CHARTING THE FUTURE OF CRITICAL MATERIALS

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RARE EARTH ELEMENTS (REE) POTENTIAL

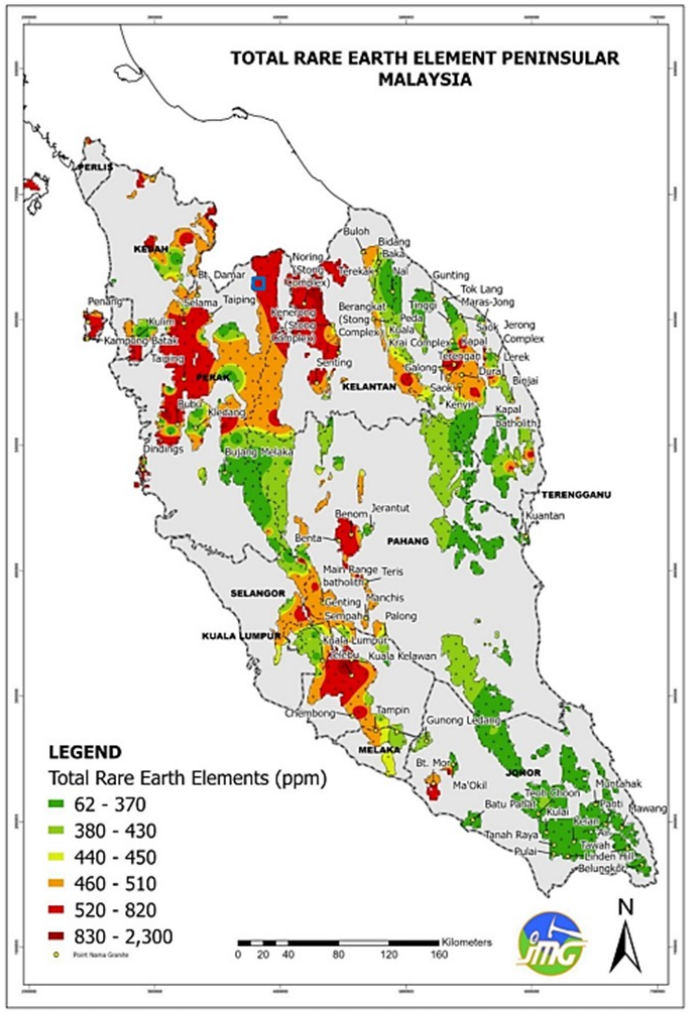


Figure 12.5 : The total Rare Earth Elements (TREE) classification in the Peninsular Malaysia. Noted that the study area classified as high concentration of TREE marked in blue box.

Preliminary studies conducted under RMKe-11 by JMG

16.1 million tons

Expected deposits of rare earth elements in Malaysia.

RM 809 billion

Expected value of local REE deposit yields.

RM 9.5 billion

GDP contribution in 2025.

24,800

New job opportunities are created.

NATIONAL POLICY ALIGNMENT

The Malaysian Government has strategically embedded rare earth development as a cornerstone of its national policy framework, recognizing these critical materials as essential to the nation's industrial and economic transformation. This integration spans two major policy instruments that will shape Malaysia's trajectory through 2030 and beyond.

Thirteenth Malaysia Plan (RMKe-13)

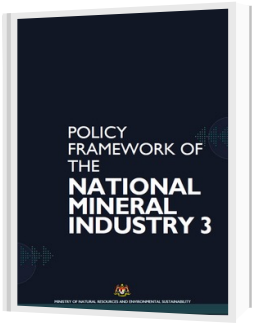
- REE for Green & Digital
- REE in Energy Transition
- Commitment to REE Growth
- REE for Resilience & Sovereignty

New Industrial Master Plan 2030 (NIMP 2030)

- REE as Strategic Pillar
- Integrated Ecosystem
- Stronger Global Value Chain
- High-Value Hub

National Mineral Industry 3 Policy Framework

- Framework for REE Management
- Sustainable Governance
- Environmental Stewardship
- Community & State Benefits

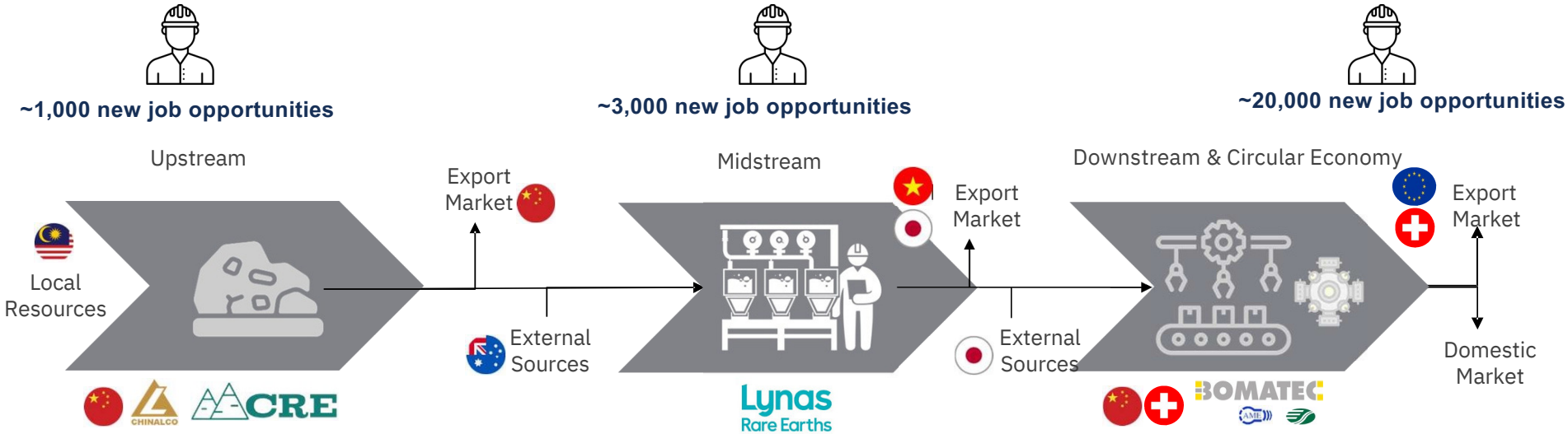


National Mineral Industry Transformation Plan 2021-2030 Framework

- REE Industry Modernization
- REE Innovation & Talent
- Global REE Integration
- REE Downstream Strength

REE MALAYSIA SUPPLY CHAIN: PLAYERS AND INDUSTRY DEVELOPMENT

Developing midstream and downstream activities is important to maximize the potential for added value



- **Malaysia is only involved in the upstream stage of the rare earth element industry, unlike China which has a complete and integrated ecosystem.**
- **In 2023, Malaysia exported RM975 million worth of rare earth elements to China, making it the country's second largest source of ore after Myanmar.**
- **Malaysia plans to develop midstream and downstream activities to increase value-added activities in the country.**

ECONOMIC OPPORTUNITIES FOR MALAYSIA IN RARE EARTH ELEMENTS (REE)

Unlocking potential through innovation, sustainability, and skilled talent

Developing Local REE Industry

Malaysia plans to enhance downstream value creation with ambitious targets.

Super-magnet manufacturing:

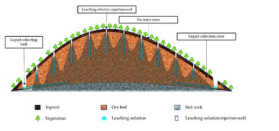
- Investment target: **RM3.5 billion**
- Annual production: **35,000 tonnes**
- Production value: **RM8.27 billion**
- Job creation: **Over 10,500 high-value jobs**

Electric motor production:

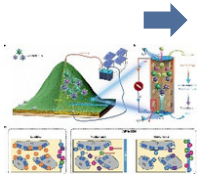
- Investment target: **RM3 billion**
- Annual production: **5 million units**
- Production value: **RM5.32 billion**
- Job creation: **Nearly 10,000 skilled jobs**

Adoption of Green & Digital Technology

Upstream



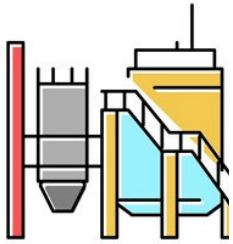
In-situ leaching (ISL) and sustainable technology.



Electrokinetic Mining (EM)

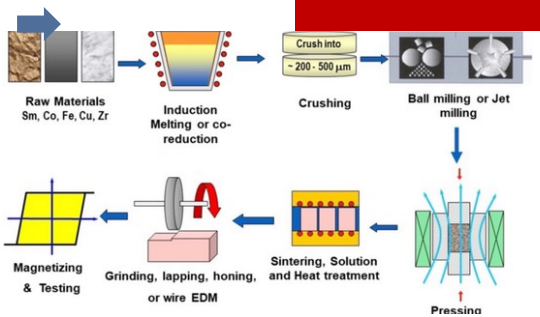
Geographical Information System (GIS)/ Geological Imaging

Midstream

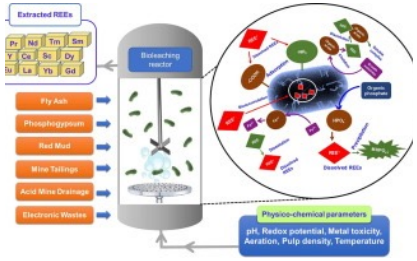


Separation/Cracking and Leaching

Downstream & Circular Economy



High power magnet & electric motor manufacturing and testing technology



Technology for extracting rare earth elements from electronic waste

Blockchain technology to safeguard the supply chain.

Sumber: Malaysian Industry-Government Group for High Technology (MIGHT)

CHALLENGES

Not be underestimated:

Rising global competition, especially from **ASEAN** neighbours.

The need to **meet stringent ESG** expectations.

State–federal alignment on royalties and land governance.

High **investment costs** and technology transfer barriers.

WAY FORWARD

- Integration across the value chain
- Sustainability and ESG leadership
- Technology and innovation
- Global positioning and partnerships
- Talent and capacity building
- Federal–state collaboration


THANK YOU