

# MINING BUILDS A BETTER WORLD

Modern society would be very different in a world without mining. The extraction of the many minerals abundant in the earth allow us to build a better world.

## TECHNOLOGY

**NICKEL**

- Jet engines and aerospace technology
- Rechargeable battery systems used in electronics, power tools, transport and emergency power
- Stainless steel derived from nickel used in countless industries and households

**CHROMITE**

- Corrosion-resistant super alloys and stainless steel
- Ovens & heating units
- Auto parts plating

**COPPER**

- Hydro transformers and electrical wiring in every home and building
- Electric vehicles require almost three times as much copper as conventional combustion engines
- Wind turbines require 3.6 tonnes of copper per megawatt

**SILVER**

- Contacts in electrical switches
- Acts as a coating for heated windshields
- Electrodes in Plasma TVs
- Makes up 90% of a glass paste applied to crystalline silicon photovoltaic cells

**SILICON**

- Semiconductors in microchips
- Makes phones, computers, and tablets possible

**GOLD**

- Key systems in jets and spacecraft
- CPU memory chips and motherboards
- Thin layers of gold cover astronauts' visors and telescopes

## WATER AND FOOD SECURITY

**ZINC, PHOSPHATE, COPPER AND MORE**

- Zinc and phosphate crucial to healthy crops
- Platinum group metals and chromium are necessary for water desalination
- Naturally anti-microbial, copper is used for storing and transporting water
- Hygienic stainless steel is used for food preparation and storage
- Silver ions used in water purification systems

## ENVIRONMENT

**RARE EARTH ELEMENTS, LITHIUM, GRAPHITE**

- Cell phones
- Electric car batteries
- Wind turbines
- Hybrid car manufacturing

Lithium, aluminum, nickel, cobalt, cadmium and zinc are key ingredients of new and emerging battery technologies.

**PLATINUM GROUP METALS**

- The largest use of PGMs is in catalytic converters, which reduce pollution from cars converting 90% of hydrocarbons, carbon monoxide, and nitrogen oxide into less harmful emissions
- Coating wind turbine blades
- Fuel cells

**NICKEL**

- Key component of future electrification technologies
- 100% recyclable; more than half of stainless steel in use today is recycled from a previous use

A single wind turbine typically contains approximately 500 kg of nickel and 3,175 kg of copper.

## HEALTH

**GOLD**

- Medication delivery at the cellular level
- Cancerous cells are targeted by gold covered "medicine bullets"
- Nano-technology allows for arthritis, malaria and HIV/AIDS treatments

**PLATINUM**

- Platinum is both durable and highly biocompatible making it ideal for medical implants

**SALT**

- Critical to intravenous therapies like saline drips
- Used for deicing to keep roads safe

**SILVER**

- Used in hospital fabrics to stop pathogen transmission

**IRON AND ZINC**

- Supplementation prevents nutritional deficiencies and diseases such as anemia

**DIAMONDS**

- Diamond knives are a common tool used for eye surgery
- Next generation lasers will improve pollution monitoring



Our minerals and metals make modern life and innovation possible. We are focused on creating value, but it is our values that define us. They are the bedrock on which our culture of safety, respect and sustainability is built, and the reason we are striving to be a global leader.