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STRATEGIC REPORT · 2026

Powering, Securing & Enhancing the Rare Earth Supply Chain.

Israel's role in the allied push to build a resilient rare-earth supply chain, examined through the lens of an Israeli technology database mapping companies that power, secure, and enhance the mining and refining base.

01 POWERING

02 SECURING

03 ENHANCING

MILE ADVISORY · 2026

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EXECUTIVE SUMMARY

The argument in brief

Rare earth elements are the foundational inputs for modern industry and defense. They are embedded in semiconductors, electric motors, precision weapons, and the AI compute stack. Roughly 70 percent of global mining and refining capacity is concentrated in a single jurisdiction, and allied governments are now moving at scale to diversify the supply base.

Israel is part of that response. As a signatory of the U.S.-led **Pax Silica** initiative, Israel sits in the coalition coordinating trusted supply chains across critical minerals, semiconductors, energy, and AI infrastructure. Israel's strength lies in a dense ecosystem of technology companies whose work spans the REE and critical-minerals supply chain, from upstream metals and recycling, through midstream materials innovation, into downstream storage and applications, and across a cross-cutting layer that powers, secures, and enhances operations throughout. This report maps that contribution.

THE STRATEGIC ARGUMENT IN THREE PARTS

01 The constraint is operational, not financial.

Capital is committed. \$8.5B into Australian REE, \$400M plus a \$150M loan into MP Materials, \$134M from DOE, parallel frameworks with Japan, Thailand, and others. The bottleneck is no longer money. It is energy intensity, cyber exposure, and cost competitiveness at projects sited in remote regions far from incumbent supply chains.

02 Israeli capability extends across the chain.

From upstream metal production and urban mining, through midstream refining and materials innovation, into downstream storage and applications, with a cross-cutting enabling layer of off-grid power, cybersecurity, and predictive operations. The depth is broadest at midstream, where the chain is most strategically constrained.

03 The work is operationalization, not advocacy.

Israel's seat at the table is established. The remaining question is how that role is executed: which Israeli capabilities connect to which allied projects, where in the supply chain they fit, and how partnerships get structured. The instruments already exist; the window to embed them in flagship projects is open now and will narrow over the next 24 to 36 months as those projects move from build to commercial operation.

01 OPENING

A new era for rare earth

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Rare earth elements, a set of seventeen elements with unique magnetic, optical, and electronic properties, have emerged as foundational inputs for the technologies that define modern industry and defense. They sit inside semiconductors, electric motors, wind turbines, precision weapons, and the AI compute stack now reshaping every sector.

The strategic problem is one of **concentration**. Roughly 70 percent of global REE mining and refining capacity is currently consolidated in a single jurisdiction, the result of decades of offshoring during which Western capability eroded. Allied governments, including the U.S., the EU, Australia, and Japan, are now investing aggressively to diversify the supply base.

Israel's strength is not in rare-earth deposits but in technology. Israeli companies bring a dense ecosystem of capability that the supply chain needs: off-grid energy, water management, industrial cybersecurity, autonomous monitoring, predictive maintenance, advanced materials, and recycling. This report examines that contribution.

METHODOLOGY · SCOPE & APPROACH

An Israel-centric database, mapped to the REE supply chain

This briefing draws on MILE Advisory's proprietary database of Israeli technology companies operating in energy, defense-adjacent, and industrial-tech sectors. Each candidate company was assessed for functional relevance to the supply chain and classified by layer. The roster reflects technology fit and operational relevance, not endorsement; commercial and procurement decisions remain with allied principals and their counsel.

Scope note: the companies named in this report are illustrative examples drawn from MILE Advisory's database. The report is not intended as a comprehensive market map; it identifies a strategic position Israel can occupy in the allied supply chain. This research contributes to MILE Advisory's Energy Alliances 2026 (mile.earth).

02 STRATEGIC IMPORTANCE

Why rare earth, why now?

Three forces have converged to make rare earth a top-tier policy priority for the United States and its allies.

A note on terminology before going further. This report refers to both “rare earth elements” and “critical minerals,” and the distinction matters. Critical minerals are the broad category: the minerals a government identifies as strategically essential and vulnerable to supply disruption, a list that includes lithium, cobalt, nickel, graphite, copper, and others, and varies by country. Rare earth elements are one specific subset, the seventeen elements prized for their magnetic and electronic properties. Every rare earth is a critical mineral; most critical minerals are not rare earths. The supply-chain concentration this report examines is most acute for rare earths, but the strategic logic, and Israel's technological contribution, extends across the wider critical-minerals base.

70%

of global REE mining and refining capacity is concentrated in a single jurisdiction.

The result of decades of offshoring. Diversification is now a stated objective of the U.S. National Security Strategy, the European Critical Raw Materials Act, and allied counterparts in Tokyo, Canberra, and Seoul.

Source: U.S. Geological Survey 2025 Critical Minerals List; IEA, The Role of Critical Minerals in Clean Energy Transitions.

WHAT RARE EARTH ENABLES

Rare earths are not an end product; they are an enabling input. Their magnetic, optical, and electronic properties make them difficult to substitute, which is why concentration in their supply is a strategic concern rather than a commodity one. Three categories of technology depend on them, and together these define competitive position in the 21st-century economy.

COMPUTING

Semiconductors & AI

Magnets, phosphors, and dopants for the chips, data-center hardware, and quantum systems that underwrite the AI economy.

DEFENSE

Precision & sensing

Inputs for precision-guided munitions, laser systems, stealth coatings, radar, and electronic warfare platforms.

ENERGY

Electrification

Permanent magnets for EV motors and wind turbines, plus battery and grid-storage chemistries central to the energy transition.

THE CONCENTRATION PROBLEM

Concentration is not in itself a moral question; it is a structural one. When one producer controls 70 percent of a critical input, that producer also controls the marginal price, the marginal volume, and, in extremis, the marginal availability. For an allied industrial base whose semiconductor, defense, and clean-energy programs are all expanding simultaneously, that exposure is structurally unacceptable.

03 OPPORTUNITY & CHALLENGE

The allied response

In December 2025, the United States launched **Pax Silica**, an initiative to coordinate trusted supply chains across critical minerals, energy, semiconductors, AI infrastructure, and logistics, the strategic backbone of the AI age. Israel is a signatory, alongside Australia, Japan, the United Kingdom, South Korea, Singapore, the UAE, India, Sweden, Qatar, and Greece. Its contribution to the coalition is framed in terms of high-end AI and defense-related technology, capabilities the rest of this report describes in detail.

The question, then, is not whether Israel has a role in the allied response to concentrated critical-minerals supply. It does. The question is how that role gets operationalized: what Israeli capabilities specifically contribute, where in the supply chain they belong, and which partners they connect to. The rest of this report is that map.

The U.S. and its allies have moved from policy intent to capital commitment. Australia, Japan, Malaysia, and Thailand now anchor a non-Chinese REE production network, and U.S. instruments such as DOE grants, DoD loans, and equity investments are flowing into both upstream mining and midstream refining. However, capital alone does not build capacity. New REE operations face three persistent constraints that allied capital cannot solve directly.

SECURITY

Supply-chain vulnerability

REE producers are high-value targets. Cyber intrusions into operational technology, theft of refining IP, and physical disruption are all in scope as the industry scales.

POWER

Energy intensity

Mining and refining are energy-hungry processes, frequently sited in remote regions where centralized grid power is unavailable, expensive, or unreliable.

PRICING

Cost competitiveness

The dominant producer benefits from sustained subsidies and operational scale. Western producers must compete on a cost structure shaped by efficiency gains, not by matching subsidies.

Each constraint maps to a category of technology where Israel has relevant, established capability. That is the bridge between the allied capital push and the operational reality of building the supply chain, and it is where Israel's contribution becomes specific.

04 ISRAEL'S ROLE

Across the supply chain

Drawing on MILE Advisory's Israeli technology database, capability emerges across four layers of the supply chain.

Upstream is extraction: mining ore, and recovering materials from secondary sources such as spent batteries. **Midstream** is processing: refining raw material into usable metals, and the materials innovation that improves them. **Downstream** is application: the batteries, components, and end-products where the materials are finally put to use. Cutting across all three is the **Enabling** layer: the energy, security, and operational technologies that allow the other three to function. Israel's contribution is not concentrated in any single tier; it extends across all four.

Companies named below are illustrative examples drawn from the MILE Advisory database, not a comprehensive list. Many operate across more than one layer; placement reflects each company's most relevant role rather than an exclusive one.

01 · UPSTREAM

Mining, extraction & primary materials

Zero-emission metal production, urban mining, and the recovery of strategic materials from secondary sources. Capability here reduces dependence on incumbent producers and creates resilient sources for critical inputs.

Helios · Li-Generate · Razor Labs · Airobotics

02 · MIDSTREAM

Refining, processing & materials innovation

Advanced polymers, nano-coatings, and anode chemistries. The refining and materials layer is the highest-value, most strategically constrained step in the chain; Israeli depth here is broad.

Super Polymer · Chiral Energy · CENS Materials · SiLiB

03 · DOWNSTREAM

Storage, application & deployment

Next-generation batteries, integrated solar coatings, and critical-material-efficient components. The end-use applications that REEs and critical minerals make possible, where demand ultimately materializes.

StoreDot · Apollo Power · SolOr · Addionics

04 · ENABLING

Powering, securing & enhancing operations

The cross-cutting layer that runs across every tier: off-grid power for remote sites, cybersecurity for high-value industrial assets, and predictive operations for cost-competitive output.

nT-Tao · LAVA · Ormat · Aquarius Engines · Exency · Claroty · Cyera · Airobotics · Razor Labs

THE CYBER THREAT IS ACCELERATING

The enabling layer is not theoretical. Threat-intelligence reporting tracks state-aligned intrusions across the sectors most relevant to REE operations.

+50%

Intrusions targeting government, technology, and telecommunications, 2023 to 2024.

The sectors that house the regulatory frameworks, control systems, and data infrastructure underpinning REE production.

Source: CrowdStrike 2025 Global Threat Report.

+200–300%

Intrusions targeting industrials and engineering, 2023 to 2024.

Direct exposure for mining, refining, and processing operations as they digitize, automate, and connect.

Source: CrowdStrike 2025 Global Threat Report.

WHY THIS MATTERS FOR THE ALLIED STACK

None of these technologies are uniquely Israeli. But in combination, across multiple layers of the supply chain and at the operational maturity Israeli firms have achieved, they constitute a meaningful position in the allied REE stack. The proposition is not that Israel substitutes for U.S., Australian, or Japanese producers. It is that Israeli technology partners help those producers move faster, more securely, and more competitively, and that Israeli capability extends further along the chain than the operational layer alone.

Illustrative, not exhaustive. Companies named are representative examples from the MILE Advisory database, selected to show the breadth of Israeli capability across the supply chain. See methodology on p. 3.

05 THE PARTNER CONSTELLATION

An allied network, not a bilateral

The most productive framing for the Israeli contribution is not bilateral but networked: Israel as the enabling layer within an allied production system anchored by the United States and extended through Australia, Japan, Thailand, and other partners. The relationships fall into three tiers, each with a distinct strategic logic.

TIER 1 · STRATEGIC ANCHOR

The United States

The U.S. provides the demand signal, the policy framework, and the largest pool of capital. Israeli enabling technology fits naturally into U.S.-funded projects whose principals, including American Rare Earths, Ucore, MP Materials, and Energy Fuels, are scaling toward commercial capacity.

STRATEGIC FOCUS

- › Partnering Israeli cyber, off-grid energy, and industrial-efficiency firms with American producers benefiting from federal incentives.
- › A U.S. and Israel REE MOU that positions Israel as a domestic-partner equivalent, in the spirit of the Canada framework, lowering entry barriers across the supply chain.

TIER 2 · ENABLEMENT TARGETS

Australia & Japan

Both countries combine modern infrastructure with a defiant posture toward concentrated supply risk, making Israel's cyber and industrial-security capabilities especially relevant. Australia's vast geography compounds the case: prospecting occurs in remote regions, elevating off-grid power, water management, and operational sustainment from optional to mission-critical.

STRATEGIC FOCUS

- › Partner Israeli cyber, kinetic-security, off-grid energy, and industrial-efficiency firms with leading Australian producers (Lynas, Iluka, Arafura) and Japanese counterparts (Shin-Etsu, Mitsui Kinzoku), plus emerging actors that may surface as government incentives accelerate.

TIER 3 · TECHNOLOGICAL BARTER

Thailand

Thailand holds significant REE reserves and an emerging mining and refinement industry, while maintaining a posture of strategic neutrality between Washington and Beijing in what is often called “bamboo diplomacy.” Even so, Thai interest in Israeli defense technology is well-established, creating a basis for an asymmetric exchange.

STRATEGIC FOCUS

- › A rare-earth-for-defense-technology framework agreement, aligned with the Israeli Ministry of Energy's proposed structure, leveraging Israeli defense expertise against Thai REE production capacity.
- › Partner Israeli cyber, off-grid energy, and industrial-efficiency firms with Thai counterparts such as Neo / Magnequench.

For Israel, the strategic logic is the same in each case: technology partnerships that enable producers to power, secure, and enhance their operations. The instruments, including commercial agreements, joint ventures, and allied co-investment vehicles, already exist and have analogues in earlier rounds of industrial cooperation.

06 MARKET & ECONOMIC SIGNIFICANCE

The numbers behind the shift

The scale of capital and demand now committed to allied REE production gives some sense of why this domain has moved from a niche industrial topic to the center of strategic policy.

2.6–2.9B tons

Israeli critical mineral & rare-earth demand by 2050

Projected aggregate demand from Israel's own transition to renewable energy and electrified industry. A non-trivial figure for a country of Israel's size and a stake in the same supply chain.

Source: Israeli Ministry of Energy, *Formulating Critical Minerals Policy for a Net-Zero Israel*.

\$8.5B

U.S. investment commitments in Australian REE

Capital flowing into mining, refining, and magnet production at the leading non-Chinese producer base.

Source: Reuters, *U.S. and Australia Sign Rare Earths Deal to Counter China's Dominance*.

\$134M

DOE allocation for domestic REE supply

Direct grants and program funding to advance U.S. mining and refining capacity.

Source: U.S. Department of Energy press release, *\$134M for Rare Earth Element Supply Chains*.

\$400M + \$150M

DoD equity and loan to MP Materials

Equity investment plus a follow-on loan. Among the most significant single commitments of public capital to a domestic producer.

Source: Reuters, *MP Materials Seals Mega Rare-Earths Deal with U.S. to Break China's Grip*; *MP Materials Q4 2024 Earnings Release*.

~\$200M / \$60M

Average revenue and profit at major Western producers

Indicative scale of established producers, providing a sense of the unit economics into which new technology partners are integrating.

Source: *Lynas Rare Earths FY 2025 results*; *MP Materials Q4 2024 earnings*; *Shin-Etsu Chemical Annual Report 2024*.

These numbers describe an industry at the early stage of a multi-decade buildout. The window for technology partners to embed in operational design, rather than retrofit later, is open now.

07 STRATEGIC OUTLOOK

What could shape the trajectory?

The path from current commitments to a resilient allied REE supply chain is not linear. Two sets of factors, favorable and adverse, will shape whether the buildout accelerates, stalls, or fragments. Each scenario has direct implications for the demand profile facing Israeli enabling technologies.

TAILWINDS

What could accelerate the buildout

- + Greenland coming on-line as a Western REE source. A largely uninhabited landmass with significant deposits whose development would dramatically expand the demand profile for off-grid energy, water, and remote operational infrastructure.
- + Resolution of the war in Ukraine, opening Ukrainian critical-minerals deposits (already covered by a U.S. and Ukraine framework agreement) to large-scale Western investment.
- + Sustained bipartisan U.S. policy support across administrations and Congresses.
- + First-of-kind Western refining projects reaching cost-competitive operation, building investor confidence for subsequent rounds.
- + Expansion of allied co-investment vehicles linking U.S., Japanese, Australian, and Korean capital.

HEADWINDS

What could slow it

- Regional security developments affecting Israel's bandwidth for sustained commercial engagement, with knock-on effects on the visibility of public-facing instruments such as MOUs.
- Difficulty finalizing bilateral MOUs and strategic frameworks if political climates harden.
- Technological breakthroughs in REE-free alternatives that reduce projected demand in some end-uses.
- Cost-curve advantage of the incumbent producer proving more durable than expected.

The asymmetry is the point: tailwinds broaden Israel's relevance, while headwinds narrow rather than eliminate it. Because the position is anchored in capabilities rather than in any single project, it holds across scenarios.

08 CONCLUSIONS

Where Israel goes from here

The first wave of allied capital has been committed, proof that the strategic shift is real. What that capital has not yet done is build the supply chain, or reach the technology layer where Israeli companies operate. Closing that gap is difficult and competitive. Three conclusions follow.

THREE STRATEGIC CONCLUSIONS

01

Lead with the enabling layer.

The clearest value proposition is “Powering · Securing · Enhancing.” Israeli companies are active across the supply chain, in metals, recycling, materials, and applications. The sharpest strategic position is as the layer that makes allied producers faster, safer, and more competitive: a complement to those producers, not a competitor to them. That framing is both accurate and commercially actionable.

02

Embed early in operational design.

Technology partners that integrate during project planning achieve dramatically better outcomes than those retrofitted post-commissioning. The window for this is open now and will narrow over the next 24 to 36 months as flagship projects move into commercial operation.

03

Build the partnerships network-first, not bilateral.

The most durable structure is one in which Israeli enabling technology connects to a constellation of allied producers, anchored in the U.S., extended through Australia, Japan, and partners further along the chain, rather than to any single bilateral relationship.

ABOUT MILE ADVISORY

MILE Advisory is a strategic advisory firm working in energy and dual-use technology, with a focus on the US-Israel corridor. We craft strategy and manage its execution, working with governments, investors, and technology companies.

09 SOURCES

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