VISUALCAPITALIST

# GRAPHITE

**The Driving Force Behind Green Technology**

LOMIKO METALS®

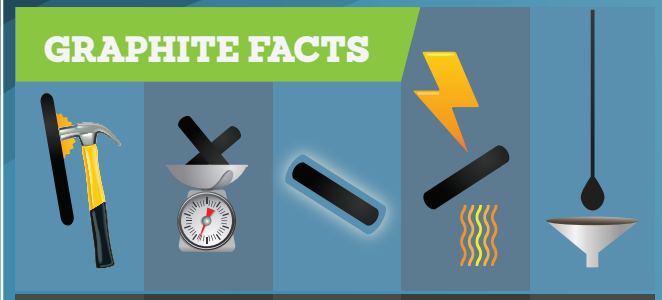
TSX-V:LMR OTC: LMRMF FSE: DH8B

6 C Carbon

**15th** most abundant element in the Earth's crust

Carbon occurs naturally in **3** forms:


## GRAPHITE FACTS




Demand for flake graphite is being driven upwards by green technology

Learn more on page 2

## GRAPHITE

Occurs in **3** forms:


# THE GRAPHITE MARKET

## SUPPLY

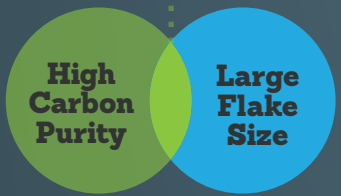
**70%** of the world's graphite market.

**40%** Flake Graphite

**60%** Amorphous Graphite

### Highest price Lowest supply

High purity crystal flake graphite supply is very limited. Only this kind of natural graphite can be used for Li-ion batteries, fuel cells, and other green tech.



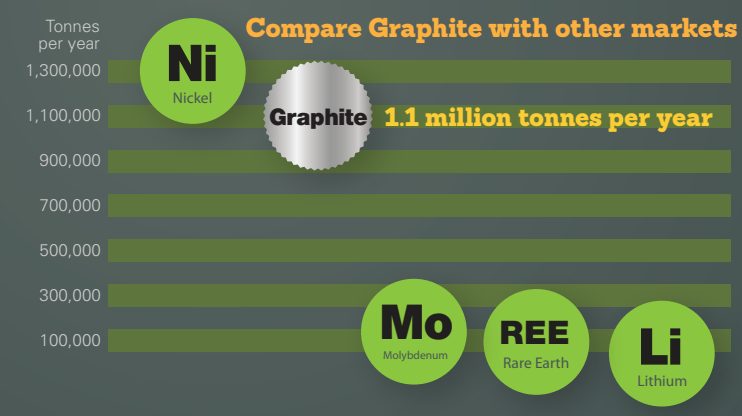

Carbon Flake Purity directly affects the price of the resource

## DEMAND

**5%** growth in the last decade.
Driven by Asian steel and auto markets

**USD $12,000,000,000**

(Estimated worldwide Graphite market in 2011)



VISUALCAPITALIST

# GREEN TECHNOLOGY

## DRIVING GRAPHITE DEMAND

LOMIKO METALS

TSX-V:LMR OTC: LMRMF FSE: DH8B

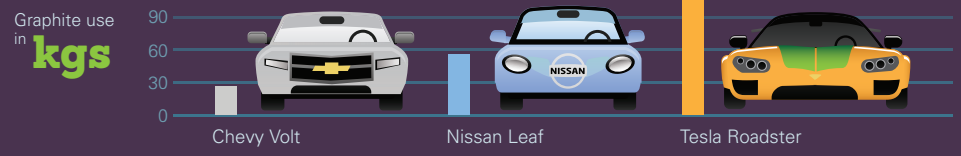
## LITHIUM ION BATTERIES

**Lithium ion batteries are found in many modern electronic devices.**

In a Li-ion battery, graphite is used as the anode.

In the near future, use of electric cars will increase dramatically. **Electric car batteries** contain a significant amount of graphite.

**For example:**




**FACT**

There is actually **10–20x** more graphite in a Lithium Ion battery than Lithium

**15g**

The amount of graphite in a smartphone battery

**3 MILLION+**

The number of electric vehicles expected to be in use by 2017

## FUEL CELLS

**Fuel Cells have the potential to use as much graphite as all other uses.***

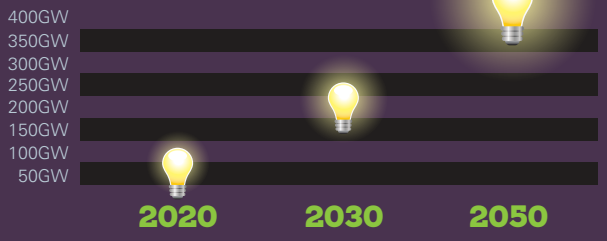
**Proton Exchange Membrane technology** requires large amounts of graphite, and is the most likely technology to be developed for use in light vehicles, buildings, and smaller applications.†

*US Geological Survey
†US Department of Energy

## NUCLEAR POWER

China is currently developing and testing **Pebble Bed reactor designs**.* In April 2011, China began building a 210 MW fourth-generation nuclear reactor using high temperature gas-cooled Pebble Bed technology.

**CHINA** is aiming to exponentially expand its nuclear power program:




**FACT**

A 1GW Pebble Bed Reactor needs 3,000 tonnes of graphite to start up and up to 1,000 tonnes to operate annually

## GRAPHENE

Graphite flakes are made of many layers of **graphene** stacked on top of each other, with weak bonds holding them together.

Carbon atoms arranged in a honeycomb pattern can be arranged in sheets that are only one atom thick.

**1mm** is the thickness of **3 million** stacked sheets of graphene

**Research has shown that GRAPHENE has unique properties:**

**1000x** the electrical current capacity of Copper wire

**200x** stronger than structural steel

**10x** better heat conductivity than Copper

**20%** flexibility without any damage

**Graphene could make technology thinner, transparent, flexible, and more powerful.**