Resources outlook into 2035

On July 4th, 2016 a conference of DER (Deutsche Rohstoffagentur) was held in Berlin to present results about the long term supply of critical raw materials.

In a study commissioned by the German Federal Ministry of Economics, the Fraunhofer Institute for System and Innovation Research has provided an overview on the criticality of certain raw materials for Emerging Technologies. For some metals the demand for selected technologies could even be more than double primary production in 2013. Consequently, there is some concern that supply will not keep up with this growing demand.

For which metals a short supply is expected?

Many of so-called Emerging Technologies will push up demand of strategic by-metals. From today's perspective a short-supply is expected mid- to long-term for a number of those metals. For that reason, there is some threat for price explosions as already seen in 2010 and 2011. According to the Fraunhofer Institute the biggest threat is on Dysprosium, Neodymium, Praseodymium, Rhenium, Tantalum and Terbium.

What is driving demand?

The inexorable growth in population and prosperity will push up the hunger for High-Tec products. Apart from this demographic change as well as increasing age of our society will drive demand for such products. In the years ahead autonomous driving will bring back mobility to older people who today are scared to drive in everyday traffic.

What exactly are Emerging Technologies?

Among others they include renewable energies, LED and OLED, Aerospace, information and communication technology as well as micromechanics. In the field of energy technology, it is mainly wind and solar technology where the scientists see biggest potential. This also applies for Lithium-ion high-performance storage devices. As most sensitive to critical raw materials, Fraunhofer has identified electro mobility. No matter if hybrid, electro or fuel cell drives.

Rising demand for displays

Approximately 80% of today's Indium supply is consumed for display technologies. It is predicted that by 2035 the amount of such ITO (Indium-Tin-Oxide) displays will double to 5 billion units. No matter if being used for LCD television, smartphones and tablets or for next generation OLED displays. They are all based on the same coating technologies.

Germanium – a critical metal

Today about 35% of the world's supply is used in infrared optics. Alongside the fields of electronics, solar and phosphors about 20% is being used for fibre optics. However, due to the rapid rise in information and communication technology the proportion of fibre optics will become as high as 81% in 2035. Consequently, there will be a significant risk for short-supplies. In this context it is important to know that about 65% of the world's Germanium is produced in China.

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