CRMs are useful in ...

BIORECOVER
Raw Materials. Sustainable. Safe

...the construction sector!

Being used in the production of **energy-efficient building materials**, **high-performance construction materials or smart building technologies**, CRMs enable the production of advanced materials and technologies that are essential for the construction industry to achieve sustainability and efficiency.

CRMs are key in the energy transition

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

CRMs are essential for the production of **high-quality**, **durable**, and **energy-efficient** construction products. They are key in making building structures strong against natural disasters, such as earthquakes.

Without these CRMs, it would be difficult to build the infrastructure that we rely on every day.

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ALUMINIUM: USED IN A VARIETY OF CONSTRUCTION PRODUCTS, INCLUDING WINDOWS, DOORS, AND ROOFING.

COBALT: USED IN THE PRODUCTION OF HIGH-STRENGTH STEEL, WHICH IS USED IN A VARIETY OF CONSTRUCTION APPLICATIONS.

GALLIUM: USED IN THE PRODUCTION OF LIGHT-EMITTING DIODES (LEDS), WHICH ARE INCREASINGLY BEING USED IN CONSTRUCTION LIGHTING.

INDIUM: USED IN THE PRODUCTION OF FLAT-PANEL DISPLAYS, WHICH ARE USED IN A VARIETY OF CONSTRUCTION PRODUCTS, INCLUDING TVS, COMPUTERS, AND SMARTPHONES.

LITHIUM: USED IN THE PRODUCTION OF BATTERIES, WHICH ARE USED IN A VARIETY OF CONSTRUCTION PRODUCTS, INCLUDING ELECTRIC VEHICLES AND SOLAR PANELS.

CRMs are useful in ...

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Raw Materials. Sustainable. Safe

...the electronic sector!

Critical raw materials are crucial for the electronic sector as they provide essential properties for **device functionality and miniaturisation**. They enhance performance, efficiency, and enable wireless communication. Their unique properties and applications are instrumental in meeting the evolving demands of the industry.

CRMs enhance devices' energy efficiency

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

CRMs are ubiquitous in electronics. For instance, **INDIUM** enables touch screens by conducting electricity and bonding to glass while remaining transparent. **GALLIUM** facilitates communication via radiofrequency chipsets and fiber-based systems. Even household appliances rely on CRMs, such as **FLUORSPAR** in coolant systems for refrigerators and air conditioners.

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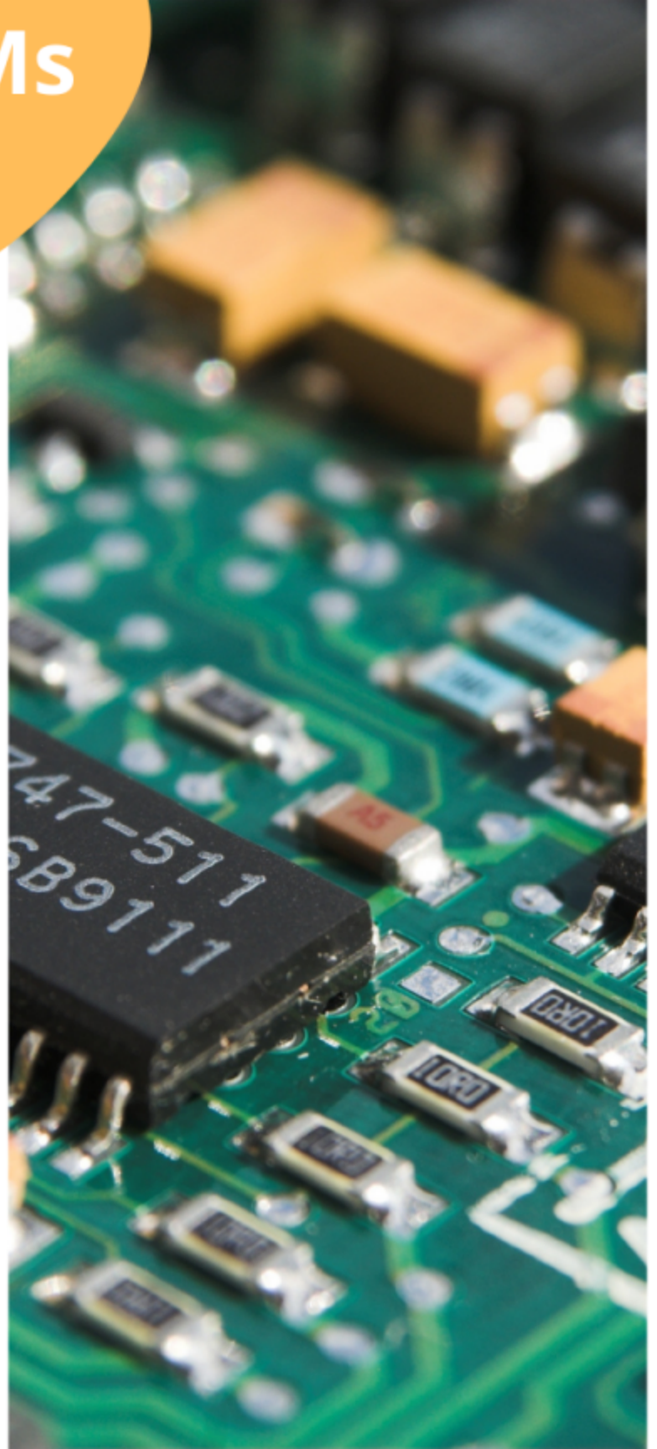

OTHER CRMS HIGHLY INVOLVED

GERMANIUM

HAFNIUM

BORATE

COBALT

GALLIUM

BAUXITE

BERYLLIUM

LITHIUM

MAGNESIUM

BISMUTH

TANTALUM

NATURAL GRAPHITE

CRMs are useful to the mobility sector

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The transport and mobility sector depends on CRMs!

Not only are REE used to make the magnets that are used in motor engines as well as the batteries used in e-vehicles, but also CRMs such as **Platinum, Vanadium, and Antimony** are key to the mobility sector.

CRMs are essential for vehicle batteries

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

CRMs are key for **cleaner & energy efficient** mobility technologies.

The CRMs are **essential components** in catalytic converters as they are responsible for the conversion reactions that turn pollutants into harmless gases.

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PLATINUM IS THE PRINCIPAL ACTIVE COMPONENT IN CATALYTIC CONVERTERS

VANADIUM ALLOWS FOR THE CREATION OF BATTERIES THAT HAVE A TEN-TIMES LONGER LIFESPAN THAN LITHIUM BATTERIES, RELEASING A HUGE AMOUNT OF ELECTRICITY INSTANTLY.

ANTIMONY IS NOW USED TO IMPROVE BATTERIES' CHARGING CHARACTERISTICS AND PREVENTS THE PRODUCTION OF HYDROGEN DURING CHARGING

CRMs are useful to the aeropace sector

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The aerospace and defence sector depends on CRMs!

Indeed, CRMS bring essential characteristics to the aerospace and defence sector since they allow for the creation of **lightweighted but very robusts materials**!

CRMs are needed for space exploration!

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

Thanks to its **stiffness and lightweight**, **beryllium**, is very appreciated to create high-speed aircraft, spacecraft, and satellites.

Also lightweighted, **titanium** is used for missiles and aircrafts. bacause of its **high corrosion resistance and ability to withstand moderately high temperatures.**

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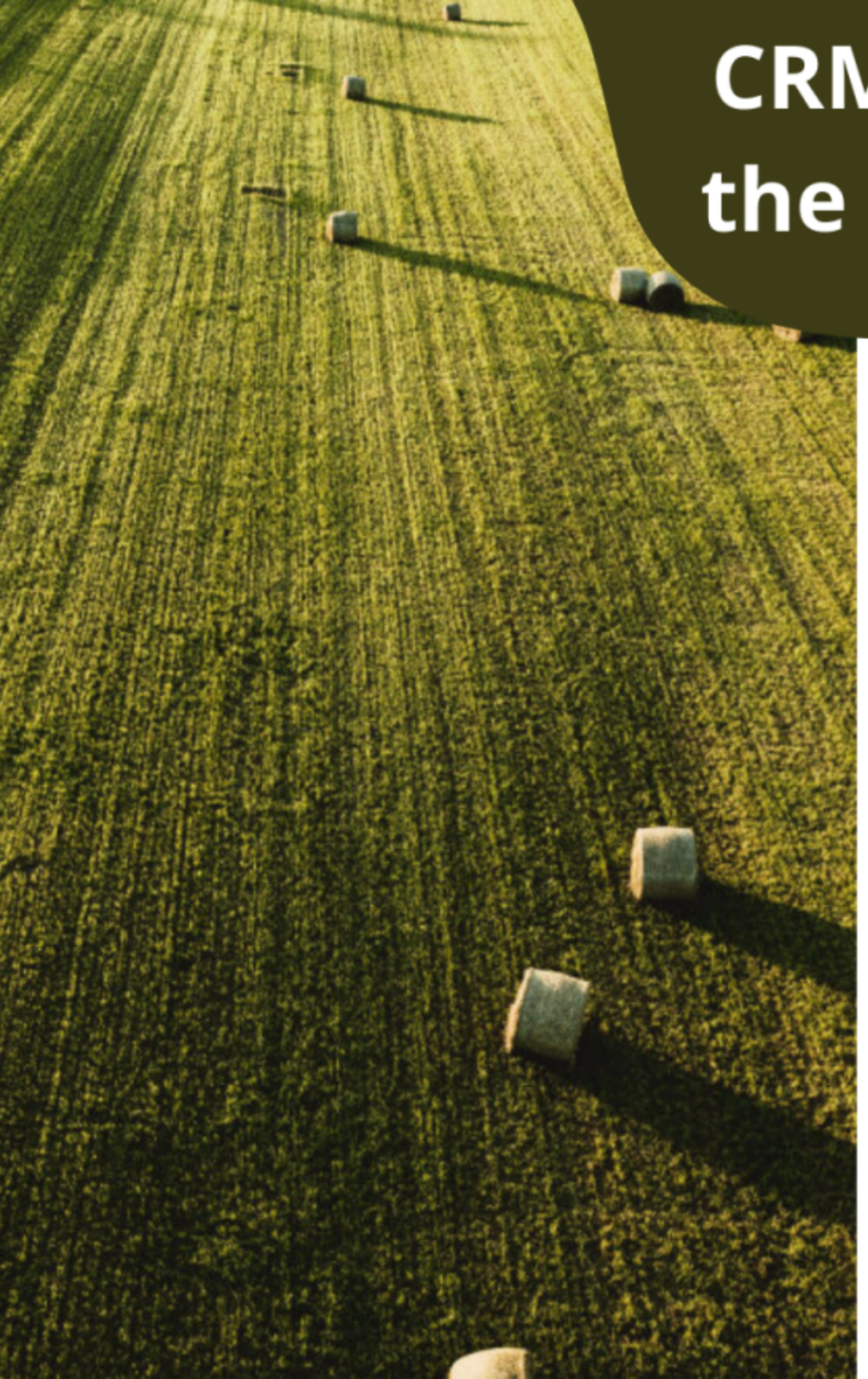
BERYLLIUM
GALLIUM
TITANIUM
HREE
BAUXITE
BISMUTH
BORATE
COBALT
GERMANIUM
HAFNIUM
INDIUM
LITHIUM
MAGNESIUM
NATURAL GRAPHITE
NATURAL RUBBER
NIOBIUM
PHOSPHORUS
SCANDIUM
SILICON METAL
STRONTIUM
TANTALUM
TUNGSTEN
VANADIUM
PGM
ANTIMONY
LREE



CRMs are useful to the agri-food sector

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The agricultural sector can use CRMs to its advantage.

Indeed, some Critical Raw Materials have specific characteristics, such as **fungicidal, sporicidal, or nutritive and fertilizing properties**!
Thus, those CRMs can be used to protect and foster crops production!

CRMs can contribute to FOOD SECURITY!

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

Thanks to its fungicidal and sporicidal properties, **borate can protect the wood from insects and rots.**

Phosphate is fostering roots strength, and photosynthesis and can also be used in animal-feed supplements and in food preservatives

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BORATE

PHOSPHORUS

PHOSPHATE ROCK

FLUORSPAR

BAUXITE

COBALT

CRMs are essential to the Health sector

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Many CRMs have crucial characteristics for vital medical applications!

Indeed, some Critical Raw Materials have the specificity to be **biocompatible**, **physiologically inert** and **hypoallergenic**! Thus, they can be used to make prosthetics and for pharmaceuticals!
CRMs are also use in the medical imaging technologies.

CRMs can contribute to SAVING LIVES!

DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

Tantalum, for instance, causes no immune response and thus can be used to **replace bones, connect torn nerves or bind abdominal muscle!**

Likewise, titanium and niobium are used in **medical implants such as pacemakers**!

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PLATINIUM
BARYTE
BISMUTH
NIOBIUM
LITHIUM
NATURAL
RUBBER
BAUXITE
SILICON METAL
STRONTIUM
TITANIUM
TUNGSTEN
VANADIUM
PGM
HREE
LREE
COBALT

CRMs are essential in the transition to CLEAN ENERGY!

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The demand for critical raw materials (CRMs) increases with the transition to renewable energy.

Indeed, an energy system powered by renewable technologies requires more CRMs than a fossil-based one.

An electric car requires six times less minerals than a conventional car!

The scarcity of CRMs brings new challenges as it could compromise the clean energy transition, and affect energy security. Thus, **recovering CRMs from secondary sources is essential!**

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DISCOVER THE CRMs INVOLVED

DID YOU KNOW?

Lithium, cobalt, and graphite are **crucial to battery performance, longevity, and energy density.**

Rare earth elements (REEs) are **essential for permanent magnets,** needed for wind turbines and EV motors.

Visit our website for more details!

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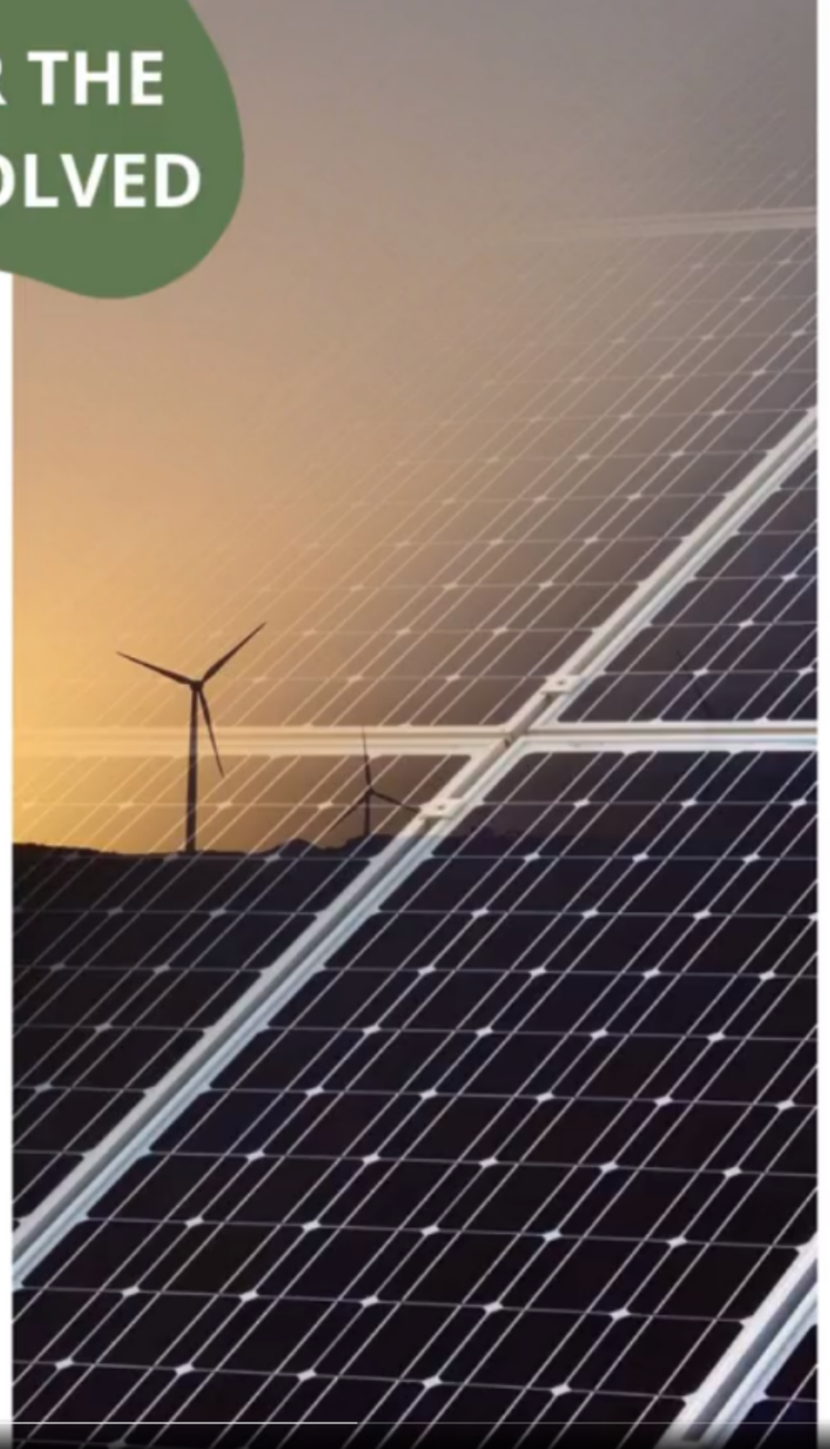

- SCANDIUM
- SILICON METAL
- COBALT
- VANADIUM
- GALLIUM
- GERMANIUM
- HAFNIUM
- INDIUM
- LITHIUM
- NATURAL GRAPHITE
- BAUXITE
- BERYLLIUM
- TANTALUM
- COKING COAL
- PGM
- HREE
- LREE
- BORATE