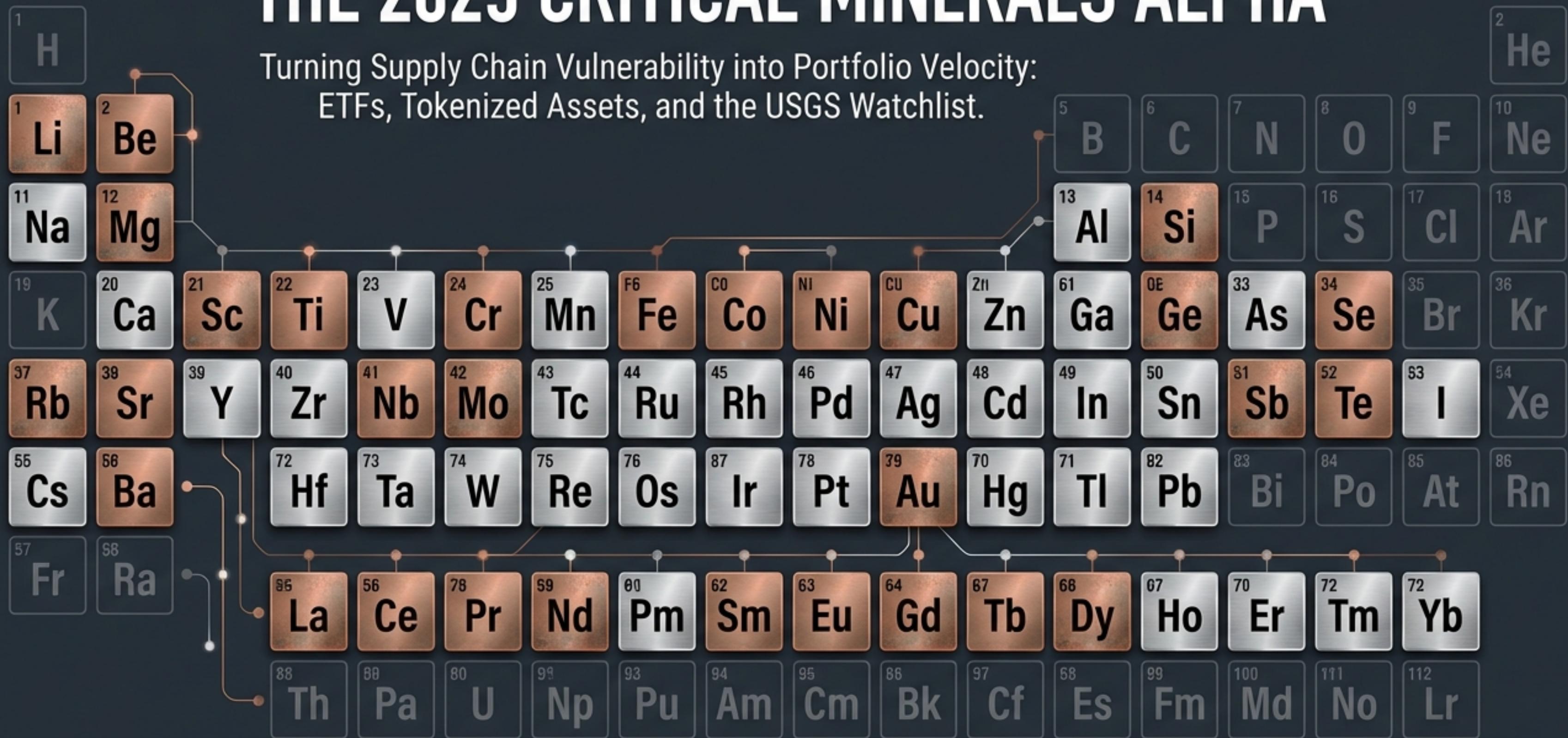


# THE 2025 CRITICAL MINERALS ALPHA

Turning Supply Chain Vulnerability into Portfolio Velocity:  
ETFs, Tokenized Assets, and the USGS Watchlist.



BASED ON THE U.S. GEOLOGICAL SURVEY 2025 LIST OF CRITICAL MINERALS RELEASED NOVEMBER 6, 2025.

# THE BUY SIGNAL: DECODING THE USGS 2025 LIST

## TOTAL CRITICAL MINERAL OPPORTUNITIES



### THE DEFINITION

Commodities essential to economic/national security with vulnerable supply chains.



### THE NEW METHODOLOGY

Shift from geological scarcity to an "Economic Risk Model." Analyzed 400 industries and 1,200 trade disruption scenarios.



### THE INVESTOR TAKEAWAY

This is a calculation of Foreign Trade Disruption Risk. The government has identified where the economy breaks if supply stops. That breakage point is where profit exists.



# THE INVESTMENT MATRIX: VOLATILITY VS. STRUCTURAL GROWTH



**HIGHEST RISK / VOLATILITY** 

Shock Plays: Rhodium, Gallium, Germanium, Tungsten.

**THE NEW METHODOLOGY** 

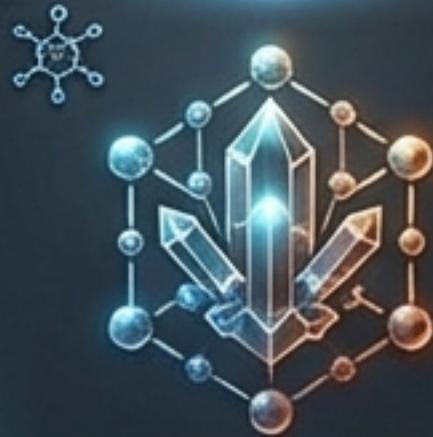
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**THE INVESTOR TAKEAWAY** 

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# BASKET 1: THE 'SUPPLY SHOCK' TRADES (HIGH VOLATILITY)

USGS Risk Designation: HIGHEST.



## GALLIUM & GERMANIUM

**Usage:** Semiconductors, Fiber Optics, Night Vision.

**Thesis:** Tech manufacturing bottlenecks.



## RHODIUM

**Usage:** Catalytic Converters.

**Thesis:** Auto industry dependency.



## TUNGSTEN

**Usage:** Jet Engines, Ammunition.

**Thesis:** Defense necessity.



## NIOBIUM

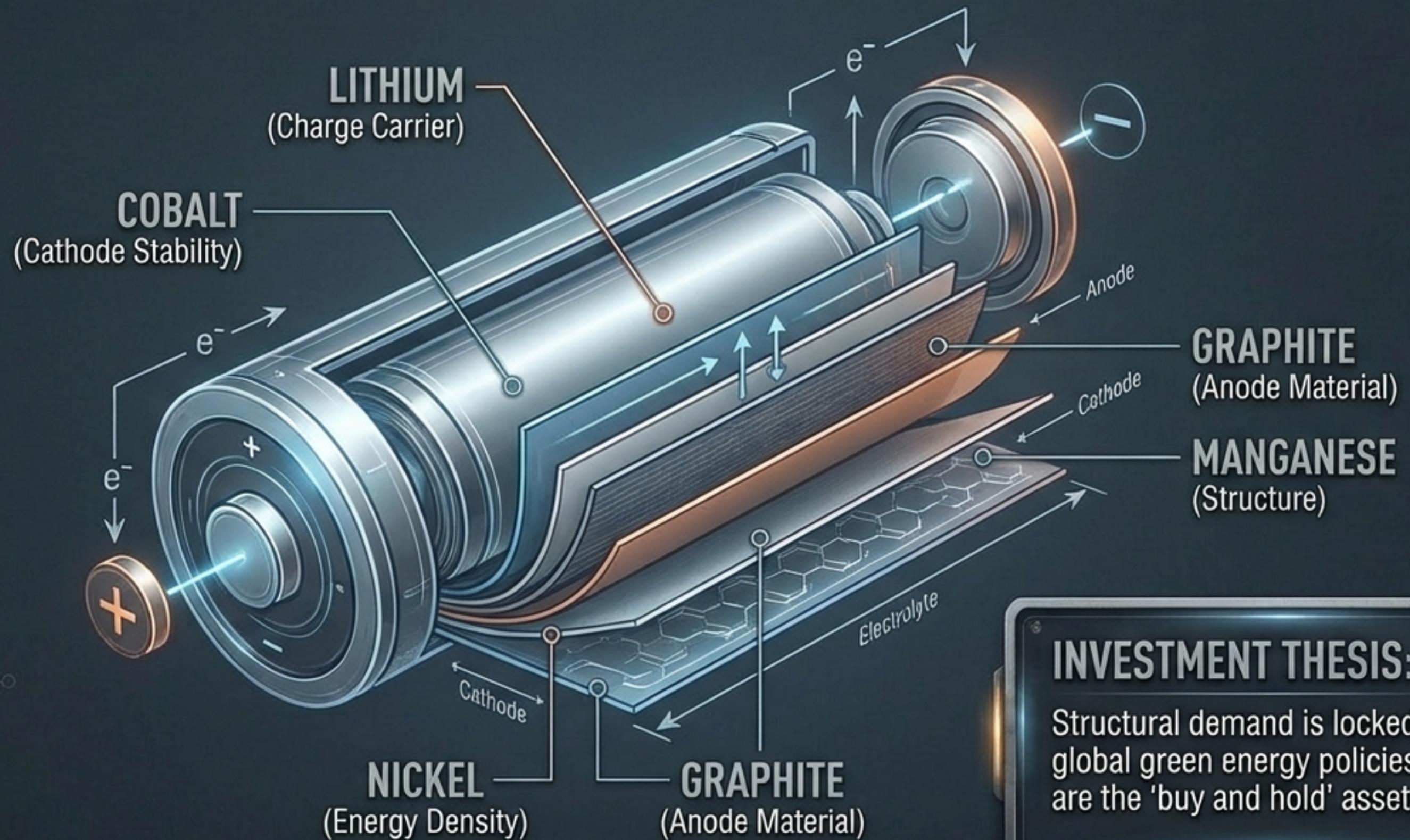
**Usage:** High-strength Steel.

**Thesis:** Infrastructure requirement.

## ALSO LISTED HIGH RISK

Magnesium Metal, Potash.

# BASKET 2: THE ENERGY TRANSITION (LONG-TERM HOLDS)



## INVESTMENT THESIS:

Structural demand is locked in by global green energy policies. These are the 'buy and hold' assets.

# BASKET 3: THE DEFENSE SHIELD & TECH STACK

Assets backed by the Department of War.

## THE RETAINED ASSETS

Arsenic & Tellurium: Retained despite lower commercial risk due to specific military applications.

Titanium: Airplanes, Spacecraft, Armor.

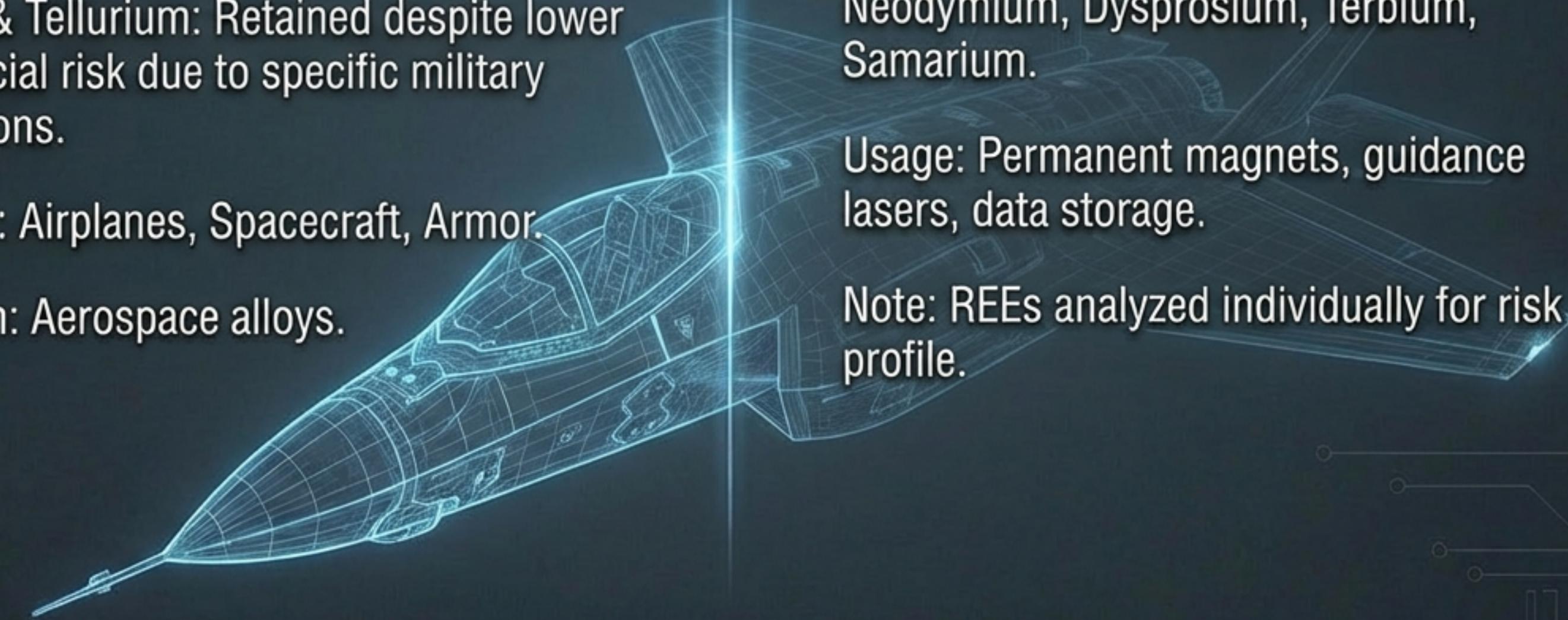
Beryllium: Aerospace alloys.

## THE RARE EARTH ELEMENTS (REEs)

Neodymium, Dysprosium, Terbium, Samarium.

Usage: Permanent magnets, guidance lasers, data storage.

Note: REEs analyzed individually for risk profile.



# THE POLICY PIVOTS: ENERGY SECURITY AS A CRITICAL ASSET



- Subject of EO 14154.
- Essential for base-load electricity generation.
- Re-added after exclusion in 2022.



- Subject of EO 14261.
- Critical for domestic steel production.
- DOE support for inclusion.

## INVESTMENT THESIS:

These additions signal a “Whole of Government” support structure. Expect subsidies and protectionism.

# EXECUTION STRATEGY A: THE ETF APPROACH

Broad Exposure for Structural Trends (Best for Basket 2)



## MINING ETFs

- Baskets of extraction companies (Lithium, Uranium).
- Pros: Dividends, operational leverage.
- Cons: Equity risk.



## SINGLE-COMMODITY ETFs

- Physically backed or futures-based (Copper, Silver, Platinum).
- Pros: Direct price exposure.
- Cons: Storage fees/Contango.

### PRO TIP:

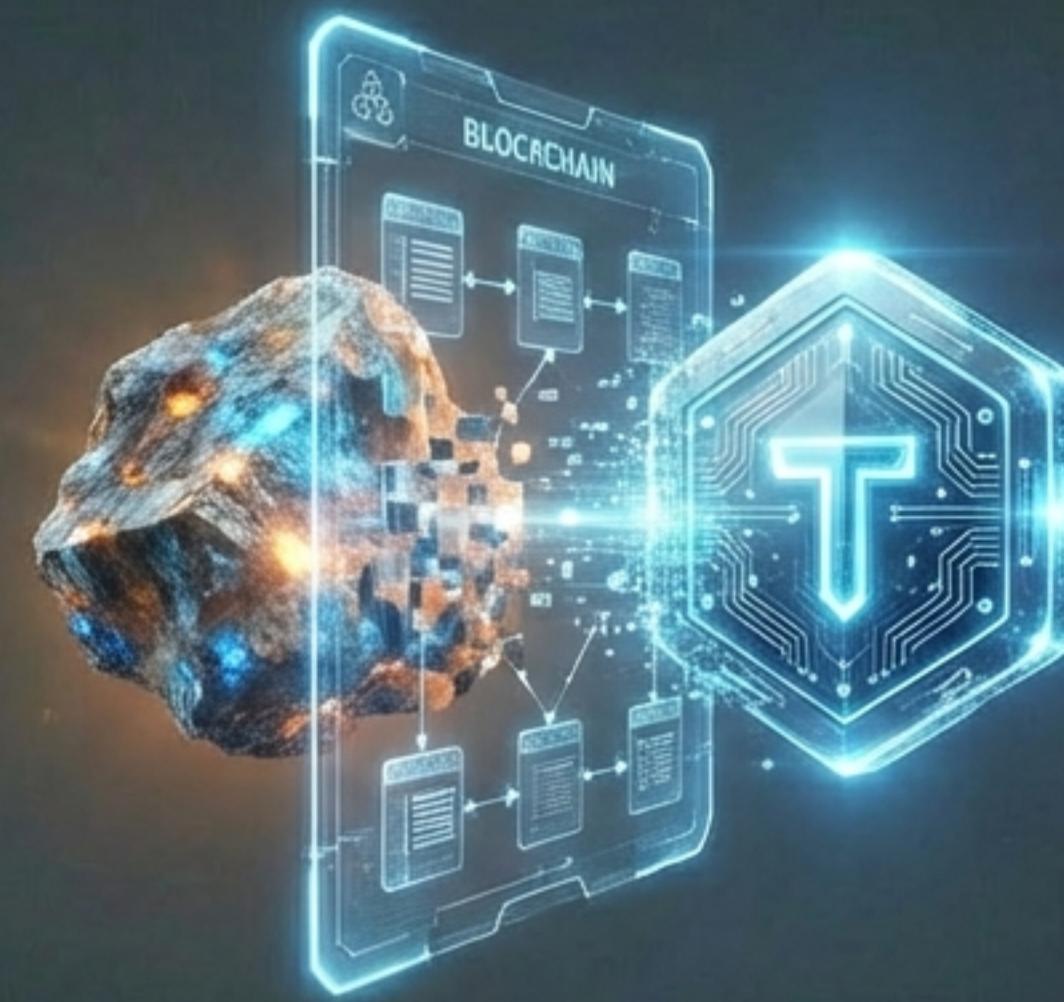
For major industrial metals like Copper and Aluminum, ETFs offer the deepest liquidity.

# EXECUTION STRATEGY B: TOKENIZED ASSETS & RWAs

Precision Trading for 'High Risk' Supply Chains (Best for Basket 1)

## THE PROBLEM

- You cannot buy 'Spot Gallium' on the NYSE.
- Minor metals lack liquid futures markets.



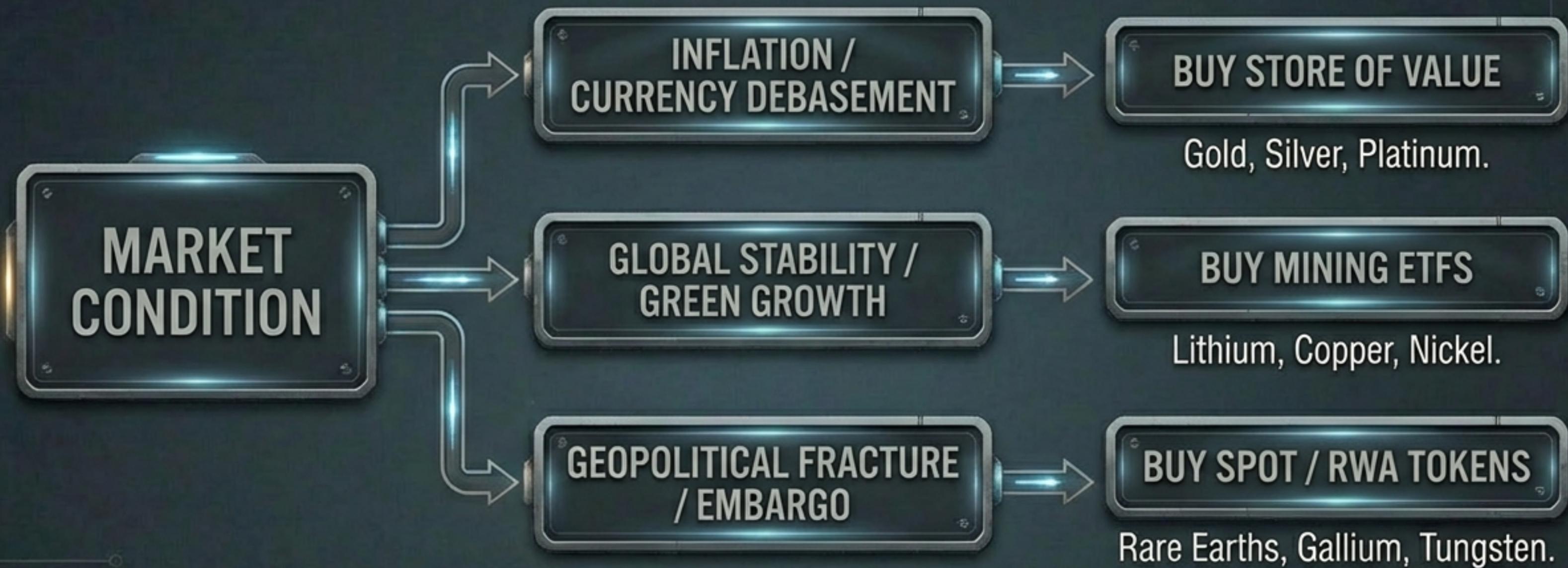
## THE SOLUTION

- Real World Assets (RWA) - Blockchain tokens backed 1:1 by physical reserves.
- Tokenized Stocks - Mirrored assets of foreign mining firms (China/Australia) inaccessible via US brokerages.

## ADVANTAGE:

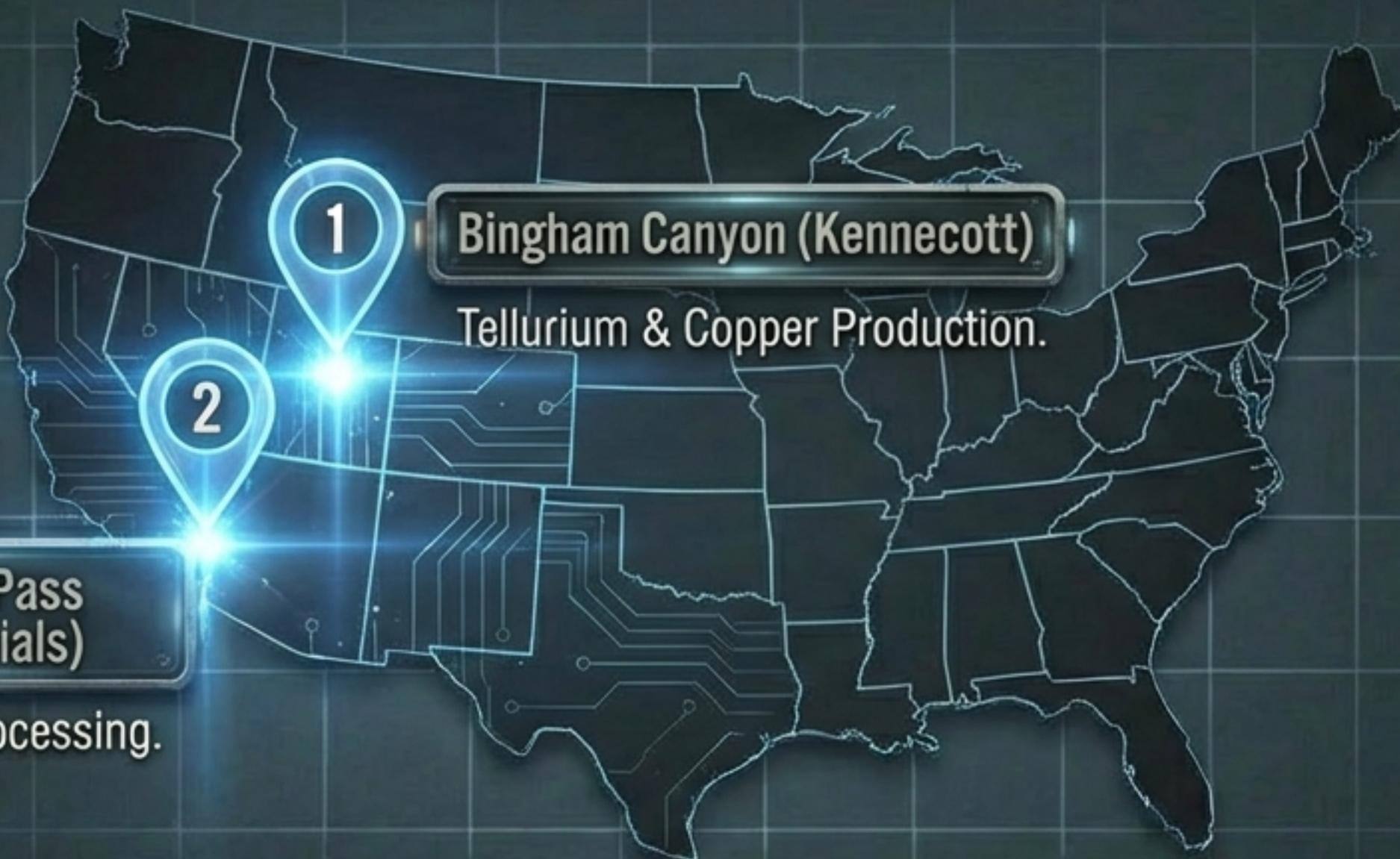
24/7 liquidity and instant repricing during geopolitical shocks.

# THE “CYCLE” PLAYBOOK: MAXIMIZING ALPHA



Match the vehicle to the macro-environment.

# THE DOMESTIC FACTOR: THE ‘MADE IN USA’ PREMIUM



THESIS: THE USGS PENALIZES “SINGLE POINTS OF FAILURE” IN FOREIGN SUPPLY. DOMESTIC PRODUCERS ARE THE HEDGE. EXPECT FAST-TRACKED PERMITS AND GRANTS.

# VISUALIZING THE SUPPLY CHAIN RISK



The 2025 methodology simulates 1,200 disruption scenarios. When news breaks in these red zones, the corresponding asset reprices instantly.

# THE INVESTOR'S CHECKLIST



1 AUDIT: Cross-reference portfolio exposure against the 'High Risk' list.



2 SELECT: Setup accounts for ETF trading (Broad) and RWA/Token trading (Precision).



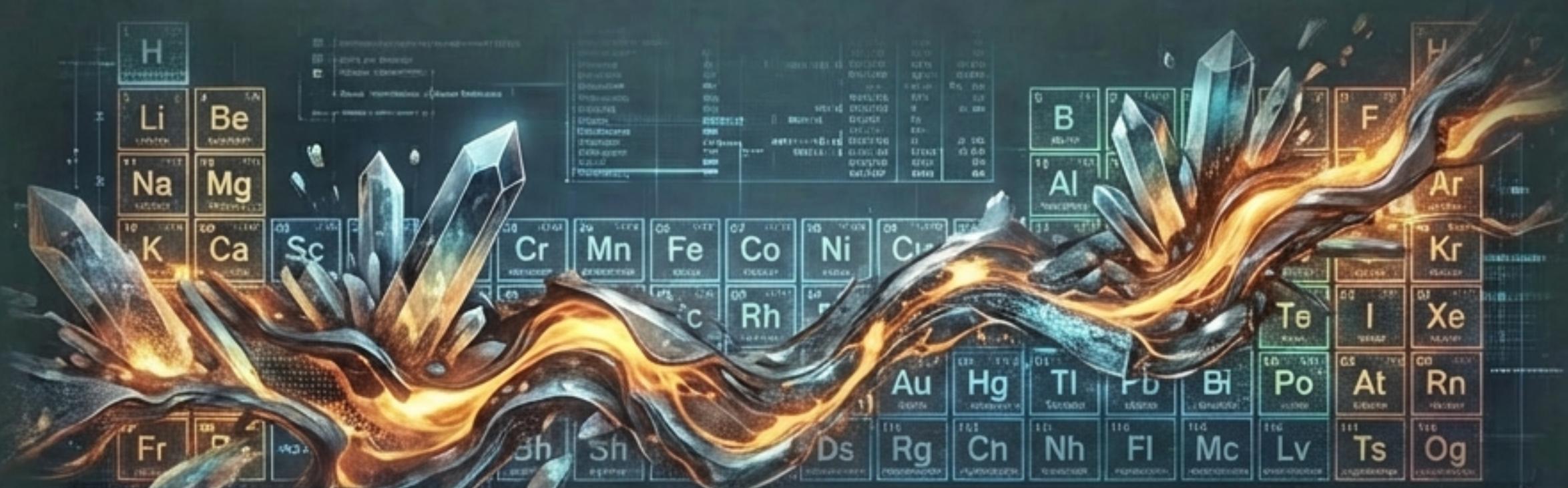
3 MONITOR: The USGS List is updated biannually. Watch Federal Register for 'Single Point of Failure' alerts.



4 DIVERSIFY: Do not bet on one mineral. Allocate across Defense, Energy, and Tech sectors.

# CRITICALITY IS THE ULTIMATE VALUE PROPOSITION

The 2025 List isn't just science; it's the blueprint for the next industrial revolution.



‘Critical minerals are essential to the economy... the absence of which would have significant consequences.’ — Energy Act of 2020.

DIVERSIFY ACROSS THE PERIODIC TABLE OF PROFIT

# DISCLAIMER

This presentation is for educational purposes only and interprets data provided by the U.S. Geological Survey (USGS). It does not constitute financial, investment, or legal advice. Trading commodities, ETFs, and digital assets involves significant risk. Past performance of critical minerals or associated assets does not guarantee future returns. The 'High Risk' designations are based on USGS supply chain analysis, not financial return projections.