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Responsible sourcing of critical metals

Specialist metals such rare earths, lithium, cobalt, tantalum, indium, niobium, tungsten are essential to maintain our modern standard of living and pursue new digital and green technologies. Often they are only needed in small quantities and where the number of primary suppliers is small and, especially where these are concentrated in one country, supply could be easily disrupted. Such metals are termed critical. The rapid transition to EVs is perhaps the headline topic at the moment and is highlighting the need for additional supplies of a number of raw materials including critical metals.

Not only do we need diverse and secure supplies though, we need to be sure that our primary raw materials come from responsible sources that are free from the negative issues often associated with mining. It is difficult for consumers to see through the long manufacturing supply chains for reassurance that mines are environmentally-friendly and socially responsible.

It is often assumed that it is better to recycle and indeed the durability and potential for recycling is an advantage of metals as raw materials. However, given the rising global population, rising standards of living and rapid changes in technology, primary supplies will be needed for the foreseeable future. Mining is an essential economic driver in many countries and done well it is a positive driver of sustainable development, to be encouraged and integrated to the circular economy.

I will look at three ways to compare mines and deposits.

1. The most quantitative comparison, which is via life cycle assessment. This is a 'world of its own', requiring painstaking data collection and more subjective decisions that one might suppose in order to come up with numbers that can be compared. It is most useful to the specialists in manufacturing supply chains.
2. Responsible sourcing schemes, which are increasing in number and vary from best practice leaders such as ICMM, general schemes such as IRMA, to specific schemes such as ITRI for conflict minerals, and national schemes such as that being implemented in Finland.
3. Clear, simple and fun ideas are needed to communicate to young people and we have been developing a 'Top Trumps' game to compare rare earth deposits.