Gigapower — EV-Battery Site-Selection Framework

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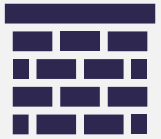
Executive Summary

Australia and Canada emerge as the unequivocal frontrunners —an expedited 60-day diligence window could lock in 15 GWh of capacity for ≤ US $500 M while cutting supply-risk by roughly 130% compared to global average.

Undisputed Leadership

Gigafactory Attractiveness Index places **Australia #1** and **Canada #2**, both more than **1 σ** above the global mean on mineral depth and governance solidity.



Recommendation Resilience

"Risk-heavy" and "Cost-heavy" re-weightings retain 4 / 5 of today's Top-5, confirming that the ranking is structurally robust to board-level trade-offs.

Clock-speed Advantage

A 60-day diligence sprint can advance two shortlisted sites to feasibility by Q-next + 2 months, preserving the 2029 start-of-production milestone.

Board seeks a de-risked 15 GWh cell supply by 2029 within a US $500 M equity envelope.

Capacity

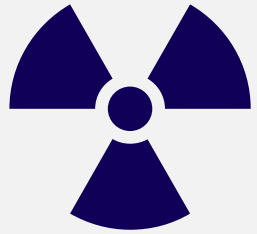
15 GWH

option to expand to 50 GWh

Capital

US$500 M

+ up to 30% incentives

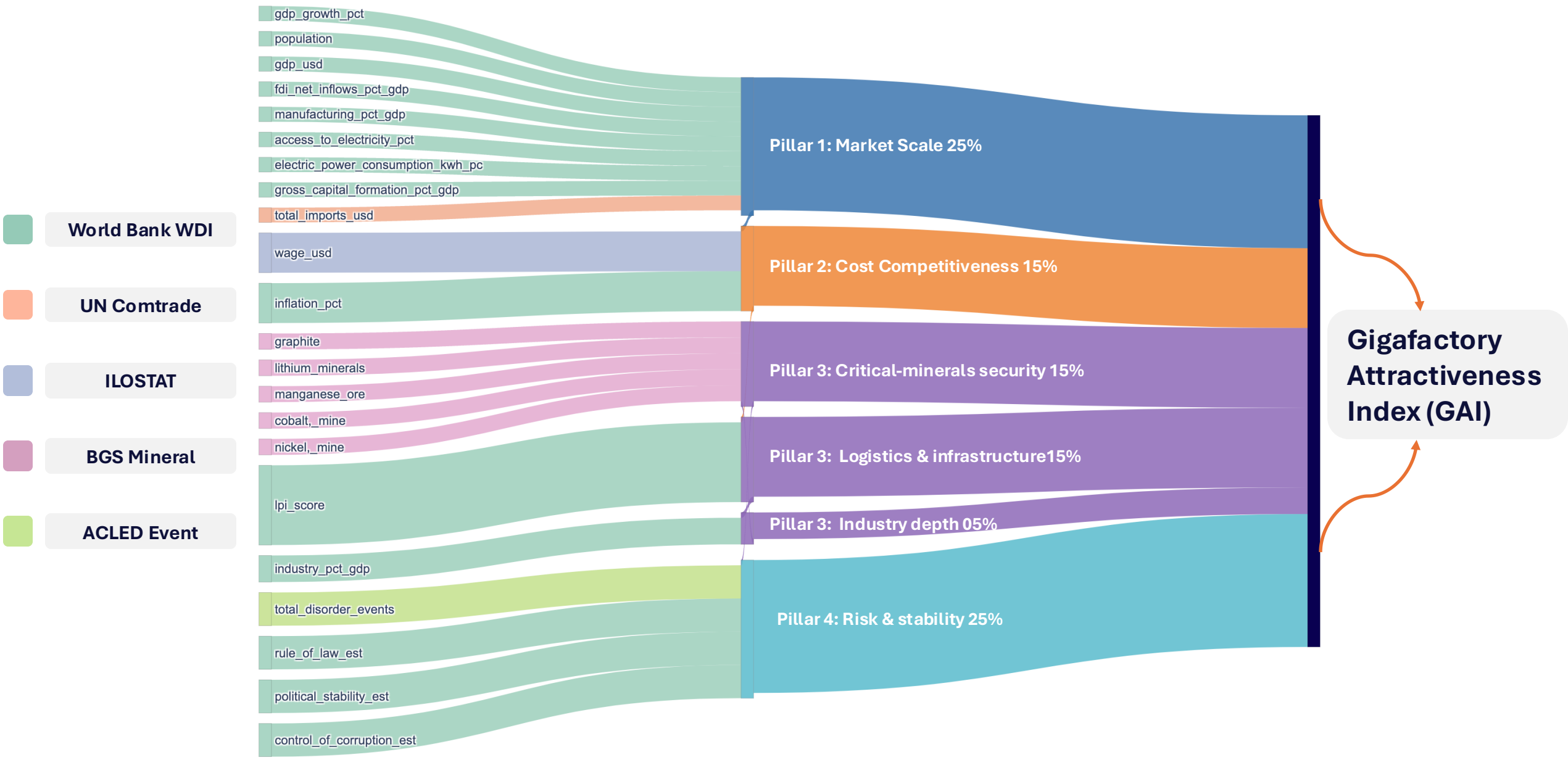


Risk

Above Median

composite governance index

Five global datasets fused into an 80-country panel (2010-23) to form GAI.

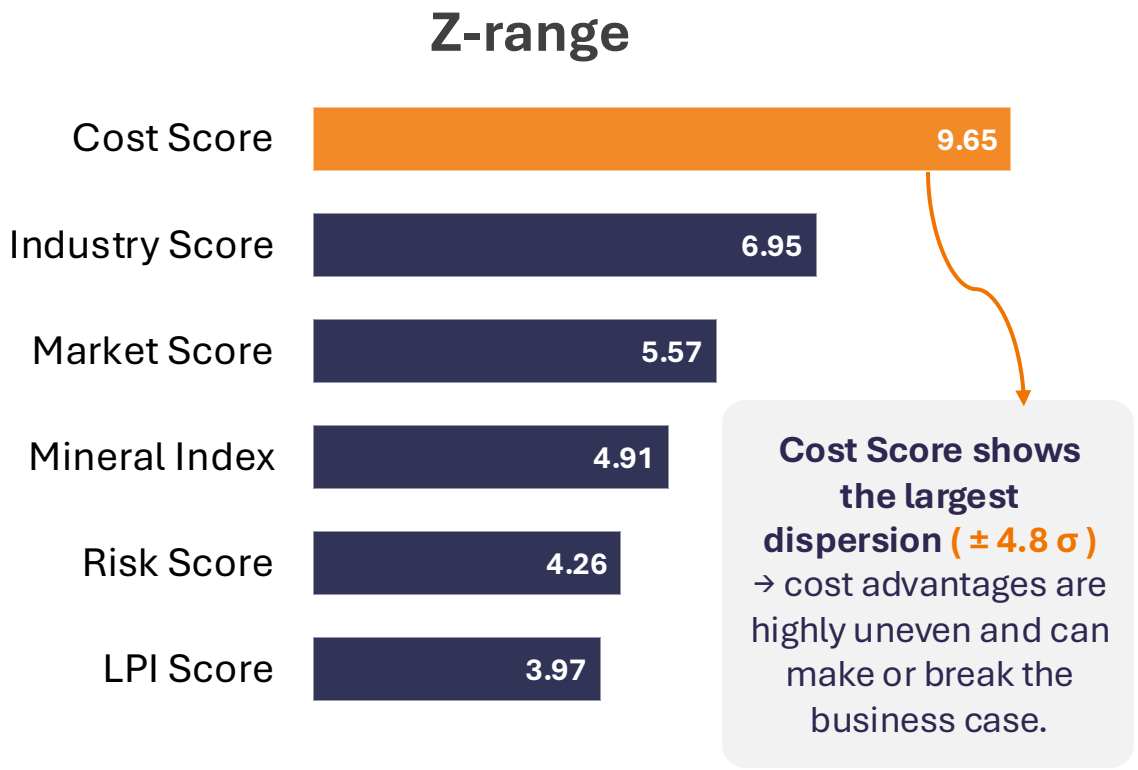


0 % missing after cleaning; variance normalized (z-score) across pillars.

Data Completeness

Missing Values Scan

0	0	0	0	0	0



2 × 2 clustering shows ‘Safe Mature Hubs’ vs. ‘Risk-weighted Frontiers’.

Germany

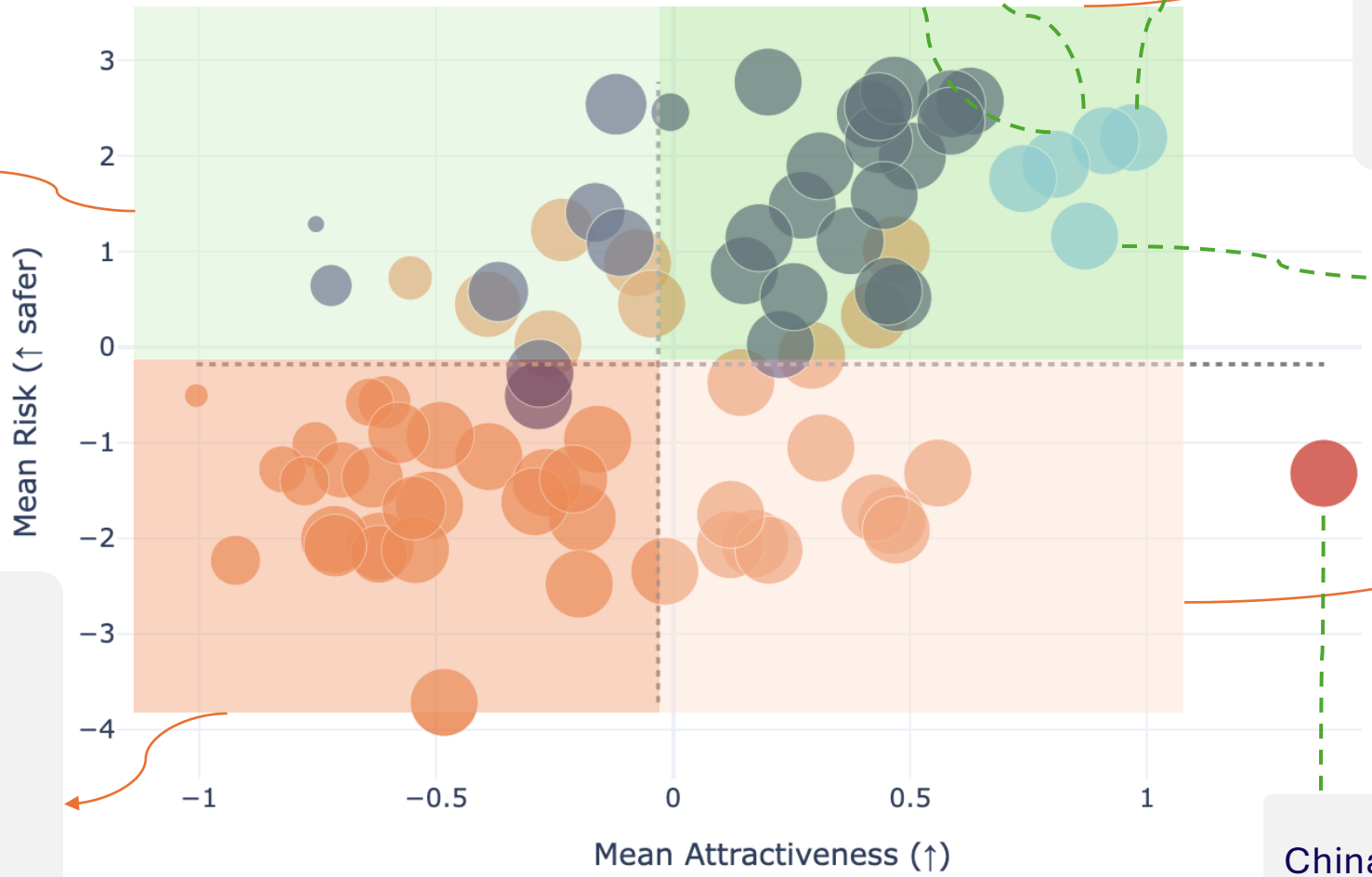
Canada

Australia

“Sweet-spot”
Above-median attractiveness and below-median risk. These are safest, most appealing markets.

“Risk-balanced”
Safer than average but attractiveness still trails the median. Often mature but smaller-scale markets.

United States



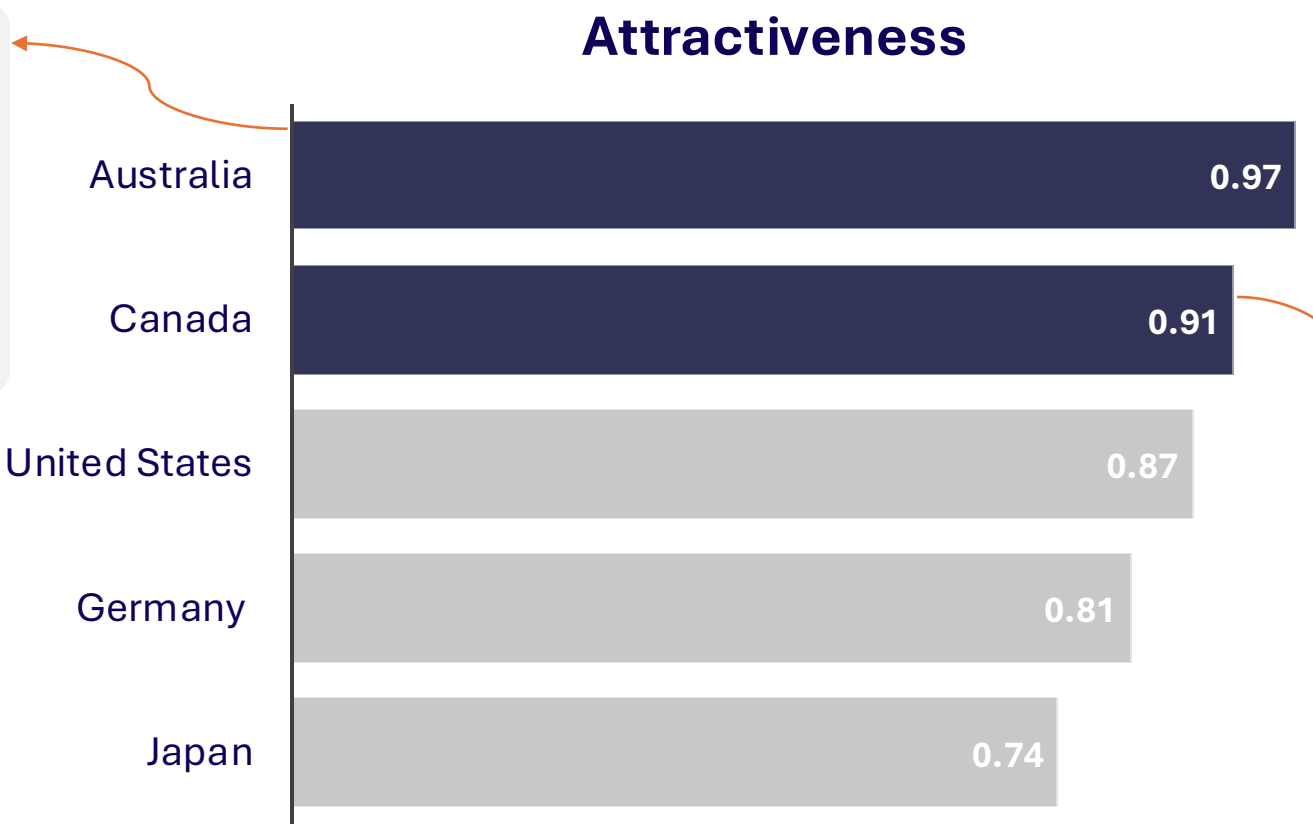
“High-reward / high-risk”
Strong attractiveness but governance & macro-risk are worse than average.

“Dual-laggards”
Both riskier and less attractive than the global median; lowest priority.

China

Gigafactory Attractiveness Index isolates five “no-regret” markets.

World-class governance and largest battery-mineral base among safe markets.



Comparable governance to Australia, bigger domestic demand, abundant critical minerals.

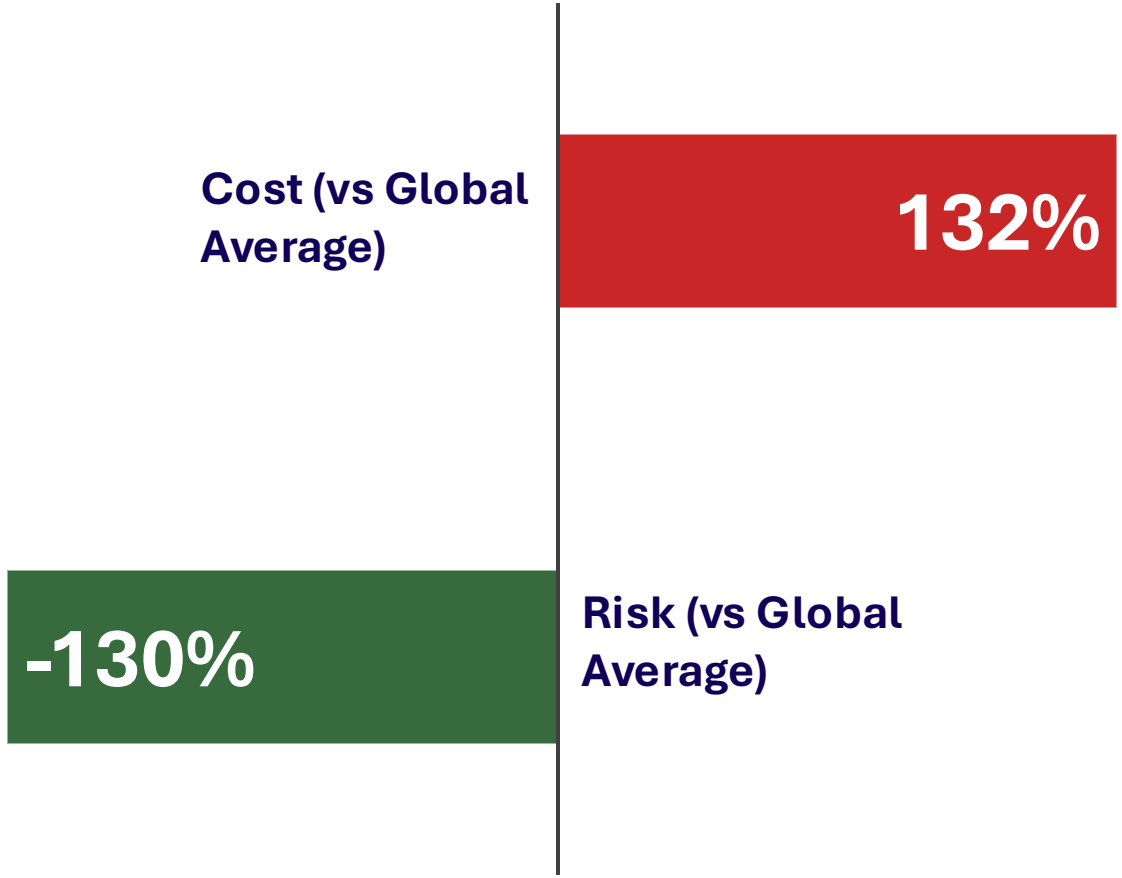
Focusing on Australia + Canada slashes supply-risk by 130% but with 132% cost headwind.

Supply-risk ↓ 130%

Australia & Canada sit 1.3 standard deviations safer than the global average (robust legal systems, low conflict exposure).

Cost ↑ 132 %

Labor + logistics run ~1.3 σ above the mean; the premium is the price of stability and market depth.



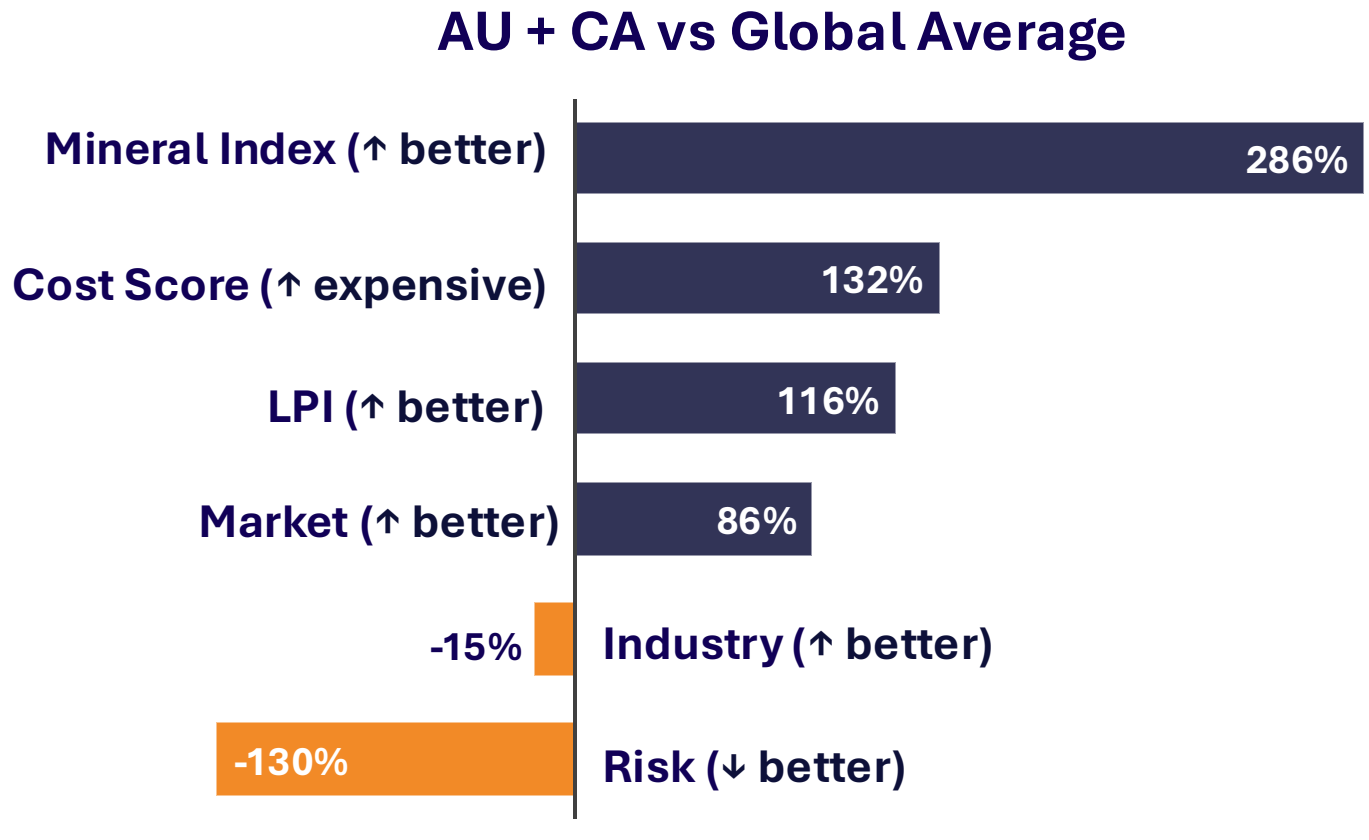
Safe-Hub markets unlock an outsized Mineral Security advantage—nearly 3× richer in battery-grade metals—while other pillars stay broadly in line.

Mineral Security + 286%

Australia + Canada sit 2.9 σ above the global mean on the Mineral Index, giving the venture access to ~3 × more battery-grade lithium, nickel, and cobalt per capita than a typical market.

Supply-chain efficiency +116%

Their average Logistics Performance Index (LPI) score is 1.2 σ higher than the world baseline, signaling faster customs clearance, denser freight networks and lower port-to-plant transit times.



Appendix

Full-access links

Main Repo

Notebook 01

Notebook 02