cg/ Capital Markets
Canaccord Genuity

Canadian Equity Research
9 December 2024

Initiation of Coverage

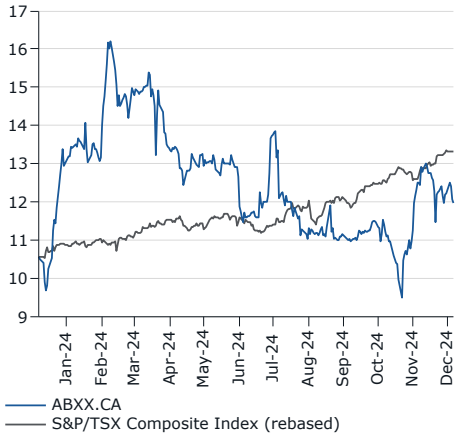
Abaxx Technologies Inc.
Financial Exchanges

Rating	Price Target
BUY	**C$20.00**
ABXX-CBOE	Price **C$11.82**

Market Data

52-Week Range (C$) :	NA - NA
Avg Daily Vol (000s) :	25
Market Cap (C$M) :	393.6
Shares Out. (M) :	33.3
Dividend Yield (%) :	0.0
Net Debt (Cash) (C$M) :	(28.2)

FYE Dec	2025E	2026E	2027E	2028E
Revenue (C$M)	7.1	18.0	39.6	80.0
EBITDA Adj (C$M)	(28.2)	(21.6)	(5.1)	30.6
EBITDA Margin (%)	(398.3)	(120.2)	(12.9)	38.2
EV/EBITDA (x)	(13.5)	(19.3)	(88.1)	15.6
EPS (C$)	(1.09)	(1.05)	(0.56)	0.50
P/E (x)	(10.9)	(11.3)	(21.0)	23.8
FCF /Shr (C$)	(0.91)	(0.94)	(0.47)	0.51
FCF Yield (%)	(7.7)	(7.9)	(4.0)	4.3



Source: FactSet

Priced as of close of business 6 December 2024

Abaxx is creating Smarter Markets by using advanced financial technology and market infrastructure to address global challenges like the energy transition.

Abaxx Technologies is the majority owner and operator of Abaxx Exchange and Abaxx Clearing (Singapore), providing centrally cleared, physically deliverable commodity futures and derivatives for improved price discovery and risk management.

Insider Ownership: Mgmt./directors: 13.9% (basic); 16.0% (fully diluted)

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A futures exchange built for the energy transition

Investment Recommendation

We are initiating on Abaxx Technologies Inc. (ABXX-CBOE) with a BUY and a $20.00 target. Abaxx operates a newly built commodities derivatives exchange and clearinghouse in Singapore, the first such endeavour in nearly a decade and a half. The futures product offerings are tailor-made to tackle the deficiencies plaguing many of the commodities connected to the global energy transition (e.g., LNG, transition metals, carbon credits) and built following extensive research and consultation with industry participants over several years. We believe this positions Abaxx to gain substantial market share over time through its fully reimagined derivatives products.

A substantial market opportunity: We note that the three initial product categories that have already launched, namely LNG, nickel sulphate, and carbon credits futures, constitute a combined TAM of just under $1.6B, and Abaxx intends to launch a range of additional products, including lithium carbonate and gold futures.

Prospects of success: Given the Exchange launched in June 2024 and the company is currently onboarding market participants (e.g., other clearing members, market makers, trading firms), visibility around the shape of the ramp-up in trading volumes is low. However, we believe there is a strong case to suggest that Abaxx's Singapore Exchange could secure a meaningful share in its product categories. First, much of the heavy lifting in terms of building the infrastructure and regulatory licensing is already done, and onboarding of market participants is going well. Second, we cite the uniqueness of the product with specifications designed based on extensive consultation. Third, Abaxx's team is compelling, in our view, comprising highly experienced operators, a rarity in a company of this market cap.

Financial outlook: We have been conservative in estimating the development of trading volumes for the launched products. We have developed our forecasts using the futures markets of adjacent commodities (e.g., natural gas) alongside a mathematical model to capture adoption rates of new products (Bass diffusion model). On that basis, we estimate that the LNG products alone could lift from $1.9M in revenue in 2025E to over $100M by 2029E. Overall, we have revenues reaching $80M in 2028E, $139.1M in 2029E, and $187.5M in 2030E. Importantly, Abaxx is likely to enjoy steep operating leverage as the top line ramps up since much of the infrastructure is already built, culminating in adj. EBITDA breakeven by late 2027E and margins extending to 69% by 2030E. In terms of balance sheet funding, we have assumed debt financing of $10M in F25 and $50M in F26. On top of our formal forecasts, there are several layers of potential upside to the model in terms of new product launches, higher penetration rates (e.g., LNG penetration can go as high as 40-60% vs. our 20% estimate), technology, and market data revenues.

Valuation of $20.00/sh using a DCF and multiple-based approach; we rate Abaxx a BUY: In estimating our valuation for Abaxx Technologies Inc., we have adopted an EBITDA multiple-based approach (11x), backed by a DCF valuation. The early stage of the Singapore exchange presents challenges from a valuation perspective, forcing us to rely on outer year (~2030) projections on which to apply our target multiples. However, in addition to a fairly conservative approach to our forecasts (in particular non-LNG products), we have also leaned on a higher WACC (14.4%) to mitigate the impact. We also highlight that, revenues and profitability projections aside, having the core infrastructure built and licences secured alone could constitute US $250-350M (equivalent to current market cap) in value. This is based on the transaction value of a comparable entity (Singapore Mercantile Exchange), which was acquired by ICE in 2013.

For important information, please see the Important Disclosures beginning on page 45 of this document.

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Executive summary

Investment Recommendation

We are initiating coverage of Abaxx Technologies Inc. (ABXX-CBOE) with a BUY rating and a $20.00 price target.

We see Abaxx Technologies as an innovative commodities futures exchange that has been built from the ground up to address the modern realities in the broader commodities sector. Energy transition features prominently in Abaxx's thesis as a central focus of its Singapore-based exchange, which is developing futures products that directly address changing needs as a result of this global transition. A key illustration is the LNG market, where a number of macro level factors have pushed up the significance of LNG as a transition fuel, although the existing market structures appear to be inadequate in terms of providing products for the industry to manage price risk and volatility, in our view. This is evident in the relatively low level of futures trading volumes in this commodity (compared to natural gas and oil). This, in turn, could compromise the longer-term development and investment within the industry. Abaxx's LNG products are built from scratch to ameliorate the pain points and offer a substantially more compelling option for market participants, in our view. As we discuss in detail below, the introduction of physically settled contracts versus the existing market norm for LNG of financially settled, is a key differentiating idea for Abaxx. Similarly, government efforts to push through objectives around carbon emissions and electrification are also driving opportunities around carbon credits futures as well as futures products for nickel sulphate (main compound in producing nickel-based lithium-ion batteries for EVs) and lithium carbonate.

Key elements of the investment thesis

It is a brand new exchange and clearinghouse, thus scaling is the central objective: Abaxx's Singapore exchange and clearinghouse opened on June 28, 2024; hence, there is a considerable degree of patient work that is required to connect the ecosystem of FCM (Futures Commission Merchants), other clearing members, liquidity providers, brokers, etc. As is generally the case with a marketplace environment, volume begets volume. Thus, Abaxx has to manage the introduction of new futures products alongside the buildup of activity (traded volumes, open interest) in existing products. There has been considerable progress made so far with five clearing firms, six merchant trading firms, and nine financial trading and market making firms being onboarded already. In terms of the live products, management has noted that it is at a point where the Gulf of Mexico LNG contract, in particular, have daily pricing and that the JREDD and CORSIA phase one contracts (voluntary carbon) have bids and offers available.

Difficulty of replication: Abaxx is one of the first commodities futures exchanges to be launched with its own clearinghouse in more than a decade. The work done to secure regulatory approvals (i.e., Recognized Market Operator (RMO) license for the exchange and The Monetary Authority of Singapore (MAS) Clearinghouse (ACH) license) and set up the infrastructure is substantial and multi-year in nature. This significantly lowers the threat of new entrants with similar product features. As the aforementioned ecosystem of FCMs and liquidity providers build up, the moat gets even stronger. We can also argue that it would also not be a straightforward exercise for the existing incumbents in this market (Intercontinental Exchange (ICE-NYSE | Not Rated), Chicago Mercantile Exchange (CME), etc.) to mimic Abaxx's products due to investments made in their own portfolios and risk of cannibalization of their own products.

Abaxx's CEO (and founder), Josh Crumb, summed it up best, in our view, during a recent investor update:

"We opened a store, a very difficult store to open on a very difficult island to get to with the moats. We've got a few ferry services to that store now. And, so really, over the next year, it's about adding the bridges and tunnels, the connections to that market."

Operating leverage: As we have illustrated in our financial projections within this report, we believe high operating leverage could be a hallmark of Abaxx's thesis as its products grow and reach maturity. With the infrastructure already fully built and key players in the market ecosystem being onboarded, adding new products comes with minimal incremental costs. As a result, we have Abaxx's EBITDA margins extending to nearly 70% by 2030E. We note that ICE's EBITDA margins are currently near 66% and CME's at 70%.

This is one of the main reasons why Abaxx opted to set up its own clearinghouse. First, it enables the company to innovate quicker in terms of creating new futures products. This is particularly true after all the key market participants are connected to the exchange and the clearinghouse, where the ramp-up could be that much faster. Second, the absence of the need to use a third-party clearinghouse could result in higher margins in the longer run. It is also relevant to note that having one's own clearinghouse could facilitate stronger relationships with relevant financial institutions which directly connect to the clearinghouse, and this could set up further opportunities for the exchange.

Positioned to emerge as a major player over time: Given Abaxx is only now emerging from the pre-revenue stage, there is a natural question around its prospects of success, challenges along the way, and the shape of the growth curve. We discuss this later in the financial outlook section; however, with respect to the former, we believe there is a strong case to suggest that Abaxx's efforts are likely to lead to a successful result longer term.

First, we cite the depth of the work done so far. As touched on above, the more difficult milestones around setting up the infrastructure and regulatory approvals have been surpassed and onboarding appears to be progressing well.

Second, the uniqueness of the product offerings is a factor, in our view. These have been designed with substantial involvement from relevant market participants and are built to redress long-running challenges in the relevant market spaces. We note that even as of a year ago, Abaxx had formal intentions to trade from as many as 43 market participants, including 14 global merchant trading companies, seven energy companies, seven global commodity trading companies, six utility companies, three mining companies, etc. The company has also effectively used its "Smarter Markets" weekly podcast to highlight the market needs and Abaxx's product fit, especially around its case for physical delivery settled futures.

Third, Abaxx's team, in our view, is compelling. Under Josh Crumb's leadership, we note highly experienced operators like Joe Raia, former managing director and head of global commodities futures at Goldman Sachs, who also headed up metals and energy Products at CME; Nancy Seah (CEO of Abaxx Exchange), who was previously head of energy risk management at BP and head of commodities sales Asia at Goldman; Dan McElduff, who was involved in developing Clearport and the gas and power markets for NYMEX. We also note the more recent addition of Jeff Currie to the board, the former global head of commodities research at Goldman Sachs. We believe that these appointments speak to the credibility of the project and its chances of success.

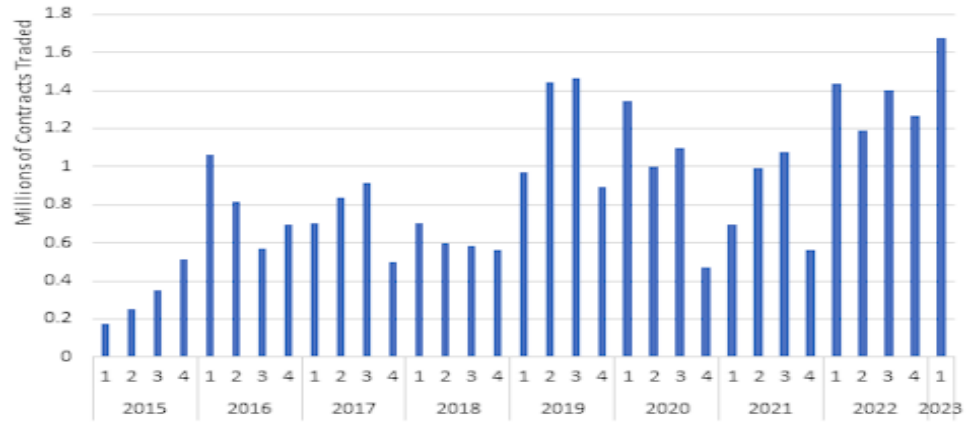
In terms of tracking the progress of the ramp up, we would be focused on continued onboarding momentum, and starting mid-2025 it would be very much a case of tracking trading volumes. For instance, with respect to LNG a key milestone to follow would be the 20,000 contract per day level which would likely take the company to financial break-even. Additionally, trading activity surpassing ICE's Platts JKM product (discussed within this report) which represents the central LNG based futures product currently, would also be a key milestone.

A focus on growth products: Connected to the energy transition, the high growth rates of some of the underlying commodities also bolster Abaxx's longer-term growth prospects. In addition to the rising significance of LNG, and we note that the nickel sulphate market is projected to grow at 22% (according to Roskill), while for

carbon credits we have seen growth forecasts of 17.5% to 32% to 2030 (CFA Institute).

A noteworthy precedent is around iron ore futures where one can draw comparisons to our thesis on LNG. Macro factors drove the demand and centrality of iron ore (in particular the surge in China's steel industry). This led to vacillations in market pricing and existing pricing benchmarks in the industry becoming obsolete in terms of offering sufficient price risk management. In turn, this led to a rise in iron ore futures trading with both the Dalian Commodity Exchange (2013) and The Singapore Exchange (2009) launching iron ore futures listings. Over the years trading volumes rose sharply, reaching 25M contracts traded (cumulatively) by 2022.

Figure 1: Ramp up in quarterly trading volumes following launch of SGX Iron Ore 62% Futures, 2015-2023

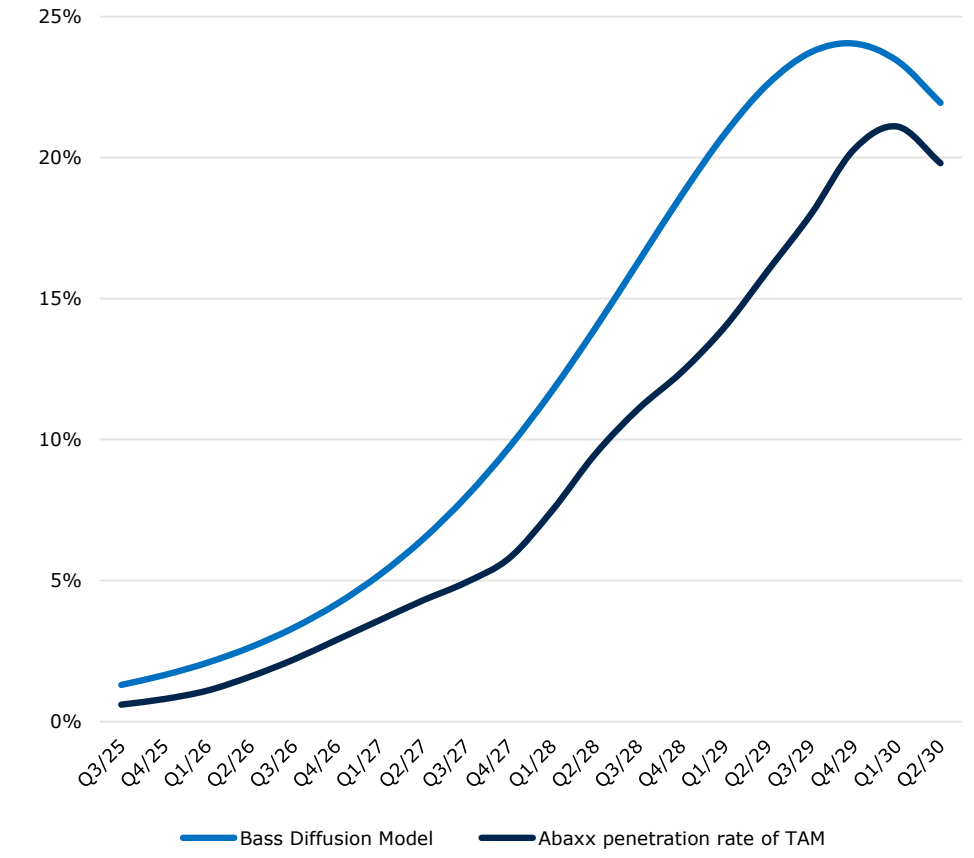


Source: FIA

Financial forecasts

Given we are at the onboarding stage of the exchange, we have been quite prudent in forecasting the shape of the ADV (average daily volumes) development curve. We focused mainly on establishing a reasonable penetration rate of the market 5-6 years post launch and used a number of markers (i.e., other commodities futures products that have reached maturity) to assess its reasonableness. With respect to the rate of the ramp-up through 2025-2030, we relied on the Bass mathematical diffusion model (a mathematical model that predicts the rate of adoption of new products). To be conservative, we have taken a 20% discount to the adoption rate implied by Bass to reflect a number of mitigating conditions and to be more conservative at this early stage.

Figure 2: Forecasted shape of ramp up for LNG revenues

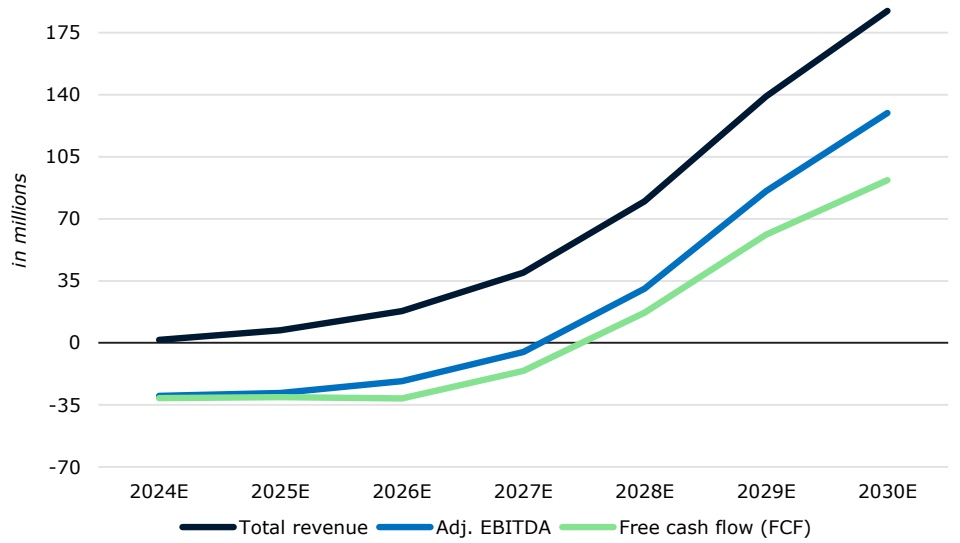


Source: Canaccord Genuity estimates

On that basis, we estimate that the LNG products alone could lift from $1.9M in revenue in 2025E to over $100M by 2029E. We estimate that LNG alone could represent nearly 75% revenues in 2029E ($103.2M) and 2030E ($134.1M). In comparison, the two main natural gas contracts (ICE's North American natural gas and NYMEX's Henry Hub natural gas - both physically settled) aggregate to approximately US$300M in revenues, at this point. We have been even more cautious in our carbon futures and nickel sulphate futures forecasts and not included estimates for additional products expected to be launched in 2025 (including lithium carbonate and gold).

All said, we have consolidated revenues reaching $80M in 2028E, $139.1M in 2029E, and $187.5M in 2030E. Importantly, as alluded to above, we believe Abaxx is likely to enjoy steep operating leverage as the top line ramps up, culminating in adj. EBITDA break-even by late-2027E and margins extending to 69% by 2030E.

Figure 3: Revenue, adj. EBITDA and FCF forecast



Source: Canaccord Genuity estimates

In terms of the balance sheet, we have incorporated two debt funding assumptions of $10M in 2025 and $50M in 2026. We have assumed debt cost of 10%. The cash balance exiting Q3/24 was $28.2M, with the quarterly burn rate in the $6-7M range.

Valuation – A target price of $20.00/share

In arriving at our target price for Abaxx Technologies Inc., we have adopted an EBITDA multiple based approach, backed by a DCF valuation. Given the stage of the project, we have to rely on outer year (2030) projections on which to apply our target multiples. However, in addition to a fairly conservative approach to our forecasts themselves (in particular non-LNG products), we have also leaned on higher WACC (14.4%) estimates to mitigate the impact. The terminal multiple we have used of 11x EV/EBITDA represents a significant discount to the sector average of 16x.

This returns a valuation of $20.00/sh, representing 69.2% upside to the current share price. We note that at the current share price of $11.82/sh, Abaxx's market cap stands at $394M. We could argue that base infrastructure alone (inclusive of licences but ex-revenues and go to market efforts) could comfortably be deemed worth US$250-350M. At the mid-point, this translates to a share price of $12.50, in line with the current share price. We base this on an interesting precedent – the case of the Singapore Mercantile Exchange (SME) which was founded in July 2008. In August 2010, following regulatory approvals, the SME started trading, mainly focusing on derivative contracts for gold, crude oil, and the euro-US dollar. In 2013, ICE announced the acquisition of SME for US$150M. ICE's rationale was broadly around diversification and offsetting pressure on legacy US equities trading revenues. Like Abaxx, SME had its own clearing and trading licence, which was deemed valuable to any global operator looking to set up in Asia. We arrive at our US$250-$350M value range based on reflating the 2013 transaction valuation at 5-8% rates. We argue that this sets a solid base valuation for Abaxx's stock, even in the backdrop of variations in the ramp-up of trading volumes versus expectations.

Risk factors

Uncertainty around the financial projections due to early stage of exchange launch: While we have used various comps and adoption models to arrive at a reasonable ramp-up projection, there is naturally a degree of uncertainty around the shape of the ramp for a brand-new exchange and clearinghouse. At this point, management has earmarked the first 12 months since launch as the 'onboarding

phase', to be followed by a more aggressive market penetration phase. With that said, driving volumes in an exchange involves parallel progress across the ecosystem of clearing firms, trading companies, market makers, etc., and a bottleneck in one area could delay the progress of the overall project.

Financing risks: As we allude to in the financials section, we expect to see EBITDA level burn through to mid-2027, which implies financing requirements in F2025 and F2026. While the financing could be achieved through equity or debt, changes to market conditions or a slowdown in the rate of adoption of key products could represent challenges to the balance sheet.

Competitive action of incumbents: The dominant operators in this sector, mainly ICE and CME, operate in the same space as Abaxx. As discussed within this report, these operators are active with their own products, particularly in LNG and carbon futures. If there is evidence of meaningful uptake in Abaxx's products, these competitors may attempt to reconfigure their own product offerings to realign with market needs and position themselves more directly against Abaxx's value proposition. We, however, recognize that larger organisations do not generally pivot quickly and are also hesitant to make sharp changes due to the risk of compromising existing revenue lines.

Loss of key personnel: We underline our view that the strength and depth of experience of the team assembled by Abaxx is central to its investment case. In that context, loss of key executives, especially early on in its development, could serve to weaken investor sentiment and potentially impact the rate of progress for the Exchange.

Changes to market conditions: In the case of LNG, we note that the demand for reliable futures products is partly driven by phases of sharp pricing variance between hub-based natural gas prices and LNG. However, extended periods of highly correlated pricing could reduce the apparent attractiveness of and the urgency for the LNG-based futures solutions.

Political risk: Changes in government policy, in particular in the US, could represent risk factors to parts of Abaxx's thesis. For instance, the possibility of the incoming Trump administration interrupting participation of the US airline industry in CORSIA could affect Abaxx's carbon futures growth trajectory, With that said, we note that this remains a low probability event at this point with state-level regulations also providing some protection against sudden changes in policy at the federal level.

Corporate profile

Abaxx Technologies was founded in 2018 by industry veterans from Goldman Sachs, NYMEX, CME, SGX with a goal of building an infrastructure for commodities critical to the energy transition. The company earns revenue through licensing its software and intellectual property, with a focus on expanding its royalty model in the financial services sector.

The core business driver for Abaxx Technologies is its prized exchange and clearinghouse that focuses on centrally cleared, physically deliverable commodities futures and derivatives for better price discovery, risk management and transparency. Abaxx launched a fully integrated commodities derivatives exchange in Singapore earlier this year. Unlike conventional exchanges that often rely on third-party clearing services, Abaxx's decision to have its own in-house clearinghouse is a strategic move as it creates high barriers to entry due to onerous and cumbersome regulatory requirements.

Another key focus for Abaxx is the development of digital identity software and cloud-based workflow applications, with the objective of facilitating a more frictionless, high-speed trading process and enhancing data security. Abaxx also leverages its own technology to enhance the efficiency of the exchange's operations, including security, compliance, and transparency. This is important because it avoids costly cloud migrations in the future which could increase opex. For instance, traditional exchanges have just started to migrate their platforms to the cloud – *Nasdaq partnership with Google Cloud, and CME with Microsoft.*

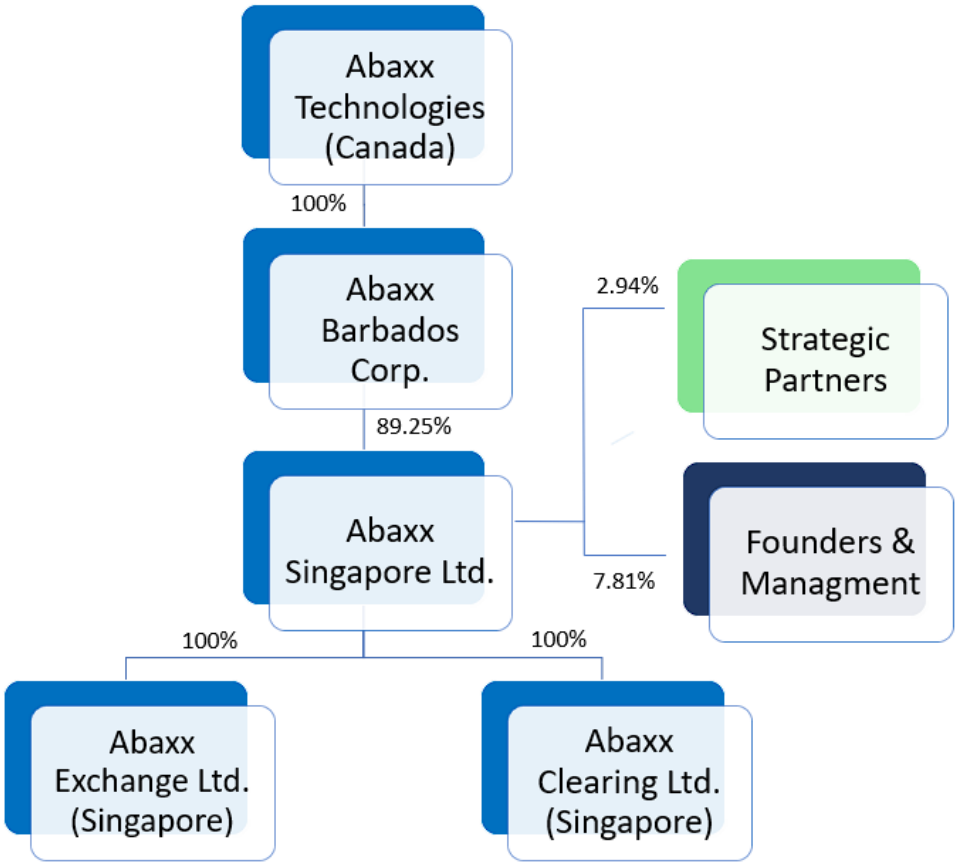
Business strategy

A well thought out strategy is to find opportunities where competitive forces are the weakest. Abaxx found its opportunity within the umbrella of the energy transition. The firm's strategy is based two pillars: (1) commercializing its exchange and clearinghouse; (2) developing financial software architecture and licencing it to B2B partners, including its own exchange and clearinghouse.

At the outset, Abaxx's strategy is to focus on trading physically settled futures contracts in LNG, carbon credits, and nickel sulphate with five new products coming at the end of this year. The company has already launched three LNG contracts and two carbon credits this year. To execute this strategy, Abaxx is in the process of onboarding 37 firms including six clearing firms (five already onboarded), five brokerage firms (10 onboarded) and 16 trading firms (six onboarded). The firm believes that LNG trading volumes could grow sharply in the upcoming years, potentially placing it in the top 10 derivative contracts list in terms of ADV due to the broader energy transition and a shift from term contracts to spot contracts.

Abaxx is focused on enhancing the global commodities trading market with its advanced technology. As part of its *Global Commodities Trading Infrastructure 3.0* strategy, the company is developing new communication protocols and proprietary software for commodity trading. This includes the use of machine learning, blockchain, and self-sovereign digital identities (ssdID). Abaxx has created key products such as Verifier, Messenger, and Vault to improve trading efficiency and security. The firm plans to sell its technology to third parties in exchange for royalties.

Figure 4: Pro forma corporate structure



Source: Abaxx Technologies

Leadership team adds genuine credibility to the thesis

We believe that the quality of the team behind Abaxx is a crucial factor in considering the credibility of this project. Both in terms of the management team and the board of directors, Abaxx has assembled a team with significant breadth and depth, which we expect investors should place significant stock in as they assess the prospects of a pre-revenue venture.

Abaxx Technologies is led by **Josh Crumb, founder and CEO**, previously a Goldman Sachs executive director and senior commodities strategist. Mr. Crumb has an extensive history in the metals space and previously founded a gold bullion dealer, Goldmoney Inc (TSX: XAU), and a precious metals jewelry company, Mene Inc (TSXV: MENE).

Nancy Seah is the **CEO of Abaxx Exchange** in Singapore. She joined the firm in August 2020. Ms. Seah has an extensive background in energy trading and risk management following her tenure at BP as Head of Energy Risk Management. In a recent SmarterMarkets podcast, Ms. Seah discussed BP's strong risk management culture and its influence on her. After her tenure at BP, Ms. Seah moved to Goldman Sachs, where she was managing director and head of commodities sales Asia. In total, Ms. Seah has over 25 years of experience in risk management and commodities.

Joe Raia is the **Chief Commercial Officer** of **Abaxx Exchange**. Mr. Raia was previously managing director, head of global commodity futures at Goldman Sachs. He also headed metals and energy products for CME. More recently, Mr. Raia was managing director, Global Energy Clearing and execution head at RJ O'Brien.

Dan McElduff is the **President, Strategy & Development** at **Abaxx Exchange**. Previously, Mr. McElduff was involved in developing Clearport and the gas and power markets for NYMEX as senior director. His experience in natural gas and futures exchange expertise is key to the development of Abaxx Exchange.

David Greely is the **Chief Economist**. Mr. Greely was a managing director in global investment research at Goldman Sachs, where he played the role of chief commodities strategist and head of energy research. Subsequently, he joined Bridgewater Associates as portfolio strategist.

Thom McMahon was a **co-founder of Abaxx** and sits on the board of directors. Mr. McMahon was instrumental in taking Clearport to Asia and has extensive experience in Singapore, Japan, and the broader Asian region. He was also the CEO of the Singapore Mercantile Exchange from 2009 to 2011.

In addition to management, we note **Jeffrey Currie** joined Abaxx as a non-executive director in 2023. Mr. Currie was global head of commodities research at Goldman Sachs.

Recent financings

Closing of strategic financing in Abaxx Singapore: On January 10, 2024, Abaxx announced the closing of its best-efforts financing for gross proceeds of US$27.3M. The financing comprised 953,787 preferred shares that were reserved for strategic partners and 4,837,392 ordinary shares (and a similar number of warrants). The company indicates key players in the space such as CBOE, TLW, and Traxys came in as strategic partners.

Most recent strategic Financing: Abaxx Technologies has made progress in its strategic financing following the onboarding of key commodity traders and a bank clearing firm in late October. On October 21, 2024, the company announced a non-brokered private placement of 215,000 common shares at $13.00 per share, to raise $2.8M. The first tranche closed on November 22, 2024, issuing 162,000 shares for gross proceeds of $2.1M, with a second tranche expected to close later in the quarter.

Figure 5: Financing summary

Close Date	Amount raised	Deal Type	Description
08 Apr '21	$19.6	Equity	Bought Deal Follow-On
26 Apr '23	-	Equity	New ATM Auth 30 M CAD
29 Sep '23	1.0	Debt	10% ABXXF15 Dec '23 Private Placement Offering
23 Oct '23	5.6	Equity	ATM From 26 Apr '23 Auth Amt Remaining C$24.355M
21 Nov '23	30.7	Equity	Private Placement Offering
18 Mar '24	13.8	Equity	Bought Deal Follow-On
22-Nov-24	2.1	Equity	Private Placement Offering

Source: FactSet

Recent Developments

Commercial Developments: Abaxx has onboarded three full clearing members, two clearing firms, and its first global bank Futures Commission Merchant (FCM), with an additional clearing member expected by year-end. Plans for two more bank FCMs and three clearing firms are underway for 2025. In trading, six merchant firms have joined, with sixteen more in progress, alongside nine financial trading firms and ten introducing brokers, with further onboarding efforts ongoing.

Exchange product development: Regulatory submissions for lithium and nickel products are imminent, with plans for the rollout of precious metals solutions underway. Development efforts have also begun for sustainable base metal and weather derivatives.

Risk and regulatory initiatives: The company is actively working to expand participation and connectivity to the Abaxx Exchange and clearinghouse in key jurisdictions beyond Singapore.

Systems and operations: Phase two system expansion initiated, adding options capabilities, multi-currency settlement, and further ID++ integrations in both Abaxx Exchange and Abaxx clearing software, supporting Abaxx Messenger and ID++ digital signature operations for use in digital titles.

Abaxx console suite and ID++ protocol: Launched Abaxx Verifier+ on iOS and Android, SMC with ID++ credential integration, and deployed phase one of Abaxx Messenger.

Strategic partnerships: Abaxx intends to increase its stake in MineHub from 10.83% to 19.99%, acquiring 8,810,000 MineHub shares for $3.1M in cash or Abaxx shares. The two companies will collaborate on commercial and product initiatives, including data integration, sustainability, and regulatory compliance. The transaction is expected to close by December 31, 2024.

Industry overview

The initial product launches of Abaxx's Singapore Exchange are based on LNG, voluntary carbon credits and nickel sulphate. We will thus focus our industry discussion in these areas.

Opportunities presented by energy transition

The global energy transition is central to Abaxx's exchange strategy as the thesis is focused on commodities that could benefit from trends driven by the generational changes that are ongoing in the energy space. The 'global energy transition' refers to a shift from fossil fuel-based systems to renewable energy sources. The process reflects not only the adoption of cleaner energy technologies but also using existing infrastructure to minimize greenhouse gas (GHG) emissions. Despite its importance, crude is a non-renewable source of energy that took millions of years to form, but once used, there is no way to replace it, thus making transition to renewable sources a priority. Eventually, a more decentralized energy system increases resilience against climate-related events as well as disruptions in energy supply.

LNG – A critical commodity in energy transition

Liquefied Natural Gas (LNG) is natural gas that has been cooled to approx. -162°C, transforming it into a liquid and reducing its volume by about 600 times. This enhances the ease of transportation and storage. In its liquid state, LNG is colourless, odourless, non-toxic, and non-corrosive, making it a versatile and lower-carbon alternative to other fossil fuels.

LNG produces ~45% less carbon dioxide (CO_2) than coal and 30% less than oil, which makes it a relatively cleaner fossil fuel. Many countries and industries that rely on natural gas for energy are situated far from gas fields, making pipelines impractical or too costly to construct. By converting gas into its liquid form, it can be transported more efficiently via ships. Upon reaching its destination, LNG is converted back into natural gas at regasification plants and transported to the end users in power generation, heating, industrial processes, and transportation.

The role of LNG has grown since the onset of the global energy crisis as countries turned to LNG for energy security. In particular, we note the significant role played by LNG following Russia's invasion of Ukraine as Europe endeavoured to shift away from its dependence on Russian gas supplies. In fact, the month following the invasion, the US committed to delivering at least 15 bcm to Europe in that same year (i.e., 2022).

According to Shell, the demand for LNG is expected to grow by more than 50% from 380 MTPA (million tons per annum) in 2023 to 650 MTPA by 2040. While Europe's ongoing efforts to move away from Russian gas should continue to be a key factor, longer term, China and other Asian nations are likely to be the primary drivers of demand for LNG.

While the rising demand from China is well known, we believe that emerging economies in South and Southeast Asia could become major LNG importers as their domestic gas production declines. India has set ambitious targets to increase its natural gas consumption from 51 MTPA to 139 MTPA by 2030 to meet the demands of its burgeoning economy. Additionally, Thailand and Bangladesh are expected to import 25 MTPA by 2040, while Vietnam is projected to import 10 MTPA.

The election of Donald Trump in November potentially means that the gas-exporting superpower will increase the export permits, thus boosting longer-term supply for LNG. The incoming Trump administration has suggested tariffs on imports from countries like China, who might potentially buy more American LNG to avoid or offset tariffs. Europe is also in the same boat with the EU President, Ursula von der Leyen, pointing to the possibility of increasing LNG imports to avoid US tariffs.

LNG futures market is primed for a new solution

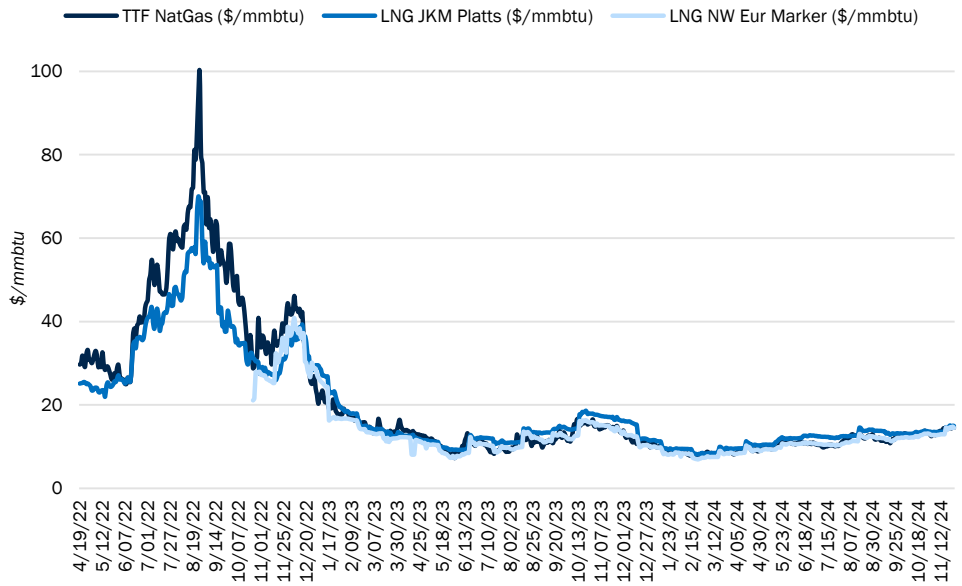
The LNG market, traditionally dominated by long-term contracts, has undergone significant changes with the entry of new buyers and sellers, especially during the 2022 energy crisis. Despite rising demand for LNG and its growing significance, reliably locking in a price (i.e., hedging) for shipments remains a major challenge. This is due to the absence of a robust benchmark futures contract for LNG. Initially, LNG pricing was based on oil-based benchmarks. However, this was fraught with challenges due to steep divergence in relative pricing, particularly as the significance of LNG grew along with the global energy transition. Rising pricing volatility between oil indices and spot prices for LNG pushed the focus towards hub-based natural gas benchmarks (e.g., Henry Hub, TTF).

Gas hub pricing as a hedge for LNG

Onshore natural gas instruments (such as TTF and Henry Hub) emerged as a legitimate alternative to the issues with using oil indices. In Europe, the Dutch TTF is the primary pricing hub for LNG imports and remains the most active (and liquid) market for LNG transactions. With that said, it is primarily designed for pipeline gas, which does not fully reflect the price volatility of LNG. Historically, LNG delivered ex-shipping costs in NW Europe was closely correlated with TTF (natural gas) with minor price differences arising from shipping costs and local demand/supply. As a result, pipeline gas prices were seen as an effective proxy to LNG.

However, the Russian invasion of Ukraine and the energy crisis that followed triggered a sharp divergence in relative pricing with LNG prices trading at a steep discount compared to hub prices. Interestingly, it has been noted by industry analysts (source: S&P Global Commodity Insights) that at its peak (October 2022) the price differential between the LNG prices (based on Platts) and the TFF was ~$30/MMBtu, which was equivalent to the value of a full LNG cargo.

Figure 6: Divergence between natural gas and LNG



Source: FactSet

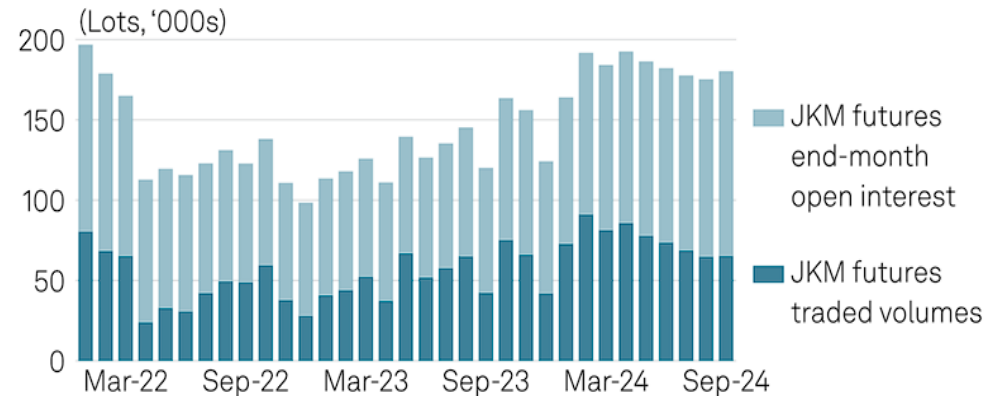
The existing solutions

The direct LNG based solutions are largely limited to the Platts JKM™ and more recently the Platts Northwest Europe market. The Atlanta-based Intercontinental Exchange (ICE) was the first to launch LNG futures contracts 12 years ago. These are cash settled futures which are based on Platts JKM™ (Japan/Korea Marker) and to date, this remains the most actively traded LNG futures contract in the market.

Since its launch, traded volumes have grown over the years and, as of October, reached an ADV of ~4,800 contracts. This is due to the underlying changes in the supply/demand dynamics in the LNG market, including growing demand in Asia for LNG, interruptions to pipeline gas supply due to Russia-Ukraine, and the disconnect versus traditional oil-based (e.g., Brent) benchmarks for LNG.

In October 2022, CME launched the LNG Platts Northwest Europe Marker (financially settled). While CME previously launched a physically settled contract (in 2019), this appears to have failed to gain traction, we suspect likely due to the timing of the launch, just before COVID-19. However, based on industry reports, the Platts NWM appears to have gained some traction early on, although in the context of the broader LNG market, traded futures volumes remain modest.

Figure 7: JKM futures volumes & open interest, 2022-2024



Source: ICE (data); chart by S&P Global Insights

The case for an effective physically settled futures contracts for LNG

Abaxx's focus on physical settlement is a cardinal differentiator as the existing LNG futures contracts are cash settled. At this point, market participants do not have a robust physically settled waterborne LNG benchmark to allow them to manage price, delivery, and counterparty risks. The problem with the existing futures market structure for LNG is that cash-settled products have lower reliability due to absence of a liquid underlying market that supports the ease of price discovery. For instance, ICE's cash settled futures, based on Platts JKM™, is really a surveyed price discovery process that could result in sharp variances to the underlying true price levels in the physical market. Furthermore, the ICE and CME LNG products represent separate low liquidity pools, with low ADV in comparison to the active products like Henry Hub Natural Gas or ICE's North American Natural Gas products, which combined have ADVs at the 1M contracts level. Abaxx has argued that what is needed is a more "centralized market with a deep pool of liquidity".

The low combined activity levels in the aforementioned cash settled LNG products of ~5,000 ADV is evidence of the lack of effectiveness of this market structure. As we discuss below, typically, a fully developed futures market trades 30-50x the volume of the underlying commodity. On this basis, futures traded volumes should be near an ADV of 300k.

The physically settled product offers a number of advantages. First, it has greater reliability in terms of price discovery. Afterall, the price in such a contract is based on a real-world transaction and not a surveyed estimate. Second, it is far less susceptible to manipulation. To manipulate the physically settled benchmark (in theory), you must influence the entire network (including tankers, exchanges, FCMs, etc.). Ultimately, the spot price and the forward curve converges. On the other hand, financially settled contracts have a history of troubles on this front, notably the Libor scandal of 2012. We note that the most successful futures products, such as WTI (for oil) and Henry Hub (US natural gas), are physically settled benchmarks.

Voluntary carbon credits – Opportunity amidst inconsistent standards

The importance of reducing carbon emissions has become universally recognized as the world deals with the escalating impacts of climate change. The 2015 Paris Agreement set a global framework to limit temperature rise to well below 2°C, with a target of 1.5°C, requiring countries to submit Nationally Determined Contributions (NDCs) for emission reduction. Achieving these goals demands significant investments in renewable energy, sustainable agriculture, and carbon capture technologies. Carbon pricing and voluntary carbon markets play a key role by enabling businesses and individuals to offset CO_2 emissions through carbon credits. Despite limited progress in COP 28 negotiations on Article 6, the voluntary carbon market continued to grow in 2023, reaching a record number of carbon offset retirements. This trend signals a shift toward prioritizing quality over volume in carbon credits, as stakeholders recognize that not all credits are equal. The market is evolving toward a place where carbon credits and other commodities are priced and traded based on their source and quality, in response to growing demands for transparency and integrity in carbon offsetting.

The carbon credits markets can be divided into two parts: *regulated* and *voluntary*.

Compliance Markets

- Used by entities that, by law, have to account for their GHG emissions.
- Mandatory national, regional, or international carbon reduction regimes
- Examples: Carbon tax, or cap-and-trade scheme

Voluntary Carbon Markets (VCMs)

- Allow firms to purchase carbon credits representing quantities of GHG emissions that have been kept of emissions reduction or removal from elsewhere, thereby offsetting their own emissions
- Enable rapid reductions in an entity's emissions profile and can also be sold to other firms looking to offset their emissions
- Boston Consulting Group (BCG) estimates that the voluntary carbon market is poised to grow from US$2B in 2020 to a range of US$10-40B by 2030 as firms increasingly use voluntary carbon credits to offset their emissions

We can further break down VCMs into three distinct categories: 1) carbon exchanges that facilitate the purchase and sale of carbon credits; 2) carbon credit generation entities that are responsible for generating carbon credits via projects including soil sustainability & farming, ecosystem perseveration, rainforest protection (REDD+); and 3) benchmarking and verification firms that verify, and rate carbon credits based on their quality.

The central issue with voluntary carbon credit is the inconsistency in how these carbon credits are measured and verified. The current standard REDD+ (Reducing Emissions from Deforestation and Forest Degradation) allows private projects often with minimal direct oversight from government entities. These projects also involve project developers that take a substantial portion away from the project itself, meaning that there is a discrepancy between the amount paid for credits versus the amount used for carbon prevented.

A 2023 article by *The Guardian* raised concerns about the legitimacy of certain providers of rainforest carbon credits, revealing that over 90% of these rainforest credits are likely "phantom credits". The study revealed that 94% of these credits had no meaningful climate benefit, as the deforestation reductions were often overstated. For example, the deforestation threat was found to be exaggerated by ~400% on average, leading to inflated claims of forest protection.

These findings raise significant questions about the effectiveness of carbon credits in helping companies meet their net-zero targets, with concerns about the potential for greenwashing, where companies appear to mitigate their environmental impact without making substantial reductions. As VCM grows, there is increasing demand for greater transparency and more rigorous standards to ensure credibility of carbon offset projects.

In response, firms such as Abaxx are partnering with organizations offering Jurisdictional REDD+ (JREDD+) credits that are generated from emissions reductions at the scale of entire political jurisdictions. This approach, with government leadership and comprehensive emissions reductions, aims to address key criticisms of private project credits. It promotes a forest-positive development model that supports Indigenous communities' rights and livelihoods, while encouraging low-carbon agricultural practices, providing a more reliable and verifiable pathway for climate action. Management has emphasised the quality and reliability of Abaxx's JREDD and CORSIA contracts (described below) in terms of its design and deliverable supply.

Other comparable market players

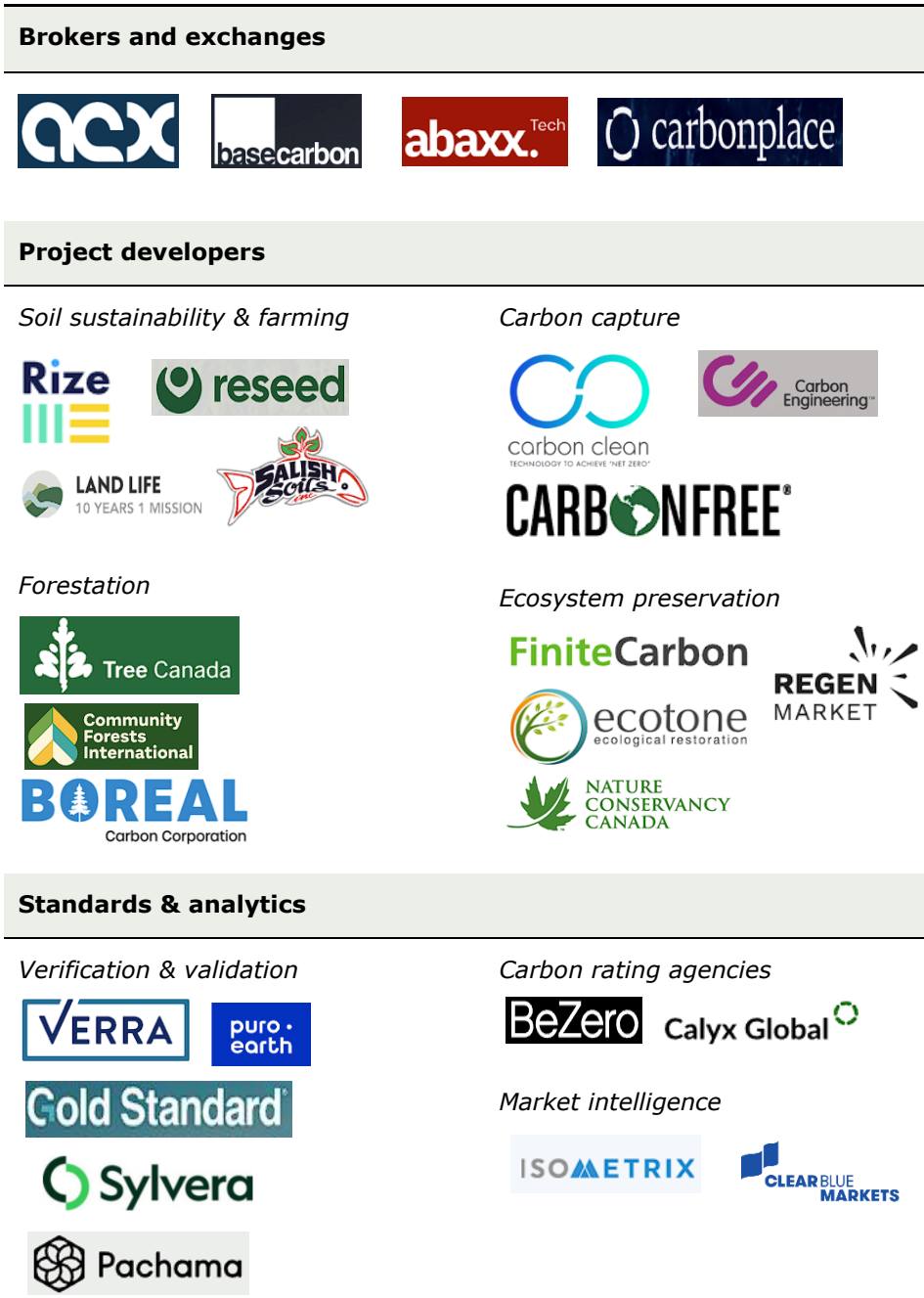
AirCarbon Exchange (ACX) is a blockchain-based trading platform in Singapore that focuses on the voluntary carbon market. ACX allows users to trade tokenized carbon credits, offering enhanced traceability, liquidity, and security through blockchain technology. While both ACX and Abaxx operate in Singapore, ACX emphasizes blockchain tokenization for transparency, whereas Abaxx focuses on traditional exchange-based contracts for institutional trading in the voluntary carbon market.

CarbonPlace is a carbon credit trading platform founded by major banks, including Barclays and Citi, aiming to provide secure and transparent infrastructure for carbon credit transactions. It integrates blockchain to ensure traceability and security for corporate buyers and financial institutions. Unlike Abaxx, which focuses on standardized VCM contracts, CarbonPlace leverages banking infrastructure and blockchain technology for enhanced transaction security and market access.

BaseCarbon (BCBN-CBOE | Not Rated) operates in both the voluntary and compliance carbon markets, focusing on high-quality, verifiable carbon offset projects like REDD+ and renewable energy. Unlike Abaxx, which specializes in standardized VCM contracts, BaseCarbon also incorporates an investment angle. In 2022, Abaxx and BaseCarbon formed a strategic partnership, with BaseCarbon licencing Abaxx's carbon trading platform technology. Abaxx receives royalty payments for its platform's use, and the partnership aims to enhance transparency and liquidity in the voluntary carbon market.

Xpansiv is a global environmental exchange platform that offers a broad range of carbon credits, renewable energy certificates, and other sustainability-related assets. It emphasizes real-time market data, advanced analytics, and market transparency. While Abaxx targets the voluntary carbon market in Singapore with standardized contracts, Xpansiv provides a broader range of environmental assets and focuses on data integration for enhanced pricing efficiency.

Figure 8: Voluntary carbon markets (VCM) ecosystem



Source: FactSet

Nickel sulphate – A key ingredient in EV batteries

The rapid adoption of lithium-ion batteries in the early 21st century was a turning point for the demand for nickel sulphate. The shift toward lithium-ion batteries was initially driven by the consumer electronics market; however, it was the rise of electric vehicles (EVs) that fundamentally altered the market dynamics for nickel sulphate.

EV batteries require significant quantities of nickel to achieve the energy density needed for extended driving range. Nickel sulphate is a primary component in these

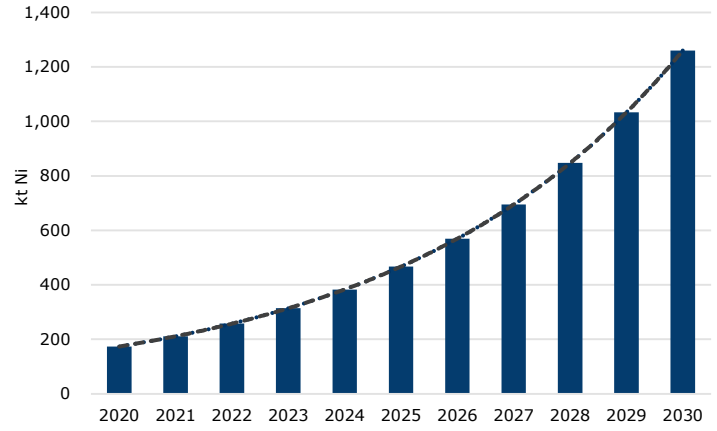
batteries, especially in the cathode material, where nickel helps to increase battery capacity, enhance performance, and extend the lifespan of the battery.

The process of converting nickel into nickel sulphate can be simplified into three main stages:

1. *Dissolution:* Nickel is introduced into a dissolution reactor, where it is combined with sulfuric acid and water.
2. *Reaction:* The nickel reacts with sulfuric acid to produce a concentrated nickel sulphate solution.
3. *Crystallization:* The solution is heated and pressurized to form crystalline nickel sulphate, with impurities being removed from the crystals.

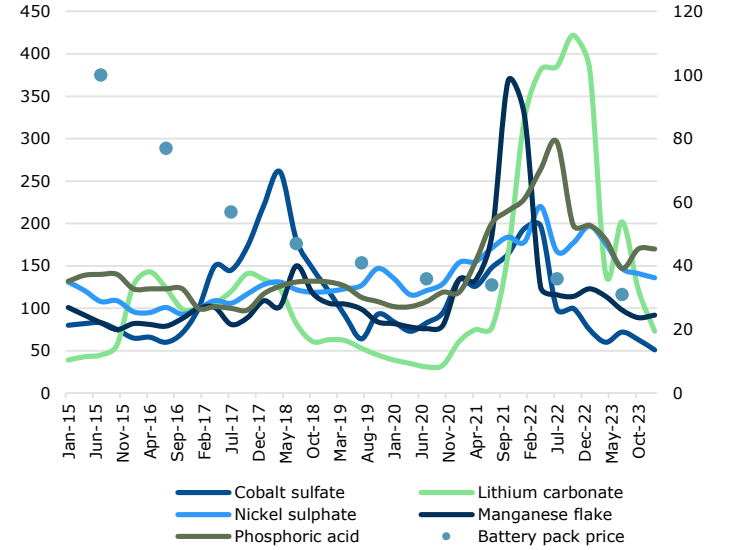
The IEA estimates battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) sales to grow from around 14M to over 45M by 2030. This growth corresponds with an increase in the share of EV sales as a percentage of total vehicle sales, from 15% to 40%. Consequently, the stock of electric vehicles is expected to rise from 43M in 2023 to 263M by 2030. As automakers ramp up production of EVs, the demand for lithium-ion batteries should continue to rise. According to Roskill, the total available market for nickel sulphate is expected to grow at 22% CAGR by 2030 (Fraser, et al., 2020)[i].

Figure 9: Nickel sulphate demand by first-use application, 2023-2030 (kt Ni)



Source: Roskill, 2020[1]

Figure 10: Price of battery materials and batteries, 2015-2024

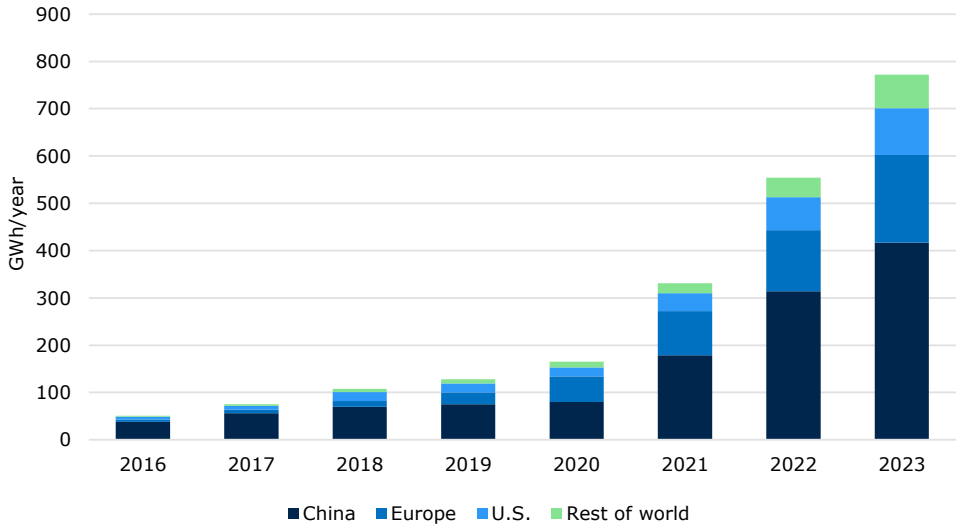


Jan 2017=100
Source: IEA. Licence: CC BY

The Asia Pacific region is the most dominant region in terms of nickel sulphate demand. China and Indonesia, the largest consumers and producers, respectively, are developing new paths such as converting low-grade ore into battery-grade nickel to narrow the supply-demand gap. However, this evolving trade dynamic lacks a standardized pricing mechanism with physical delivery.

[1] Citation: Fraser, Jake; Anderson, Jack; Lazuen, Jose; Lu, Ying; Heathman, Oliver; Brewster, Neal; Bedder, Jack; Masson, Oliver, Study on future demand and supply security of nickel for electric vehicle batteries, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-29139-8, doi:10.2760/212807, JRC123439

Figure 11: Historical EV battery demand by region, 2016-2023



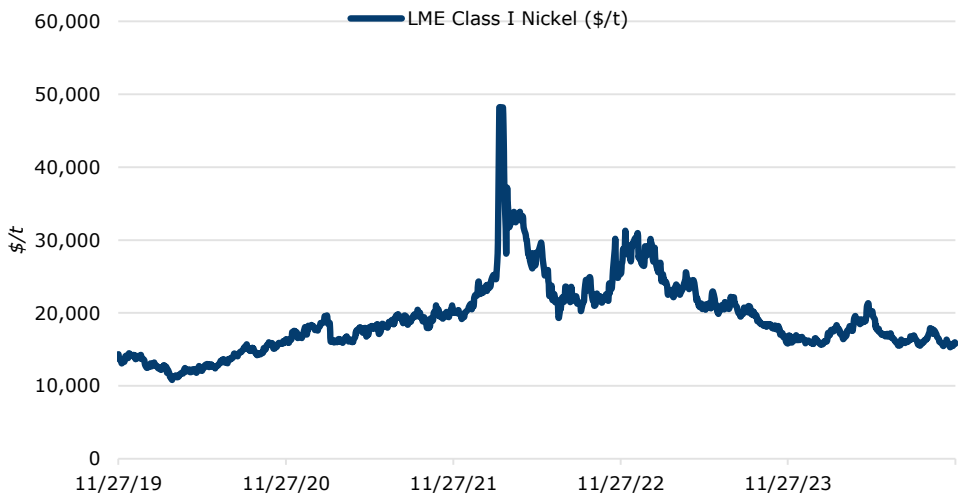
Source: IEA. Licence: CC BY 4.0

Example scenario: A nickel producer in Indonesia decides to sell a large amount of nickel matte to a buyer in China. However, because there is no widely accepted exchange pricing system for this trade, the producer and the buyer struggle to agree on a fair price for the nickel. The LME's Class I contract, typically used for refined nickel, is not applicable because nickel matte is not deliverable on the exchange. While they may attempt to use LME's futures prices to guide the transaction, there is no reliable mechanism to convert those prices into a physical delivery system for matte. This issue contributed to the 2022 LME meltdown, when the exchange suspended trading due to a massive price spike. The estimated value of the cancelled trades, totalling ~$12B, illustrates the magnitude of the problem and the importance of reliable contracts for price discovery and risk management.

Consider nickel matte, which is a key raw material for producing refined nickel but can vary widely in nickel content and impurity levels. A smelter in Indonesia might produce nickel matte with 70% nickel content, while another in Canada produces matte with 50% nickel. This variation makes it impossible to use these materials as a consistent benchmark on exchanges like the LME, complicating pricing and physical delivery. Buyers and sellers are left unsure about how to price these materials, further exacerbating the volatility in the nickel market.

The case of nickel sulphate is another instance where commodities markets are trailing in adapting to changing conditions. The growing demand for EVs, alongside shifts in production and trade, is set to impact the demand for nickel sulphate. As this demand continues to rise, market participants will need to adapt to evolving market conditions, with an emphasis on developing more specialized pricing mechanisms and financial instruments to manage the risks associated with this crucial commodity.

Figure 12: LME Nickel Class I contract price reached $48,241 on March 9, 2022, a day after LME halted trading



Source: FactSet

Operational construct and progress

Abaxx Exchange and clearinghouse

Abaxx Exchange Singapore is a platform for trading commodities derivatives, particularly focusing on those essential for the energy transition like LNG, carbon offsets credits, battery metals like nickel sulphate, and eventually even precious metals like gold. Users can access the market, submit trades through dynamic APIs, and rely on a user-friendly interface for block trades. Orders can also be placed through third-party platforms at big banks and online trading platforms.

The exchange was approved by the Monetary Authority of Singapore (MAS) on December 7, 2023, securing a Recognized Market Operator (RMO) licence after an arduous multi-year process. On June 28, 2024, the Abaxx Commodities Futures Exchange and clearinghouse became fully operational, with trading commencing in the LNG physically deliverable futures contracts and carbon futures contracts.

Abaxx clearinghouse received the Approved Clearing House (ACH) licence on December 7, 2023, from MAS to operate along with the Exchange. The importance of a clearinghouse becomes particularly pronounced in the futures market, where financial products often involve leverage. It plays a vital role in providing stability by acting as an intermediary between buyers and sellers, overseeing the finalization of trades, settlement of accounts, collection of margin payments, regulation of asset delivery, automation capabilities, and reporting of trading data. The clearinghouse enjoys two competitive advantages: (1) higher pricing power due to switching costs; (2) playing a role in establishing relationships with stakeholders:

Abaxx exchange and its clearinghouse have a strong competitive advantage and higher pricing power, in our view: Derivatives cannot be bought and sold on different exchanges, meaning that if the contract was bought on Abaxx, it will only be sold on the same exchange; this creates liquidity captive pools by keeping the buyers and sellers on the same platform, thus improving liquidity and giving a strong competitive advantage, which in turn translates to high pricing power and barriers for new competition. Secondly, a vertically integrated clearinghouse helps reduce the systematic risk in an event of counterparty default and keeps members tied to an exchange due to collateral efficiencies.

We believe the clearinghouse is an important player in building relationships with key stakeholders: The clearinghouse establishes relationships with large banks, which play a crucial role in routing their trades to the exchange. This connection with Futures Commission Merchants (FCMs), like big banks, enhances the clearinghouse's ability to manage and process trades effectively. FCMs, including non-bank FCMs, collaborate with the exchange and clearinghouse to establish margin calls and process trades.

Abaxx contracts are based on broad consensus from industry players

Instead of taking the *build and they will come* approach, Abaxx took the bottom-up approach of understanding the market first through an extended period of consultation with market participants, then coming up with a tailored solution. Abaxx spent years identifying the opportunities within the commodities industry, interviewing key stakeholders, including FCMs, global trading companies, energy companies, commodity traders, mining companies, EV battery suppliers, and financial participants. The broad consensus means that the onboarding process is potentially less arduous. As a result, Abaxx has managed to secure formal intentions to trade from 43 commercial participants.

Based on the feedback from the participants, Abaxx designed its contracts with two broader objectives: (1) liquidity for price discovery; (2) effective risk transfer. As part of its initial product offering, Abaxx offers three LNG and two carbon credit contracts. This will be followed up with several nickel sulphate contracts shortly. More recently, management also alluded to an upcoming lithium carbonate contract over the next month or so.

1. **LNG futures contracts:** The initial product offering will include the following three LNG futures contracts:
   a) *The North-West Europe (NWE) Futures Contract* will cater to the market in Europe. Eligible ports include seven ports in Spain, four in France, three in UK, two in Netherland, and one each in Portugal and Belgium
   b) North-Asia Pacific (NPA) Futures Contract will be available to South Asian and Southeast Asian markets. Eligible ports include 18 ports in China, 32 ports in Japan, and six ports in South Korea – *see for details.*
   c) Gulf of Mexico (GOM) Futures Contract will be available to North American markets. Eligible ports include three ports in Texas including Sabine Pass LNG, Freeport, Corpus Christie and Cameron in Louisiana.

2. **Voluntary carbon credits futures contracts:** The initial product offering will include two carbon credits contracts:
   a) *CORSIA Phase One Carbon Futures are based on the CORSIA* (Carbon Offsetting and Reduction Scheme for International Aviation) standard, which is the first market-based initiative for any sector. The framework is aimed at addressing the emissions related to the aviation industry, which accounts for ~2% of the CO_2 emissions and is one of the most challenging industries to decarbonize. The CORSIA pilot phase ran from 2021 to 2023, followed by an ongoing phase 1 (2024-2026). Both of these phases were voluntary and the carbon emissions will be based on the industry average. The mandatory Phase 2 will begin in 2027 and will include all flights, excluding less developed countries that have a very minor share of international traffic. The multi-level structured reporting and verification will ensure integrity and compliance.
   b) *JREDD+ 21-25 Carbon Futures:* JREDD+ stands for *'Jurisdiction Reducing Emissions from Deforestation and Forest Degradation*,' and is a verifiable credit that rewards a country for saving its forests with a nature-based solution. As discussed in the voluntary carbon credits section, JREDD+ credits improve credibility with oversight from the local governments. JREDD credits are generated from emissions reductions that have been achieved across an entire jurisdiction, allowing for precise measurement, and addressing a key criticism often associated with private project credits.
3. **Nickel sulphate futures contracts:** The idea of launching nickel sulphate contracts was triggered based on discussions with BHP Billiton, a dominant producer of the compound, and the company is a partner in the development of these contracts. Abaxx collaborated with 21 nickel players, including two major global auto manufacturers, two global mining companies, six merchants, two EV battery manufacturers, and three sulphate producers to create two physically deliverable contracts: *(i) Nickel Sulphate Rotterdam Futures and (ii) Nickel Sulphate Singapore Futures.* Both contracts will provide direct delivery from seller to buyer, thus eliminating the need to go through a network of warehouses.

Figure 13: Overview of initial product offering

	LNG	Carbon	Gold	Nickel Sulfate
Products	▪ **Abaxx LNG Futures** - Three new physically settled futures contracts servicing the global market: - Gulf of Mexico FOB - Northwest Europe DAP - North Asia Pacific DAP	▪ **Carbon Futures** ("CF") *(REDD+ Contract)* - multiple contracts distinguished by credit vintage. Delivered to sellers Verra account.	▪ **Gold Futures** - Hybrid futures/forward contracts focused on liquid dates ▪ **Spot Gold** - trades in kilo bar form for spot denominated in USD basis deliver in Singapore on an Abaxx Spot CLOB.	▪ **Nickel Futures** - Products under development in collaboration with large market participants distinguishing differences in region and form (e.g. nickel metal, nickel sulphate and ferro nickel.
Abaxx EFRP	▪ **Exchange of Futures for Related Products** - (EFP – Exchange for Physical, EFS – Exchange for Swap) will go beyond traditional and seek to capture non-exchange transaction data for use in developing price discovery and transparency in basis markets.			
Bilateral Trades	▪ **Bilateral Trades** – extends the Abaxx platform beyond futures for physical delivery while increasing velocity and price discovery in the spot market.			

Source: Abaxx Technologies

Progress since launch – and ramp-up process: Naturally, one of the most important phases of a project like Abaxx's Singapore Exchange is the ramp-up, as the entire ecosystem of FCMs, traders, brokers, and liquidity providers need to be connected to the exchange and clearinghouse. Based on updates from the company, this has been progressing quite well with three full clearing members (StoneX, ADM, and KGI Securities) and two additional clearing companies already onboarded. This includes their first global bank FCM. In terms of ongoing discussions, management has indicated that it expects two additional bank FCMs to sign on shortly and as many as three more clearing companies.

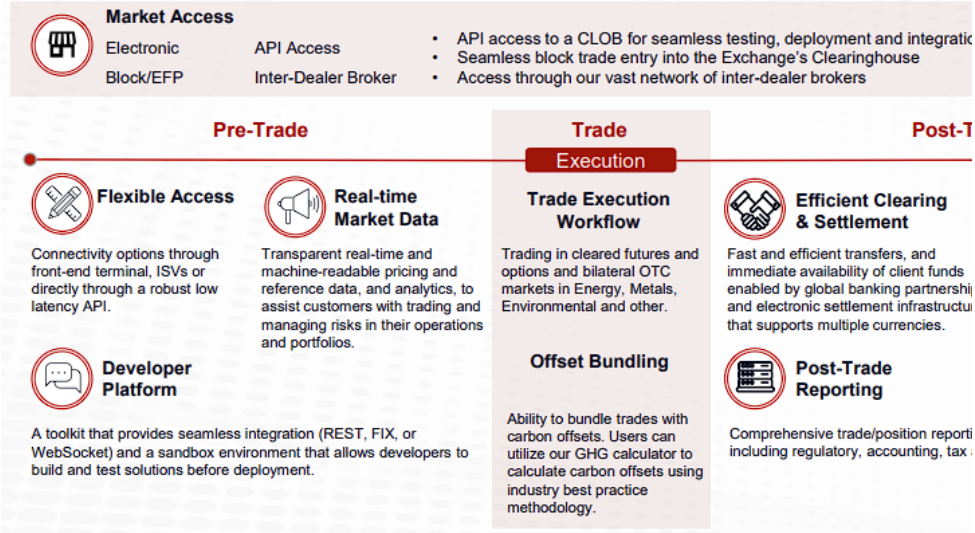
On the trading front, as many as six trading firms, nine financial trading and market making firms, and ten introducing broker firms have been onboarded to the exchange. Comments from management suggest that this count could rise sharply in the near term with over 30 other trading and brokers partners likely to be added to the mix.

As the onboarding of the ecosystem of market participants continue, a key focus is driving the liquidity of the exchange forward to ensure that onboarded participants remain engaged. To this end, the company has introduced a rebates model to further incentivize the participants. Management has indicated that it is at a point where the Gulf of Mexico LNG contracts, in particular, have pricing daily and that the JREDD and CORSIA phase one contracts (voluntary carbon) have bids and offers available.

Abaxx proprietary technology

The Abaxx Trading Platform is designed to offer a comprehensive range of services that address the full trading lifecycle—from market data and analytics, to order execution, clearing, settlement, and reporting. With access to both electronic and block trading, API connectivity, and inter-broker dealer services, it is tailored to meet the needs of institutional traders, asset managers, and other professional market participants. The platform's strong focus on decentralized identity, data privacy, and regulatory compliance ensures that users can confidently execute trades in a secure and transparent environment, with the flexibility to trade across multiple markets and asset classes.

Figure 14: Abaxx trading platform



Source: Abaxx Technologies

Abaxx's technology stack is built on open internet protocols focused on digital identity and data privacy, developed with open standards bodies. At its core is ID++, a proprietary policy layer that integrates decentralized identity and privacy protocols, enabling compliance in regulated environments and providing a competitive edge.

The firm's identity management applications, including the *Abaxx Verifier* (available on iOS and Android) and *Abaxx Credential Issuer*, manage digital identities for memberships and transactions. Powered by ID++, an open protocol using W3C Verifiable Credentials (VCs), the Verifier ensures data authenticity, reduces fraud risks, and enhances privacy by decentralizing control. These applications could become standalone products offering secure, verifiable identities across industries like financial services and commodities.

Abaxx's workflow applications — *Messenger, Sign, Drive, and Vault* — streamline business processes using decentralized identity and privacy technologies. Abaxx Messenger, already in use on the Abaxx Exchange, ensures secure, auditable communication and will evolve into an AI-driven interface for the entire platform. Abaxx Drive stores personal data securely in the cloud, while Abaxx Vault offers additional protection for digital assets and records. These tools enhance regulatory compliance and privacy, particularly in financial services and commodities markets.

At the top of Abaxx's stack are business applications that leverage Abaxx's technology to create market value, including *Smart Commodities* derivatives with digital titles, full digital title for collateral clearing, and AI-enhanced features in platforms like Minehub and Coffeehouse. With the integration of PrivacyCode.AI, Abaxx also offers advanced supply chain compliance and privacy solutions, building a unique ecosystem that provides competitive advantages and new opportunities for regulated industries.

Figure 15: Abaxx addresses key technology issues driving high transaction costs and low volumes

Source: Abaxx Technologies

ID++ and Abaxx technology suite

Abaxx Technologies recently announced the launch of three innovative software products, marking a key milestone as it transitions to a fully operational business. The new software products, introduced without separate launches, combine proprietary deep-tech innovations that are unmatched in the market. The company these transformative solutions have the potential to function as standalone products or businesses, offering new features and enabling SaaS distribution to enhance value for clients and partners, and reflect Abaxx's commitment to advancing the digital transformation of commodity markets and financial infrastructure, underscoring its role as a leader in developing next-generation solutions that address emerging needs across trading, risk management, and compliance.

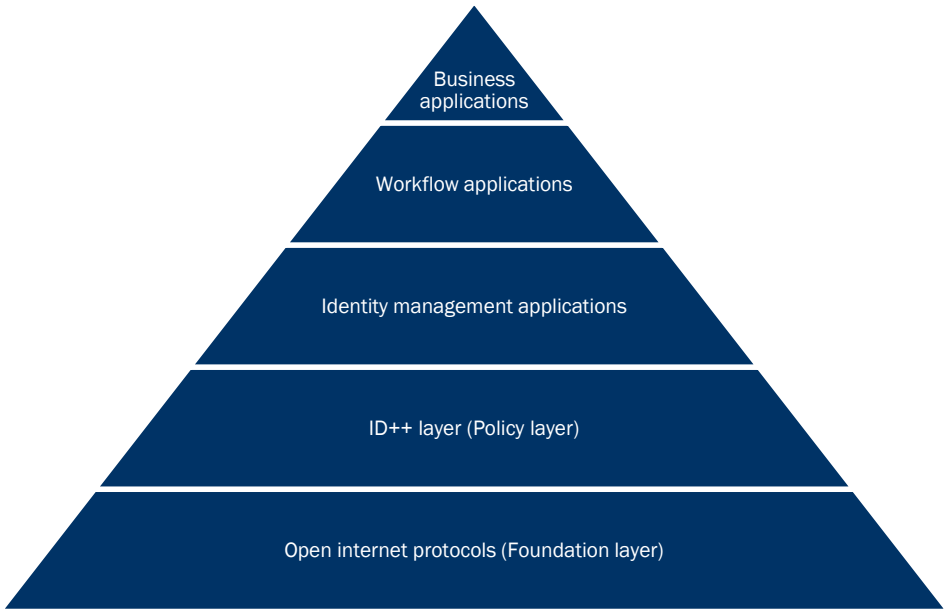
Abaxx has built its infrastructure on a cloud-native architecture, supporting scalable microservices and machine learning. With a globally distributed mesh network, it ensures high availability, low latency, and fair access. Having integrated cloud technology four years ago, well ahead of competitors like ICE and CME, Abaxx is positioned for long-term scalability and innovation, in our view. Its proprietary approach integrates ID++ and advanced software solutions, focusing on identity and privacy, setting it apart from the commoditized blockchain technologies used by other platforms.

Abaxx's unique *"Identity-Privacy-and-Distributed Ledger Trilemma"* framework ensures high standards in three key areas:

1. **Digital identity certainty and finality** - require rigorous standards for ensuring the integrity of digital identity within the title signatures.
2. **Distributed ledger certainty and finality** - maintain strong guarantees around the certainty and finality of the distributed ledger state.
3. **Data privacy and persistence** - enforce stringent measures to ensure that data shared between market participants is both persistent and protected by high privacy standards.

Abaxx's approach aligns with regulatory standards, addressing key principles set by authorities. Unlike many DeFi projects that struggle with regulatory compliance, Abaxx ensures its solutions meet institutional market requirements, enabling seamless integration into regulated financial ecosystems.

Figure 16: Abaxx tech stack: Enabling decentralized identity, privacy, and market innovation



Source: Abaxx Technologies

Overview of comparables and competitors

Intercontinental Exchange (ICE) (ICE-NYSE| Not Rated)

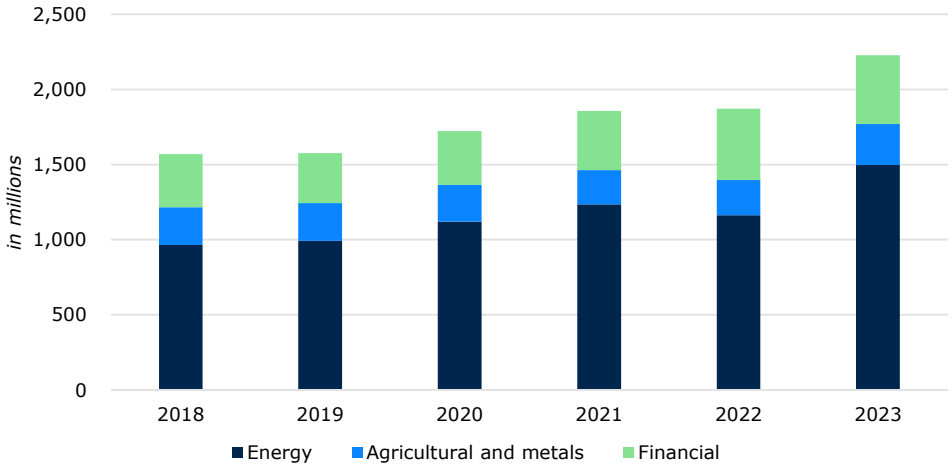
In 2001, ICE acquired the International Petroleum Exchange, which brought the Brent Crude Index and enhanced connectivity to energy traders and customers. In 2007, ICE acquired the New York Board of Trading, adding benchmarks for commodities like sugar, cocoa, cotton, and, more importantly, a clearinghouse (ICE Clear), which kick-started its growth. ICE leveraged the expertise of ICE Clear US to build ICE Clear Europe, the UK's first clearinghouse in a century.

Today, the ICE global energy platform offers more than 1,000 futures and options contracts across power, natural gas, energy transition, oil, and other products, helping traders hedge risk and benefit from secular growth trends.

The Atlanta-based exchange was the first to launch LNG futures contracts in 2012. The new contract, called Platts JKM™ (Japan Korea Marker), became the benchmark for Northeast Asia. In 2017, when the US became a net exporter of LNG for the first time since 1957, ICE launched its contract based on the Platts LNG Gulf Coast Marker. In Q4 2022, ICE announced the launch of two LNG futures contracts for northwest and southwest Europe, aiming to better manage the regional pricing differentials arising from the 2022 European energy crisis.

ICE's evolving strategy to adapt to the changing dynamics of energy markets has been paying off. The rising, and seemingly sustainable, growth in ICE's energy exchange-related revenues (33% growth in Q2 2024) is an important indicator of the underlying demand for its energy products. ICE Energy futures and options revenue grew by 9.2% from 2018 to 2023, outpacing Agricultural & Metals (+1.5%) and Financial (+5.4%) sectors (see Figure 20).

Figure 17: ICE futures and options revenue, 2018-2023



Source: FactSet

As part of its holistic strategy, ICE operates robust carbon credits markets alongside its energy markets, providing solutions for participants looking to mitigate the impact of climate change in North America (CCA, RGGI, LCFS) and Europe (EUA, UKA). ICE Environmental Markets enable participants to offset carbon-related liabilities, invest in green projects, or benchmark their carbon costs. Trading activity in ICE's environmental markets increased by 30% y/y, with open interest up by 20% y/y. The firm's EU Carbon Allowance (EUA) futures and options market is the most liquid carbon marketplace globally, serving as the global benchmark.

ICE views the carbon credit markets as a promising area with significant growth potential. Recently, ICE introduced CORSIA carbon credits for the aviation industry and plans to expand into European ETFs and industries like shipping. In addition,

ICE launched ICE CRED to standardize carbon credit reference data. The firm is partnering with various service providers to offer environmental data to private and public companies (e.g., Dun & Bradstreet), asset managers, freight companies, and municipal governments.

Figure 18: ICE Global Carbon Credit Futures - price history

Source: FactSet

The CME Group (CME-NASDAQ | Not Rated)

The Chicago Mercantile Exchange (CME) was originally known as the Chicago Butter and Egg Board. For much of its history, the exchange was owned by its members. However, it demutualized in 2000 and went public two years later. In 2007, the CME and the Chicago Board of Trade (CBOT) merged to form the CME Group, becoming the world's leading derivatives marketplace. The following year, in 2008, CME Group acquired the New York Mercantile Exchange (NYMEX), the world's largest physical commodities exchange. Market participants recognized the value of the acquisition, particularly the prized clearinghouse, Clearport.

The NYMEX acquisition was a key element of CME's growth strategy, allowing the exchange giant to expand globally and diversify its product base. Clearport, in particular, played a critical role in the modernization of CME's operations as it streamlined OTC transactions and improved CME's ability to trade more efficiently.

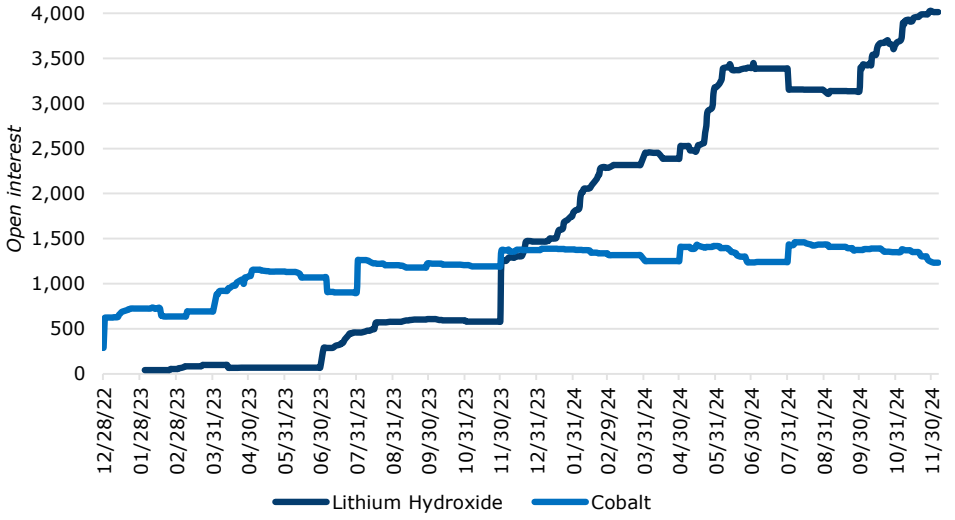
Today, the Chicago-based CME Group is the largest and most diverse derivatives marketplace globally, handling 3B contracts worth approximately $1Q (or quadrillion) annually – *that's $1,000T in annual trades.*

Similar to its close competitor ICE, CME Group aims to identify opportunities in the market and come up with relevant and tailored products. The exchange launched its first physically settled LNG contract in 2019 in partnership with Chinere Energy. However, due to the timing of the launch, just a few months before the COVID-19 pandemic, the markets were slow to adapt and demand remained low. Timing is a crucial component in the success of new products, especially in the commodities market. During the 2022 energy crisis, CME Group launched its Northwest Europe (NMW) LNG contract to cater to the European LNG market.

CME is also becoming a major player in the battery metals market, offering key products across the supply chain, such as cobalt, cobalt hydroxide, lithium carbonate, and molybdenum oxide. While the demand for cobalt has stabilized, the rise of LFP batteries, especially in China, has boosted the demand for lithium hydroxide. Consequently, the lithium hydroxide contract reached record open interest last month, indicating increased liquidity as traders seek more accurate pricing.

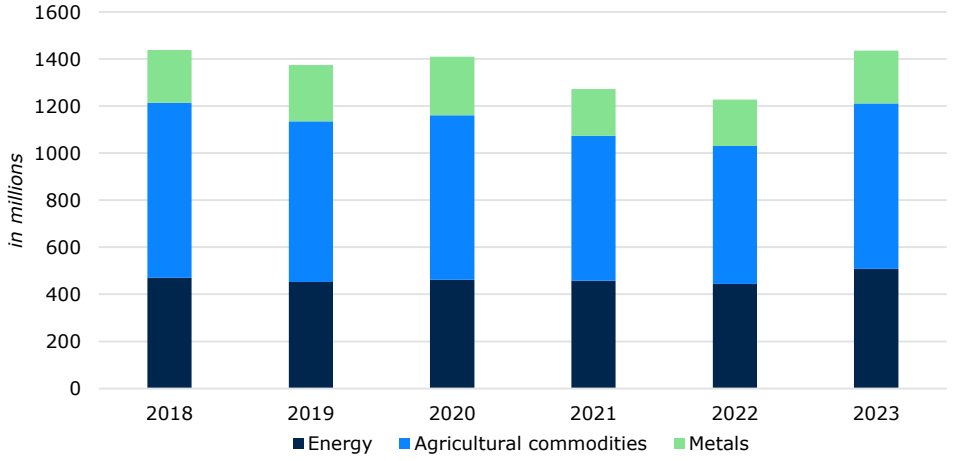
As the battery metals market evolves, CME continues to introduce new products to meet changing market needs. On Sep 30th, CME announced the launch of spodumene (a raw material in production of lithium hydroxide) futures to further expand its battery metals suite. This trend supports our thesis that once an exchange is set up, it can rapidly launch a wide range of new products at minimal cost.

Figure 19: Open interest in CME's Lithium Hydroxide Futures contract has surged since the start of 2024



Source: FactSet

Figure 20: CME Commodities trading revenue, 2018-2023



Source: FactSet

The Singapore Exchange (SGX) (S68-SG | Not Rated)

The Singapore Exchange is Asia's second-largest listed exchange. While most of its derivative products are focused on equities and fixed income, SGX is also quite active in commodities, with a particular focus on iron ore & steel, freight, rubber, coal, and oil. The firm's strategy is based on two pillars: steel value chain and freight complex. The firm has successfully leveraged this strategy around its flagship iron ore contracts, offering clients both iron ore and shipping contracts to mitigate the risk.

SGX launched its Iron Ore 62% futures contract in Q1/14. After a gradual ramp-up, the trading volume exceeded a million by Q1/15. Since its launch, the volumes have been robust as the contracts serve as a separate liquidity pool outside China. In 2023, the SGX iron ore contracts were up +43% to a record 4.4B metric tonnes.

SGX has also been active in the environmental markets. In 2021, SGX took part in a joint venture alongside DBS Bank, StanChart, and Temasek's GenZero to launch a global carbon marketplace called Climate Impact Exchange (CIX). As of 2024, SGX owns 21.1% in Verified Impact Exchange, the holding company of CIX.

Abaxx's moat

The barriers to entry in the commodities exchange business can be naturally high due to onerous regulatory and legal challenges. Unlike a couple of decades ago, regulators now ask for a plethora of documents and evidence. Onboarding new partners is a slow and cumbersome process, which further adds to why we rarely see brand new entrants.

Once set up, the clearinghouse reinforces the moat by creating higher switching costs due to collateral requirements and a liquidity captive pool. The clearinghouse also enjoys some network benefits from partnerships with different stakeholders such as FCMs, liquidity providers, trading houses, etc. These stakeholders, in turn, route trades through the exchange. This cycle boosts liquidity, which, in turn, keeps these partners tied to the clearinghouse as no one wants to trade in an exchange with low liquidity. In the end, the exchange and its clearinghouse exert relationship-specific costs to these stakeholders.

Building an exchange involves heavy upfront investments in infrastructure. Once set up, the cost of acquiring new customers (CAC) decreases and willingness to pay increases with higher liquidity and better trade execution, two key ingredients of a successful commodities exchange.

Assessing longer-term upside

All about scaling: With the arduous work around building the infrastructure and navigating the regulatory seas finished, it is now a case of onboarding market participants to the exchange. However, there are considerable challenges around assessing the shape of and extent of upside for an operation like Abaxx at the present early stage. Factors like the timing of the ramp-up, adoption rate by trading firms and market makers, road bumps in terms of onboarding key players, and competitive developments could impact the projections. The fact that there has not been a launch of a new exchange with its own clearinghouse in more than a decade adds to the visibility challenge.

With all that said, there is a framework for investors to consider the magnitude of the upside for Abaxx's Singapore Exchange. Anecdotally, when NYMEX ClearPort altered the landscape of commodities trading, it was not an overnight success. In fact, it took around 10 months for any trading volumes to show up. In February 2003, the energy exchange cheerfully announced that it has processed more than 100 contracts in a single day, a meager sum versus today's 300k contracts per day.

Upside from LNG: While Abaxx's business model is by no means limited to LNG, given the significance of the commodity and the evident opportunity, we believe that Abaxx's LNG products alone could emerge as a top 10 or top 15 of futures contracts. We note that the natural gas futures products in Figure 27 translate to ~1M ADV in terms of traded volume and almost $300M in revenues. We note that even our F2030 LNG revenue forecast for Abaxx is $134M. We also note that our F2030 penetration rate (of TAM) stands at 20%. We argue that the dominant futures product can extend to 40-50% share over time.

Figure 21: Top 15 contracts by revenue (ADV, volumes in millions, Revenue – US$M)

#	Product	Exchange	Revenue(1)	ADV(2)	Volume
1	WTI Light Sweet Crude	NYMEX	320	1.166	291
2	Eurodollar	CME	319	2.748	687
3	Brent Crude Oil	ICE	293	0.885	221
4	10 Year Treasury Note	CBOT	209	1.799	450
5	S&P 500 E-mini	CME	207	1.581	395
6	NA Natural Gas	ICE	182	0.549	137
7	Euro Stoxx 50 Index	Eurex	154	1.169	292
8	Corn	CBOT	126	0.413	103
9	Henry Hub Natural Gas	NYMEX	113	0.414	103
10	Gold (GC)	COMEX	113	0.346	87
11	Gas Oil	ICE	106	0.320	80
12	FTSE China A50 Index	SGX	103	0.391	98
13	Nasdaq 100 E-mini	CME	60	0.460	115
14	Aluminium	LME	57	0.264	66
15	CBOE Volatility Index	CBOE	44	0.250	62

Source: Abaxx Technologies

Nickel sulphate and carbon: We estimate that the futures products proposed thus far (carbon and nickel sulphate) encompass a substantial TAM of ~$900M. While Abaxx may only be positioned for a smaller share of this, our own projections assume a mid-single-digit market share for carbon credits futures and 15% for nickel sulphate due to the early stage of the launch. However, given the unique construct of these markers, there could be substantial upside if market adoption of these products catches fire.

Future product launches: A key tenet of Abaxx's growth strategy is to expand its product set, especially once the exchange establishes itself and moves towards scale. Management has already indicated plans to launch gold futures as well as lithium carbonate futures in the near term. Furthermore, the exchange has significant optionality in terms of expanding its product set to a plethora of other commodities due to the infrastructure in place. We believe that this is one of the key benefits of owning one's own clearinghouse, in that the exchange can seamlessly introduce new futures contracts.

Technology revenues: While we deem it premature to assign revenues to Abaxx's technology IP, including its workflow applications, we suspect that the Singapore Exchange could serve as an incubator to develop the case for these products. At this point, Abaxx has a Master Licencing Agreement (MLA) with Abaxx Singapore, assigning exclusive rights of use and sub-licencing rights. Thereby, Abaxx Singapore is obligated to pay the parent company a royalty if, in the future, it sub-licences the technology suite. This amounts to 20% of revenues on the first US$2M, falling 10% for the next US$3M and 5% after that. We also note that the comparable universe of ICE, CME, CBOE, NASDAQ, SGX, etc. suggests that core data services could represent anywhere from 7% (Tradeweb) to 15% (ICE) of total revenues.

Financial outlook

Considering the essentially pre-revenue status of the Abaxx Exchange, there is some added complexity around financial estimates. While one can have a degree of confidence around the 'ramped-up' financial state upon successful execution, there is the question of the shape of the adoption curve, which could be subject to variations. With that said, we see a very achievable path to over $100M in annual revenues within five years and meaningfully positive EBITDA by 2028E. Our forecasts indicate an adj. EBITDA level in excess of $80M by F2029E and nearly $130M by F2030E. This is largely due to the fact that Abaxx has already invested in and built the infrastructure that is needed, suggesting steep operating leverage as the initial products ramp and new futures products are added to the exchange.

Modelling approach: In establishing our financial estimates, we have adopted an approach where we separately forecasted the initial futures product categories (LNG, carbon, nickel sulphate). Beyond the first three product categories, we are likely to include them in a combined 'other' category or aggregate them under sectors.

LNG revenue projection: We expect LNG could be the central product in Abaxx's model to the extent the entire operation could essentially be justified by LNG alone if properly executed. In assessing the long-term market opportunity, we adopted a methodology of translating overall global LNG demand to aggregate futures contracts traded. Typically, the futures contract value aggregates to 30-50x the value of the physical volume as the futures market reaches maturity. This is augmented by a further 30% when we consider extensions of those futures, such as secondaries and options (on futures). For our market size assessment, we used the mid-point of 40x and applied the aforementioned augmentation.

We believe the key to the financial projection is the penetration rate (of TAM) and the shape of the ramp-up. In the absence of reliable guides, we have based our adoption rate on the Bass model (a mathematical model that predicts the rate of adoption of new products). To be conservative, we have taken a 20% discount to the adoption rate implied by Bass to reflect the fact that (1) these are physically deliverable contracts and thus adoption may be slower and (2) Abaxx is a B2B construct whereas Bass is mainly used to project consumer adoption.

Figure 22: LNG revenue projections, 2024E-2030E

Energy (LNG)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	CAGR %
Total LNG Trade	432,000,000	455,328,000	479,915,712	505,831,160	533,146,043	561,935,929	592,280,470	*5%*
Physical TAM - mmBtu	20,046,960,000	21,129,495,840	22,270,488,615	23,473,095,001	24,740,642,131	26,076,636,806	27,484,775,193	
mmBtu/contract	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
Total contracts in physical market	2,004,696	2,112,950	2,227,049	2,347,310	2,474,064	2,607,664	2,748,478	
% of short term contracts	40%	40%	45%	50%	50%	50%	50%	
Short term contracts in physical market	801,878	845,180	1,002,172	1,173,655	1,237,032	1,303,832	1,374,239	
Futures market - 40x of physical	32,075,136	33,807,193	40,086,880	46,946,190	49,481,284	52,153,274	54,969,550	40.0x
+) Secondary contracts - 20%	6,415,027	6,761,439	8,017,376	9,389,238	9,896,257	10,430,655	10,993,910	20%
+) Additional contracts - 10%	3,207,514	3,380,719	4,008,688	4,694,619	4,948,128	5,215,327	5,496,955	10%
Total contracts	41,697,677	43,949,351	52,112,943	61,030,047	64,325,670	67,799,256	71,460,416	
Trading days per year	250	250	250	250	250	250	250	250
ADV - LNG futures	**166,791**	**175,797**	**208,452**	**244,120**	**257,303**	**271,197**	**285,842**	
Contract price	$10.00	$5.25	$5.51	$5.79	$6.08	$6.38	$6.70	*5%*
Revenue/day	$1,667,907	$922,936	$1,149,090	$1,412,998	$1,563,765	$1,730,619	$1,915,276	
Revenue per period	$416,976,768	$230,734,095	$287,272,600	$353,249,541	$390,941,267	$432,654,700	$478,818,956	
.baxx Singapore revenue (USD)	$14,594	$1,364,792	$5,676,507	$16,390,779	$39,406,880	$73,724,361	$95,763,791	
X rate (CAD/USD)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	
Abaxx Singapore revenue (CAD)	**$20,432**	**$1,910,709**	**$7,947,109**	**$22,947,090**	**$55,169,632**	**$103,214,105**	**$134,069,308**	
Abaxx Singapore penetration of TAM	*0.0%*	*0.6%*	*2.0%*	*4.6%*	*10.1%*	*17.0%*	*20.0%*	

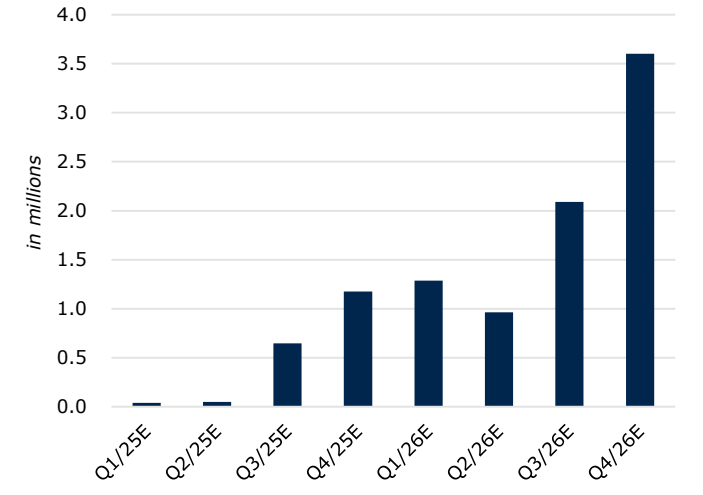
Source: Canaccord Genuity estimates

Another notable factor in our forecasts is the revenue per contract. We have assumed a significant discount to the standard 'per trade fees' starting in 2025 to reflect dilution due to market making and other incentives, and we have only assumed modest growth from those levels beyond 2025E. Based on our review of

other futures products and discussions with the company, we believe that the $5-7 per trade (aggregated for both sides) is a reasonable range, despite the ~$10 sticker price ($5 per side).

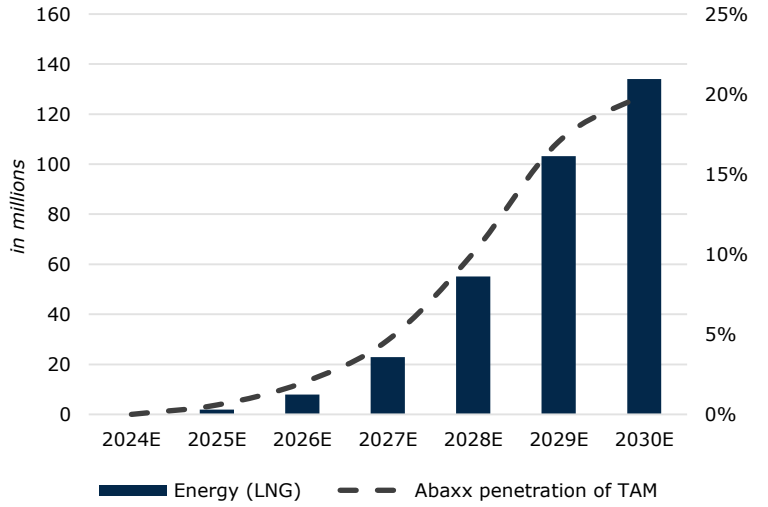
As shown in the figure below, our forecasts assume Abaxx crosses the 10% penetration threshold by F2028 and then reaches 17% by 2029, translating to just over $100M in revenues from the LNG futures products. As a comparable, the two main natural gas contracts (both physically settled) aggregate to US$300M in revenues.

Figure 23: LNG FY25-26 quarterly forecast



Source: Canaccord Genuity estimates

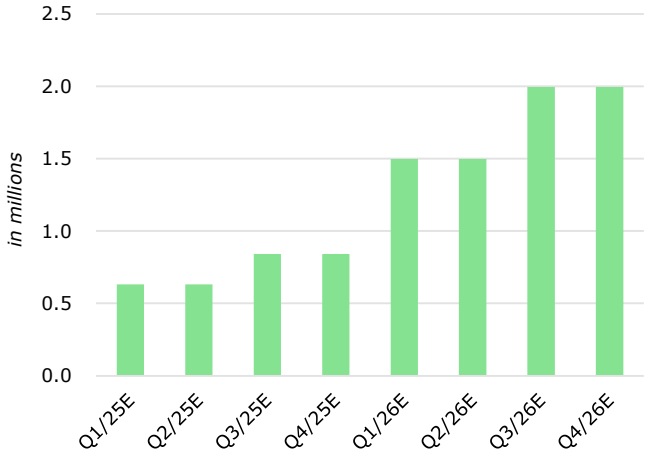
Figure 24: LNG FY25-30 yearly forecast



Source: Canaccord Genuity estimates

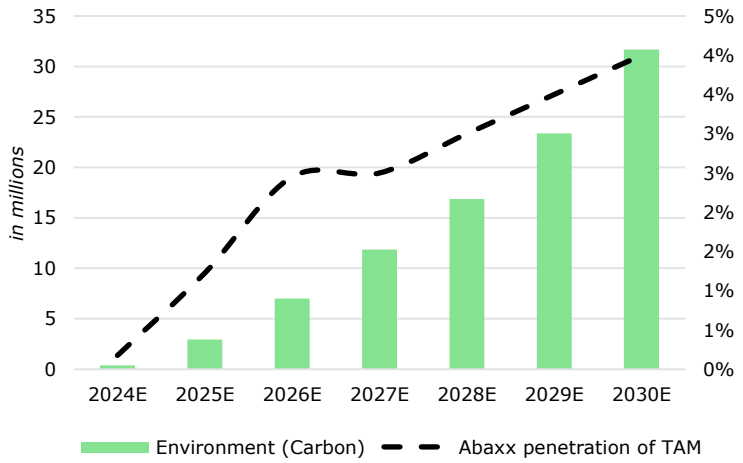
Carbon credit futures: We broadly used a similar methodology for carbon in terms of working off the total demand and applying a multiple to estimate the futures market. We are more circumspect in terms of the penetration rate projections, in that while the early adoption rates may track even ahead of LNG given the existence of active futures products in the market in this category, and we have opted to cap the longer-term penetration rate at the mid-single-digit level. As a reasonableness check on these numbers, we cite ICE's trading volumes on its environmental futures. Recall, ICE launched its CORSIA futures in 2023. In total, the company has reported 3.9M contracts being traded in 2023, which translates to an ADV of 15,600. However, we note that ICE's contracts have 1,000 units each versus Abaxx's contracts which include 100. In that context, even our 2030 estimate for carbon represents only a fraction of ICE's comparative current volumes.

Figure 25: Carbon credits, FY25-26 quarterly forecast



Source: Canaccord Genuity estimates

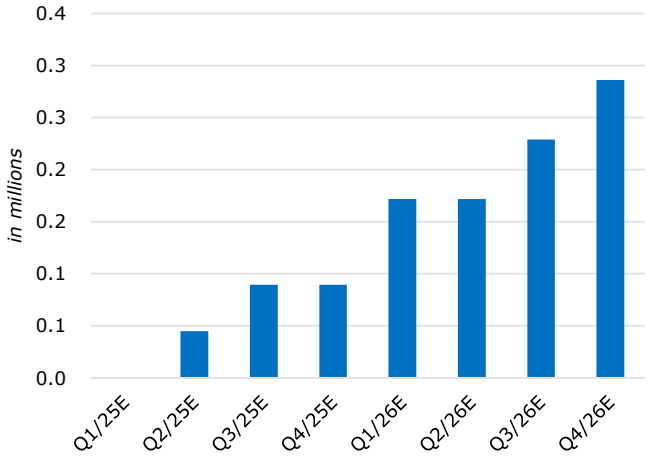
Figure 26: Carbon credits, FY25-30 yearly forecast



Source: Canaccord Genuity estimates

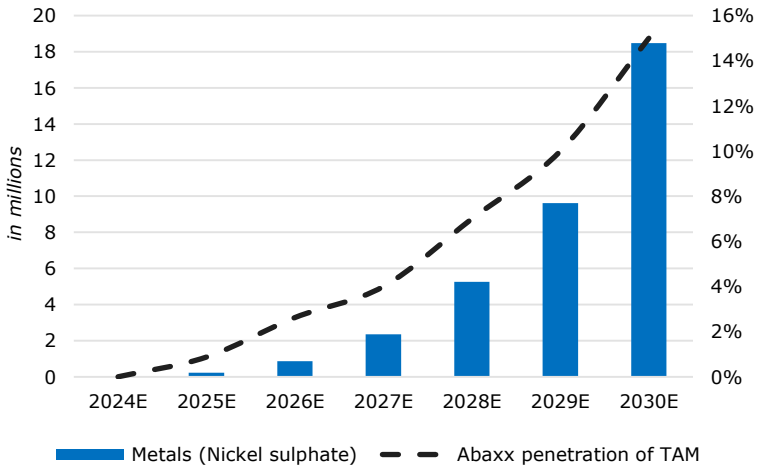
Nickel sulphate futures: Once again, a similar construct in terms of our approach to forecasting. Given the products have not launched yet (due in weeks), we have taken an even more conservative approach, ramping up revenues to no more than $18.5M by 2030E.

Figure 27: Nickel sulphate, FY25-26 quarterly forecast



Source: Canaccord Genuity estimates

Figure 28: Nickel sulphate, FY25-30 yearly forecast



Source: Canaccord Genuity estimates

Royalty income from the Singapore Exchange: We have excluded this item from our forecast due to visibility and materiality, particularly due to the fact that Abaxx Singapore is consolidated in the financials owing to the 89.25% ownership. Recall that in 2019, Abaxx Technologies entered into a Master Licensing Agreement (MLA) with Abaxx Singapore in exchange for its proprietary technology. As part of the contract, Abaxx Singapore will pay a 2% royalty on its revenue each quarter, starting April 1, 2019, and continuing indefinitely unless the company relinquishes the obligation. The royalty payments are due only when Abaxx Singapore generates positive EBITDA of US$25M. The company can purchase an additional 1% increase in the royalty rate for US$10M by December 2025.

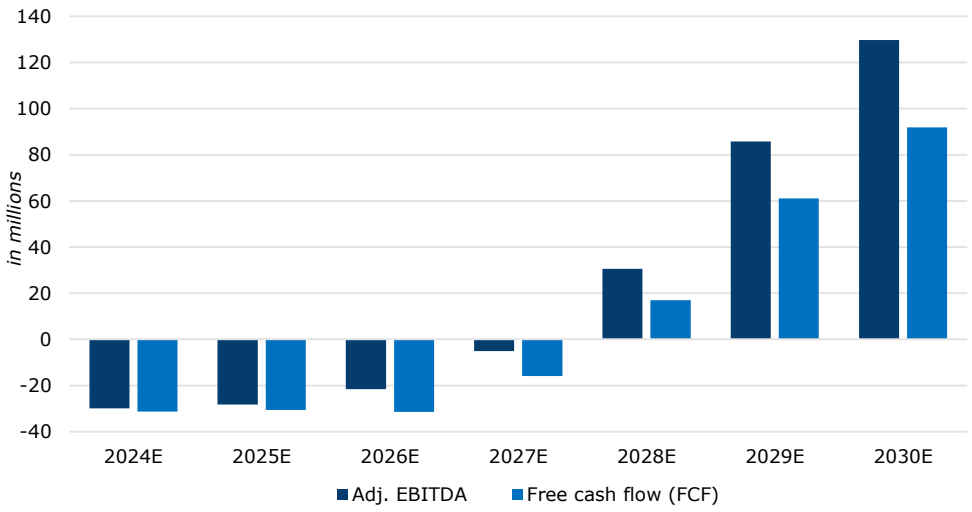
Royalties from Base Carbon: We have assumed fairly moderate growth in royalty revenue here due to lack of visibility. Recall, Abaxx was a founding shareholder of Base Carbon and owned 17.2% of the company as of September 30, 2024, with its shares valued at $8.7M. Abaxx earns a 2.5% royalty by leasing its proprietary

technology to Base Carbon. The agreement allows Base Carbon to buy back the royalty for US$150M.

As of September 30, 2024, $812k had been accrued under this agreement. The royalty payments depend on Base Carbon having a positive EBITDA, which was the case for the period ending September 30, 2024. Abaxx also received a loan from Base Carbon of US$1M, secured by future royalty payments, with a 9% annual interest rate and a maturity date of September 2025.

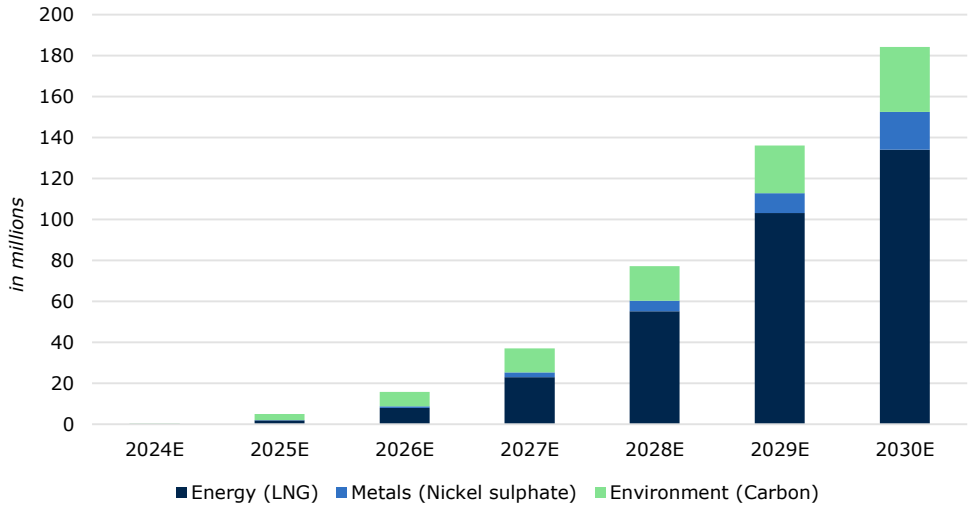
Assumptions for balance sheet management: Given our expectation of break-even being achieved only in late 2027, we have included two debt funding assumptions of $10M in 2025 and $50M in 2026. We have assumed debt cost of 10%.

Figure 29: Adj. EBITDA and FCF forecast



Source: Canaccord Genuity estimates

Figure 30: Total projected revenue from LNG, nickel sulphate, and carbon, 2024E-2030E



Source: Canaccord Genuity estimates

Figure 31: Financial summary

in 1000s CAD, unless stated	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Revenues							
Energy (LNG)	0.0	1.9	7.9	22.9	55.2	103.2	134.1
Metals (Nickel sulphate)	0.0	0.2	0.9	2.3	5.3	9.6	18.5
Environment (Carbon)	0.4	2.9	7.0	11.8	16.9	23.4	31.7
Total transactional revenue	**0.4**	**5.1**	**15.8**	**37.1**	**77.3**	**136.2**	**184.2**
Royalty income - Exchange & Base Carbon	1.3	2.0	2.2	2.4	2.7	2.9	3.2
Total revenue	**1.7**	**7.1**	**18.0**	**39.6**	**80.0**	**139.1**	**187.5**
y/y revenue growth %							
LNG	*0.0%*	*9251.6%*	*315.9%*	*188.7%*	*140.4%*	*87.1%*	*29.9%*
Nickel sulfate	*0.0%*	*NA*	*284.3%*	*173.3%*	*124.2%*	*83.0%*	*92.2%*
Carbon credits	*0.0%*	*730.7%*	*137.4%*	*69.5%*	*42.4%*	*38.5%*	*35.6%*
Total revenue growth	***682.7%***	***319.8%***	***154.1%***	***119.8%***	***102.1%***	***74.0%***	***34.7%***
Operating Expenses	**31.6**	**35.3**	**39.6**	**44.7**	**49.4**	**53.4**	**57.7**
Growth %		*11.6%*	*12.3%*	*12.8%*	*10.6%*	*8.1%*	*8.1%*
Adj. EBITDA	**(29.9)**	**(28.2)**	**(21.6)**	**(5.1)**	**30.6**	**85.7**	**129.7**
Adj. EBITDA growth y/y - %	*NA*	*NA*	*NA*	*NA*	*497.3%*	*180.6%*	*51.3%*
Adj. EBITDA margin - %	*NA*	*NA*	*NA*	*-12.9%*	*38.2%*	*61.6%*	*69.2%*
Net income	**(42.2)**	**(38.2)**	**(37.0)**	**(20.6)**	**14.8**	**64.8**	**93.5**
EPS - basic	**($1.20)**	**($1.09)**	**($1.05)**	**($0.56)**	**$0.50**	**$1.99**	**$2.84**
EPS - diluted	**($1.20)**	**($1.09)**	**($1.05)**	**($0.56)**	**$0.50**	**$1.99**	**$2.84**
CFO	(31.2)	(30.2)	(30.9)	(14.9)	18.5	63.1	94.4
Capex	0.0	(0.4)	(0.6)	(1.0)	(1.5)	(2.0)	(2.5)
Free cash flow (FCF)	**(31.2)**	**(30.6)**	**(31.4)**	**(15.9)**	**17.0**	**61.1**	**91.9**
Net Debt (Cash)	(21.8)	8.8	40.2	56.1	39.1	(22.0)	(113.8)
LTM EBITDA	(42.2)	(37.4)	(30.8)	(61.6)	(8.3)	58.7	152.0
Net Debt/EBITDA	**0.5x**	**(0.2x)**	**(1.3x)**	**(0.9x)**	**(4.7x)**	**(0.4x)**	**(0.7x)**

Source: Company reports, Canaccord Genuity estimates

Valuation

We have calculated a target price of $20.00/share. In estimating a valuation for Abaxx Technologies Inc., we have adopted an EBITDA multiple-based approach, backed by a DCF valuation. As indicated above, the early stage of the Singapore Exchange presents challenges from a valuation perspective, forcing us to rely on outer year (~2030) projections on which to apply our target multiples. However, in addition to a fairly conservative approach to our forecasts themselves (in particular non-LNG products), we have also leaned on higher WACC estimates to mitigate the impact. We also cite the following notes with respect to our valuation analysis.

- The terminal multiple we have used of 11x EV/EBITDA represents a significant discount to the sector average of 16x. We also use EBITDA as opposed to adj. EBITDA as we are not revising our share count to factor in dilution from SBC.
- Rather than using the book value to represent the non-controlling interest in Abaxx Singapore, we have relied on our own NAV.
- We have not assigned a valuation for the royalty agreement with Abaxx Singapore owing to lower visibility and we suspect low materiality given the company owns 89.25% of this affiliate in any case.
- For investments in associate companies (i.e., Base Carbon) and other investments such as Minehub, AirCarbon, and Pasig & Hudson we have simply used book values.
- As shown in the figures below, we use a WACC of 14.4% in our valuation calculations by assigning a somewhat exaggerated beta factor of 3x.

Figure 32: Target price derivation

Valuation	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBITDA	(11,469)	(42,197)	(37,381)	(30,800)	(14,289)	21,380	76,562	120,565
Multiple	11.0x	11.0x	11.0x	11.0x	11.0x	11.0x	11.0x	11.0x
EV	**(126,159)**	**(464,171)**	**(411,188)**	**(338,797)**	**(157,180)**	**235,183**	**842,184**	**1,326,220**
(-) Net Debt	(25,164)	(21,778)	8,779	40,201	56,114	39,128	(21,952)	(113,804)
(-) NCI (based on 10.75% of Abaxx Singapore not owned	5,813	7,219	(45,146)	(40,742)	(22,929)	21,076	92,895	154,803
(+) Investments	-	6,098	21,248	21,248	21,248	21,248	21,248	21,248
Equity Value	**(106,808)**	**(455,710)**	**(353,573)**	**(317,008)**	**(169,117)**	**196,227**	**792,489**	**1,306,469**
WASO - basic (M)	25,488	33,517	33,517	33,517	33,517	33,517	33,517	33,517
WASO - diluted (M)	25,488	33,517	33,517	33,517	33,517	33,517	33,517	33,517
Valuation	$(4.19)	**$(13.60)**	**$(10.55)**	**$(9.46)**	**$(5.05)**	**$5.85**	**$23.64**	**$38.98**
Discounted back to 2025 (using WACC)			**19.89**					

Source: Canaccord Genuity estimates

Figure 33: Discounted Cashflow (DCF) valuation

	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
Revenue	7,082	17,996	39,561	79,960	139,119	187,451	215,568	232,814	244,454	256,677	269,511
Growth	319.8%	154.1%	119.8%	102.1%	74.0%	34.7%	15.0%	8.0%	5.0%	5.0%	5.0%
OPEX	44,463	48,796	53,850	58,580	62,557	66,885	75,449	79,157	80,670	84,703	88,939
Growth	1.3%	9.7%	10.4%	8.8%	6.8%	6.9%	12.8%	4.9%	1.9%	5.0%	5.0%
EBITDA	(37,381)	(30,800)	(14,289)	21,380	76,562	120,565	140,119	153,657	163,784	171,974	180,572
Margin	(527.8%)	(171.1%)	(36.1%)	26.7%	55.0%	64.3%	65.0%	66.0%	67.0%	67.0%	67.0%
Growth	11.4%	17.6%	(53.6%)	(249.6%)	258.1%	57.5%	16.2%	9.7%	6.6%	5.0%	5.0%
Depreciation	109	179	339	532	777	1,064	1,170	1,288	1,416	1,558	1,714
EBIT	(37,490)	(30,979)	(14,628)	20,848	75,785	119,501	138,949	152,370	162,368	170,416	178,859
CAPEX	(400)	(560)	(1,000)	(1,500)	(2,000)	(2,500)	(2,750)	(3,025)	(3,328)	(3,660)	(4,026)
Capex Intensity	5.6%	3.1%	2.5%	1.9%	1.4%	1.3%	1.3%	1.3%	1.4%	1.4%	1.5%
Cash Tax	0	0	0	0	(5,000)	(20,000)	(23,621)	(25,903)	(27,603)	(28,971)	(30,406)
Cash Tax Rate (EBIT)	0%	0%	0%	0%	7%	17%	17%	17%	17%	17%	17%
Unlevered FCF	(37,781)	(31,360)	(15,289)	19,880	69,562	98,065	113,748	124,729	132,854	139,343	146,140
Discount Factor (x)	0.87	0.76	0.67	0.58	0.51	0.45	0.39	0.34	0.30	0.26	0.23
Discounted FCF	(33,025)	(23,962)	(10,212)	11,607	35,501	43,748	44,357	42,517	39,586	36,293	33,272

Terminal EV/EBITDA	11.0x
Terminal Value	1,986,296
Present Value of Terminal Value	517,349
Present Value of FCFs	219,683
Total Present Value	737,032
(–) Net Debt (Cash)	8,779
(–) Non-controlling interest (based on 2030 valuation discounted back)	79,004
(+) Investments	21,248
Equity Value	670,497
Basic Shares Outstanding	33,517.5
Implied Equity Value per Share (C$)	**$20.00**

Assumptions	
WACC	14.4%
Market rate of return	8.0%
Beta - 5 yr	3.00
Risk-Free Rate	4.3%
Cost of Equity	15.50%
Cost of Debt	10%
Equity weighting	80%
Debt weighting	20%

Source: Canaccord Genuity estimates

Figure 34: Comparables

	Price	Market Cap.	Div. Yield	EV/EBITDA			P/E			P/FCF		
Company	*6-Dec-24*	(M)	(%)	2024E	2025E	2026E	2024E	2025E	2026E	2024E	2025E	2026E
Abaxx Technologies	**$11.8**	**388**	**-**	**-9.2x**	**-13.5x**	**-19.3x**	**-9.8x**	**-10.9x**	**-11.3x**	**-12.7x**	**-13.0x**	**-12.6x**
TMX Group	$44.4	12,118	1.7%	17.8x	15.8x	15.2x	27.5x	25.3x	21.4x	28.6x	26.5x	21.2x
Intercontinental Exchange	$155.9	89,537	1.2%	17.9x	16.7x	15.7x	25.6x	23.2x	20.7x	26.0x	22.4x	19.9x
CME Group A	$240.7	86,729	1.9%	20.4x	19.9x	18.9x	23.5x	23.2x	22.2x	23.4x	22.9x	41.2x
Nasdaq	$81.1	46,590	1.2%	21.6x	19.9x	18.2x	29.0x	25.7x	22.8x	49.3x	45.8x	41.4x
Cboe Global Markets	$203.5	21,298	1.2%	16.7x	15.9x	15.2x	23.5x	22.2x	20.8x	25.8x	22.0x	41.1x
ASX	AUD 68.4	13,254	3.0%	18.9x	17.9x	17.2x	27.9x	26.9x	26.2x	29.1x	40.0x	38.0x
Singapore Exchange	SGD 12.7	13,599	2.7%	18.8x	16.6x	16.2x	25.8x	22.9x	22.4x	25.2x	26.3x	25.2x
Euronext	£107.4	11,195	2.3%	12.9x	12.2x	11.6x	16.7x	15.9x	15.1x	14.8x	15.8x	15.0x
Average				**15.1x**	**13.5x**	**12.1x**	**21.1x**	**19.4x**	**17.8x**	**23.3x**	**23.2x**	**25.6x**
Average ex-ABXX				**18.1x**	**16.8x**	**16.0x**	**25.0x**	**23.1x**	**21.4x**	**27.8x**	**27.7x**	**30.4x**

Source: FactSet, Canaccord Genuity estimates

Appendix I

Figure 35: Income statement

Income Statement (C$ thousands)	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Transaction Revenue							
Energy (LNG)	20	1,911	7,947	22,947	55,170	103,214	134,069
Metals (Nickel sulphate)	0	223	858	2,344	5,256	9,618	18,481
Environment (Carbon)	354	2,943	6,986	11,843	16,866	23,352	31,672
Total transactional revenue	**375**	**5,077**	**15,791**	**37,135**	**77,291**	**136,184**	**184,222**
Royalty income - Base Carbon	1,312	2,005	2,206	2,426	2,669	2,936	3,229
Total revenue	**1,687**	**7,082**	**17,996**	**39,561**	**79,960**	**139,119**	**187,451**
Operating Expenses	31,615	35,289	39,622	44,676	49,406	53,383	57,712
Research & development	12,471	13,094	13,749	14,437	15,158	15,916	16,712
Salaries & wages	8,869	10,643	12,772	15,326	17,625	19,388	21,326
Professional fees	4,797	5,757	6,908	8,290	9,533	10,486	11,535
Travel, marketing and promotion	2,222	2,445	2,689	2,958	3,254	3,579	3,937
General and administrative	2,983	3,079	3,233	3,394	3,564	3,742	3,929
Regulatory expenses	272	272	272	272	272	272	272
Share-based compensation	9,174	9,174	9,174	9,174	9,174	9,174	9,174
Depreciation & amortization	18	109	179	339	532	777	1,064
Total operating expenses	**40,806**	**44,572**	**48,975**	**54,189**	**59,112**	**63,334**	**67,949**
Operating Profit (loss)	**(39,120)**	**(37,490)**	**(30,979)**	**(14,628)**	**20,848**	**75,785**	**119,501**
Other Expenses							
Foreign exchange gain (loss)	(41)	0	0	0	0	0	0
Investment income	59	0	0				
Change in fair value of short term investments	0	0	0				
Other income	265	0	0				
Loss on investment under equity method	(2,668)	0	0				
Fair value adjustments on note receivable	(69)	0	0				
(Loss) gain on investment under equity method	(643)	0	0				
Listing expense	0	0	0				
Interest and accretion expenses	0	(750)	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)
Other expenses	0	0	0				
Income (loss) before tax	**(42,216)**	**(38,240)**	**(36,979)**	**(20,628)**	**14,848**	**69,785**	**113,501**
Income tax expense	0	0	0	0	0	5,000	20,000
Total Tax	0	0	0	0.0	0.0	5,000	20,000
Effective tax rate (%)	0%	0%	0%	0%	0%	7%	18%
Net income (loss)	**(42,216)**	**(38,240)**	**(36,979)**	**(20,628)**	**14,848**	**64,785**	**93,501**
Net loss attributable to:							
Shareholders of the company	(40,340)	(36,434)	(35,172)	(18,821)	16,654	66,592	95,308
Non-controlling interest	(1,876)	(1,806)	(1,806)	(1,806)	(1,806)	(1,806)	(1,806)
Cumulative translation adjustment	722	0	0				
Comprehensive income (loss) for the year	**(41,493)**	**(38,240)**	**(36,979)**	**(20,628)**	**14,848**	**64,785**	**93,501**
Net loss attributable to:							
Shareholders of the company	(39,618)	(36,434)	(35,172)	(18,821)	16,654	66,592	95,308
Non-controlling interest	(1,876)	(1,806)	(1,806)	(1,806)	(1,806)	(1,806)	(1,806)
EPS - basic	**($1.20)**	**($1.09)**	**($1.05)**	**($0.56)**	**$0.50**	**$1.99**	**$2.84**
EPS - diluted	**($1.20)**	**($1.09)**	**($1.05)**	**($0.56)**	**$0.50**	**$1.99**	**$2.84**
WASO (in millions):							
Basic	33,517	33,517	33,517	33,517	33,517	33,517	33,517
Diluted	33,517	33,517	33,517	33,517	33,517	33,517	33,517
Adjusted EBITDA Reconciliation	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Net Income	(42,216)	(38,240)	(36,979)	(20,628)	14,848	64,785	93,501
Interest expense	0	750	6,000	6,000	6,000	6,000	6,000
Income taxes	0	0	0	0	0	5,000	20,000
D&A	18	109	179	339	532	777	1,064
EBITDA	**(42,197)**	**(37,381)**	**(30,800)**	**(14,289)**	**21,380**	**76,562**	**120,565**
Share-based compensation	9,174	9,174	9,174	9,174	9,174	9,174	9,174
FX gain (loss)	41	0	0	0	0	0	0
Investment income	(59)	0	0	0	0	0	0
Change in fair value of short term investments	0	0	0	0	0	0	0
(Loss) gain on investment under equity method	2,668	0	0	0	0	0	0
Fair value adjustments on note receivable	69	0	0	0	0	0	0
Loss (gain) on investment at fair value	643	0	0	0	0	0	0
Other income & expense	(265)	0	0	0	0	0	0
Adjusted EBITDA	**(29,928)**	**(28,207)**	**(21,626)**	**(5,115)**	**30,554**	**85,736**	**129,739**
y/y growth %	*18%*	*-6%*	*-23%*	*-76%*	*-697%*	*181%*	*51%*
Adjusted EBITDA Margin	*-1774%*	*-398%*	*-120%*	*-13%*	*38%*	*62%*	*69%*

Source: Company Reports, Canaccord Genuity estimates

Figure 36: Cashflow statement

Cash flow Statement *(C$ thousands)*	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Operating Activities							
Net Income	(42,216)	(38,240)	(36,979)	(20,628)	14,848	64,785	93,501
Share-based compensation	9,174	9,174	9,174	9,174	9,174	9,174	9,174
Depreciation	18	109	179	339	532	777	1,064
Accrued investment income	0	0	0	0	0	0	0
Foreign exchange gain	(359)	0	0				
FV adj. on convertible note receivable	69	0	0				
Change in FV of ST investments	0	0	0				
Loss (gain) on investment in associate	2,668	0	0				
Loss (gain) on investments at fair value	643	0	0				
Fair value adjustment on derivative liability	0	0	0				
Impairment of investment in associate	0	0	0				
Depreciation	0	0	0				
Interest on shareholders loan	0	0	0				
Interest and accretion expenses	0	0	0				
Shares issued for consulting fees	0	0	0				
Changes in operating assets and liabilities:							
Member margin deposit and guaranty funds	(2,714)	0	(2,000)	(1,000)	(1,000)	(1,000)	(1,000)
Margin deposits and guaranty funds	2,751	0	2,000	1,000	1,000	1,000	1,000
Other receivables	(279)	(1,761)	(3,921)	(3,402)	(6,675)	(12,156)	(9,931)
Prepaid expenses	0	0	0	0	0	0	0
Account payable and accrued liabilities	(992)	562	684	(395)	607	500	544
Loan payable to shareholders	0	0	0				
Cash from operating activities	**(31,236)**	**(30,157)**	**(30,862)**	**(14,913)**	**18,486**	**63,080**	**94,352**
Investing Activities							
Core Capex	0	(400)	(560)	(1,000)	(1,500)	(2,000)	(2,500)
Decrease in fair value short term investments	0	0	0				
Sale (purchase) of (ST) investments at fair value	0	0	0				
Investment in associate	0	0	0				
Increase in convertible note receivables	0	0	0				
Cash from investing activities	**0**	**(400)**	**(560)**	**(1,000)**	**(1,500)**	**(2,000)**	**(2,500)**
Financing Activities							
Proceeds from share issuance, net of issue costs	19,652	0	0				
Proceeds from exercise of options	7,377	0	0				
Receipts of funds held in trust	0	0	0				
Receipt of subscription receivables	0	0	0				
Proceeds from Debt	99	10,000	50,000				
Cash from financing activities	**27,128**	**10,000**	**50,000**	**0**	**0**	**0**	**0**
Effect of FX ▲ on cash and cash equivalents	722	0	0				
Cash Position							
Increase (decrease) in cash and cash equivalents	(4,108)	(20,557)	18,578	(15,913)	16,986	61,080	91,852
Cash and cash equivalents, beginning of period	25,164	21,778	1,221	19,799	3,886	20,872	81,952
Cash and cash equivalents, end of period	**21,778**	**1,221**	**19,799**	**3,886**	**20,872**	**81,952**	**173,804**

Source: Company Reports, Canaccord Genuity estimates

Figure 37: Balance sheet

Balance Sheet *(C$ thousands)*	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Current Assets							
Cash and cash equivalents	21,778	1,221	19,799	3,886	20,872	81,952	173,804
Member deposits & ST investments	2,771	2,771	4,771	5,771	6,771	7,771	8,771
Subscription receivable	0	0	0	0	0	0	0
Funds held in trust	0	0	0	0	0	0	0
Other receivables	671	2,432	6,353	9,755	16,430	28,586	38,517
Prepaid and other assets	681	681	681	681	681	681	681
Convertible note receivables	636	636	636	636	636	636	636
Total Current Assets	**26,536**	**7,741**	**32,239**	**20,729**	**45,390**	**119,626**	**222,409**
Non-Current Assets							
Investments at fair value	3,599	3,599	3,599	3,599	3,599	3,599	3,599
Investment in associate	17,648	17,648	17,648	17,648	17,648	17,648	17,648
Property. Plant & Equipment	360	651	1,032	1,693	2,661	3,884	5,320
Total Assets	**48,145**	**29,640**	**54,519**	**43,670**	**69,299**	**144,758**	**248,977**
Current Liabilities							
Accounts payable and accrued liabilities	4,827	5,388	6,073	5,678	6,285	6,785	7,329
Covertible debenture	0	0	0	0	0	0	0
Loan payable to shareholder	0	0	0	0	0	0	0
Margin deposits & guaranty funds	2,714	2,714	4,714	5,714	6,714	7,714	8,714
Total Current Liabilities	**7,540**	**8,102**	**10,786**	**11,391**	**12,999**	**14,499**	**16,043**
Long term debt		10,000	60,000	60,000	60,000	60,000	60,000
Total liabilities	**7,540**	**18,102**	**70,786**	**71,391**	**72,999**	**74,499**	**76,043**
Shareholders' equity							
Share Capital	131,894	141,068	150,241	159,415	168,589	177,762	186,936
Preferred shares	6,098	6,098	6,098	6,098	6,098	6,098	6,098
Contributed surplus	15,877	15,877	15,877	15,877	15,877	15,877	15,877
Cumulative other comprehensive income (loss)	1,373	1,373	1,373	1,373	1,373	1,373	1,373
Warrants	0	0	0	0	0	0	0
Surplus (deficit)	(107,418)	(145,658)	(182,637)	(203,265)	(188,416)	(123,631)	(30,130)
Total equity of Abaxx Technologies Inc.	**47,824**	**18,758**	**(9,048)**	**(20,502)**	**3,520**	**77,479**	**180,154**
Non-controlling interest	(7,219)	(7,219)	(7,219)	(7,219)	(7,219)	(7,219)	(7,219)
Total Shareholder's equity	**40,604**	**11,538**	**(16,267)**	**(27,721)**	**(3,699)**	**70,259**	**172,934**
Total liabilities and owners' equity	**48,145**	**29,640**	**54,519**	**43,670**	**69,299**	**144,758**	**248,977**

Source: Company Reports, Canaccord Genuity estimates

Appendix II – Revenue projections

Figure 38: LNG revenue projections, 2024E-2030E

Energy (LNG)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	CAGR %
Total LNG Trade	432,000,000	455,328,000	479,915,712	505,831,160	533,146,043	561,935,929	592,280,470	5%
Physical TAM - mmBtu	20,046,960,000	21,129,495,840	22,270,488,615	23,473,095,001	24,740,642,131	26,076,636,806	27,484,775,193	
mmBtu/contract	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
Total contracts in physical market	2,004,696	2,112,950	2,227,049	2,347,310	2,474,064	2,607,664	2,748,478	
% of short term contracts	40%	40%	45%	50%	50%	50%	50%	
Short term contracts in physical market	801,878	845,180	1,002,172	1,173,655	1,237,032	1,303,832	1,374,239	
Futures market - 40x of physical	32,075,136	33,807,193	40,086,880	46,946,190	49,481,284	52,153,274	54,969,550	40.0x
+) Secondary contracts - 20%	6,415,027	6,761,439	8,017,376	9,389,238	9,896,257	10,430,655	10,993,910	20%
+) Additional contracts - 10%	3,207,514	3,380,719	4,008,688	4,694,619	4,948,128	5,215,327	5,496,955	10%
Total contracts	41,697,677	43,949,351	52,112,943	61,030,047	64,325,670	67,799,256	71,460,416	
Trading days per year	250	250	250	250	250	250	250	250
ADV - LNG futures	**166,791**	**175,797**	**208,452**	**244,120**	**257,303**	**271,197**	**285,842**	
Contract price	$10.00	$5.25	$5.51	$5.79	$6.08	$6.38	$6.70	5%
Revenue/day	$1,667,907	$922,936	$1,149,090	$1,412,998	$1,563,765	$1,730,619	$1,915,276	
Revenue per period	$416,976,768	$230,734,095	$287,272,600	$353,249,541	$390,941,267	$432,654,700	$478,818,956	
Abaxx Singapore revenue (USD)	$14,594	$1,364,792	$5,676,507	$16,390,779	$39,406,880	$73,724,361	$95,763,791	
X rate (CAD/USD)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	
Abaxx Singapore revenue (CAD)	**$20,432**	**$1,910,709**	**$7,947,109**	**$22,947,090**	**$55,169,632**	**$103,214,105**	**$134,069,308**	
Abaxx Singapore penetration of TAM	*0.0%*	*0.6%*	*2.0%*	*4.6%*	*10.1%*	*17.0%*	*20.0%*	

Source: Canaccord Genuity estimates

Figure 39: Nickel sulphate revenue projections, 2024E-2030E

Metals (Nickel sulphate)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	CAGR %
Nickel Sulfate tonnes - TAM	383,000	467,260	570,057	695,470	848,473	1,035,137	1,262,867	*22%*
Nickel/contract - 5 tonnes	5	5	5	5	5	5	5	5
Physical contracts - TAM	76,600	93,452	114,011	139,094	169,695	207,027	252,573	
Futures market - 40x of physical	3,064,000	3,738,080	4,560,458	5,563,758	6,787,785	8,281,098	10,102,939	40x
(+) Secondary contracts - 20%	612,800	747,616	912,092	1,112,752	1,357,557	1,656,220	2,020,588	20%
(+) Additional contracts - 10%	306,400	373,808	456,046	556,376	678,779	828,110	1,010,294	10%
Total contracts	3,983,200	4,859,504	5,928,595	7,232,886	8,824,121	10,765,427	13,133,821	
Trading days	250	250	250	250	250	250	250	250
ADV	**15,933**	**19,438**	**23,714**	**28,932**	**35,296**	**43,062**	**52,535**	
Contract price	$5.00	$5.25	$5.51	$5.79	$6.08	$6.38	$6.70	*5%*
Revenue/day	$79,664	$102,050	$130,726	$167,459	$214,515	$274,794	$352,012	
Revenue per period	$19,916,000	$25,512,396	$32,681,379	$41,864,847	$53,628,869	$68,698,581	$88,002,882	
Abaxx Singapore revenue USD	$0	$159,452	$612,776	$1,674,594	$3,754,021	$6,869,858	$13,200,432	
FX rate (CAD/USD)	NA	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	
Abaxx Singapore revenue CAD	**$0**	**$223,233**	**$857,886**	**$2,344,431**	**$5,255,629**	**$9,617,801**	**$18,480,605**	
Abaxx Singapore penetration of TAM	*0.0%*	*0.9%*	*2.6%*	*4.0%*	*7.0%*	*10.0%*	*15.0%*	

Source: Canaccord Genuity estimates

Figure 40: Carbon revenue projections, 2024E-2030E

Environment (Carbon)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	CAGR %
VCM tonnes - TAM	486,670,313	571,837,617	671,909,200	789,493,310	927,654,640	1,089,994,201	1,280,743,187	*17.5%*
Credits/contract	100	100	100	100	100	100	100	100
VCM physical contracts	4,866,703	5,718,376	6,719,092	7,894,933	9,276,546	10,899,942	12,807,432	
Futures market - 40x of physical	194,668,125	228,735,047	268,763,680	315,797,324	371,061,856	435,997,681	512,297,275	40x
(+) Secondary contracts - 20%	38,933,625	45,747,009	53,752,736	63,159,465	74,212,371	87,199,536	102,459,455	20%
(+) Additional contracts - 10%	19,466,813	22,873,505	26,876,368	31,579,732	37,106,186	43,599,768	51,229,727	10%
Total contracts	253,068,563	297,355,561	349,392,784	410,536,521	482,380,413	566,796,985	665,986,457	
Trading days	250	250	250	250	250	250	250	250
ADV	**1,012,274**	**1,189,422**	**1,397,571**	**1,642,146**	**1,929,522**	**2,267,188**	**2,663,946**	
Contract price	$0.80	$0.81	$0.82	$0.82	$0.83	$0.84	$0.85	*1%*
Revenue/day	$809,819	$961,053	$1,140,530	$1,353,524	$1,606,294	$1,906,270	$2,262,266	
Revenue per period	$202,454,850	$240,263,293	$285,132,463	$338,380,951	$401,573,593	$476,567,462	$565,566,435	
Abaxx Singapore revenue USD	$253,069	$2,102,304	$4,989,818	$8,459,524	$12,047,208	$16,679,861	$22,622,657	
FX rate (CAD/USD)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40	
Abaxx Singapore revenue CAD	**$354,296**	**$2,943,225**	**$6,985,745**	**$11,843,333**	**$16,866,091**	**$23,351,806**	**$31,671,720**	
Abaxx Singapore penetration of TAM	*0.2%*	*1.2%*	*2.5%*	*2.5%*	*3.0%*	*3.5%*	*4.0%*	

Source: Canaccord Genuity estimates

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Investment Recommendation

Date and time of first dissemination: December 09, 2024, 04:46 ET

Date and time of production: December 08, 2024, 22:34 ET

Target Price / Valuation Methodology:

Abaxx Technologies Inc. - ABXX

We value the company using DCF and multiple-based approach. We use 11x EV/EBITDA (2030E) and discount it back to 2025 to get our target price of $19.89/sh. Our DCF target price of $20/sh. is derived from 14.4% WACC, 11x terminal multiple and 2035E EBITDA.

Risks to achieving Target Price / Valuation:

Abaxx Technologies Inc. - ABXX

Uncertainty around the financial projections due to early stage of Exchange launch: While we have used various comps and adoption models to arrive at a reasonable ramp-up projection, there is naturally a degree of uncertainty around the shape of the ramp for a brand-new exchange and clearing house. At this point, management has earmarked the first 12 months since launch as the 'onboarding' phase, to be followed by a more aggressive market penetration phase. With that said, driving volumes in an exchange involves parallel progress across the ecosystem of clearing firms, trading companies, market makers etc, and a bottleneck in one area could delay the progress of the overall project.

Financing risks: As we allude to in the financials section, we expect to see EBITDA level burn through to mid-2027 which imply financing requirements in F2025 and F2026. While the financing could be achieved through equity or debt, changes to market conditions or a slowdown in the rate of adoption of key products could represent challenges to the balance sheet.

Competitive action of incumbents: The dominant operators in this space, mainly ICE and CME operate in the same spaces as Abaxx. As discussed within this report, these operators are active with their own products, particularly in LNG and Carbon futures. If there is evidence of meaningful uptake in Abaxx's products, these competitors may attempt to reconfigure their own product offerings to realign with market needs and position themselves more directly against Abaxx's value proposition. We however recognize that larger organisations do not generally pivot quickly and are also hesitant to make sharp changes due to the risk of compromising existing revenue lines.

Loss of key personnel: We underline the view that the strength and depth of experience of the team assembled by Abaxx is central to its investment case. In that context, loss of key executives, especially early on in its development could serve to weaken investor sentiment and potentially impact the rate of progress for the Exchange.

Changes to market conditions: In the case of LNG, we note that the demand for reliable futures products is partly driven by phases of sharp pricing variance between hub-based natural gas prices and LNG. However, extended periods of highly correlated pricing could reduce apparent attractiveness of the LNG-based futures solutions.

Distribution of Ratings:

Global Stock Ratings (as of 12/09/24)

Rating	Coverage Universe		IB Clients
	#	%	%
Buy	618	66.74%	24.76%
Hold	131	14.15%	9.16%
Sell	14	1.51%	7.14%
Speculative Buy	154	16.63%	51.30%
	926*	100.0%	

*Total includes stocks that are Under Review

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HOLD: The stock is expected to generate returns from -10% to 10% during the next 12 months.

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*As of January 1, 2024, the Ratings History Chart will reflect the new Canaccord Genuity Ratings System as defined above.

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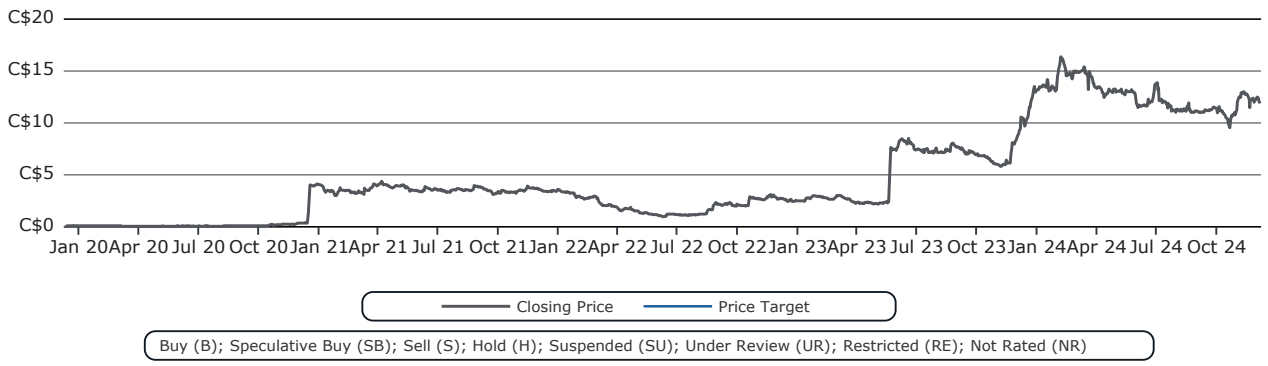
Abaxx Technologies Inc. Rating History as of 12/06/2024



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