



Critical metals for a better environment

Smog in China and its impacts

In the last couple of weeks the news were full of the serious air pollution in Beijing. Car usage is strictly regulated; factories and schools are being closed. People have to wear face masks when being outside. Public life comes almost to a halt.

However, those problems appear to be largely self-inflicted. Approximately 70% of China's energy comes from dirty coal-fired power plants. Whereas many countries are moving towards green energy China's coal consumption has increased by an average 9% over the past 10 years. Even though China's economy had risen sharply in the last 25 years the country failed to plough back their profits into new technologies and factories. But meanwhile it seems that the Government will take necessary action and cut down China's dependency on coal. Beijing has launched an investment program for renewable energies and nuclear power. Overall this initiative should have some positive impact on the markets as it will drive the demand for strategic metals. When it comes to solar energy, wind power and nuclear plants a number of those metals are essential. No matter if it is Indium, Gallium, Hafnium or Rhenium, just to mention some of the most important ones.

Another sector to look at is traffic. An increasing number of cars leads to a growing amount of exhaust emissions. Apart from the fact that emission levels for normal cars need to be further reduced, China's government will offer tax incentives for hybrid and electric vehicles. This is certainly another aspect that will lead to an increased consumption of critical metals such as Dysprosium or Neodymium.

Gallium – a changing market

By the turn of the year there is some hope that the gallium market is about to rebound any time soon. Some of the gallium producers were forced to pay tribute to a continuing drop in prices. There have been reports saying that a shut-down of

various factories has cut back China's production by some 40% over the past few months. There are still some old stocks that may be offered at low prices just for the purpose of liquidation. However, times of an over-supply should come to an end very soon.

At the same time low prices have stimulated the use of gallium in a number of new applications. The break-through for so-called CIGS solar cells appears to be imminent. Market leader Manz AG reports on their web-site that CIGS is the state-of-the-art technology giving both highest profitability and efficiency. Compared with traditional silicon cells, CIGS allows for significantly higher efficiency rates. As a result of China's ongoing smog problems the Government in Beijing has put focus on CIGS. Tax incentives shall help to quickly generate facts in this area. Only a few weeks ago construction of China's biggest CIGS plant was started (1.5 GW). The plant is scheduled to go operational in early 2017.

Apart from this there is an increasing demand for Gallium-Indium liquid alloys. Often these liquids are used as a replacement for toxic mercury. One good example are clinical thermometers where this technology has already been introduced some years ago. Due to its excellent thermal and electrical conductivity those liquid alloys find an increasing use in thermal cooling and heating systems.

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