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# *The Role of Innovation in Strengthening Critical Minerals & Metals Supply Chains*

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*Why secure critical minerals & metals supply chains?  
Why is innovation important?*

- **Critical minerals & metals are key for clean energy technologies.**
  - Essential for climate mitigation
  - Industrial competitiveness
  - Energy security
- ⇒ **Strong demand for critical minerals & metals.**
- **A few challenges to supply-chain security, and no ready solution:**
  - Geographical concentration
  - Long mining project timelines, etc...
- *Innovation is key to making the supply chains robust and resilient.*

## **Various Types of Innovation...**

**New extraction technologies**

**Reducing material intensity**

**Material substitution**

**Recycling & Recovery**


# Innovation is a Top Focus in Key Government Strategies and Policies.



BRIEFING ROOM

## The Biden-Harris Plan to Revitalize American Manufacturing and Secure Critical Supply Chains in 2022

FEBRUARY 24, 2022 • STATEMENTS AND RELEASES



## Outline of Strategic Energy Plan

October, 2021  
Agency for Natural Resources and Energy

十四五

## China's 14<sup>th</sup> Five Year Plan



Brussels, 3.9.2020  
COM(2020) 474 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability