



## Response to Commission's Consultation on the Raw Materials Initiative (RMI)

EuCheMS - European Association for Chemical and Molecular Sciences - provides a single voice for chemistry societies across Europe. EuCheMS aims to ensure that chemistry plays its role as a solution provider to global challenges. EuCheMS is a non-profit-making organisation and has 47 member societies which represent chemists in academia, industry and government in 34 countries across Europe <http://www.euchems.org>.

EuCheMS has chosen to respond to five questions asked in the consultation. We have addressed the questions in the following order: Q3, Q23 and Q24, Q4 and Q2. Blue text indicates EuCheMS recommendations

**Q3.** Do you have any comments regarding the recommendations of the report? If so, please specify.

We very much welcome the work of the expert ad-hoc working group identifying 14 critical raw materials and the recognition that this is an important issue. Nevertheless, we also feel that the 27 raw materials that are not identified as 'critical' should not be neglected. **We would therefore urge the Commission to follow the recommendation made in the report to update and review the list every 5 years. We would also like to highlight the expertise of EuCheMS. EuCheMS has singular access to expertise in this area, we would welcome the opportunity to work with the Commission on future reports.**

The group also identified the need to create a working group(s) to further analyse the impact of emerging technologies on demand for raw materials. Again, **EuCheMS, would welcome involvement in relevant working groups.**

In order to raise the profile of sustainable chemistry and be a spur to innovation and competitiveness, EuCheMS has launched the European Sustainable Chemistry Award. The European Sustainable Chemistry Award is designed to recognise individuals or small research groups which make an outstanding contribution to sustainable development by applying green and sustainable chemistry.

This year the award was made to Professor Dr Matthias Beller, Director of the Leibniz Institute for Catalysis in Rostock, Germany (LIKAT), recognising his exceptional research in the field of homogeneous catalysis. His main focus is on the environmentally sustainable conversion of small molecules into recyclable or reusable materials. More recently he has been active in the development of new catalysts based on bio-relevant metals, especially iron, that are cheaper and more available than precious metal equivalents, including 'critical' materials. 'Bio-inspired' catalysts have not yet been used in industry, but they have shown themselves to be efficient in the production of hydrogen and can be activated by sunlight rather than by fossil fuels. Professor Beller's work is a very clear example of how the Chemical Sciences can be instrumental in finding solutions to the problem of scarcity.

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## RESEARCH

We have addressed the following questions together:

**Q23.** Where do you see the major gap / the urgent need for the raw materials sector related research, development and innovation at EU level. Please provide details.

**Q24.** What is your idea of a major research and innovation action that would have the highest positive impact on the security of raw materials supply for the EU industries? Please specify.

The report recognises the need for further research on extraction, but we feel that much more concrete proposals are needed. In particular, [research like Prof. Beller's into substitution and more effective use of all critical materials should be given greater support through the EU RTD programmes, both under the current FP7 programme and the forthcoming FP8 programme.](#)

The FP7 work programme for nanosciences, nanotechnologies, materials and new production technologies currently focuses on platinum and 'rare earth' metals, [we believe that the work programmes in the current Framework Programme and the future Framework, should look at substitution and more effective use for all critical raw materials.](#)

Europe needs to take the lead in product synthesis, analysis and design if it is to remain competitive. In order to lead, Europe needs to fund cutting edge basic research in the Chemical Sciences. [We would recommend that the panels and domains that the make up the European Research Council should be revised with a stronger emphasis on the chemical sciences,](#) materials, synthesis, molecular architecture and the other disciplines, such as computer science and process engineering. These disciplines are critical to innovation in the production of environmentally friendly products, energy and pharmaceuticals that meets societal needs.

## OTHER INITIATIVES

**Q4.** Are you aware of any initiatives in your country that aim to assess the criticality of raw materials? If so, please describe briefly.

Yes, GDCh (the German Chemical Society), DECHEMA (the German Society for Chemical Engineering and Biotechnology), both EuCheMS members and the German Chemical Industry Association and German Society for Petroleum and Coal Science and Technology, have produced a position paper on 'Change in the Raw Materials Base'. Whilst the position paper is specific to Germany many of the issues and priorities identified apply across the EU. This report is available in English at [http://www.gdch.de/oearbeit/pospap\\_e.htm](http://www.gdch.de/oearbeit/pospap_e.htm)

## SKILLS AND EDUCATIONS

**Q21.** What type of actions would you propose to provide better cooperation between companies, universities and public authorities in order to promote skills and in the extractive or other raw materials sectors? Please specify.

EuCheMS has an Education Division which addresses some of these matters. The High Level Group on the Chemicals Industry, listed the [need to promote chemical and science education, starting with primary schools,](#) we would fully support measures to improve education and skills in the Chemical Sciences.

Innovative solutions to shortage in raw materials requires skilled researchers with the most up to date skills, [more should be done to support knowledge transfer so that basic research can bring economic benefit.](#) The Marie Curie Industry-Academia Pathways and Partnerships (IAPP), is a good example of a tool to support this sort of knowledge transfer.