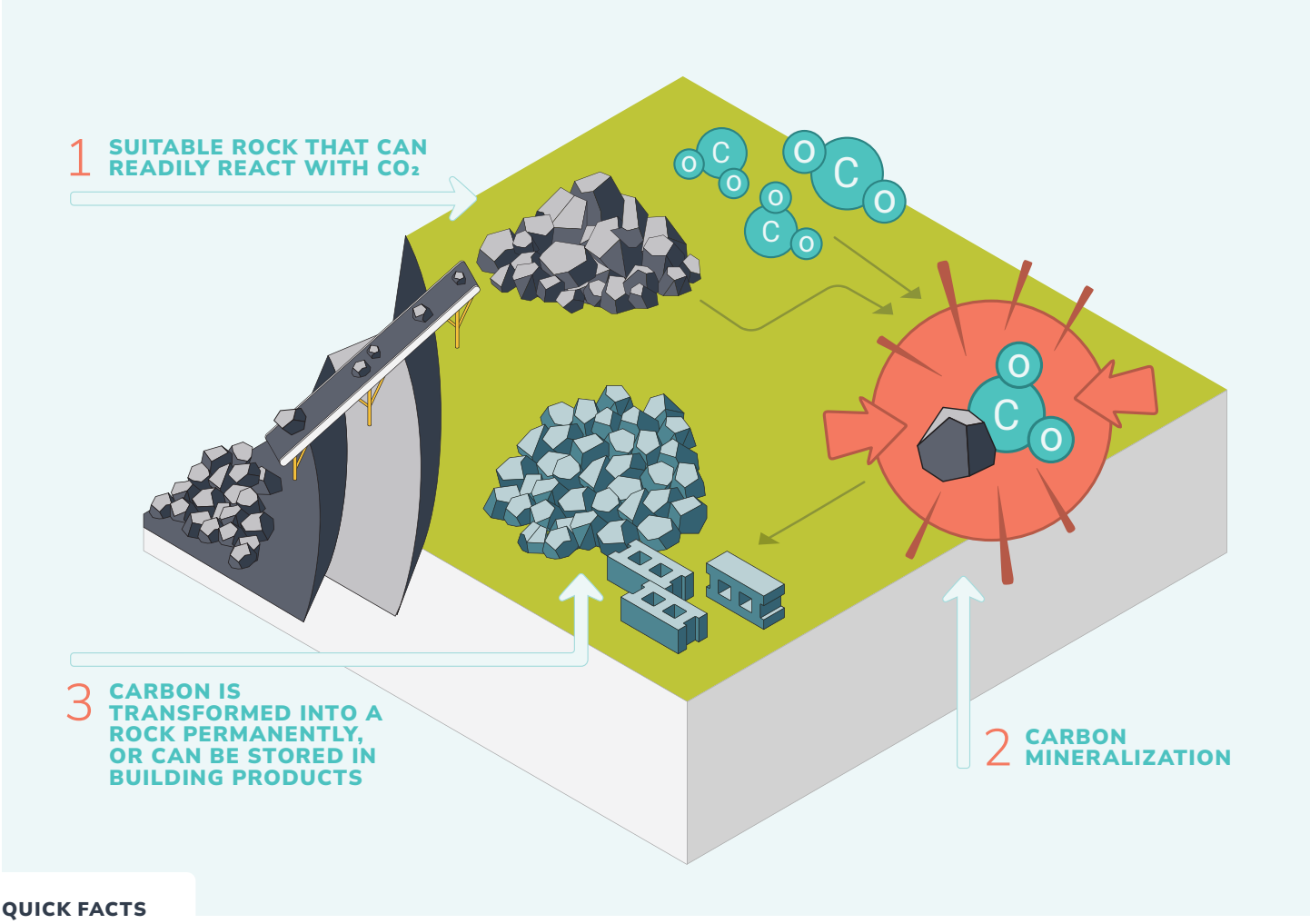
Carbon removal is Carbon Mineralization

carbon removal canada

From mine waste to carbon storage



QUICK FACTS

- Future Estimated Cost: $10 - $1000 per tonne of CO_2
- Potential 2050 Global Capacity: 1B - 10B tonnes of CO_2 per year

What is carbon removal?

Carbon removal is the process of cleaning up carbon dioxide (CO_2) *already in the atmosphere* and storing it away for centuries or longer. Even if we cut emissions significantly, Canada cannot reach net-zero without also scaling carbon removal solutions to counterbalance any residual emissions. Beyond net-zero, carbon removal can help tackle historical emissions and turn back the clock on the worst impacts of climate change.

Carbon removal's potential in Canada

Carbon removal isn't just climate action, it's also an economic opportunity. Our research shows it will create jobs, position Canadian industries to compete globally, and make net-zero dramatically more affordable.

$80B economic boost to Canadian GDP

$13B in annual investment catalyzed across Canadian industries

40% - 70% cost savings on Canada's path to net-zero

How does Carbon Mineralization work?

Think of: Mixing cement to make concrete.

Canada can remove carbon from the atmosphere while cleaning up its mine tailings and industrial waste. When CO_2 comes into contact with certain minerals, found in mine tailings and industrial byproducts, a chemical reaction occurs that permanently turns the carbon into stone.

The technology mimics what Earth does naturally over millions of years with rocks like basalt and magnesium-rich minerals that react with CO_2. This process can take place aboveground using mine tailings, underground using natural rock formations, or at industrial facilities. By crushing these minerals into fine particles or injecting CO_2 into reactive rock formations, we can achieve the same permanent storage in weeks instead of millennia.

As an added benefit, the carbon mineralization process can extract valuable critical minerals like nickel, cobalt, and rare earth elements from mine tailings. This creates a new revenue stream where mines can be paid for carbon removal while also recovering minerals essential for electric vehicles, batteries, and clean energy technologies that would otherwise be wasted.

Why Canada?

1 **MASSIVE MINING WASTE STREAMS**
Canada's mining industry generates significant tailings that can be repurposed for carbon storage.

2 **STRONG CONSTRUCTION SECTOR**
Existing concrete and building materials industries can integrate carbon-infused products into their operations.

Co-benefits from Carbon Mineralization

RECOVER CRITICAL MINERALS
The carbon mineralization process can extract additional critical minerals from tailings, turning waste into another revenue stream.

CLEAN UP MINE TAILINGS
Carbon mineralization stores carbon from the atmosphere in the mine tailings, which also neutralizes the tailing's toxicity.

INDUSTRIES SUPPORTED

Mining · Construction · Steel

Project snapshot

There are over 500M tonnes of asbestos mine tailings at Thetford Mine, QC that could be neutralized by carbon mineralization.

CO_2 LOCK CORP.
Prince George, BC. *Planned.*

ARCA
Thetford Mine, QC. *Planned.*

KARBONETIQ
Sault St. Marie, ON. and Contrecoeur, QC. *Both operational.*

BAIE MINERALS INC.
Baie Verte, NL. *Planned.*

CANADA NICKEL
Timmins, ON. *Planned.*

EXTERRA CARBON SOLUTIONS
Val-des-Sources, QC. *Planned.*

Canada's carbon removal capacity across technologies

106K	11M
Current	Planned

11M TONNES OF CARBON REMOVAL CAPACITY IS EQUIVALENT TO:

Taking 3.6M cars off the road

Completely decarbonizing all domestic air travel

Canada is ready for removal

Visit the Carbon Console to explore more projects, technologies, and companies