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From:	Presidency
To:	The High Level Working Group on Competitiveness and Growth
Subject:	Raw materials as a driver of economic growth and job creation in the transition to low-carbon and circular economy

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Delegations will find in Annex a Presidency discussion paper on Raw materials as a driver of economic growth and job creation in the transition to low-carbon and circular economy, in view of the meeting of the High Level Working Group on Competitiveness and Growth on 26 April 2018.

## **Raw materials as a driver of economic growth and job creation in the transition to low-carbon and circular economy**

### **Global picture and outlook**

By 2050, there will be 9.7 billion people in the world. Projections of future trends indicate that resource use could double between 2010 and 2030, mostly as a result of demand in developing regions, where up to 3 billion people will move from low to middle class levels of consumption by 2030.

It is essential that non-energy raw materials production matches the demand. By 2050, global metals extraction and biomass production are forecast to increase by at least 50% and non-metallic minerals production by at least 100%<sup>1</sup>.

Urbanization will be a key driver of industrial minerals and base metals consumption. In 2015 around 54% of the population lived in cities, while in 2050 this share is expected to increase up to 66%. Urbanization and agriculture will also increase land use competition with possible negative impacts on access to raw materials.

In addition, decarbonisation will be a key driver in many raw materials value chains. The EU is strongly committed to the Paris agreement to decarbonise the economy and meet the ambitious target of reducing greenhouse gas emissions to 80 - 95% below 1990 levels by 2050. In the International Energy Agency “2°C Scenario” the power sector will be decarbonised by 2060<sup>2</sup>. The EU industry and in particular the energy intensive industries, which process raw materials, are on their way to decarbonisation.

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<sup>1</sup> <http://www.resourcepanel.org/reports/assessing-global-resource-use>

<sup>2</sup> [https://www.iea.org/publications/insights/insightpublications/Renewable\\_Energy\\_for\\_Industry.pdf](https://www.iea.org/publications/insights/insightpublications/Renewable_Energy_for_Industry.pdf)

In September 2017, the Commission adopted a renewed EU industrial policy strategy<sup>3</sup>. A major challenge for the EU industry is to embrace technological breakthroughs while making the transition to a low-carbon and circular economy by 2050. It relies on the EU's raw materials policy<sup>4</sup> to help ensure sustainable and secure supply of raw materials at affordable prices for the EU manufacturing industry. The circular economy is bringing new opportunities for resource efficiency.

In the future, the use of resources will increase. The EU will face strong competition from fast-growing economies on the global raw materials markets. Sustainable, responsible production and sourcing of raw materials for downstream industries will play a bigger role at the global level.

The transition to a low-carbon economy means that a sustainable and secure supply of non-energy raw materials will become more critical as the relative importance of fossil fuels declines. Rising global and EU demand for raw materials will lead to more competition:

- other manufacturing regions vs the EU;
- use of land for raw materials or other purposes;
- competition between different sectors of the EU economy for the same resources:
  - Energy (biomass, wind, solar, storage, infrastructure)
  - Transport (e-vehicles, alternative fuels infrastructure)
  - Energy-intensive and downstream industry (electrification, hydrogen, carbon-based technologies)
  - Buildings (metals, minerals and biotic materials)
  - Agriculture (fertilisers).

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<sup>3</sup> Doc. 12202/17, COM(2017) 479 final

<sup>4</sup> See: [https://ec.europa.eu/growth/sectors/raw-materials/policy-strategy\\_en](https://ec.europa.eu/growth/sectors/raw-materials/policy-strategy_en)

## Raw materials – a competitive advantage or a bottleneck?

In terms of GDP, jobs or trade, non-energy raw materials are relatively small. However, they are key enablers of all EU value chains. Access to raw materials can be a competitive advantage or a bottleneck. The choice of the external and domestic supply mix will influence downstream investment decisions and the competitiveness of the EU industrial value chains, such as the EU battery value-chain, which is becoming critical for the competitiveness of the automotive sector and energy storage.

The main global producers and suppliers of critical and some non-critical raw materials to the EU are highly concentrated in a few third countries. This could pose risks to security of supply of raw materials as well as environmental and social problems.

Security of supply will be key for EU economic stability and more widely for societal well-being. Therefore diversity of supply is very important. In this context, beyond actions aiming at diversifying external sources of supply and combating trade restrictions on raw materials, the EU has a raw materials potential. The EU raw materials sector and the related industries operate at a very high sustainability level compared to the rest of the world. However, there are still gaps in our knowledge of the EU's raw materials potential. The conditions for producing raw materials vary across the EU. There are large differences between Member States in mineral resources potential, land use competition, social acceptance, the regulatory framework and its implementation<sup>5</sup>. In particular, the permitting processes differentiate significantly and often are too slow. Long-term regulatory efficiency, stability and predictability are crucial for industrial investment decisions and the full use of the potential to source more raw materials inside the EU.

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<sup>5</sup> Minlex study, <https://publications.europa.eu/en/publication-detail/-/publication/18c19395-6dbf-11e7-b2f2-01aa75ed71a1/language-en>

The EU is also at the forefront of the circular economy transition increasing the use of the secondary raw materials, e.g. the recycling rates of some metals such as iron, aluminium, zinc, chromium or platinum already reach over 50%. However, these high recycling rates cannot cover the demand for these metals due to long product life-cycles (e.g. in buildings). Moreover, for most of the raw materials needed in renewable energies or high-tech applications, such as rare earth elements, indium, gallium or lithium, secondary production only represents a marginal contribution (often only around 1% or less) in meeting fast growing materials demand.<sup>6</sup>

Substitution of critical raw materials by non-critical raw materials and better resource efficiency can also contribute to the circular economy by reducing the pressure on the raw materials supply. Research and innovation have a significant role and require intensified efforts.

The actions under the EU raw materials policy and in particular the European Innovation Partnership (EIP) on Raw Materials have helped to build awareness, consolidate the European raw materials "community", mobilise investment under Horizon 2020 and support the Circular Economy Action Plan. These efforts are just the first small step needed to face the transition of the global and EU economy in the rapidly changing geopolitical context.

### **Questions for debate:**

*Question 1: In your opinion which raw materials are or will become of significant importance for the EU economy? How can we better integrate raw materials value chains into our economic and industrial strategy? How should we mobilise public and private finance of innovation and investment in raw material value chains and finding substitutes for critical raw materials?*

*Question 2: The Commission is expected to provide in the near future the Action plan for the EU Battery Initiative. This will lead to an in-depth assessment of raw materials for batteries. Which other value chains are of strategic importance to your countries from a raw materials perspective?*

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<sup>6</sup> Raw Materials Scoreboard 2016, <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/eip-raw-materials-monitoring-and-evaluation-scheme>