

# MONTHLY EXECUTIVE BRIEFING

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## Saudi Arabia and the UAE's critical-mineral dependencies and strategic exposure

Saudi Arabia and the United Arab Emirates (UAE) have made renewable energy, electric vehicles (EVs) and artificial-intelligence (AI) infrastructure prominent pillars of their economic diversification and net-zero agendas. These sectors run on imported, mineral-intensive hardware whose refined inputs are processed in a handful of foreign jurisdictions, and mostly in China. This exposes both states to the risks of supply disruption and of refining leverage being used as an instrument of statecraft. They are attempting to mitigate these risks, but most domestic capacity remains prospective because of choke points, fiscal pressures and the fallout from the Iran war.

- **Saudi Arabia and the UAE face a processing, not a resource challenge.** Saudi Arabia holds copper, lithium and rare-earth deposits and other minerals, and both states are investing upstream, domestically and through overseas equity and offtake. Yet neither refines at a commercial scale, leaving them dependent on a midstream dominated by China, which the International Energy Agency (IEA) estimates holds a 70% average refining market share across 19 of 20 strategic minerals in which it leads.
- **Vulnerability is deployment and manufacturing led.** Saudi Arabia and the UAE deploy imported solar, storage, EV and AI infrastructure hardware containing refined inputs neither processes, with supplier concentration reaching them indirectly through finished equipment. The second, more acute vulnerability for Saudi Arabia is manufacturing led: as EV, battery and advanced-manufacturing ambitions move into domestic production, exposure shifts to the refined feedstock those production lines consume.
- **Mitigation is under way but incomplete.** Both states are pursuing US-aligned partnerships as well as prospective domestic-refining pipelines spanning rare earths, gallium, lithium, graphite and copper.

## GSIS 2026 News

The GSIS 2026 conference programme is taking further shape:

- **First speakers confirmed:** **Bernhard Klutwig**, Director-General for Security, Gas and Hydrogen at the German Federal Ministry for Economic Affairs and Energy, will take part in the panel discussion "Energy Security in Uncertain Times". **Lieutenant General Michael Vetter**, Director-General for Innovation and Cyber and CIO at the German Federal Ministry of Defence, and **Marcus Wandt**, Senior Vice President and Head of Group Strategy & Technology at Saab, will participate in the panel discussion "Innovation in the Defence Sector".
- **Further speaker announcements will follow shortly:** over the coming weeks, additional high-profile speakers from the worlds of politics, industry, defence and technology will be featured on the [GSIS LinkedIn channel](#).
- **The deadline for the early-bird discount is approaching:** participant tickets at a reduced price are available until 31 July 2026.

≥80%

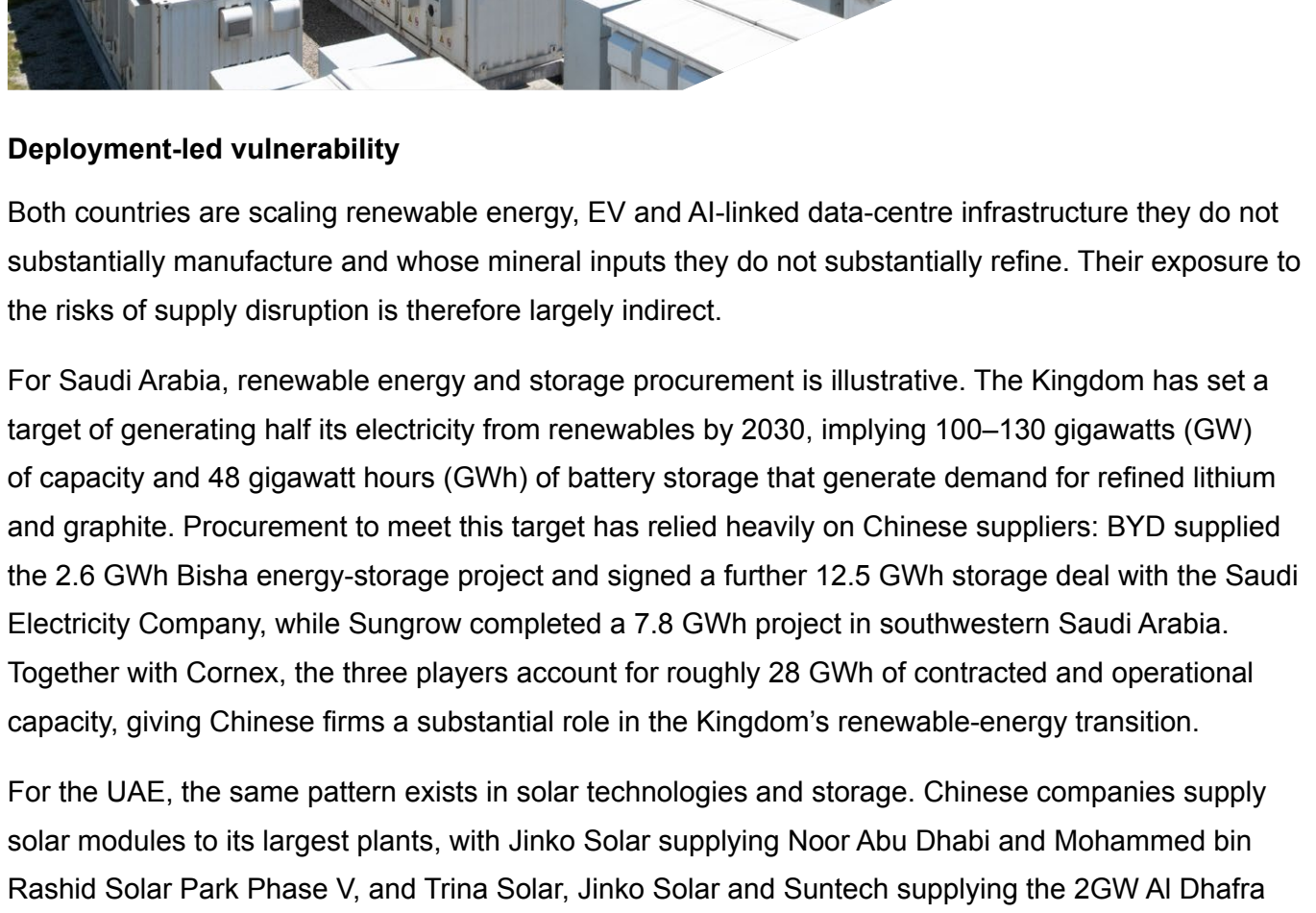
**CHINA'S GLOBAL SHARE OF MIDSTREAM AND DOWNSTREAM SUPPLY CHAINS FOR BATTERIES IN MANY KEY AREAS**

US\$9.32 BILLION

**VALUE OF 9 INVESTMENT DEALS SIGNED BY SAUDI ARABIA IN METALS AND MINING SPANNING COPPER, LITHIUM AND RARE EARTHS**

100

**NUMBER OF EXPORT-RELATED MEASURES INTRODUCED ON CRITICAL MINERALS SINCE 2020, MOST PROMINENTLY BY CHINA, DRC AND INDONESIA**



### Deployment-led vulnerability

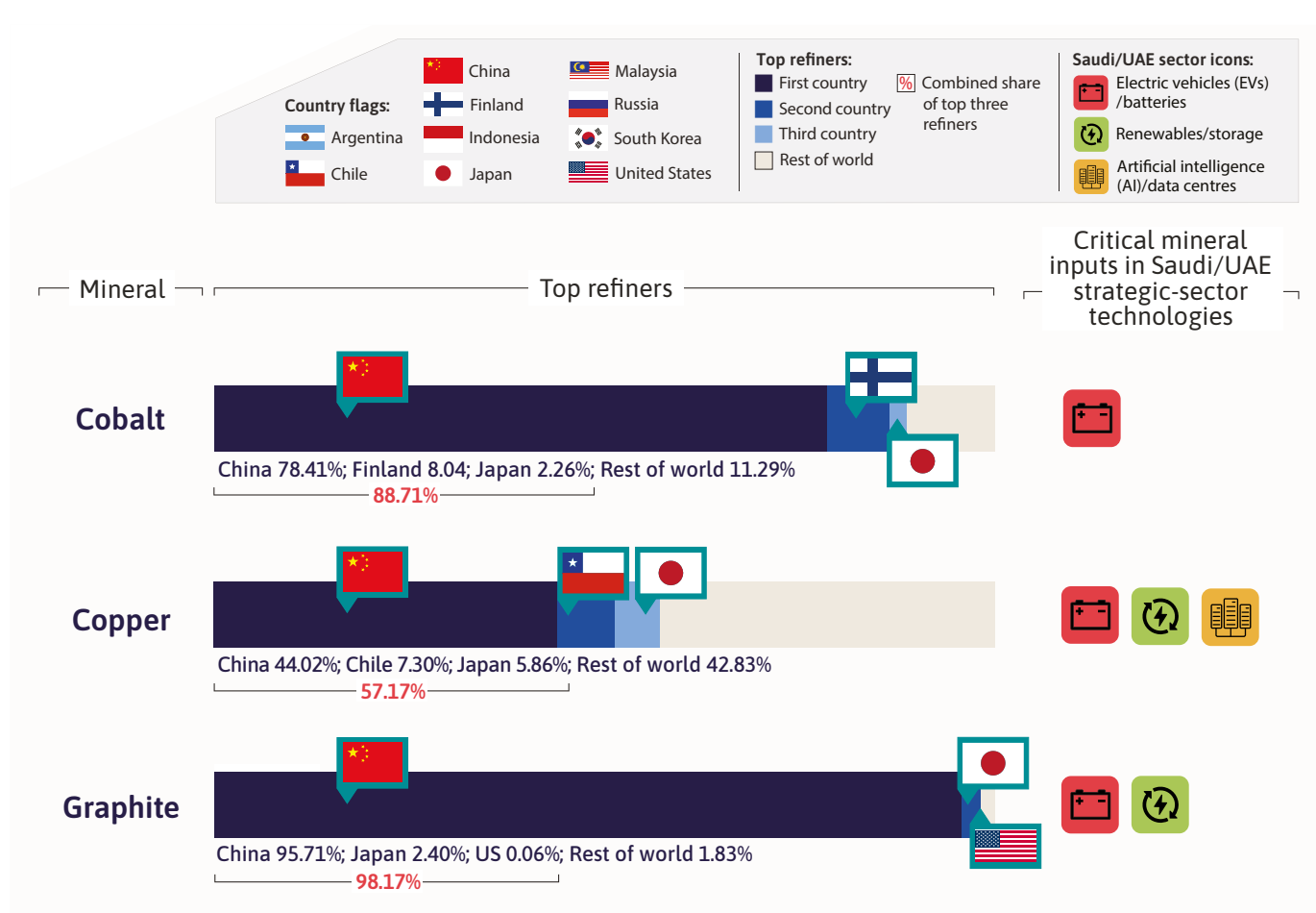
Both countries are scaling renewable energy, EV and AI-linked data-centre infrastructure they do not substantially manufacture and whose mineral inputs they do not substantially refine. Their exposure to the risks of supply disruption is therefore largely indirect.

For Saudi Arabia, renewable energy and storage procurement is illustrative. The Kingdom has set a target of generating half its electricity from renewables by 2030, implying 100–130 gigawatts (GW) of capacity and 48 gigawatt hours (GWh) of battery storage that generate demand for refined lithium and graphite. Procurement to meet this target has relied heavily on Chinese suppliers: BYD supplied the 2.6 GWh Bisha energy-storage project and signed a further 12.5 GWh storage deal with the Saudi Electricity Company, while Sungrow completed a 7.8 GWh project in southwestern Saudi Arabia. Together with Cornex, the three players account for roughly 28 GWh of contracted and operational capacity, giving Chinese firms a substantial role in the Kingdom's renewable-energy transition.

For the UAE, the same pattern exists in solar technologies and storage. Chinese companies supply solar modules to its largest plants, with Jinko Solar supplying Noor Abu Dhabi and Mohammed bin Rashid Solar Park Phase V, and Trina Solar, Jinko Solar and Suntech supplying the 2GW Al Dhafra solar park. Masdar and Emirates Water and Electricity Company's US\$6 billion 'round-the-clock' solar and battery-storage project in Abu Dhabi has identified CATL as the preferred supplier for its battery system, and Jinko Solar and JA Solar for its solar photovoltaic modules. The UAE develops, finances and operates the asset, but the equipment, and the refined inputs within it, is sourced overwhelmingly from China.

The EV sector is also heavily dependent on China as a supplier. China holds over 80% of global lithium-ion battery-manufacturing capacity, a dominance that extends upstream to the cathode and anode materials the cells are built from. In October 2025, China placed export controls on cathode and anode materials, and the equipment and technology used to make them, before pausing the measures for one year. The Gulf region was not the target of these controls, but the episode demonstrated Beijing's willingness to restrict inputs the region depends on – the kind of control the IEA warns could entrench the very concentration that diversification is meant to undo.

The digital build-out, including the planned 5 GW UAE–US AI Campus in Abu Dhabi, and Saudi Arabia's up-to US\$1.2bn Humain–National Infrastructure Fund financing agreement to develop data-centre capacity, signals the scale of ambition, but neither country fabricates the chips and servers that hyperscale data centres require. Saudi Arabia's attempt to build chip plants through the Public Investment Fund (PIF)-backed Alat was abandoned in early 2026. Unlike the solar and battery build-out, where the supplier dependence runs to China, the binding constraint for compute is US export licensing: in November 2025 the US Commerce Department licensed Humain and G42 to purchase the equivalent of up to 35,000 NVIDIA Blackwell processors each.



### Manufacturing-led vulnerability

Saudi Arabia's PIF 2026–30 strategy identifies 'advanced manufacturing and innovation' as one of six domestic ecosystems it aims to develop. The Kingdom's industrial ambitions require access to refined material inputs as production feedstock, making exposure to supply-chain disruption more direct and difficult to hedge. Its EV-manufacturing push is the clearest illustration, though the vulnerability is still prospective. Saudi Arabia aims to manufacture 500,000 vehicles annually by 2030. Ceer, the PIF–Foxconn joint venture preparing for trial production at King Abdullah Economic City in late 2026, is central to this target. SAR3.7bn (US\$985m) in localisation agreements covers polymers, glazing, body-shop equipment and fluids, in line with Ceer's goal of 45% domestic content by 2034, but the mineral-intensive components are not covered by these agreements and continue to be imported. Ceer's partnership with Croatia's Rimac Technology indicates that the Kingdom continues to import the highest-value EV components, namely battery and electric-drive systems, rather than produce them domestically.

This vulnerability will become more pronounced when Saudi Arabia moves to localise battery production. Exposure will then shift to the refined feedstock those production lines require. China dominates global midstream refining of the lithium, cobalt, manganese and graphite that determine battery performance, most acutely for graphite, at over 90%. The same midstream concentration matters for Europe: China supplies roughly 98% of rare-earth magnets used by its carmakers, wind and defence manufacturers. Whether Saudi Arabia can build refining capacity outside China also affects the supply available to European derisking efforts.

## Global refining concentration of selected critical minerals underpinning Saudi and Emirati strategic sectors, 2024



Notes: All data for 2024 (IEA), except Indium and tellurium, for which the latest available data is 2023 (BGS). Combined shares are calculated from unrounded data; individual shares may not sum to combined totals due to rounding.  
\*Core to thin-film photovoltaic (PV) specifically: tellurium to cadmium-telluride (CdTe) cells, indium to copper-indium-gallium-selenide (CIGS) cells.  
\*\*Embedded – the mineral sits inside a subcomponent the technology incorporates, not the principal hardware itself. In all other examples, the mineral is a core material of the sector's principal hardware.

Sources: IEA Global Critical Minerals Outlook 2025; BGS World Mineral Statistics 2023; ISS analysis

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### Mitigating exposure: partnerships and domestic refining

Both countries have moved to embed their mineral strategies within broader geopolitical frameworks, partly in response to the US-led effort to build trusted supply chains outside China. In November 2025 Saudi Arabia and the US signed a Strategic Framework for Cooperation on Securing Uranium, Metals, Permanent Magnets and Critical Minerals Supply Chains. The UAE signed a critical-minerals framework at the 2026 Critical Minerals Ministerial in Washington, building on a US\$1.8bn Orion Critical Mineral Consortium, in which the Abu Dhabi Developmental Holding Company (ADQ) invests alongside the US International Development Finance Corporation and fund manager Orion Resource Partners to finance critical-minerals projects in developing markets. It also signed up to Pax Silica, the US State Department's flagship economic-security initiative covering mineral refining and processing.

Neither country, however, has pursued exclusive alignment with the West. China remains the dominant refiner across virtually all relevant minerals, and the processing expertise to build a domestic refining base cannot, in the near term, be sourced exclusively from Western partners. Saudi Arabia signed nine investment deals in metals and mining valued at US\$9.32bn in late 2024 under its Global Supply Chain Resilience Initiative, spanning Australia, China and India, and targeting copper, rare earths and lithium.

Both states recognise that durable resilience also requires the possession of domestic refining capacity, not just influence over supply chains elsewhere. Saudi Arabia is pursuing capacity through a strategic joint venture between the Saudi Arabian Mining Company (Ma'aden), MP Materials and the US Department of War to develop a rare-earth refinery, and a Tariq Abdel Hadi Abdullah Al-Qahtani (TQB)–Critical Metals Corp non-binding agreement for the development, financing, construction and operation of a rare-earth processing facility, under which Saudi Arabia would secure offtake rights over 25% of Greenland's Tanbreez Project's rare-earth concentrate. Saudi Arabia's Northern Graphite–Al Obeikan venture will develop and operate a battery-anode facility in Yanbu, while Vedanta Copper International has signed a memorandum of understanding (MoU) with Saudi Arabia to set up a 400 kilotonne-per-annum greenfield copper smelter. This project will address the supply of a metal the Kingdom imports almost entirely, and which the IEA predicts could face a supply deficit of 30% by 2035.

In the UAE, Tawazun Council, RTX and Emirates Global Aluminium (EGA) signed an MoU to establish EGA as a new producer of gallium at EGA's Abu Dhabi alumina refinery. This agreement addresses the supply of a choke-point mineral used in semiconductors as well as defence systems, and could position the UAE as the world's second-largest producer. Also in the UAE, Titan Lithium's planned US\$1.4bn plant at Khalifa Economic Zones Abu Dhabi (KEZAD) aims to establish domestic refining capacity for lithium, for which China controls over two-thirds of the world's refining capacity.

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