

## COBALT APPLICATIONS:



**CLEAN AIR:**  
 Oil Desulfurization  
 Fuel Cells  
 Hybrid Vehicles  
 Gas to Liquid Technology  
 Coal to Liquid Technology  
 Electric Vehicles



**RENEWABLE ENERGY:**  
 Solar Panels  
 Wind Turbines  
 Geothermal Power Plants  
 Hydrogen Economy (storage)  
 Biomass (biochemical conversion to H)  
 Solar Energy Storage  
 Rare Earth Magnets



**DEFENCE:**  
 Military Aircraft Guidance Systems  
 Communication Satellites  
 Propulsion Systems  
 Jet Engines  
 Energy Storage



**LIFESTYLE:**  
 Cell Phone Batteries  
 Hard Disk Drives  
 Commercial Aircraft Jet Engines  
 Portable Wireless Devices  
 Laptops  
 Smartphones  
 Tablets  
 Computer Memory Storage



**HEALTH:**  
 Vitamin B12  
 Prosthetics  
 Cancer Treatment  
 Food Preservation  
 Animal Feed Additive

## COBALT:

Symbol: Co  
 Atomic Number: 27

## INTERESTING FACTS:

One of the world's most versatile metals with hundreds of uses

Melting Point 1493°, Boiling Point 3100°  
 Curie Temp 1121°—maintains strength and integrity at extremely high temperatures

An essential element in the move towards “green energy”

Considered a “strategic metal” by the United States Government

65% of all cobalt is mined in Africa but only 5% is refined in Africa

China, which lacks cobalt reserves, refines almost 40% of all cobalt production

Most cobalt is a byproduct of nickel mining (50%) or copper mining (35%)

Main metal grades:  
 99.3% low grade (LME grade)  
 99.8% high grade  
 Briquettes (powder)  
 99.9% high purity (superalloys)

Cobalt is refined into metal or chemical form

Superalloys account for ~19% of all cobalt consumption (eg. aerospace, land based turbines).

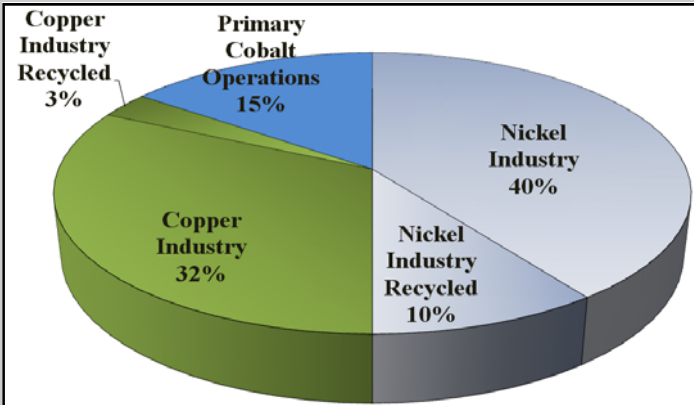
Land based turbines are one of the fastest growing applications.

~60% superalloys are consumed by the US which has no current domestic supply

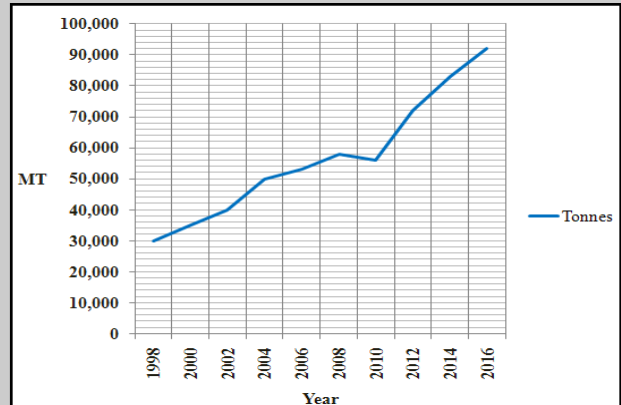
The Idaho Cobalt Project is projected to produce ~1500 mt high purity cobalt metal annually (roughly 15% of US demand)

European Economic community classifies high purity cobalt metals as a distinct market with high barriers to entry.

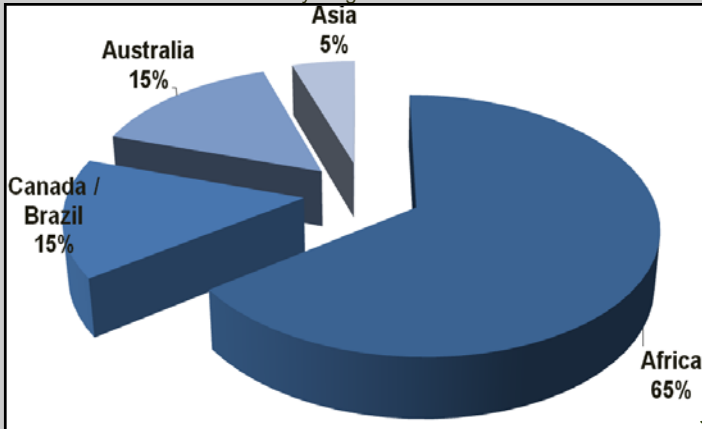
### Cobalt Sources:



### Cobalt Demand:

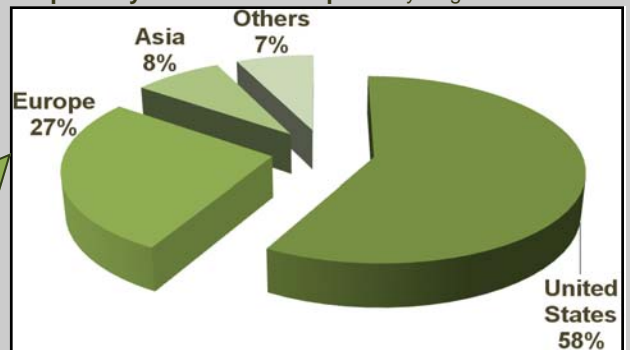


### Cobalt Mine Production By Region

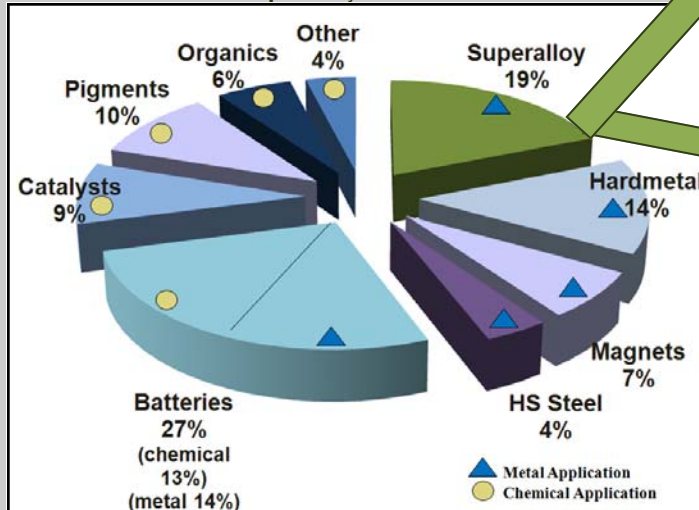


Formation Metals Inc.'s "Idaho Cobalt Project" will be capable of producing ~1500mt per year of high purity cobalt metal rounds suitable for critical applications in the superalloy industry.

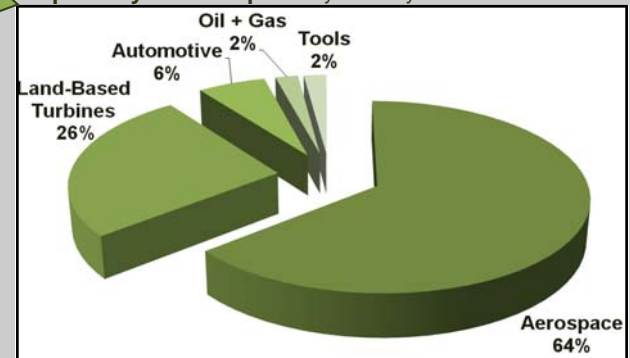
### Superalloy Cobalt Consumption By Region



### Global Cobalt Consumption By Sector



### Superalloy Consumption by Industry



The information in this fact sheet has been compiled from the Cobalt Development Institute, Roskill and Aerostrategy. For further information, please contact [inform@formationmetals.com](mailto:inform@formationmetals.com). Formation Metals Inc. (604) 682-6229.