

Beyond the mine: infrastructure, value chains and alternative capital

19 October 2026



Clifford Chance's 2026 Asia Pacific Energy and Infrastructure conference looked at how developers, investors and financiers are navigating an era of dislocation defined by geopolitical shifts, evolving energy security priorities and changing capital flows. We explored the opportunities created by these dynamics and the investment strategies shaping the next phase of growth across energy and infrastructure.

Our panel session, "Beyond the mine: infrastructure, value chains and alternative capital", looked at what is behind the growing demand for critical minerals and metals and discussed the evolving ways in which mining projects are being structured, financed and monetised across the value chain. The session also considered how mine operators can free up capital and how investors can identify and maximise emerging opportunities across the mining ecosystem.

Capital is increasingly flowing into adjacent infrastructure and assets that support resource development and production. These include energy, water, rail, ports, logistics infrastructure, processing, trading and downstream value chains.

The session focused on four themes:

- **Demand for critical minerals and metals**

Three forces are driving demand for critical minerals and metals: digitalisation, decentralisation and decarbonisation.

Digitalisation reflects rapid growth in AI and data centre capacity, alongside increasing sophistication of electronics, communications infrastructure and semiconductors. Decarbonisation reflects the shift from fossil fuels to renewable energy. Decentralisation reflects the move towards distributed power generation, including captive power plants and household solar installations. Together, these forces have increased demand for metals because each relies heavily on metal inputs.

In particular, the energy transition over the past decade has required a range of metals, from aluminium used in solar panels to copper for grid infrastructure.

The same dynamic extends to battery energy storage systems (BESS) and electric vehicles, which both rely heavily on lithium.

On the supply side, the tension is that demand for critical minerals has grown far faster than the industry's ability to bring new supply online. Developing a new mine typically takes 10-15 years from discovery to first production, after permitting, financing, environmental approvals and infrastructure build-out. This structural lag means that even where demand signals are clear today, supply responses lag by a decade or more, creating persistent tightness and price volatility in key materials such as lithium, copper, nickel and cobalt.

- **Mine-adjacent infrastructure**

Major mine operators are releasing capital from their balance sheets and bringing private investment into mine-adjacent infrastructure. The economics of these investments depend on capital availability and the cost of capital.

Infrastructure funds have become effective at raising large pools of capital. Traditional multi-user infrastructure assets requiring investment, such as telecoms, roads and airports, have become scarcer. This is pushing funds towards mine-adjacent assets with stable income and diversified users. Infrastructure funds typically have a lower cost of capital than mining companies, often around 5%-10% compared with 10%-15%. Selling an infrastructure asset to a buyer with a lower cost of capital can increase its value because the same cash flows are discounted at a lower rate. This can also free up capital for the mining company to reinvest into its core business, where it may generate higher returns. This can make the transaction beneficial to both sides.

For example, major miners in Western Australia's Pilbara region historically built separate rail lines rather than sharing mining infrastructure. This reflected how closely mining companies guarded assets they viewed as core to their competitive position. More recently, some iron ore majors in the region, including BHP and Rio Tinto, have looked to release value from their infrastructure and to cooperate more closely. This marks a significant shift from historic practice.

Structurally, private capital investors often do not take a direct equity-level interest in the underlying asset. Instead, they may use synthetic investments that sit several steps away from the asset while monetising a defined revenue stream, such as throughput volumes or electricity usage.

- **Geopolitical realignment**

Geopolitics is reshaping the supply chains for minerals. Governments increasingly treat critical minerals as national security assets, not ordinary commodities.

Governments across the world, particularly in the US, Europe, Japan, South Korea and Australia, are using a range of strategies to support critical minerals projects and respond to China's dominance in this area.

These strategies include financing projects, building domestic capacity, securing overseas supplies through strategic partnerships,

stockpiling critical minerals and tightening investment screening and export controls. Governments do this through grants, loans, loan guarantees, direct equity, export credit support and political risk insurance, and, in some cases, guaranteeing offtake or minimum pricing. These tools can lower the cost of capital, speed up slow-moving projects and add political weight to strategically important deals.

In the US, several agencies support this strategy. They include the US International Development Finance Corporation, which backs allied-nation mineral projects that feed US supply chains, the Department of Energy, which funds domestic projects directly, and the Export-Import Bank of the United States, which supports export-oriented domestic investment and import-oriented overseas investment.

At the same time, governments are also using policy measures to strengthen domestic processing of commodities. For example, Indonesia's push for domestic metals processing is framed around a national downstreaming agenda aimed at capturing value domestically rather than exporting raw ore. Indonesia has implemented this through several measures, including a mandatory downstream processing obligation, which requires mineral licence-holders to process or refine ore in Indonesia rather than sell or export it in raw form. An export ban on raw ore reinforces this obligation. As a result, licence-holders have built or contracted domestic processing capacity in Indonesia because they have no other route to monetise unprocessed ore.

- **Hybrid / insurance capital**

Insurance capital has become an increasingly significant source of financing for large-scale, long-life infrastructure. These investment structures are tailored to the relevant asset. It is part of the broader private capital market being used to finance mine-adjacent infrastructure.

Insurance capital is typically provided and documented through rated notes. This structure allows insurance funds, which are generally restricted to investment-grade instruments, to invest. Despite this distinct form, it shares features with other private capital structures. It can achieve equity-like accounting treatment and favourable ratings treatment if the structure includes a highly rated counterparty and a reliable revenue stream, such as throughput, electricity usage or lease payments.

Its rated status and risk profile can give insurance capital a competitive cost of capital compared with other financing sources.



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