

General remarks

The European extractive industries view Resource Efficiency as the policy concept that should yield optimum solutions to the many trade-offs that exist between different environmental objectives and between the environmental, social and economic imperatives of Sustainable Development. Clearly, it must therefore be based on a holistic picture of current trends and the different trade-offs that exist.

Consequently, rather than promoting any one link of the value-chain over another, Resource Efficiency should encompass whole value chains and involve different contributions from each link of those value-chains according to their strengths and abilities. The result should be an economy that optimises its use of resources and, therefore, results in improved living conditions and reduced waste globally.

Resource efficiency and what it may achieve

A “Resource Efficiency” Policy cannot reduce the EU’s exposure to sudden price rises or shortages, but it can mitigate their impacts. Sudden price rises and bottlenecks on world markets are usually created by:

- » political interference in the markets,
- » speculation,
- » geopolitical crises,
- » natural and man-made disasters,
- » rising demand in a particular application,
- » creation of monopolies.

If resource-efficiency is used to promote the interests of one step of the value chain over another, economic resilience will be lost (e.g., using a resource-tax to favour secondary raw-materials over primaries). If contributions to resource-efficiency are sought from all partners in the value chain, economic resilience will be increased (e.g., world-leading exploration and extraction and processing efficiency as well as world-leading reductions in waste).

If implemented well, Resource Efficiency has the potential, not only to create “green jobs”, but to make all jobs greener and economically sustainable. Increasing mineral exploration and self-sufficiency in mineral resources will create European jobs. Nurturing a geological services industry for export will create jobs beyond our borders. Both will reduce the EU’s global footprint. On the other hand, reducing resource-use in the EU may increase pressure on the earth’s bio-capacity as a whole by simply causing a shift of economic activity to less efficient regions. Resource Efficiency should guarantee that the new balance of material flows amongst the different regions of the world will be less harmful to the planet as a whole. In order to realise the competitive advantages of a Green Economy, the EU should not insist on unilaterally reducing its absolute material inputs, but in competing on efficiency.

Key Challenges and Opportunities

1. Meeting minimum EU demand for the jobs, metals & minerals that are needed to

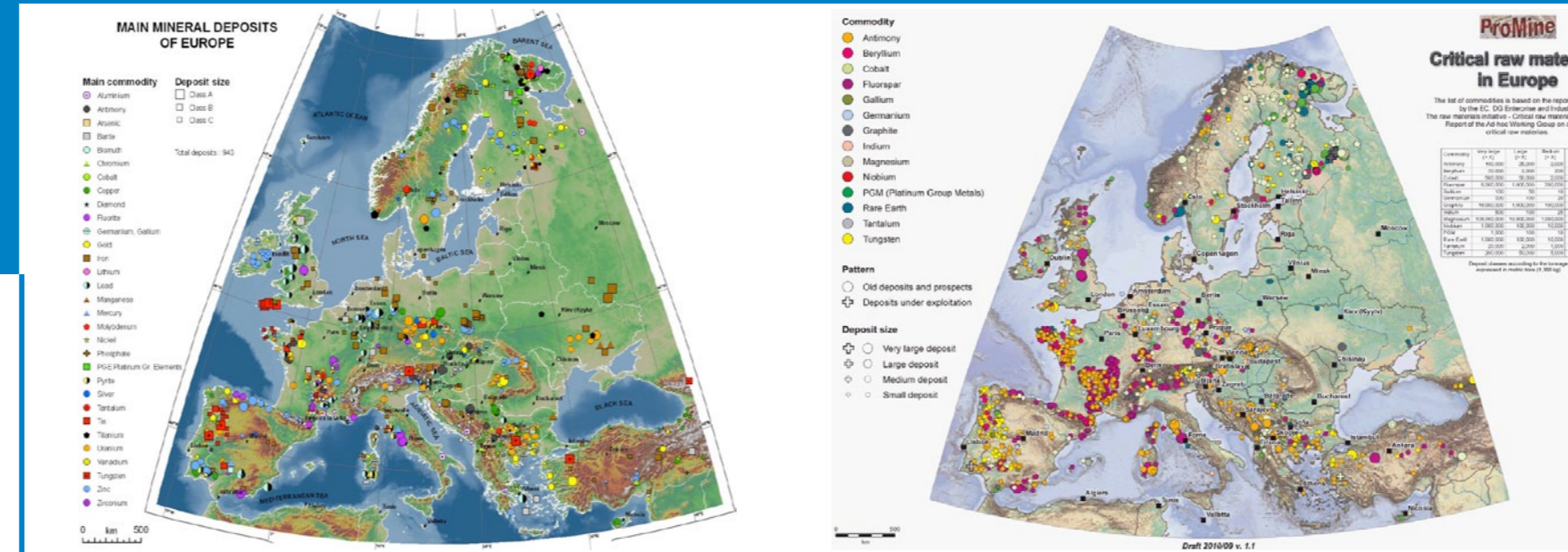
- » Upgrade and maintain ageing infrastructure (health, transport, energy,...),
- » Accommodate increased resource-efficient urbanisation,
- » Deploy new sustainable technologies,
- » Share equitably the benefits of information & communications technology,
- » Re-balance lifestyles and employment across the whole EU.

2. Further de-coupling of economic growth from resource/energy use: “a change of gears”

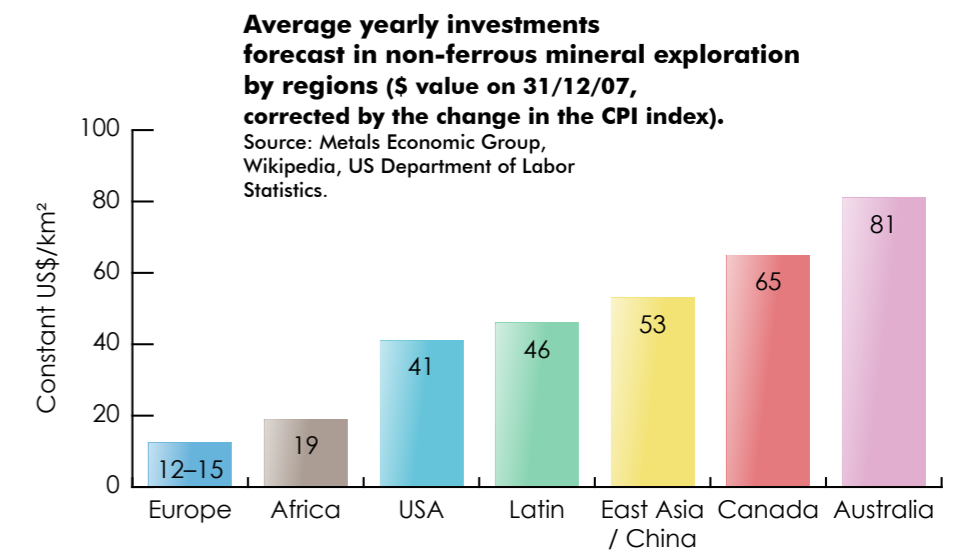
- » Decoupling of resource use from its environmental impact will come with improved standards of living globally (as has already happened in the developed world),
- » Further decoupling must be balanced with development, climate and energy security needs,
- » Historical long-term demand for base-metals has steadily increased by 1-3% per annum globally and this is likely to continue between now and 2050

3. Increased competition for resources and therefore increased supply risks

- » Several counter-measures are available (i.e., Resource Efficiency is only one of them),
- » Free & Fair Trade and EU Primary Production (i.e. mining) are also needed,
- » Diverse parallel measures will reduce the EU’s vulnerability to supply risks,
- » Several measures may also be counter-productive (e.g., stockpiling or resource-taxes, which create further market distortion).



NB: “Class A” Deposit size indicates world-class deposits. Europe is not “poor in resources”.



NB: Mine production is directly correlated to exploration expenditure. Europe isn’t looking.

4. Remaining relevant in a global economy – “having something to sell to the world”

- » EU Economic Policy must allow for international competitiveness
- » A factual baseline must be determined to put future performance into context
- » EU Innovation must finally start to rival that of its main competitors (USA)
- » “Regulation-Efficiency” is also critical: - priorities must be nurtured

Perceived scarcity

There is no scarcity of mineral resources in the short, medium or long term in Europe or in the world - only supply bottlenecks in the short-term and in some cases a lack of access which needs to be resolved. Minerals and metals are likely to play a key part in achieving sustainable development and bringing the global footprint back to within the limits of one planet. The current surge in demand for materials is not the result of mass consumerism, but an improvement in the living standard of tens of millions of people around the world. In terms of metals & minerals, from now until 2050, the world will actually need to “do more with more”.

WHICH RESOURCES ARE SCARCE ?	Renewable Resources	Non-Renewable Resources
Natural Resources	Water	Potable Water
	Nutrient cycling	Biodiversity
	Carbon cycling	
	Other Ecosystem Services	
Biotic Resources	Fish	Oil
	Crops & Forest products	Gas
	Livestock	Peat
	Foodstuffs	Coal
Abiotic Resources		Uranium
		Sand
		Clay
		Gravel
		Stone
		Minerals
		Metals
Colour Legend:	= Scarce	= Abundant

Obstacles preventing an economy from becoming more resource efficient

Today’s bottlenecks

Supply shortages and price rises of some mineral commodities can be expected between now and 2050 due to the lag between market demand and supply. These are due to long lead-times for permitting, but also due to unfavourable investment conditions including, in the case of the EU, overregulation, overlapping administrative competencies and lack of support for exploration.

EU access to mineral resources will become difficult in the longer term if the EU does not ensure supply of a good mix of resources from diverse origins. Reuse and recycling will contribute to the supply of resources worldwide and in Europe, but will not satisfy demand in the foreseeable future. One reason for this is the lifetime of materials in use. A couple of examples:

- » 100% recycling of telephone and computer circuit boards in the EU would only supply up to 25% of the EU’s current demand for gold.
- » 100% recycling of end-of-life copper or nickel would only supply up to 35% of current demand for those metals.

Getting Prices Right

Inadequate market signals are a significant obstacle to more Resource Efficiency globally. As long as the EU sourcing/trade policy does not internalise the environmental and social costs of imported resources/materials/goods, there is very little incentive for consumers to move towards further Resource Efficiency. For example, the environmental and socio-economic sustainability of mining regions in Africa is not improving and this poses a threat to African relations with the EU. The EU cannot ignore these challenges in its Trade and Development policies.

“Regulation Efficiency”

Inadequate legislation in the EU and uneven implementation of legislation in the Member States can also be considered a major obstacle to Resource Efficiency. The Birds and Habitats Directives are having a significant impact on the extractive industry’s proposals to extend existing sites or open new mines and quarries. The important issue is the extent to which areas that coincide or overlap with important mineral resources are protected, without having taken any account of geological data. Implementation of the European Commission Guidance on the non-energy extractive industries and Natura 2000, and the Council conclusions on “Smart Regulation in the European Union” is necessary in this regard.

System Lock-In

The current lack of canals and water infrastructure is hampering the eco-efficient transport of bulk materials. The missing connection of the Danube Canal to South East Europe is hampering transport routes there. A lack of railways in northern Finland, Sweden and Norway is hampering increased self-supply of iron ore. Huge investments in smart cities, transport and electricity-transmission infrastructure are needed to realise a Resource Efficient Europe.

Skills Shortages

Skills shortages are affecting many industrial sectors in the EU, including the extractive industry. Full implementation of the Raw-Materials Initiative in this regard, including the creation of sectoral skills' councils at European level and support for the Erasmus Mundus Minerals and Environment Programme, is necessary to remove a significant obstacle to achieving Resource Efficiency. There is a pool of skilled mining labour in the Eastern European Countries made redundant following the wholesale closures of the last decades. The mining industry will retrain these people in the latest methods if the environment to invest in new operations becomes favourable in the medium to long term

Policy Options and International Competitiveness

Continued and new access to mineral resources in Europe

Whereas Europeans only consume half what Americans do, Europe is still "worst in class" in terms of exploration expenditure. Successful exploration increases Resource Efficiency. Minerals exploration should be classed as research expenditure for tax purposes as is done in other regions of the world.

Full implementation of the Raw-Materials Initiative is necessary in this regard, including application of the Commission Guidance on the non-energy extractive industries and Natura 2000; definition of National Minerals Policies; and better streamlined processes to authorise minerals exploration and extraction.

Best Available Techniques and Innovation

Resource Efficiency, in terms of process efficiency and minimising losses over the long term, is the core business of mining companies. The mining industry, perhaps more than many others, is forced to consider a longer term view because of the long lead-times and payback periods associated with its major investments. For this reason, industry needs certainty that new technologies will be supported long enough to ensure a return on investment (e.g., re-configuring processing plants to recover an additional metal or rare earth element from the ore). Increasing efficiency by making better use of tailings is hindered today by lack of clear policy. In particular, liability issues need to be resolved before successful investment into reprocessing of historically abandoned waste dumps can be made.

Market-based instruments (i.e. energy and resource taxes and incentives) to induce resource saving measures

New taxes, regulations or standards must not stifle innovation, put unilateral obligations on products and services that are in global competition, or provide additional hindrances to trade in either direction.

Therefore, any environmental tax should ensure cost-effectiveness and tax neutrality to maintain international competitiveness. The use of indirect taxes, or removal of existing subsidies, may have negative externalities in other sectors, and may raise social equity concerns. So, they must be analyzed on a case-by-case basis. Any increase in the total cost of raw materials, energy and labour will lead to future investment (and innovation) being drawn to other locations. A tax on resource-use is not an adequate fiscal tool for increasing resource efficiency.

Long-term Resource Efficiency targets

Whilst mandatory long-term targets could be effective in specific areas on a global level (e.g., phasing out of CFCs), since the performance and the quality of products is to a high degree dependent on the amounts and types of resources used, overall targets for resource reduction could lead to absurd situations where for example one resource will have to be replaced by a larger amount of another critical one; possibly introducing increased risks to safety and stifling innovation.

A single "economy wide material efficiency" could be a useful concept to provide a snapshot of the status of the EU economy as a whole but is not suitable as a basis for policy-making, assessment of policy measures or detailed comparison of countries or products. A "dash-board" of particularly important high-level indicators is more appropriate and will better visualise for the public the necessary trade-offs that are required to achieve Resource Efficiency as we define it at the beginning of this paper.

Indicators of success

Not all existing indicators for measuring Resource Efficiency are applicable to extractive operations and may therefore provide a wrong basis for decision making. There is a need to further develop and validate proposed indicators for resource-efficiency.

Concepts such as "resource use", "material footprint" and "material intensity" often wrongfully underweight the importance of stability and durability of materials in the technosphere and therefore over-estimate the potential for their release within any relevant timeframe. In other cases they wrongfully underweight the environmental impacts of dispersive use & release patterns. Minimising the "potential" for environmental impacts by limiting material inputs, without considering realised impacts in the use phase, is inherently inefficient and wasteful.

2020 EU Policy Objectives for a Vision of 2050

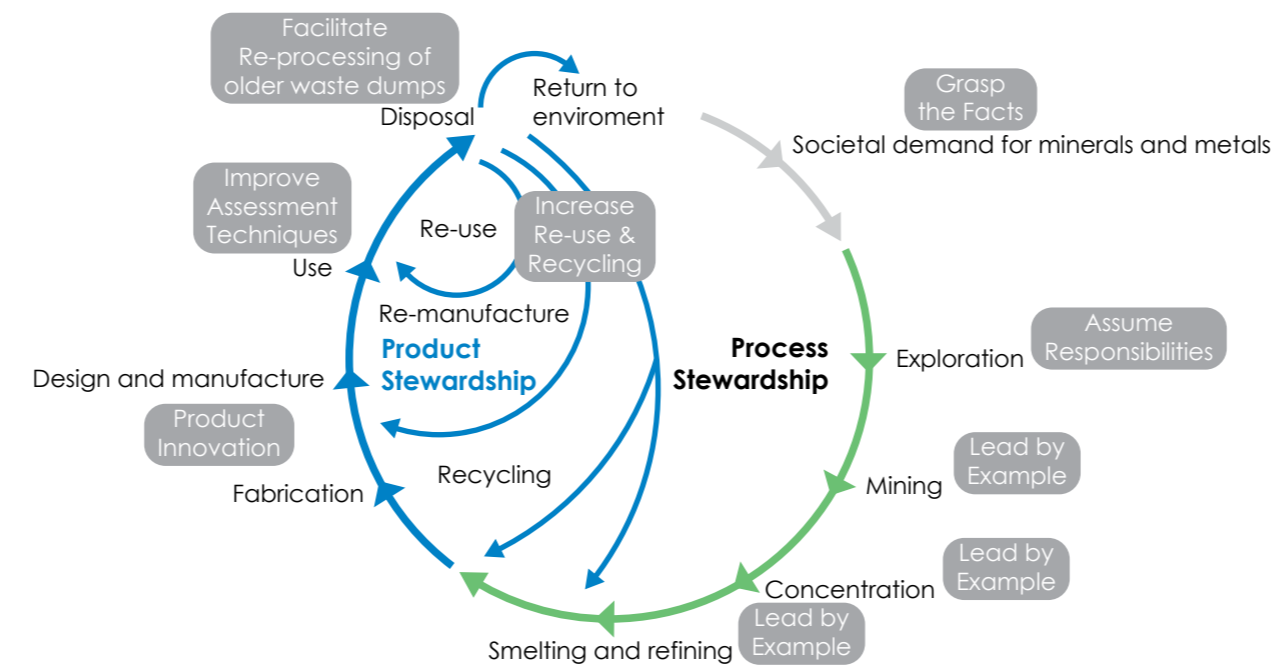
To place the EU as the "international partner of choice" for mineral resource management including sustainable development of primary and secondary mineral resources.

By 2020, the EU should:

- » Attract - through fiscal incentives - the same level of exploration as Africa per hectare
- » Match the degree of self-sufficiency in mineral resources of Asia, in part by developing world-class ore-bodies in Europe
- » Possess a complete modern database and economic assessment of primary and secondary resources across the EU
- » Have the liability framework in place to allow re-processing and/or secure closure of historically abandoned waste dumps
- » Lead the world in technology for several aspects of mineral resource management and efficiency (design, exploration, extraction, transformation to products for export, re-processing, recovery, reuse, recycling, materials flow monitoring, life-cycle assessment, resource intensity)

By 2050, the EU should:

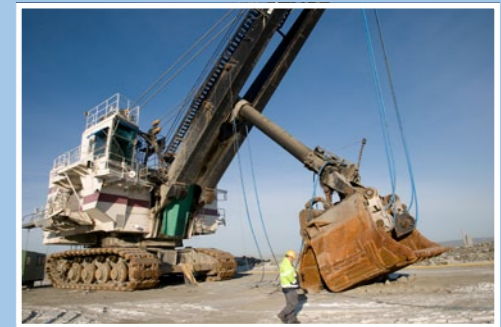
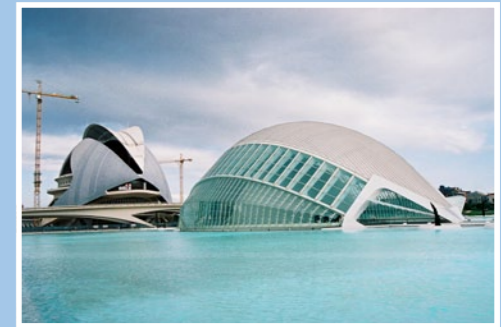
- » Achieve 100% responsible and balanced sourcing of its mineral resources
- » Where necessary, achieve secure closure of all historically abandoned waste dumps in the EU
- » Be the "partner of choice" for several aspects of mineral resource management internationally (sustainable development and transformation of primary and secondary mineral resources)
- » Regularly meet its own resource-efficiency targets using validated indicators and assessment techniques.



NB: Resource Efficiency requires contributions from whole value-chains.

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Position on Resource Efficiency



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Metal Ores & Industrial Minerals
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