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Developments and trends in the availability of high-tech metals with a special focus on the German situation

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The global commodity situation has undergone substantial changes during the past 15 years. Due to the rapid economic growth in the emerging markets, first of all China, the demand for raw materials has significantly increased from 2002 to 2014. As a result of this enormous growth in demand, the prices have increased considerably. High commodity prices generated creativity in the development of new technologies for substitution, recycling, extraction of so-called by-products and the exploration of new mineral deposits. This situation and the slower economic growth in China during the last two years have caused a reduction of the growth of mineral resources demand and lower commodity prices for most metals recently.

Due to the development of new technologies, the demand for raw materials has significantly changed and this development will continue during the next years. The supply of raw materials is virtually the “Achilles’ heel” of the German industry, especially for the key and advanced technologies. With regard to new technologies, particularly the development of renewable energies and electro mobility, an increasing demand for metallic raw materials, especially for the so-called high-tech metals like indium, germanium, lithium, tantalum, rare earths, etc. has to be anticipated for the next decade.

The German commodity-processing industry is realizing that high volatilities in the commodity markets can lead to production limitations and affect innovations. Against this background, the German Mineral Resources Agency (DERA) in the Federal Institute for Geosciences and Natural Resources (BGR) has developed a new tool the “Raw Materials Monitor”. With this monitoring tool we will analyze the supply, the demand and the price developments for all metals, with a special focus on high-tech metals. On this basis we will be able to determine potentially critical minerals in detail. An introduction to the methodology of the “Raw Materials Monitor” will be given in this presentation and for selected metals the potential of primary and secondary resources and their potential criticality will be analyzed.

