



Direct access to physical cobalt,
stored in secure facilities



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INTRODUCTION

xCo gives holders direct, fractional access to physical cobalt held in professionally managed storage. By combining a trust structure with Tezos-based smart contracts, xCo makes it possible to own, hold, and transfer cobalt without the financing, warehousing, and minimum lot-size frictions that have historically made physical cobalt an asset for industrial buyers and traders rather than investors.

Cobalt is one of the defining critical minerals of the energy transition. It is essential to nickel manganese cobalt (NCM) and nickel cobalt aluminium (NCA) battery cathodes used in the majority of European and North American electric vehicles, as well as in consumer electronics, aerospace alloys, and a range of industrial catalysts. It is also one of the most geographically concentrated commodities in the world, with the Democratic Republic of Congo (DRC) producing roughly three-quarters of global mined supply and China refining around 80% of the world's cobalt. That concentration has put cobalt at the centre of the broader conversation about supply chain resilience, ethical sourcing, and resource nationalism.

This whitepaper sets out why we have brought cobalt onto metals.io as part of our broader real world asset (RWA) digitisation roadmap, how the xCo smart contract works, who the key partners are, and how xCo compares honestly to the alternatives already available to investors. The intent is to be straightforward about what tokenisation does and does not solve.

Why cobalt, and why now

The following factors are relevant to understanding current cobalt market dynamics.

The first is the structural shift in supply caused by DRC policy. In February 2025 the DRC, which accounts for over 70% of global mined cobalt supply, imposed a full export ban on cobalt hydroxide. The ban was lifted in October 2025 and replaced with a formal quota system,

capping exports at 96,600 tonnes for 2026 with a similar level set for 2027. That figure is less than half of the DRC's 2024 production of around 211,000 tonnes. The Authority for the Regulation and Control of Strategic Mineral Substances' Markets (ARECOMS) administers the regime, with 87,000 tonnes distributed to producers on a pro rata basis and 9,600 tonnes retained under discretionary control. Fastmarkets projects a structural shortfall of around 10,700 metric tonnes against expected 2026 demand of approximately 292,300 tonnes, with Benchmark Mineral Intelligence assessing that ex-DRC cobalt stocks could be reduced to around one month of demand by Q4 2026. Prices have moved accordingly, with cobalt metal entering 2026 at around \$56,000 per tonne, more than double the level seen at the start of 2025.

The second is the bifurcation of battery chemistry between cobalt-containing NCM/NCA cathodes and cobalt-free lithium iron phosphate (LFP). LFP surpassed nickel-based chemistries in global EV battery deployments for the first time in 2025, accounting for more than half of all EV batteries installed worldwide. This is mainly a Chinese phenomenon, driven by cost and safety in mass-market vehicles. In Europe and North America, cobalt-containing NCM still dominates 80% to 90% of EV production because OEMs continue to prioritise energy density and range. The result is two demand profiles moving on different fundamentals, with Western auto and grid storage demand likely to remain cobalt-dependent for the foreseeable future.

The third is the growing importance of ethical sourcing and provenance. Cobalt has had well-documented issues with artisanal mining practices in parts of the DRC, and OEMs subject to supply chain due diligence obligations under regimes such as the EU Battery Regulation and equivalent US legislation are paying close attention to where the metal in their products has come from. A tokenised structure where the underlying material is sourced from named industrial producers, held in Western warehousing, and transferable on chain creates a clean provenance trail. We see this as a meaningful differentiator for investors with ESG mandates, although it does not eliminate broader questions about the DRC's cobalt industry.

Sources: Benchmark Mineral Intelligence (September 2025); Cobalt Institute Cobalt Market Report; Fastmarkets December 2025 update; S&P Global Commodity Insights; ARECOMS public statements; USGS Mineral Commodity Summaries 2025; IEA Global EV Outlook 2025; Johnson Matthey; Mining Technology.



THE COBALT MARKET TODAY

The physical market and its frictions

Cobalt is traded primarily through long-term offtake agreements between major producers (Glencore, CMOC, ERG, Eurasian Resources, and a number of smaller miners) and refiners or end users. A spot market exists but is relatively thin, with most physical metal moving on contract terms. There is an LME cobalt contract, but it trades in modest volumes compared with copper, aluminium, or nickel, and it is widely viewed as a reference rather than the primary clearing venue for physical material. Most physical cobalt sits in approved warehouses globally and is sold against published market reference prices.

Physical ownership at scale is therefore possible but operationally heavy. Minimum lot sizes for cobalt cathode or briquette purchases through OTC channels typically start at one tonne and scale up from there. At early 2026 prices of around \$56,000 per tonne, a one-tonne minimum implies a USD 56,000 minimum ticket, before any consideration of warehouse storage costs, insurance, and the financing of working capital. The market is not designed for investors looking for sub-tonne fractional ownership, and settlement timelines, payment terms, and warrant transfer mechanics are all geared toward industrial buyers.

In the current quota environment, even institutional buyers are facing difficulty. Industry reports suggest that less than half of Q4 2025 and Q1 2026 quota allocations resulted in actual material shipments, with administrative bottlenecks and logistical delays compounding the formal export cap. CMOC, one of the largest producers, reported holding a quota of 6,650 tonnes for Q4 2025 and only expected first shipments to leave DRC ports in January 2026 after technical and customs checks. This is a market where physical availability is genuinely tight, not just expensive.

Other ways to gain cobalt exposure

There are several existing routes for investors who want cobalt exposure. Each solves a different problem and each has its own trade-offs. The table below sets out the main alternatives honestly.

Method	Direct physical ownership	Fractional sub-lot size	Management or wrapper fees	24/7 settlement
LME cobalt futures	No (thinly traded reference)	No (1t contract size)	No (margin and broker costs)	No
Cobalt ETPs (e.g. WisdomTree)	No (fund holds futures)	Yes	Yes	No

Method	Direct physical ownership	Fractional sub-lot size	Management or wrapper fees	24/7 settlement
Cobalt miner equities	No (equity exposure)	Yes	No	No
Physical OTC purchase	Yes	No (typically 1t+)	Storage and financing costs	No
xCo	Yes (beneficial ownership)	Yes (no minimum)	Annual fee paid via dilution mechanism	Yes

xCo is designed to address frictions associated with existing routes to cobalt exposure. ETPs give accessible exposure but are wrappers that hold futures and charge management fees. Miner equities give leveraged exposure but also carry operational, jurisdictional, and equity-market risk. Direct OTC purchase gives genuine ownership but requires institutional infrastructure and a meaningful minimum ticket. xCo gives holders beneficial ownership of physical cobalt at any size, with the position held in secure Western warehousing and transferable on chain at any time. For investors with ESG mandates who want exposure to cobalt without the supply chain due diligence overhead of bilateral purchases.

Comparison is illustrative and reflects typical features of each instrument. Specific fees, lot sizes, and settlement terms vary by provider and venue. Investors should consult product documentation for each alternative.



SMART CONTRACT DESIGN

How the xCo smart contract works

xCo is designed so that holding a token on a Tezos wallet means holding a real, fractional beneficial ownership claim on physical cobalt sitting in a secure warehouse. The structure follows the same English trust law framework that underpins xU3O8, with the trustee holding legal title to the cobalt for the benefit of token holders.

The smart contract uses a layered ownership ledger. The primary layer records, in kilograms, the total amount of physical cobalt held by the trustee for beneficial owners. The secondary layer records the fractional ownership of each wallet holder in that pool. To pay the service providers that support storage, and administration, a treasury wallet is credited with fractional ownership on a daily basis. This works in a similar way to equity dilution in traditional markets and means that each user wallet's share of the underlying cobalt reduces gradually over time as fees accrue. The annual fee schedule will be published and updated monthly.

The balance of xCo credited to a wallet represents proportional ownership of the physical cobalt held in trust. The price of xCo is determined by supply and demand dynamics across approved trading venues. There is no formal peg to a published cobalt reference price. Market makers and arbitrageurs accessing approved venues are likely to keep xCo broadly aligned with the underlying physical market, but xCo is not a synthetic tracker and there is no creation or redemption mechanism that forces a tight peg in real time.

Trading and transfer

Only approved wallets, either those of approved centralised exchanges or wallets that have been whitelisted for use in the dApp, can be used to acquire xCo. Trading in or out of xCo must happen at one of these approved venues. The approved trading venues act as price discovery

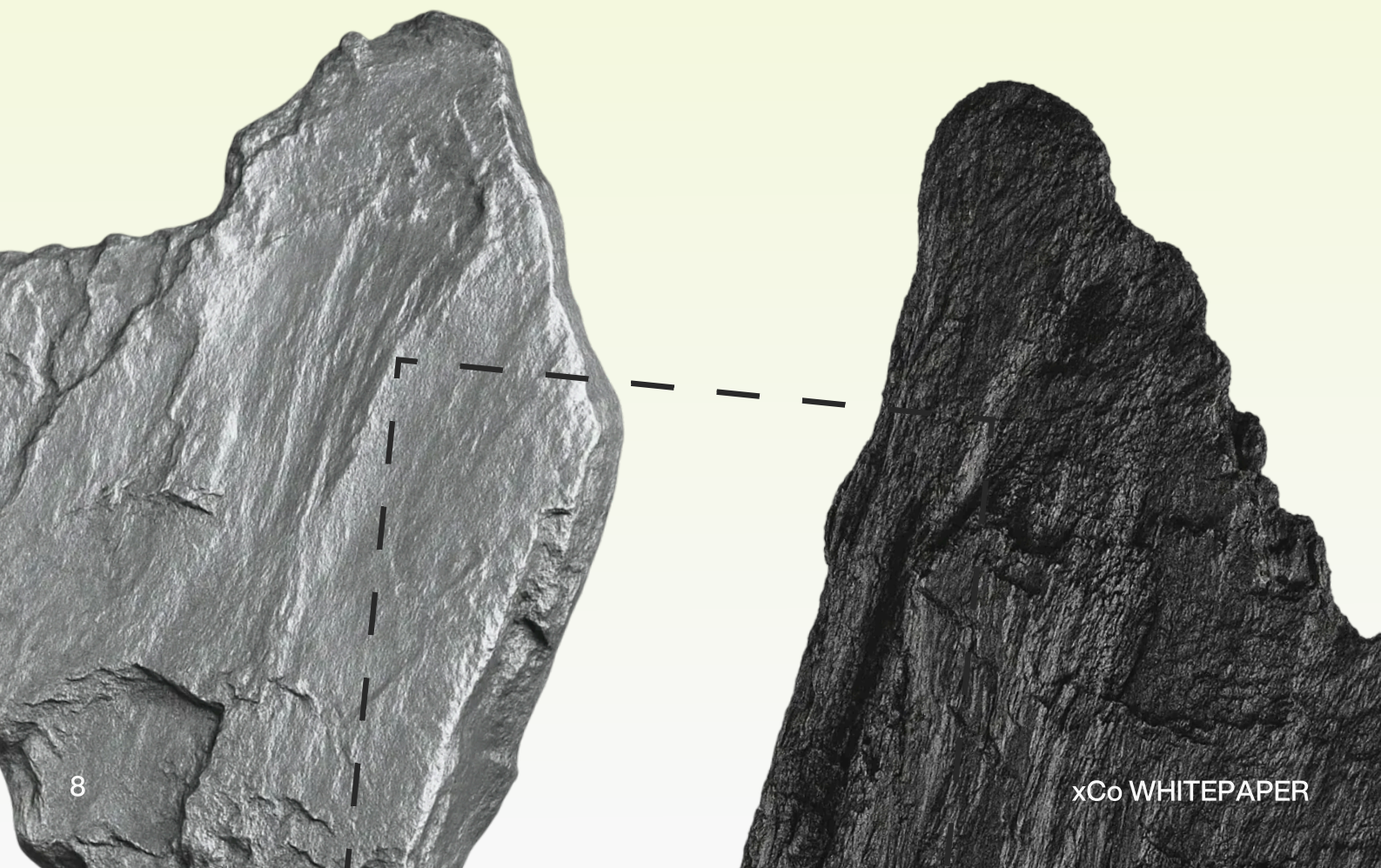
points. Investors who wish to take physical delivery can do so through a cobalt custody account held with the relevant warehouse operator, subject to the standard minimum delivery sizes that apply at the warehouse level. For the avoidance of doubt, the absence of a minimum purchase size applies to xCo itself, not to physical redemption.

Fees

Annual fees cover storage, insurance, trust administration, and platform costs. These are accrued daily through the dilution mechanism described above, using the formula:

$$\text{Daily treasury credit} = (\text{Annual Fees} \div 365) \times \text{Aggregate User xCo Balances}$$

Because xCo gives investors beneficial ownership of physical cobalt rather than exposure through a fund or special purpose vehicle, the structure removes management and SPV-level fees that are common to ETP wrappers. Storage costs for cobalt are modestly higher than for some other industrial metals because of handling requirements for cobalt sulphate and hydroxide intermediates, although metal cathode is straightforward to store. The intent is to be competitive on total cost of ownership against the comparable fund alternatives over a meaningful holding period.





KEY PARTNERS

The xCo arrangements depend on a small number of regulated counterparties, each with a specific role. We have chosen partners who are established in the physical metals market and who can evidence the underlying holdings.

<p>Steinweg / C. Steinweg or Metal</p>	<p>Physical custodian of the underlying cobalt, with material held in LME-approved or equivalent warehouse facilities. Steinweg is one of the longest-established independent metals warehousing operators globally and provides the trail and inventory reporting that underpins the trust arrangements. All material is sourced from named industrial producers to support clean provenance.</p>
<p>Archax</p>	<p>FCA-regulated digital securities exchange and custodian, responsible for tokenisation, trustee account set-up, and RWA administration. Archax holds permissions in the UK for arranging deals in investments, custody, and operating a multilateral trading facility.</p>
<p>Trillitech</p>	<p>Lead Tezos ecosystem contributor responsible for the dApp, relevant integrations, and the wider technical ecosystem in which xCo trades. Trillitech is the primary engineering organisation supporting the Tezos protocol.</p>
<p>OTC Suppliers</p>	<p>Physical cobalt is sourced through established OTC broker relationships with several supply counterparties. This is intentionally a multi-source arrangement to avoid single-supplier concentration and to provide flexibility on grades, origin, and warehouse locations.</p>
<p>Distribution Partners</p>	<p>Approved centralised exchanges and onboarding partners, who manage trading access, KYC and AML, and investor acquisition for the segments of the market they serve.</p>



IMPORTANT CONSIDERATIONS

This document is for informational purposes only and does not constitute an offer or invitation to buy any financial product. xCo may not be available in all jurisdictions and is subject to local regulatory restrictions.

Cobalt is an industrial commodity with a highly concentrated supply base. Its price is influenced by DRC mining and export policy, refining capacity in China, technological substitution (in particular the share of cobalt-free LFP battery chemistries), broader macroeconomic conditions, and currency movements. Past performance is not indicative of future results.

The value of xCo can move down as well as up, and investors may not recover the amount they originally invested. The value of xCo may diverge from published cobalt reference prices during periods of market stress, low liquidity, or technical disruption at trading venues.

Forward-looking statements about market structure, supply, demand, and policy are based on third-party sources cited in this document and reflect those sources' views at the time of publication. They are not forecasts by the issuer and should not be relied upon as such.

Investors should read the full xCo product documentation, including the fee schedule, and consider taking independent financial and tax advice before investing.



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