



RAW MATERIALS FOR DECARBONISATION

Rare earth elements (REE)

What are rare earth elements (REE)?

The REE are a group of 17 chemically similar metallic elements that include the 15 lanthanides, spanning atomic numbers 57 (lanthanum) to 71 (lutetium), together with scandium and yttrium.

As refined metals the REE are typically lustrous, dark grey to silvery in appearance.

How are REE used?

They have some unusual magnetic and optical properties that make them useful in many chemical and metallurgical applications, for example, in catalysts, glass and ceramics, super alloys and permanent magnets.

In the UK REE are predominantly used in the manufacture of permanent magnets.

Where are REE found?

REE-bearing mineral deposits occur in a diverse range of igneous, sedimentary and metamorphic rock types. However,

the majority of economic REE resources are associated with just three minerals, bastnäsite, monazite and xenotime.

Does the UK import REE?

The UK imports REE in several forms, which includes metals, cerium compounds, yttrium and scandium compounds, and ferro-cerium.

Where does REE occur in the UK?

REE minerals are known to occur in the UK, many of them are quite rare and are typically found in minor amounts in a few localities.



BGS geologists examining rare earth rich rocks in the Cnoc nan Cuilean intrusion, north-west Scotland.
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