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# Critical Energy Transition Minerals (CETMs) and Algeria's Strategy



Shared Prosperity Dignified Life



## Leveraging Mineral Resources for a Sustainable Energy Transition

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# Introduction to CETMs

- ▶ Essential for renewable energy (solar, wind, EVs, batteries).
- ▶ Support SDG7 (Clean Energy) and SDG13 (Climate Action).
- ▶ Global demand surging—\$1.7 trillion investment needed by 2035 (Wood Mackenzie).
- ▶ Key CETMs: Lithium, Cobalt, Nickel, Copper, Rare Earths.



# Algeria's Strategic Mineral Resources for LFP Battery Production

- ▶ Iron Ore - Gara Djebilet (3.5B tons, 57% Fe).
- ▶ Phosphates - Djebel Onk (2B tons, 5.4M tons/year by 2025).
- ▶ Lithium - Tamanrasset & oilfield brines (China partnership).

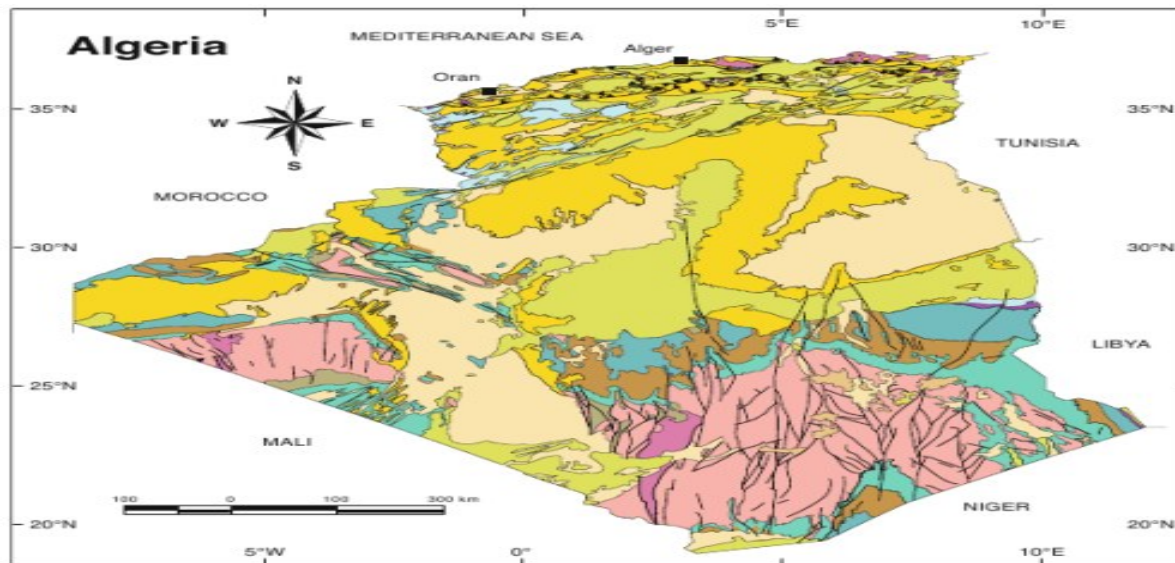


Figure 1: Geological overview of Algeria, Fabre et al., 1978

# Algeria's Strategic Projects

- ▶ **Gara Djebilet Iron Mine** - \$2B deal with Sinosteel (3M tons/year by 2025).
- ▶ **Phosphate-Lithium Integration** - \$6B project with China (CITIC) for batteries.
- ▶ **Renewable Energy**- 15 GW solar by 2035 to power processing.
- ▶ Quote: "Algeria aims to move from raw exports to battery manufacturing".



# Lithium-Iron-Phosphate (LFP) Battery Strategy

- ▶ **Vision:**

- ▶ - Full battery supply chain (mining → manufacturing).
- ▶ - Partnerships: Ganfeng Lithium, Sonatrach, Sonarem Karim Zaghib (LFP expert).
- ▶ - "Battery School" to train engineers.

- ▶ **Economic Impact:**

- ▶ - 50,000+ direct jobs, 100,000+ indirect jobs.
- ▶ - 14% global lithium market share by 2028 (S&P Global).

# Challenges & Solutions



- ▶ Challenge | Solution
- ▶ Infrastructure gaps | Rail projects (Tindouf-Béchar)
- ▶ Bureaucracy | Streamlined mining regulations
- ▶ Environmental risks | Solar-powered extraction (Launch of the 200 MW solar power plant project in Ghara-Djebilet).
- ▶ Key Focus: ESG compliance & intergenerational equity.



# Algeria's Role in Global Supply Chains

- ▶ EU Critical Minerals Alliance – Alternative to China.
- ▶ AfCFTA Partnerships – Egypt Electric Vehicles (EVs).
- ▶ Belt & Road Initiative – Chinese investments in lithium.





# Policy Recommendations

- ▶ Fast-track lithium exploitation with local value addition.
- ▶ Boost R&D in battery tech (e.g., LFP).
- ▶ Strengthen regional cooperation under ESCWA/ United Nations Resource Management System (UNRMS).
- ▶ Quote: "A just energy transition requires responsible mineral governance."



# Conclusion & Call to Action

- ▶ Algeria possesses significant reserves of rare earth metals (20% of the world's rare earths)
- ▶ Algeria is a rising CETM hub with iron, phosphates, lithium.
- ▶ - Strategic projects align with SDGs and green industrialization.
- ▶ Call to Action:
  - ▶ - Increase investments in sustainable mining.
  - ▶ - Enhance regional collaboration for resilient supply chains.



CONCLUSION



**Call to  
action**