides input on impacts/effects of policies</li> </ul>
Action area n. II.3: Public Awareness, Acceptance and Trust		
1 <sup>st</sup> ranked action: “2) Promote early and open communication with neighbours and local communities” <sup>(6)</sup>		
	Implementation Steps	<ul style="list-style-type: none"> <li>• Harmonized / integrated permitting for extraction industry</li> <li>• Identify and train trust builders and community gains</li> </ul>
	Stakeholder roles	<ul style="list-style-type: none"> <li>• Local authorities should lead consultations</li> </ul>

<sup>3</sup> European Innovation Partnership Strategic Implementation plan Part II, p. 6

<sup>4</sup> The table discussion group merged two of the five proposed actions of the SIP due to their equal weight in importance; European Innovation Partnership Strategic Implementation plan Part II, p. 10

<sup>5</sup> European Innovation Partnership Strategic Implementation plan Part II, p. 25

<sup>6</sup> European Innovation Partnership Strategic Implementation plan Part II, p. 30



Action area n. II.5: Optimised waste flows for increased recycling		
1 <sup>st</sup> ranked action: “(1) Qualitative targets in EU legislation” (7)		
	Implementation Steps	<ul style="list-style-type: none"> <li>• Design standards for eco-design</li> <li>• Bill of materials</li> </ul>
	Stakeholder roles	<ul style="list-style-type: none"> <li>• Manufacturers need to declare what materials are in products</li> <li>• Manufacturers and regulators need to agree on design standards</li> </ul>

## Working Group 2: Opportunities and best practice: sustainable raw materials management along value-chains

### Working Group 2 “Opportunities and best practice: sustainable raw materials management along value-chains” encompassed

- An introduction to potential (future) opportunities linked to sustainable raw materials management along the value chain, held by Christian Hudson from Ecologic Institute
- A carousel of four cases of sustainable raw materials management along different value-chain stages.

a) Christian Hudson started by outlining the global trends that would change the business as usual use of materials. Projected increases in global population and income levels appear certain to increase an upward trend of material use. Since the 1990s this trend has led to higher levels of price volatility and an apparent end to the long era of declining resource prices.

These trends raise challenges in the form of security of supply, greenhouse gas emissions, fresh water shortages and toxin release. They also increase the benefits from expansion of smarter models of material provision. 3 examples were given:

1) The use of higher strength steel, which Arcelor-Mittal uses to reduce the weight of steel in columns (by 32%) and other steel products. There are huge opportunities for saving steel through use of higher strength steel globally, particularly in China, which consumes 60% of global steel reinforcement bars (for construction) at significantly lower levels of steel strength than is usual in the EU. Partial global switching could save 105 million tonnes of steel a year, and save 20% of costs.

2) High prices of metals may make it economic to extract metals from the 120m tonnes of 'red mud' waste produced each year from alumina production, and from the 2.7bn tonnes of 'red mud' already stored worldwide. It contains Gallium, TiO<sub>2</sub>, Chromium, Vanadium, Zirconium, Yttrium, Scandium and other rare other metals.

<sup>7</sup> European Innovation Partnership Strategic Implementation plan Part II, p. 34



3) 80,000 tonnes of aluminium a year were already extracted by 2006 from the bottom ash produced from incineration of municipal waste. This bottom ash contains 50 or more different metals, some of which can be extracted. The aluminium, for example, has a 2 year payback period on investment, and 250,000 tonnes/year might be extracted by 2020 with better technology.

b) After the initial presentation of potential opportunities, the participants were split into four groups, each starting at different carousel stations - each station featuring one of the four case presentations. After an initial presentation from the case presenters about their specific case for sustainable raw materials management, participants entered into discussions on

- i. drivers and enabling framework conditions to achieve best practice;
- ii. necessary policy support for industry / business to be enabled to adopt best practices.

After 15 minutes, the exchange was stopped and each group moved to the next carousel station so that after 4 rotations all groups had visited and discussed with each presenter on the respective cases.

The presentations and discussions are summarised per carousel station.

### 1. Sustainable Process Industry through Resource and Energy Efficiency, SPIRE

Presenters: Michelle Wyart-Remy and Aurela Shtiza, IMA Europe

An international non-profit association, A.SPIRE was formed in 2012 to support and represent the private sector in the Sustainable Process Industry through Resource and Energy Efficiency (SPIRE) Public-Private Partnership (PPP). To be launched as part of the Horizon2020 framework programme, SPIRE aims at fostering innovation in resource and energy efficiency in the process industries. This shall be done by developing the enabling technologies and solutions along the value chain that are required to reach long term sustainability for Europe and thus contributing adapted solutions to



- fostering growth and employment and increasing the competitiveness of Europe in a global market,
- rejuvenating the European process industry





- reducing resource and energy inefficiency and the environmental impact of industrial activities.

Thereby, SPIRE strives to help achieving the European objectives of 'Smart, Sustainable and Inclusive growth', as put forward in the European Commission's Europe 2020 strategy.

**Drivers:** SPIRE as a private-public partnership was created with the purpose of finding common avenues to work together, e.g. on consumer-public opinion issues and to improve access to EU funds.

**Policy needs:** The sectors / sector's players were concerned about intellectual property rights issues and considered this affecting their readiness to scale up and diffuse eco-innovation by making their best practice developments available (for copying).

Another big constraint to progress in sustainable raw materials management is the concurrence between companies and the products they offer. In this sense, EIP is crucial as it represents a big step forward for knowledge sharing and committing the different participants. In this context, the discussants also saw a need to foster consumer information.

## 2. Metal recycling at ERAMET

Presenter: Bertrand Schutz, ERAMET



ERAMET, a French mining, metallurgical and recycling company, works along the entire value chain from exploration and extraction to metallurgy, alloy transformation and recycling. One of the key barriers that ERAMET encounters in its secondary raw material management processes are illegal exports of spent recycling catalysts escaping the European markets - almost 25% of spent catalysts, which contain significant

quantities of strategic/critical metals such as Nickel, Cobalt and Vanadium, are illegally exported to Asia or South America.

**Policy needs:** As the illegal exports are mainly due to a lack of level playing field with weak environmental standards in some Asian or South American countries (not performing quality recycling as asked for at European level, notably by EUROMETAUX), what is needed are

- More controls at borders– Waste Shipment Regulation 1013 – 2006 Amendment
- Certification of the end recycling plants ; this certification should be mandatory and the audits done by approved external auditors
- Creation of a European database of waste containing strategic metals
- Organisation of better waste flow monitoring, including improved transparency and enforcement of existing legislation.



### 3. Carpet development and leasing, Desso

Presenter: Marko van Bergen, Desso

Desso is a key European player for carpet recycling and carpet development without use of bitumen layer. The business case for Desso consists in all carpet components being able to be reused and that increasingly the leasing of carpet (tiles) is becoming an economically viable business model – but in this context, contracts need to be made for more than 5 years.

DESSO controls the different elements present in the carpet life cycle, e.g. the bituminous compound of the carpet is taken out from the life cycle of the recycled carpets, as it is not stable and therefore they can't control what is being introduced in the production loop. DESSO sells it for asphalt purposes. Thereby, the production process is gradually changed from linear to circular.



#### **Drivers:**

- Effective ISO efficiency
- Positive carbon footprint
- Design for disassembly
- From ownership to use-leasing

#### **Policy needs:**

- Taxing “bads” instead of “goods”: don't tax labour in recycling business
- Support research on product sustainability
- Ban incineration
- investment credits to foster cradle-to-cradle/circular production processes
- Establish eco-industrial sites with closed loop options and relevant infrastructure in place, e.g. “Silicon valley's”
- Ecodesign for electronic devices is an issue, e.g. mobiles and need of components with rare earths coming from China. Here the question was raised what is the sense of doing things according to EU regulations and best available technology (BAT) if we don't follow their principles when we exploit/bring materials from third countries? Why do we bring minerals that we can exploit here from other countries?

### 4. material and energy saving in household appliances, Electrolux



Presenter: Karl Edsjö, Electrolux

Karl Edsjö presented a vacuum cleaner developed with high level sucking performance but reduced energy use (in terms of Watts, almost half as much energy as a conventional vacuum cleaner) and consisting of 70% post-consumer



recycled plastic. The predecessor of this model was launched in 2008. Since then, different generations and different models have been produced and marketed worldwide. In New Zealand, it is the Nr 1 model on the vacuum cleaner market. In the meantime, competitors have caught up and state government was considering making such kind of energy performance mandatory.

#### Drivers:

- Customer awareness and certification as a means of consumer information and to turn improved eco-efficiency into a business case, e.g. environmental footprint of vacuum cleaners and composition of recycled materials as recycling resonates well with environmentally aware customers and can trigger demand among those customers
- A planned Directive for 2014 setting limits for watt amount for vacuum cleaners

#### Policy needs and ideas:

- Fostering product life extension
- Adopting the Japanese example of setting dynamic standards depending on the market leaders (top-runner approach).

After the four rotations, all working group participants formed smaller break-out groups at the tables in the plenary to work out some key insights and key recommendations. In summary, the discussions and group work results highlighted that:

- A level playing field is needed for all players along the value-chain to foster up-take and diffusion of more sustainable raw materials management and not to encourage burden shifting
- New business models and greater consumer awareness are needed
- Interdisciplinary networking and matchmaking between science, innovation, upscaling of innovation and customer demands are important
- Making use of financial incentives to boost value chain collaboration

## 2.6 Main findings from Session 4: Global perspectives on sustainable material management

Session 4 aimed to put European raw materials policy into the global context of sustainable development.

**Derek Osborn**, Stakeholder Forum for a Sustainable Future, from an insider's perspective on United Nations approaches to the sustainable management of materials highlighted the fact that European policies should continue to strive to be embedded in international processes and agendas. He argued that over the last few years, Europe has





lost confidence in sustainable development as a key vehicle delivering on the social and environmental performance needed to stay within planetary boundaries and foster justice. To some extent, the resource efficiency and raw materials debate can come to sustainable development's rescue due to the inherently global and cross-cutting issues concerning social, ecological and economic aspects. Thus it can help reviving the spirit of the 1990ies in the sustainable development agenda. In this light, the EU should use its policies and practices to reduce perverse subsidies and also challenge restrictive practices in other countries.

While certainly non-renewable resources could and will likely run out in the future if not counteracted, we should neither be complacent nor too alarmist in the short-term as the main argument for more sustainable raw materials management. One has to recognise that the market has power to deliver some of the changes that are needed in this crucial situation, so we should avoid getting in the framework of mind that we have got to adapt central planning policies to counter scarcities

Although the sustainable development goals (SDGs) are still in discussion at UN level, they should include strong elements of resource efficiency and in that a certain amount of detail on specific raw materials needing to be managed more efficiently. In this light, the SDGs can provide significant framing and impetus for resource efficiency.

## 2.7 Main findings from Session 5: Future dimensions of sustainable management of raw materials

Session 5 was set-up to add aspects of international justice and development aspects, to explore the views and needs of geological surveys and to present European research and innovation options supporting a more sustainable raw materials management.

In the first keynote presentation, **Leida Rijnhout**, Executive Director of ANPED Stakeholder Forum for a Sustainable Future, argued for shifting focus away from the one-dimensional focus on economic development to a globally fair and sustainable economy: an economy, which integrates respect for planetary boundaries with a focus on quality of life, participation and justice. In the present global economy patterns, over-consumption of resources causes large-scale injustice, in particular among the poorest people with hardly any access to or influence on decision making processes. In this



light, the concept of sustainable development has been turned into a focus on economic development, rendering the environmental and the social pillar subsidiary. Therefore, what is needed is a paradigm shift turning this the other way around: viewing planetary boundaries as the life-maintaining ecological capital, enclosing and enabling the formation of social capital, which in turn encloses and builds up economic capital. This approach will certainly be resisted by unsustainable forces currently in power. That is, because it will have to involve an approach of contraction in the so-called environmental space of industrial and increasingly



emerging economies to converge with that of developing economies, which must be allowed to catch up to a certain level. In order to do so, existing legal frameworks should be used and further ones developed, e.g. establishing an International court for environmental crimes to recognise ecocide and also to refocus corporate accountability away from (short-term) profit maximisation.



**MEP Philippe Lamberts** outlined the need for a big transformation in order to successfully respond to the challenges of the 21st century. Throughout the past decades after World War Two economic growth, or more precisely GDP growth, has become the Holy Grail for policy makers to pursue in order to deliver on societal and economic performance, e.g. job creation and generation of fiscal revenue. At the same time, however, this growth focus has resulted in social inequalities, in particular income inequalities, employment inequalities as well as inequalities in

access to resources, to decision making, and large-scale environmental degradation. One telling indicator for environmental degradation is the overshoot-day – the day in the year, by which the global economy has surpassed the annual capacity of the planet to generate the resources needed and take up the emissions produced: Overshoot day has moved forward from mid December in 1981 to mid August in 2010.

Therefore, Mr Lamberts issued a strong call to provide all people on the planet the possibility of an existence worth living within the physical limits of our planet. However, approaches for doing so should go beyond the concepts of ecological modernisation or a green economy, which are still rooted in the economic growth paradigm. And as data for relationships between GDP and CO<sub>2</sub>-emissions as well as between GDP and ecological footprint show, these approaches will not be able to break the links locking us into further increasing environmental degradation. In response, a Green New Deal is advocated, focusing on strong sustainability and on more equal societies, which will improve the opportunities to generate prosperity more equally and within planetary boundaries. This will require huge investments in social cohesion, education and training, R&D, greening of infrastructures and restoration of ecosystems. And it will require a transformational shift, which can only be seen as a journey and not a goal in itself. We will need to be calling upon the initiative and creativity of the entire society to make it a collective process, requiring diversified and contextualised approaches towards both technological and social innovation. And Europe could become the spearhead of this transformation.

**Manuel Regueiro**, Spanish National Delegate to EuroGeoSurveys, presented Geological surveys' perspectives on Sustainable management of raw materials in Europe and highlighted the issue of supply scarcities and import dependencies, which the European economy is increasingly facing: World mineral production is to the largest extent (more than 30%), and increasingly so, confined to a group of six developing countries, which may have



implications on security of supply where exporting countries are politically unstable. In addition, high-tech minerals needed for future technologies and new technologies are also coming from a limited number of countries, for Rare Earths mainly from China, which is prone to conflicts over access to such resources. For some of the critical metals and industrial minerals, e.g. Cobalt, Rare Earths and Platinum, Europe is 100% import dependent.

In this context, the European approach on both fostering sustainable extraction of domestic deposits and a circular economy, as put forward in the EIP, is needed. When fostering the sustainable extraction of domestic deposits, the lessons learned from the many contentious mining projects both beyond and within Europe (e.g. the Rosia Montana gold mine case) should be duly taken into consideration: risks, costs, and benefits should be equitably distributed; responsible stewardship of natural resources should be promoted, including remediation of past damage; and waste and environmental damage should be minimised. A wide variety of projects are underway to enhance knowledge of available deposits on the territory of the EU as well as concerning more sustainable mining techniques and processes. In addition, a knowledge and information centre (KIC) for raw materials is both planned and needed in order to pool together knowledge, link industries and civil society and reach out to the public with awareness raising campaigns on the presence of minerals in daily life.



In the final keynote of Session 5, **Verena Fennemann**, DG Research and Innovation, presented opportunities under HORIZON 2020 for research and innovation tackling waste as a resource. Horizon 2020 forms a core part of the Europe 2020 strategy and the associated Flagship Initiative Innovation Union, aiming to



- Respond to the economic crisis to invest in future jobs and growth
- Address people's concerns about their livelihoods, safety and environment
- Strengthen the EU's global position in research, innovation and technology

The three priorities under HORIZON 2020 are excellent science, industrial leadership and societal challenges. The focus on societal challenges will help addressing concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc) through innovation. Furthermore, the necessary breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities. And lastly, promising solutions need to be tested, demonstrated and scaled up in order to deliver on the societal challenges. As regards more sustainable use of raw materials, challenge 5 (Climate action, environment, resource efficiency and raw materials) of HORIZON 2020 strives "to achieve a resource – and water –



efficient and climate change resilient economy and society, [aims at] the protection and sustainable management of natural resources and ecosystems, and a sustainable supply and use of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources and eco-systems." Under this challenge, 3 calls deal with waste as a resource to recycle, reuse and recover raw materials.

The discussions after the first three keynote presentations once more revealed the diversity of relevant and important perspectives on and components of a more sustainable raw materials management: on the one hand fostering a circular economy with Europe as well as discussing the needs and opportunities for sustainable extraction of domestic deposits; and on the other hand moving towards more holistic approaches shifting the priority focus on economic growth towards an environmentally strong, sustainable, socially equal and fair global economy. While the latter can only be a joint journey towards openly debated visions for a global society, Europe could become a leading party and gain first-mover advantages for its economy.

## 2.8 Main findings from Session 6: Panel discussion on societal and business needs in relation to sustainable management of raw materials

Initially, it was planned to have a rapport from the five working groups planned for the first conference day in Session 6. As only two of the five working groups could be realised due to unexpected low numbers of participants, the rapport was replaced by a brief input paper into the panel discussion of Session 6. The input was a one-pager summing up the main points discussed and lessons learned both during the working groups and the full first conference day – as a list of wicked issues. The panel then served as a sounding board to the aspects put together. While the sounding board function was working well and the panel discussions were widely appreciated in the audience, the feedback questionnaire from several conference participants showed disappointment with not having been presented with the working group rapports as initially planned and put on the conference agenda.

The panel discussion featured:

- Flor Diaz Pulido, DG Enterprise and Industry, Deputy Head of Unit F3 “Raw Materials, Metals, Minerals and Forest-based Industries”
- Christian Hagelüken, Umicore, Director of European Governance Affairs
- Michelle Wyart-Remy, IMA Europe, Director General
- Meghan O’Brien, Wuppertal Institute
- Sorin Mierlea, National Association for Consumer Protection and Promotion of Programs and Strategies, Romania

Initially, the panellists were asked to provide a quick statement on main emerging themes



and issues that struck them:

**Flor Diaz Pulido** highlighted that the COBALT project will support the European Commission's commitment to the EIP and the implementation of the EIP's Strategic Implementation Plan in two regards: (1) to help broaden the stakeholder base of the raw materials dialogue to ensure that all stakeholders are involved, in particular civil society; (2) to help getting the dialogue much more to the national and regional level by integrating regional stakeholders. Furthermore, she outlined the many points for synergies between the project and ongoing European Commission activities and hence encouraged the project partners to feed in COBALT project and process findings continuously.



**Christian Hagelüken** considered the strength of the COBALT project to be the multi-stakeholder approach. When it comes down to cooperation along the value-chain, first the term value-chain must be defined so that the different economic drivers as well as present and needed business models are understood. This in turn requires improving the understanding of organisational, physical, institutional and behavioural/psychological aspects of actors involved in and processes shaping a value-chain. COBALT can play a role in better understanding these kinds of system dynamics.

**Michelle Wyart-Remy** pointed out that bringing people together and giving them the time for exchange, which not many conferences do, is very important to bring the different views and perspectives to the tables. But if people want to learn and make steps forward, they need to be given the time for exchange, discussion and debate to foster mutual understanding. So to open the doors and to have civil society transparently involved can make a key difference to the raw materials debate.







**Meghan O'Brien** stressed that for improving resource management, we will need (1) better information, (2) better long-term objectives, and (3) better incentives for actors in society to take action. Better information requires robust indicators that allow integration of upstream and hidden flows into decision making processes. As regards targets a discussion is ongoing on the European level and this will need making a connection between planetary boundaries and the targets, which is challenging. Incentives for actors to take action should include measures steering consumption. While that makes a lot of people nervous, we must be aware that we already do this by tax policy, safety standards – so consumer choices are steered or edited already.



**Sorin Mierlea** underlined that dialogues need at minimum two sides and the willingness of all involved in the dialogue to really listen to each other. And in this regard, the COBALT project is a milestone allowing for such dialogue. This is also exemplified by the dialogue on the conflict going on in Romania as regards the Rosia Montana gold mine which was allowed to be raised during this conference and was listened to respectfully. As we are all consumers, regardless of our professional activities, we need to be aware of the

consumer choices we make and to engage in an open and honest dialogue, in basic understandable language, and partnership on systemic structures impacting on behaviour.

The panel then acted as a sounding board to the list of wicked issues produced from conference day 1.

**Wicked issue 1:** Working group 2 identified value-chain collaboration as one important way forward towards sustainable raw material management

*What would be ideal processes for value chain collaboration for innovation? What information is needed in this process?*

Panellists discussed the difficulty for value-chain collaboration for some raw materials where

- (i) direct linkages to consumers or extractors are rather small
- (ii) and the number of customers often is very large so that the different value-chain contacts remain more discrete rather than linked. This often contributes to missing out on opportunities to establish contacts and to exchange on respectively important issues and standards.

In the context of exchanging on the different value-chain stages' perspectives, a worthwhile



exercise for meetings and workshops is to have participants take up the perspective of another player in the value-chain. This fosters a mutual understanding of different visions, of potential synergies as well as of path dependencies and drivers for behaviour. However, in practice when translating such exchanges into the real world, often we end up with dogmatic views of different stakeholder or interest groups and therefore we will need catalysts or catalytic environments allowing us to break free from such lock-in situations. In this context, DG Enterprise was considered being on the move towards such a catalytic function as many internal discussions are currently ongoing helping to reorient some processes and actor constellations accordingly.

**Wicked issue 2:** Working group 1 discussed the call for commitments under the EIP, exchanging on options of fostering technological and non-technological innovation.

*If you could prioritise one specific area for funding for innovation, where would it be? And why?*

The discussion highlighted that for SMEs, funding for innovation is crucial, but that we need to differentiate between fast and slow wins:

- While fast wins are the low-hanging fruits leading to quick returns on investments, but rather to incremental innovation only,
- slow wins are characterised by long(er) pay-back periods, but the potential for more disruptive, game-changing innovation.

Here, the problem is, that many SMEs cannot wait for these pay-backs to realise after a long time, so they would need more funding for these kinds of disruptive innovations in multi-actor partnerships. Furthermore, funding should go into relevant future education programs, which go beyond disciplinary borders and towards systems thinking to integrate the various and complexly interconnected aspects contributing to creating wicked problems. Here, the EIP was considered well designed to help identifying priority areas for innovation, both technological and non-technological, along value-chains. However, this view was partially challenged from the audience, because the kind of innovation focused on in the EIP is less on the disruptive side and hence will likely not be the societal response needed to face the looming challenges of the 21<sup>st</sup> century. Furthermore, as much of the funding for innovation is thus focused on the supply side, the question arose whether there could be (created) any business opportunity for reducing consumption.

**Wicket issue 3:** During the conference it was mentioned several times that the consumer is widely uninformed, looking for cheap products, but also that the consumer could possibly play an important role in sustainable raw materials management.

*Is it feasible for consumers to be informed of the sustainability of their products? And how? Is it possible for informed consumers to drive the sustainability down the value-chain?*

Driving sustainability down the value-chain will also depend on business opportunities for reducing consumption, and not just of the environmental and social impacts of certain



products. As under the present prevailing paradigm in many businesses seeing such opportunities seems difficult to occur, focus should be put both (i) on educating current business leaders and entrepreneurs and (ii) in particular on education of the next generation so that future generations can become more sustainability oriented leaders. At the same time, this would allow improving information of sustainability of products and processes because gathering and making available such data would rank high on the new leaders' agendas.

At present, we can easily inform consumers about information available through indicators for sustainability impacts along a product's value chain. However, this information is often far from complete and furthermore price mechanisms also impact consumer's choices so that the more sustainable, but more expensive product is of course not always consumed. Therefore, it is clear that such a shift will not be easy and hence will have to be a collective journey towards a joint vision.

**Wicked issue 4:** Consumer and citizen acceptability of increased mining in the EU was heard to be a shared goal of participants. Participants questioned whether some of the environmental, health and social issues, e.g. expropriation of homes and use of cyanide could be acceptable. Working group 1 called for integrated approach in extraction permitting procedures for extraction as a solution.

*What are drivers for cases of conflict such as Rosia Montana? What is needed for the EIP to provide solutions in the future?*

According to the panel discussions, the impacts of extractive industries on local communities and the environment are a well-known dilemma needing change. Usually, a number of rules apply to extraction, e.g. having to have a licence first before being allowed to explore and then install a mine, which may easily take up to ten years time. In principle, such a licensing process should be fair and transparent involving the public, but there are cases where governments are corrupted and therefore ignore such required licensing processes. One trend is to go for smaller and more flexible operations creating less impact and being less visible, and also to restore the site after the mining operation towards a jointly created vision.

The provision of credible and comprehensive information and truly involving local communities in such process is crucial to make extraction process more socially and environmentally sustainable. Such information and participation will allow an authentic dialog that could help to co-optimize the different interests of governments, workers of a mining operation and the population being affected by pollution, forced removal, etc.

In their final round of statements panellists stated that an environmentalists and industrialists perspective need to better be aligned and can be aligned. In this context, quality dialogue needs to be continued and fostered between various stakeholders to allow for both environmentalism and industrialism under the umbrella of joint sustainability ventures and journeys. Such dialogue will also need to debate on contentious areas such as planetary boundaries.



Besides the direct response to the panellists, conference participants had the chance to comment on the wicked issues during and after the panel discussion. These insights and thoughts on the topic have been collected by the COBALT team and will be used as a further input for the future project activities (i.e. consecutive project workshop-style events – three European and three Regional Dialogues).

### 3 Spirit of open and respectful dialogues

One of the main outcomes of the conference was to foster and continue the COBALT spirit of an open and respectful dialogue, where various stakeholders get together, meeting at eye-level and being willing and prepared to listen and explore even contentious issues. While there certainly will not be a need to agree on the issues as such, there will have to be agreement on the process and quality of the dialogue (establishing clear rules for the dialogue) so that contentious issues can be raised in a comfort zone.

The table below (taken from the COBALT background paper) shows that sustainable raw materials management involves and translates into different actions for a multitude of stakeholders along the entire life-cycle and value chain – and hence into likely differing views and potential contentious areas.

**Table 2. Overview of likely raw materials needs and potential focus of sustainable raw material management of different stakeholder groups**

Stakeholder group	Raw material needs	Potential focus of sustainable raw materials management
Industry/business	Sector specific (virgin or secondary) and life-cycle stage specific (from extraction through to recycling and waste management) raw material needs, including e.g. steel, copper, rare earths	<p><u>Resources sector</u>: Increasing the security of supply and reducing import dependencies and impacts of price volatilities; exploring the potential for further, more sustainable primary production of raw materials within Europe by use of Best Available Technologies (BAT) and respecting existing social and environmental standards</p> <p><u>Manufacturing</u>: Increasing the security of supply and reducing import dependencies and impacts of price volatilities (including through substitution of critical/hazardous raw materials); contributing to technological innovation towards sustainable raw materials management and a green economy</p> <p><u>Recycling sector</u>: Improving design for recyclability and fostering circular economy</p>
CSOs	No major specific raw material needs – raw material needs as	<u>Consumer associations</u> : guaranteeing economically, socially and environmentally sustainable products, providing information on <b>sustainable consumption</b>



Stakeholder group	Raw material needs	Potential focus of sustainable raw materials management
	citizens	<p><b>choices</b></p> <p><u>Environmental NGOs:</u> Socially and <b>environmentally sustainable production processes</b> (including extraction, processing, manufacturing, end-of-life treatment) without use of hazardous materials harming the environment; environmentally aware consumers looking for environmental product information to base purchasing decisions on; reduction of the consumption of virgin raw materials</p> <p><u>Labour unions:</u> Socially just and health-respecting <b>working conditions</b> providing sufficient <b>income</b> for workers; respecting and complying with health standards and <b>worker's rights</b></p>
Policy makers	No major specific raw material needs – raw material needs according to industrial policy needs and as citizens	Prevention of mining accidents; provisioning of safe jobs in extraction, processing, manufacturing; fostering innovation and competitiveness for reducing import dependencies; ensuring secure supply of needed raw materials through bi-/multilateral agreements; increasing sustainable production processes
Academia	No major specific raw material needs – raw material needs as citizens	<p>Developing innovative, cleaner and more efficient technologies as BAT for resource extraction, processing, manufacturing and recycling</p> <p>Identifying substitution potential of hazardous and critical materials</p> <p>Reducing the consumption of virgin raw materials and fostering a circular economy</p> <p>Reducing the consumption of materials in general and promoting growth in well-being over growth in GDP</p> <p>Understanding consumption behaviour (e.g. final consumption in the sense of product purchasing and use and disposal) influenced by wider socio-economic as well as psychological factors</p>
Geological surveys	No major specific raw material needs – raw material needs as citizens	Exploring resource deposits (also for substitution materials) to reduce import dependencies; minimising potentially adverse geological/ecological implications from resource extraction by use of BAT

Source: Compilation based on ANEC/BEUC (2011), Dittrich et al. (2012), EEA (2013), Ellen MacArthur Foundation (2012, 2013), EuroGeoSurveys (2012), European Commission (2011, 2012, 2013b, c), FoEE (2010), ILO (2012), McKinsey Global Institute (2011, 2012), Rockström et al. (2009), Steffen et al. (2011), UNEP (2010, 2011, 2012, 2013b, c), van den Bergh (2012).



The conference encouraged different stakeholder groups (incl. representatives from business and industry, environmental NGOs, consumer organisations, policy making, and research) to share their common as well as different views on sustainable raw materials management. In this context, representatives from the European Commission's DG Enterprise and Industry stated that European Raw Materials Policy, e.g. through the European Innovation Partnership (EIP) on Raw Materials, fosters sustainable use of European mineral resources to reduce import dependencies and increase competitiveness of the European economy. Contrasting perspectives called for fighting growing social inequalities and respecting planetary limits at the global level by reducing virgin material consumption within Europe, both of domestic and foreign sources, in the context of global sustainable development.

Mining activities and their social as well as environmental impacts in a local context were among the rather contentious and emotional topics addressed. Exemplified by concerns raised in the case of the Rosia Montana gold mine in Romania, participants called for improving social and environmental standards and their compliance for mining activities. According to a European Commission's DG Enterprise and Industry representative, current activities under the EIP on Raw Materials tackle more socially and environmentally sustainable, alternative mining technologies and frameworks.

Fostering a circular economy through closing material cycles, improving recycling, urban mining and also substitution of raw materials plays a prominent role and receives attention and calls for commitment under the EIP. During the conference discussions, a circular economy emerged as one mutually shared hot topic for further action. While fostering the use of secondary raw materials through recycling and urban mining practices seemed much more within reach of joint action in the shorter term, the issues on planetary boundaries, reducing consumption of primary raw materials and sustainable mining seem to require a longer-term debate.

The COBALT opening conference was only the first step to create the space for an open and continuous dialogue between various stakeholders. COBALT future activities will engage with stakeholders to create European and regional dialogues and explore future avenues for collaboration on the issues discussed at the first COBALT Opening conference!

## 4 Next steps forward

The conference participants helped identifying issues to be explored further by the project, and be fed into to the raw materials policy debate, especially the work of the European Innovation Partnership on Raw Materials.

Building on some of the lessons learned, the first of a series of three EU industry – civil society dialogues will take place on 27 February, 2014 in Brussels. This workshop will further explore the issue of eco-design and business models towards more sustainable raw materials management among key civil society and industry stakeholders, together with policy-makers and researchers.

Based on the opening conference input and discussions, a working group on a COBALT Declaration was set up, bringing together relevant stakeholder groups to discuss



- issues to tackle in relation to a more sustainable raw material management, e.g.
  - i. reducing import dependencies by less raw material input need and substitution;
  - ii. respecting existing social and environmental needs and capacities;
  - iii. identifying related relevant research needs;
  - iv. improving and building up necessary skills;
- providing input to the debate on sustainable raw material management for further development and full implementation of the raw materials policy framework.

According to the initial meeting of the working group, the following points were discussed:

- the relevant topics and themes addressed during the opening conference should be sketched out as issues that the declaration may address in terms of inviting and encouraging further open and respectful dialogue on these topics and themes in the future
- the declaration process will be a living process where findings from all COBALT events will be fed into on relevant themes, crucially important dialogue and process aspects
- the declaration will mainly be a vision of best practice and golden rules for needed dialogue and process, but at the same time also help identify a list of potentially relevant and contentious issues to clarify jointly in a respectful manner through the dialogue process
- the declaration shall be seen and used to elicit commitment by key actors to continue the dialogue and have the dialogue as a respectful and open comfort zone (safe and respectful space).



## 5 Annexes

### 5.1 Annex I – COBALT Opening Conference Attendees List

Name	Surname	Institution	Country
Riikka	Aaltonen	Ministry of Employment and the Economy	Finland
Francesca	Angeloni	University of Pisa	Italy
Chiara	Armeni	University College London (UCL)	UK
John	Atherton	International Council on Mining and Metals (ICMM)	UK
Serena	Azzi	Pirelli & C.	Belgium
Milda	Basiulyte	European Federation of Waste Management and Environmental Services (FEAD)	Belgium
Flavio	Biondi	Adiconsum	Italia
Laurent	Bontoux	European Commission - Joint Research Centre	EU
Elisabetta	Borella di Torre	LUISS Guido Carli University	Italy
Jan	Caerels	GDF SUEZ	Belgium
Annick	Carpentier	European Association of Metals (EuroMetaux)	Belgium
Angelos	Charlaftis	EPAPHOS ADVISORS Teamwork	Belgium
Roland	Chavasse	Maritime House	UK
Roberta	De Carolis	Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Research Center (ENEA)	Italy
Sabrina	Demuru	Autonomous Region of Sardinia	Italy
Ronny	Denis	Toyota Motor Europe	Belgium
Jonathan	Derham	Irish Environmental Protection Agency (EPA)	Ireland





Name	Surname	Institution	Country
Paula	Dinis	Directorate General for Energy and Geology (DGEG)	Portugal
Telente	Dumitru-Traian	Citizen	Germany
Karl	Edsjö	Electrolux	Belgium
Verena	Fennemann	European Commission, Directorate-General for Research & Innovation	Belgium
Isabel Manuela	Fernandez Fuentes	European Federation of Geologists (EFG)	EU
Florian	Flachenecker	University College London - Institute for Sustainable Resources (ISR)	UK
Angel	Galindo	TECNICAS REUNIDAS	Spain
Fatima	Ghardi	European Universe Awareness (EUNAWA)	Belgium
Meike	Gierk	Federal Ministry for the Environment	Germany
Christian	Hagelüken	Umicore AG & Co. KG, Germany	Germany
Jonny	Hazell	Green Alliance	UK
Guillermo	Hernandez	Milieu	Belgium
Jonas	Ivarsson	Nordic Innovation	Norway
Eric	Johnson	European Metal Trade and Recycling Federation (Eurometric)	Belgium
Zbigniew	Kamieński	Ministry of Economy of the Republic of Poland	Poland
Philippe	Lamberts	MEP	Europe
Aniela	Lenz	Citizen	Germany
Nina	Leth-Espensen	Confederation of Danish Industry (DI)	Denmark
Marie T.	Lubs	Royal Institute for International Relations (EGMONT)	Belgium
Pauline	Lucas	Logos Public Affairs	



Name	Surname	Institution	Country
Tobias	Lung	European Environment Agency (EEA)	Denmark
Núria	Matamoros	DIBA	Belgium
Marek	Matejun	Lodz University of Technology	Poland
Roland-Jan	Meijer	San Antonio Communications	Belgium
Lukas	Micka	Access EU! - European Economic Interest Grouping (EEIG)	Belgium
Slavko	Solar	European Commission, DG Enterprise and Industry	
François	Misser	Africa Energy	Belgium
Simone	Mittl	BMW Group	Belgium
Beate	Orberger	ERAMET	France
Derek	Osborn	Stakeholder Forum for a Sustainable Future	
Mario	Parrot	European Commission, Directorate-General for Research and Innovation	Belgique
Mattia	Pellegrini	European Commission, DG Enterprise and Industry	Europe
Vesselin	Petkov	University of Leuven	Belgium
Sophie	Quecke	Beryllium Science and Technology Association (BeST)	Belgium
Laure	Quintin	FEDEREC	France
Manuel	Regueiro	Geological Survey of Spain / EuroGeosurveys	Spain
Leida	Rijnhout	The Northern Alliance for Sustainability (ANPED)	Belgium
Stephanie	Roth	EcoRuralis	Romania
Mihai	Sabo	none	Romania
Anders	Sand	Luleå University of Technology	Sweden
Ester	Sanna	Autonomous Region of Sardinia	Italy



Name	Surname	Institution	Country
Bertrand	Schutz	ERAMeT	France
Aurela	Shtiza	Industrial Minerals Association Europe (IMA-Europe)	Belgium
Hans	Sprangers	Ministry of Economic Affairs	Netherlands
Magda	Stoczkiewicz	Friends of the Earth Europe (FoEE)	Europe
Gertjan	Storm	University of Maastricht	Belgium
Renata	Surowiec	Ford of Europe	Belgium
Maud	Tarnot	UNICEM	France
Guy	Thiran	European Association of Metals (Eurometaux)	Europe
Elżbieta	Uzunow	Institute of Mechanised Construction and Rock Mining (IMCRM)	Poland
Viaggi	Valerio	Municipal Waste Europe	
Marco	Vallini	Nickel Institute	Belgium
Marco	van Bergen	Desso - Recycling floor tiles to provide material for new floor tiles	
Cedric	Van der Essen	SPF Economie	Belgium
Raymond	Van Ermen	European Partners for the Environment (EPE)	Belgium
Anne	Vaucher	Lafarge	France
Isabelle	Videlaine	UNICEM	France
Andreas	Volz	Forschungszentrum Jülich GmbH	Germany
Michelle	Wyart-Remy	Industrial Minerals Association Europe (IMA-Europe)	Belgium



## 5.2 Annex II – COBALT Opening Conference Agenda

### Opening Conference

# **"Industry and Society's needs for sustainable management of raw materials in Europe: Exploring solutions for future action"**

**Supporting the European Innovation Partnership on Raw Materials**

## **Agenda**

**28-29 November 2013, Brussels**

Bedford Hotel & Congress Centre,  
135-137 Rue du Midi, 1000 Brussel



# 28<sup>th</sup> November 2013

**8.30 – 9.00**      **Registration and Welcome Coffee**

**Event facilitator**    Peter Woodward

**Session 1**      **Introduction and opening to the topic of sustainable raw materials management**

**9.00 – 09.30**      **Introduction to COBALT and challenges for sustainable raw materials management in Europe**

André Martinuzzi & Andreas Endl, Institute for Managing Sustainability, Vienna University of Economics and Business, Austria

**Welcome address: Sustainable raw materials management in the context of resource efficiency**

Video message from Janez Potočnik, European Commissioner for Environment

**9.30 - 9.50**      **How innovation can deliver solutions for raw materials and the EU's needs: Objectives of the European Innovation Partnership on raw materials**

Mattia Pellegrini, DG Enterprise and Industry, Head of Unit F3 “Raw Materials, Metals, Minerals and Forest-based Industries”

**09.50 – 10.10**      **Resource trends, science and implications for Europe**

Fraser Thompson, McKinsey Global Institute (Report "Resource Revolution")

**10.10 – 10.30**      **Plenary discussion**

**10.30 – 11.00**      **Coffee Break**

**Session 2**      **Panel discussion: Viewpoints on sustainable raw materials management in the EU**

<b>11.00 – 13.00</b>	<b>The needs of consumers and the environment</b>	<b>Perspectives from the metals processing and automotive sector</b>	<b>National and regional perspectives on sustainable raw material policy issues</b>
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Presentations from:  
Magda Stoczkiewicz, Friends of the Earth Europe (FoEE), Director

Flavio Biondi  
ADICONSUM (Consumer Association of Italy)

Guy Thiran, Eurometaux, Director General

Zbigniew Kamienski, Sherpa for the EIP on raw materials to Grażyna Henclewska, Undersecretary of State in the Polish Ministry of Economy

**Group work to reflect on stakeholders’ perspectives and roles with regard to**





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sustainable management of raw materials

**13.00 – 13.15** Introduction to the working group format

*13.15 – 14.30 Lunch break*

**Session 3** Identifying challenges for sustainable raw materials management for EU policy, society and business

**14.30 – 16.15** 5 parallel working groups

### **Working group 1: Complementing the policy framework – how to successfully implement the European Innovation Partnership (EIP) on raw materials**

*Topics to be covered:*

- Strategic Implementation Plan of the EIP
- Prioritizing actions and important steps for implementation
- Stakeholders' roles in supporting implementation

### **Working group 2: Changes in international material use patterns and the corresponding opportunities along value-chains**

*Topics to be covered:*

- Business opportunities in relation to changing global material availability and use
- Promising areas of innovation and co-operation to seize opportunities
- Socially and economically sustainable pathways to increasing sustainable supply and reducing consumption of primary raw materials

### **Working group 3: Learning from existing best practice: sustainable raw materials management along value-chains**

*Topics to be covered:*

- Successful business models for changing materials management
- Identifying enabling framework conditions and drivers for achieving best practice
- Policy support for SMEs to adopt best practices

### **Working group 4: What do EU consumers need? Household appliances and raw material awareness**

*Topics to be covered:*



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- Drivers of EU citizens' consumption of ICT equipment
- Awareness of EU citizens in relation to embedded raw material demand
- Needs to raise awareness and change consumption patterns
- Ways to achieve change and their feasibility

### Working group 5: Skills and training for sustainable raw materials management – where we stand and what we need

#### Topics to be covered:

- Existing and future skills gaps along the value-chain
- Discussing the effect of lacking skills on sustainability and competitiveness of operating businesses
- Target groups and format for skilling/training policies, including courses

16.15 – 16.40 *Coffee break*

#### Session 4 **Global perspectives on sustainable material management**

**16.40 – 17.30 An insider perspective on United Nations approaches to the sustainable management of materials**

Derek Osborn, Stakeholder Forum for a Sustainable Future

**Group work on creative solutions towards sustainable management of raw materials**

**17.30 End of Day 1**



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<b>Session 5</b>	<b>Future dimensions of sustainable management of raw materials</b>
<b>09.00 – 09.15</b>	<p><b>How sustainable management of raw materials affects international development</b></p> <p>Leida Rijnhout, ANP Stakeholder Forum for a Sustainable Future ED, Executive Director</p>
<b>09.15 – 09.30</b>	<p><b>A political perspective on future socio-economic challenges for sustainable raw materials management</b></p> <p>Philippe Lamberts, MEP</p>
<b>09.30 - 09.45</b>	<p><b>Down to the ground: Geological surveys' perspectives on Sustainable management of raw materials in Europe</b></p> <p>Manuel Regueiro, Spanish National Delegate to EuroGeoSurveys</p> <p><b>HORIZON 2020 – Research and Innovation tackling waste as a resource</b></p> <p>Verena Fennemann, DG Research and Innovation</p>
<b>09.45 – 10.00</b>	<b>Plenary discussion</b>
<b>Session 6</b>	<b>Results of the parallel working groups on sustainable management of raw materials</b>
<b>10.00 – 10.45</b>	<b>Presentation of working group results of day 1 (working groups)</b>
<b>10.45 – 11.15</b>	<i>Coffee break</i>
<b>Session 7</b>	<b>Main findings and next steps</b>
<b>11.15 – 13.15</b>	<p><b>Discussions on the main findings of the WGs</b></p> <p><b>Panel discussion on societal and business needs in relation to sustainable management of raw materials – <i>sounding board for the working group main findings</i></b></p> <ul style="list-style-type: none"> <li>• Flor Diaz Pulido, DG Enterprise and Industry, Deputy Head of Unit F3 “Raw Materials, Metals, Minerals and Forest-based Industries”</li> <li>• Christian Hagelüken, Umicore</li> <li>• Michelle Wyart-Remy, IMA Europe</li> <li>• Meghan O’Brien, Wuppertal Institute</li> <li>• Sorin Mierlea, National Association for Consumer Protection and Promotion of Programs and Strategies, Romania</li> </ul>





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**13.15 – 13.30**      **Next steps and closure**  
COBALT consortium

**13.30**              **End of opening conference**



## 5.3 Annex III – Planned outline of the five working groups

This chapter outlines the general focus and content topics of the five working groups at the Opening Conference. Conference participants were invited to join one of the working groups and bring in their experiences and expertise to debate with their colleagues in an informal setting. Each working group was planned to be introduced by expert views on the respective topic and facilitated by COBALT team members. The results of each working group should then be presented in the plenary.

### Working Group 1: Complementing the policy framework – how to successfully implement the European Innovation Partnership on raw materials

The European Innovation Partnership (EIP) on raw materials is a new policy tool to foster research and innovation for securing raw material supply, increased competitiveness of raw materials sectors and tackling related negative environmental, social and health impacts.

Following up on the implementation of the EIP, a Strategic Implementation Plan (SIP) outlines a detailed schedule with regard to EIP objectives, targets and methodology and explaining detailed action.

This working group aimed to explore prospective steps for a range of diverse SIP action areas (see box below). Participants in this working will (i) prioritize individual actions in the respective action areas, (ii) identify most important next steps in the implementation process, and (iii) specify concrete roles of different stakeholders in the implementation. Background information on the SIP and its actions areas was provided in the working group by a short presentation and printouts of the original SIP parts.

Speaker: Patrice Millet, DG Enterprise and Industry

#### Box 2. Pre-selected SIP actions areas and testing ground for call for commitments

The COBALT Opening Conference specifically discussed a number of EIP action areas in one of its working groups:

- Action area I.1: Improving R&D&I coordination in the EU
- Action area I.3: Innovative extraction of raw materials
- Action area II.1: Minerals Policy Framework
- Action area II.3: Public Awareness, Acceptance and Trust
- Action area II.5: Optimised waste flows for increased recycling
- Action area III.2: Global Raw Materials Governance and Dialogues

Source: Strategic implementation plan for the European Innovation Partnership on raw materials, FINAL VERSION - 18/09/2013.



## Working Group 2: Changes in international material use patterns and the corresponding opportunities along value-chains

Technological change is one driver of change in material use patterns. But it may not be the biggest. As an addition 3 billion people will join the world population in the next 35 years, as average consumption levels for the global population increases - with perhaps 3 billion more people enjoying 'middle class' consumption levels by 2030, and as environmental and physical limits constrain resource supply, patterns of material demand and use are certain to change.

This offers significant opportunities for those firms able to foresee future demands and constraints, and respond innovatively, whether through: ways to expand supply within constraints, to design products able to substitute problematic materials, or to develop substitute materials. With global value-chains and global markets, the opportunities seem likely to involve simultaneous change in demand and supply.

This Working Group was planned to discuss the potentially significant changes, and the opportunities which could result, looking at:

- Business opportunities in relation to changing global material availability and use
- Promising areas of innovation and co-operation to seize opportunities
- Socially and economically sustainable pathways to increasing supply
- Costs and benefits from reducing consumption of primary raw materials

Speaker: Christian Hudson, Ecologic Institute

## Working Group 3: Learning from existing best practice sustainable raw materials management along value-chains

Every value chain originates with the demand for a material which delivers a particular function. Although each value chain is different, within each lies the possibility to increase security that the function can be met by sufficient supply of an appropriate material in the future, and that the economic, environmental and social costs of doing so can be reduced.

The opportunities for these improvements can lie within: extraction, recycling, processing, logistics, substitution, design, and manufacturing processes. Evidence suggests that many of the potential wins can only be realised by planning and co-operation between partners in the supply chain.

This Working Group discussed best practice examples where technical or organisational innovation has reduced economic, environmental or social costs whilst securing supply. It considered, in particular:

- Successful business models for changing materials management
- Identifying the enabling framework conditions and drivers for achieving best practice
- Which policy support can help industry/business (including SMEs) to adopt best practices

To promote interaction with best practice examples, this working group did split participants into 4 smaller groups, which each discussing examples with the respective speakers below in a world café setting, moving to another speaker after 15 minutes. After 1 hour, the full group



discussed key insights and main recommendations for sustainable raw materials management.

Case presenters:

Marco Van Bergen, Desso - Recycling floor tiles to provide material for new floor tiles

Aurela Shtiza/Michelle Wyart-Remy, IMA-Europe – Sustainable Process Industry through Resource and Energy Efficiency (SPIRE) Public-Private Partnership (A.SPIRE PPP)

Bertrand Schutz, ERAMET – Metal recycling

Karl Edsjö, Electrolux – material savings in household appliances

#### Working Group 4: What do EU consumers need? Household appliances and raw material awareness

The consumer is king. But in terms of raw material needs of consumed products often a blind one. Product information as regards embedded raw materials is lacking, insufficient or even misleading. In addition, very few consumers understand the material demand they generate through their consumption choices: This lack of understanding relates to the type and quantity of materials required, or the social and environmental impacts along the value chain of extraction and manufacturing. Yet when these issues are attracting consumers' attention, they can generate strong feelings that reflect underlying needs and preferences.

This Working Group was planned to look at the full range of EU consumer needs, from access to social justice, at ways to simultaneously meet those needs in the future, and at the roles consumers could play in supporting change. It should include discussion of:

- Drivers of EU citizens' consumption of materials, for example in ICT equipment
- Current levels of awareness of EU citizens in relation to embedded raw material demand
- The potential role of consumer awareness and future change in consumption patterns

Speaker: Sorin Mierlea, National Association for Consumers' Protection and Promotion of Programs and Strategies

#### Working Group 5: Skills and training for sustainable raw materials management – where we stand and what we need

The global economy is continuously increasing its material demand, across a range of materials. Whichever way this demand is met, the sectors which play a role in meeting final consumption demand (i.e. extraction, processing, material innovation, manufacture, design, waste logistics and recycling) will be required to expand and innovate. For most sectors, individuals and firms, this innovation will need the application of new skills or an expanded, skilled workforce.

This Working Group was planned to identify which skills are needed and to think strategically about where gaps in skills need to be addressed. It will consider how, in practice, the partnerships that could deliver the right skills training could come about. The discussion should include:

- Views on existing and future skills gaps along the value-chain



- Evidence on the effect of skills gaps on future sustainability and competitiveness of businesses
- Target groups and format for skilling/training policies, and identification of how, in practice, to change existing skills delivery to meet future needs.

Speaker: Jan Rosenkranz, Luleå University of Technology