

Luisa Moreno PhD
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Critical Raw Materials

Capacity Building in Supplying
Countries: What is Needed?



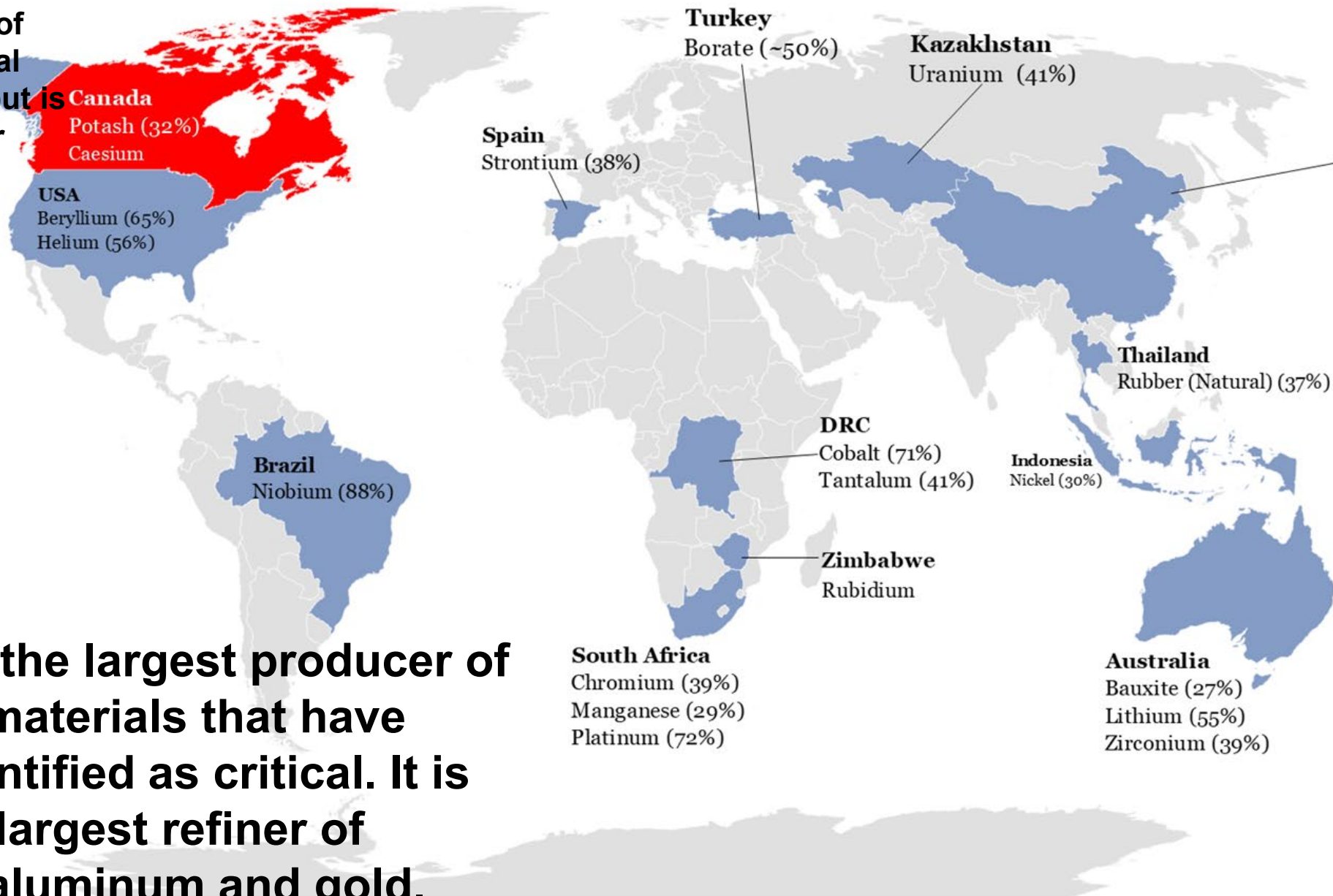
RESOURCE MANAGEMENT WEEK 2021

ENABLING SUSTAINABILITY PRINCIPLES IN RESOURCE MANAGEMENT



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Canada has resources of most critical materials but is not a major producer



China is the largest producer of over 20 materials that have been identified as critical. It is also the largest refiner of copper, aluminum and gold.

China's Raw Materials Security Model



Chinese Government Hands-on Approach:

- Control of resource companies (partially owned by government)
- Offer aid (e.g., grants, low interest loans) to industry
- Support companies along the supply chain (miners, refineries/processors, end-users (e.g., technology companies), etc.)
- Implement production quotas
- Implement export quotas
- Support R&D along the supply chain (e.g., resource and technology hubs)

EU Following Aid Model for the Automotive Industry Supply Chain



AP

EU approves more state aid to boost car batteries industry



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BRUSSELS (AP) — The European Union has approved 2.9 billion euros in subsidies from 12 member countries for a second pan-European project to develop the electric battery industry and move away from its reliance on Asian imports.



EIT RawMaterials is supported by the EIT, a body of the European Union



2. Investment channel for raw materials projects:

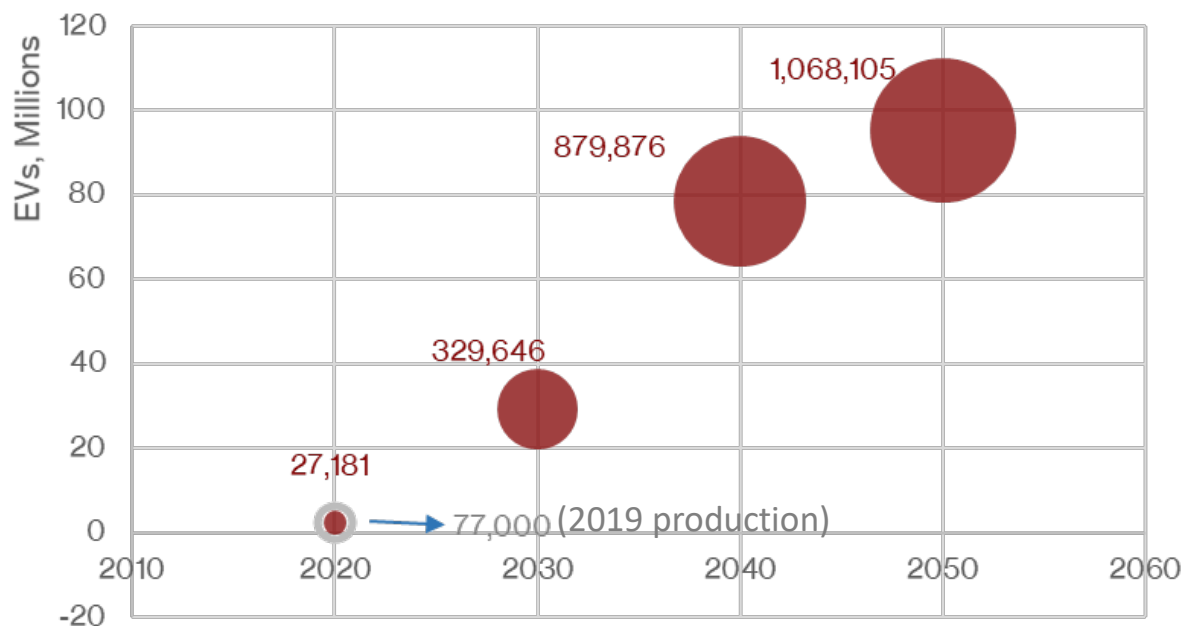
- Select and prioritize cases to secure primary and secondary raw materials supply for European industrial ecosystems
- **Assess EU funding opportunities and financing sources for investment opportunities inside and outside Europe**

EV Demand for Critical Materials

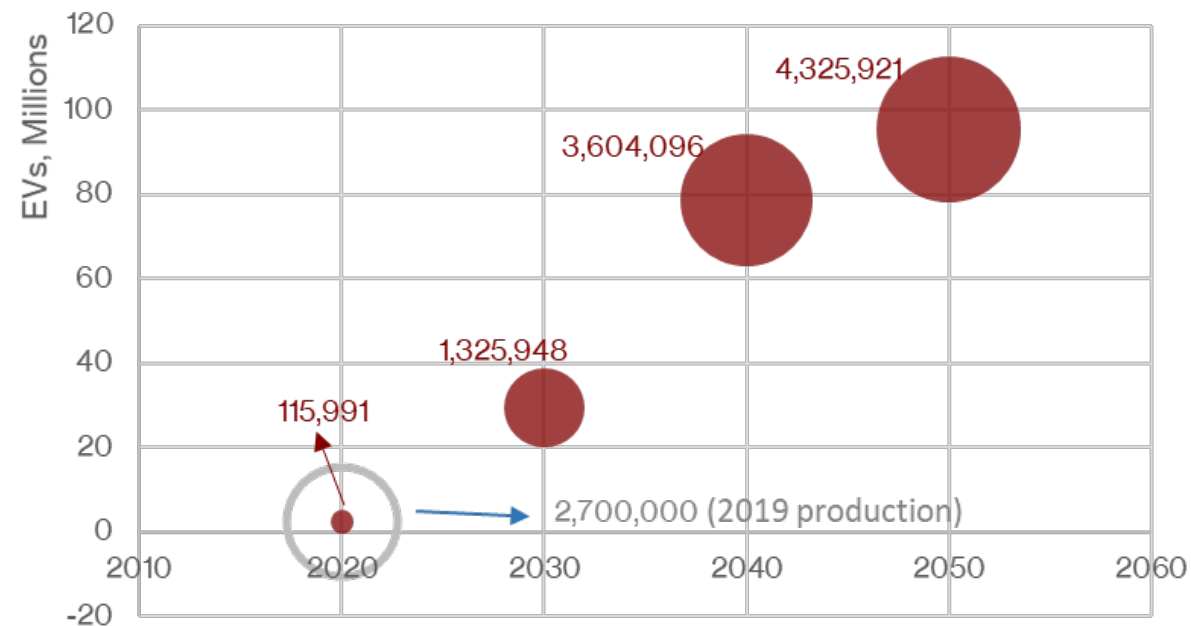
The Crisis Ahead



Lithium, tonnes



Nickel, tonnes

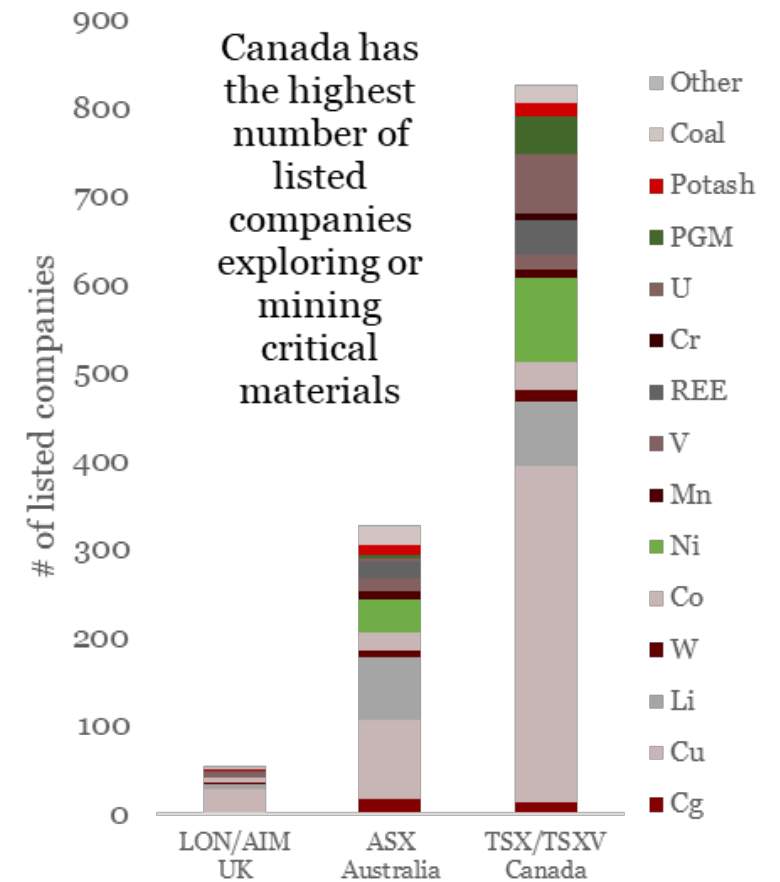


Significant demand growth expected for lithium and nickel from the EV sector

Resource Companies Also Need Government Support



Number of Critical Materials Mining Companies

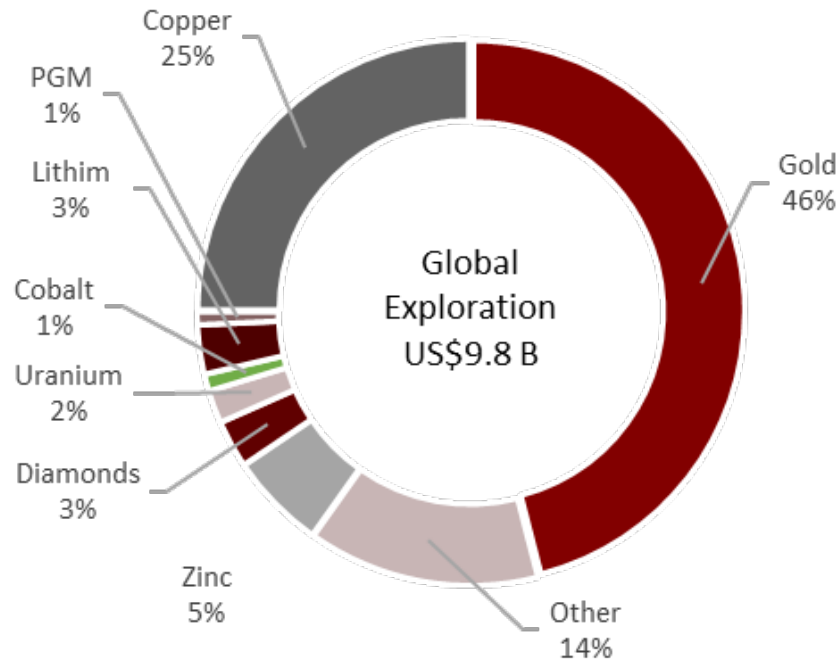


Source: Tahuti Global

Critical materials attract less than 5% of the global exploration budget

Projects usually financed through Capital Markets

Projects have low success rate

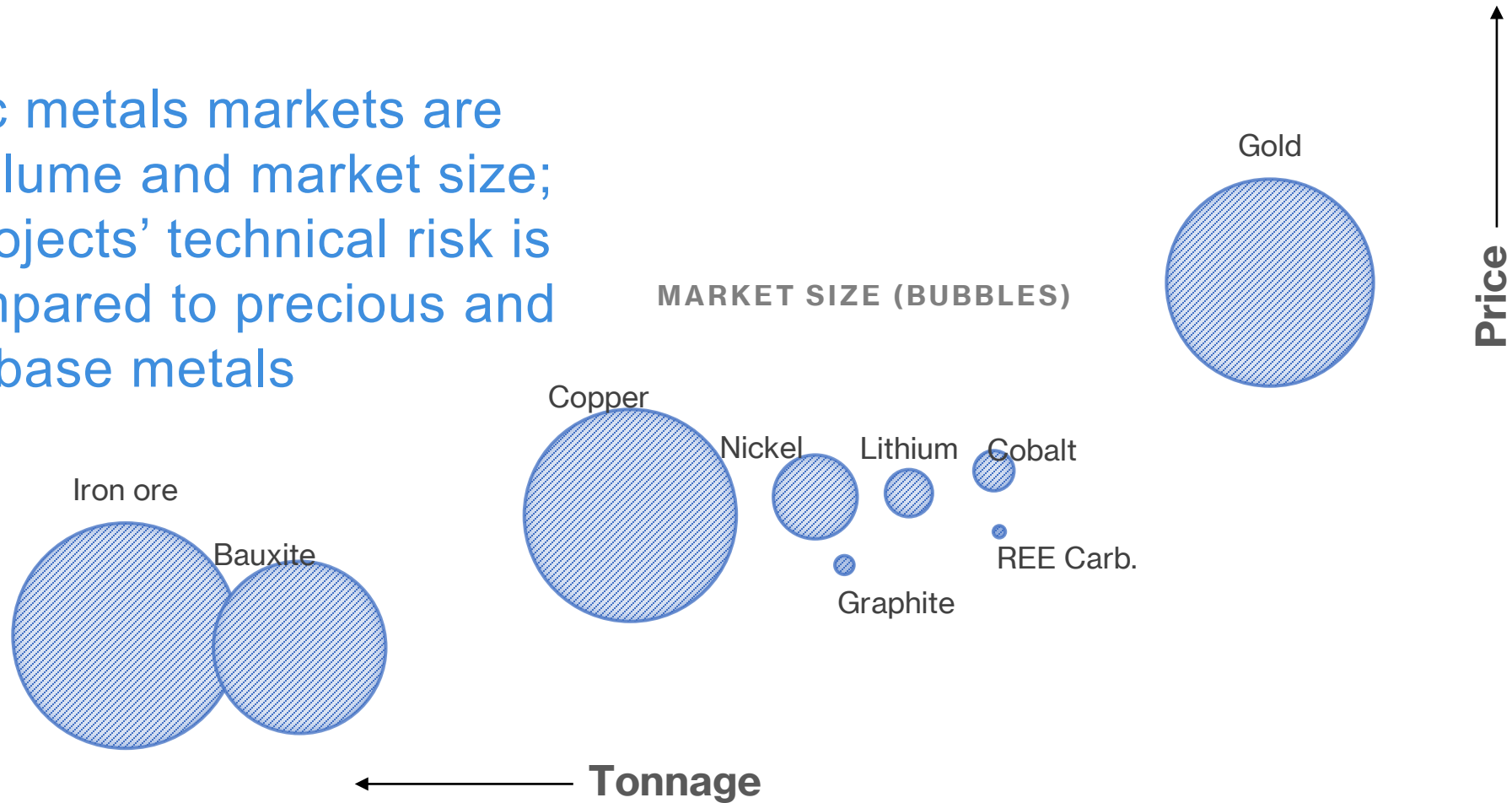


Source: S&P Global, 2019

The Market Size of Critical Materials is Small



Strategic metals markets are small in volume and market size; and the projects' technical risk is higher compared to precious and base metals



Building Raw Materials Capacity

What is needed?



- Governments should collaborate to increase discovery of critical materials around the world (e.g., US Energy Resource Governance Initiative (ERGI))
- Governments should collectively invest in infrastructure – large resources of critical materials are in remote areas, e.g., Northern Canada and in Africa.
- Governments should collaborate to invest in mineral projects via low interest loans, equity investment, grants, lower taxes, JVs, PPPs, etc. (e.g., EU Raw Materials Alliance (ERMA))
- Support Global Supply Chains - offer aid to resource companies, refiners/processors, metal makers, fabricators, etc.
- Resource rich countries should avoid resource nationalism, but more effort should be made to bring benefits to minerals supply countries
- Invest in R&D and skills training centers

Thank you!

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