

# HALLGARTEN + COMPANY

## Initiation of Coverage

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## Edison Lithium

(TSX-v: EDDY, OTCQX: EDDYF, FSE: VV0)

Strategy: LONG

### Key Metrics

Price (CAD)	\$0.225
12-Month Target Price (CAD)	\$0.680
Upside to Target	202%
12mth high-low	\$0.125 to \$0.80
Market Cap CAD mn)	\$4.17
<b>Shares Outstanding (mns)</b>	<b>18.6</b>
<b>Options (av. 26cts)</b>	<b>1.3</b>
<b>Warrants (av price 74 cts)</b>	<b>8.4</b>
<b>Fully diluted</b>	<b>28.3</b>

# Edison Lithium

## Pivoting to Sodium-Ion Battery Technology

- + Recent dive into Sodium Brines in Saskatchewan driven by the rising interest in Sodium-Ion battery formulations
- + Majors, such as Northvolt, Tesla and now China's massive BYD, are all experimenting with sodium-ion formulations for stationary applications in the first instance
- + Edison moved, in 2021, into Lithium *salares* in Argentina, and now (December 2023) has flipped 80% of the package for three times what it paid for it, while retaining key pieces for its own purposes
- + Argentina has become the "Saudi Arabia of Lithium" as Chile has sidelined itself and Nevada can never compete in size
- + As a mining jurisdiction Argentina is a favourable one, yet the politics left a lot to be desired, but now the Milei government promises a return to freer markets
- + EV demand is soaring after a long period of projections exceeding reality, now the opposite appears to be the case
- + The company disclosed its intention to spin out its Cobalt prospects in Ontario in late 2023 as a NewCo via a demerger
- ✘ Sodium-ion batteries are well-known but mass adoption has not yet been achieved
- ✘ No work has yet been done on the newly-added sodium sulphate asset suite
- ✘ Little has been done in terms of exploration and resource definition at the properties that Edison Lithium has picked up in Argentine *altiplano*

### Battery Metals Resurgent

The First Lithium Boom back in 2009-10 seems an eternity ago, and it was quickly squelched by the Rare Earth juggernaut. In reality, it was somewhat ahead of its time with EV's being mainly a twinkle in the eye of Toyota, with the Chinese EV industry and Elon Musk's efforts being largely conceptual. In 2013 Graphite reared its head with investors suddenly realising that Lithium-Ion batteries contained more than just Lithium. Coming in the midst of the generalized mining malaise from 2012-19, it rapidly fizzled but created a small universe of Graphite plays. Then along came the Second Lithium Boom of 2017. This blazed bright and also fizzled, with the rain on the parade being misinformed Wall Street punditry. Finally though in 2020, a Third Unified Battery Metal Boom washed upon the shore with real EV demand/production as its driving force. This has lifted all battery metals projects to differing extents.

In this update we shall look at Edison Lithium's move into the ranks of Lithium explorers in Argentina and its more recent targeting of Sodium Ion batteries. We also look at its scheduled spin-out of its Cobalt assets, as a NewCo, onto Canadian markets.

## Some Background

Edison Lithium (formerly Power Americas Minerals Corp) was incorporated in November 2009 and listed on the TSX-v in August 2011. In September of 2018 the company changed its name to Edison Cobalt. In mid-2021, the company changed its name to Edison Lithium. The stock is traded on the TSX-V under the symbol EDDY, on the Frankfurt Stock Exchange under the symbol VVO.

In June of 2021, it moved into the Lithium *salares* space in Argentina with the purchase of two sets of licenses in Catamarca province.

More recently, in September of 2023, it made a move into the supply chain of the up-and-coming sodium-ion battery technology when it signed an agreement with the project generator, Globex Mining Enterprises (TSX: GMX, FSE: G1MN, OTCQX: GLBFX) to acquire concessions prospective for sodium sulphate in the province of Saskatchewan. The rationale behind the latter is to get positioned in an upcoming technology at a moment when there are questions being asked about the long-term suitability of Lithium-ion format for EV's and red-flags raised over the carbon footprint of Lithium-based batteries.

## Latest Deal

In late August, it was announced that Edison Lithium had inked a deal with the project generator, Globex under which Edison would acquire from Globex the rights to certain alkali dispositions located in Ceylon Lake, Freefight Lake and Cabri Lake, in southern Saskatchewan. Sodium sulphate has been reported to occur on all the acquired assets.

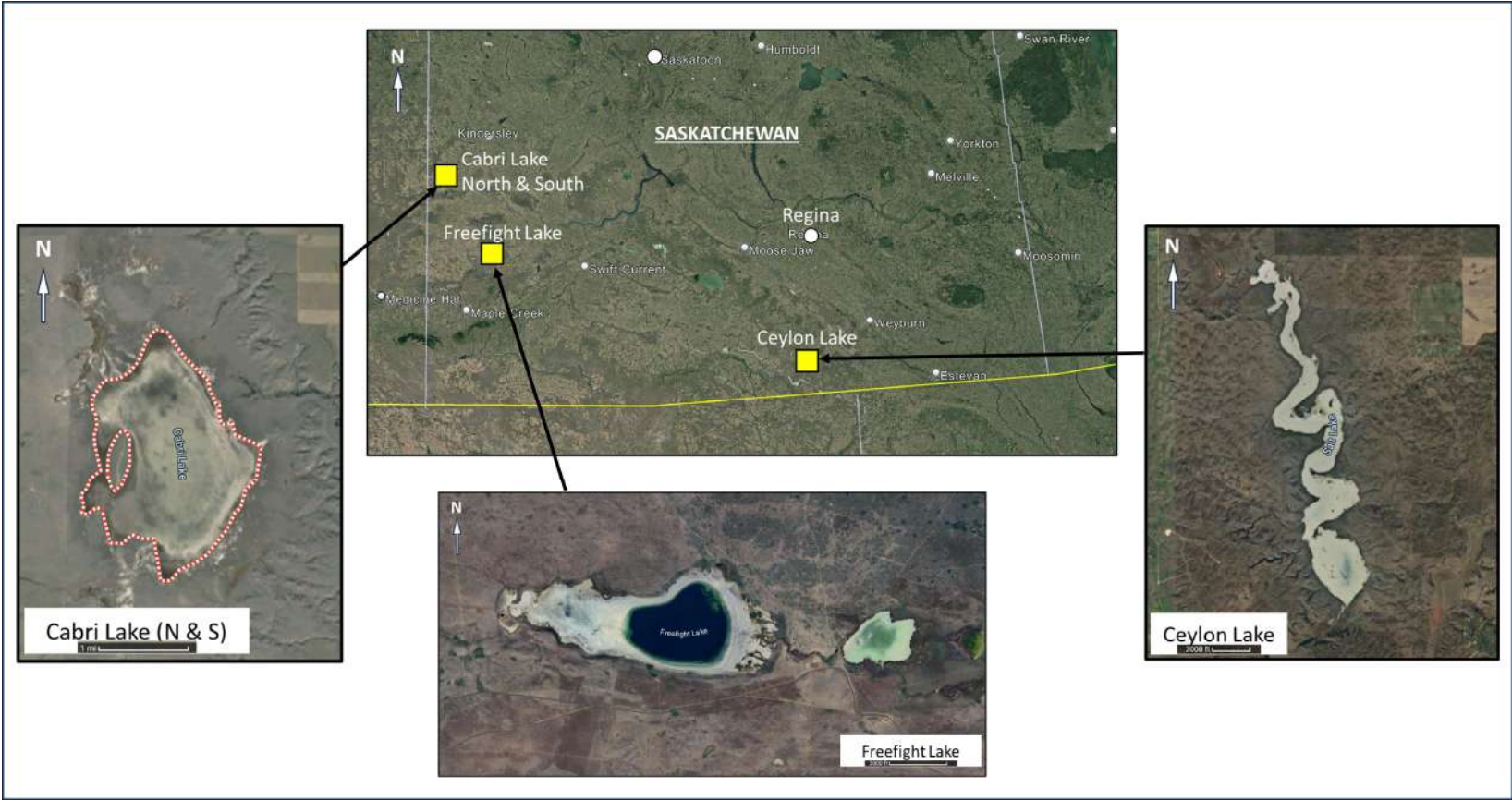
## Terms & Conditions

Under the terms of the agreement, Globex shall transfer all of its right, title and interest in the Alkali Dispositions to Edison in exchange for:

- a cash payment of \$35,000 payable to Globex
- the issuance of 156,250 common shares in the capital of Edison to Globex
- payment to Globex of a royalty of 2% of Gross Revenue from commercial production of mineral products by Edison
- Half of this royalty can be repurchased by Edison for US\$1mn

Alkali Dispositions		
Location	No. LSD Grid Cells	Acres
Ceylon Lake	32	1269.86
Freefight Lake	22	883.88
Cabri Lake North	30	1200.79
Cabri Lake South	30	1200.36

The shares to be issued in connection with the agreement shall be subject to a statutory hold period of four months from the date of issuance.



Above can be seen maps of the individual concessions and then their provincial context.

## Sodium

Sodium is the chemical element with the symbol Na (from Latin natrium) and atomic number 11. It is a soft, silvery-white, highly reactive metal. Sodium is an alkali metal, being in group 1 of the periodic table.

It belongs to the same group in the periodic table as Lithium and thus has similar chemical properties.

### Sodium-Ion Batteries

The sodium-ion battery (NIB or SIB) is a type of rechargeable battery that uses sodium ions (Na<sup>+</sup>) as its charge carriers. In some cases, its working principle and cell construction are similar to those of Lithium-ion battery (LIB) types, but it replaces Lithium with sodium as the cathode material.

SIBs received academic and commercial interest in the 2010s and 2020s, largely due to the uneven geographic distribution, high environmental impact, and high cost of many of the materials required for Lithium-ion batteries.

Chief among these are Lithium, cobalt, copper and nickel, which are not strictly required for many types of sodium-ion batteries.

The largest advantage of sodium-ion batteries is the natural abundance of sodium, which can be readily harvested from saltwater. Challenges to the adoption of SIBs include lower energy density and insufficient charge-discharge cycles.

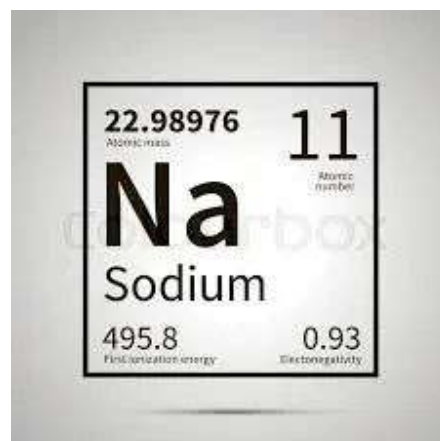
### EVs and SIBs

Electric vehicles using sodium-ion battery packs are not yet commercially available. However, CATL, the world's biggest battery manufacturer, announced in 2022 the start of mass production of SIBs. In February 2023, the Chinese HiNa Battery Technology Co., Ltd. placed a 140 Wh/kg sodium-ion battery in an electric test car for the first time, and energy storage manufacturer Pylontech obtained the first sodium-ion battery certificate from TÜV Rheinland.

### History

This storage formulation is far from being new as the sodium-ion battery was discovered in 1807 by an English chemist and inventor Sir Humphry Davy (1778–1829).

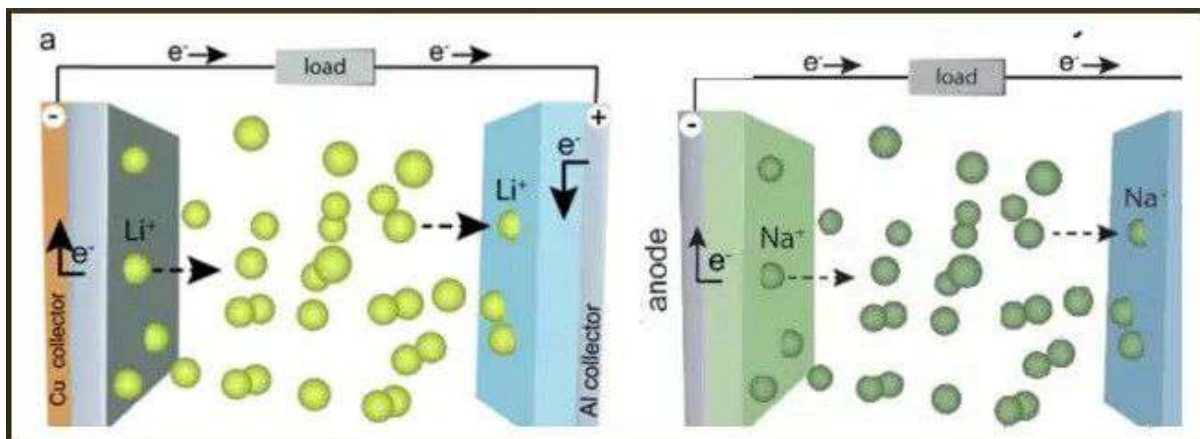
Necessity may be the mother of invention, but the modern sodium-ion battery has many claimants to paternity. Significant sodium-ion battery development took place in the 1970s and early 1980s. However, by the 1990s, Lithium-ion batteries had demonstrated more commercial promise, because of higher energy density, causing interest in sodium-ion batteries to decline. In the early 2010s, sodium-ion batteries experienced a resurgence, driven largely by the increasing cost of Lithium-ion battery raw



materials and improvements in the performance of sodium-ion batteries.

### How They Work

SIB cells consist of a cathode based on a sodium containing material, an anode (not necessarily a sodium-based material) and a liquid electrolyte containing dissociated sodium salts in polar protic or aprotic solvents. During charging, sodium ions move from the cathode to the anode while electrons travel through the external circuit. During discharge, the reverse process occurs.



### Attractions and Advantages

Sodium-ion batteries offer a versatile and economically viable option by relying on an alkaline metal so abundant on Earth and with relatively low production costs. They provide energy efficient power with fast charging, stability against temperature extremes and safety against overheating or thermal runaway.

Amongst the currently perceived disadvantages of the format are the relatively lower energy density of sodium-ion batteries, its short cycle life and the industrial chain still being incomplete. However, compared with lithium ions, sodium ions have a larger volume and higher requirements regarding structural stability and the kinetic properties of materials. This has become a bottleneck for the industrialization of sodium-ion batteries.

### Adoption?

The key to triggering sodium-ion formulations moving into the mainstream is first technological development and improvement and then practical applications that are non-niche. Sodium-ion capacity announcements have historically been dominated by academia and start-ups, thus the entry of battery heavyweights is crucial for commercialisation of the technology.

Two recent developments in sodium-ion batteries were both primarily focussed on stationary applications:

- BYD of China, the world's second biggest cell producer, announced it will build a 30 gigawatt-hour

(GWh) plant in China

- Tesla, in its eternal search for alternatives to reduce costs and maintain its role at the front of technology, has been reviewing the potential for sodium-ion formats. This is being advanced through a relationship with Jeff Dahn and Dalhousie University
- Peak Energy, a “son of Tesla” start-up announced a push into the space
- Sweden’s Northvolt announced that it had developed a sodium-ion cell with an energy density similar to Lithium iron Phosphate (LFP) cells and aimed to set up Europe’s first pilot plant

In October of 2023, a US-based start-up, Peak Energy, announced that it was aiming to roll out its sodium-ion batteries by 2025 and open a giga-scale manufacturing plant the following year.

The company is led by two Tesla veterans with a goal to challenge the dominance of lithium-ion batteries with sodium-ion alternative that it claims could halve the cost of energy storage for generators such as wind and solar. Its launch follows a \$10mn funding round led by California-based Eclipse Ventures and strategic partner TDK Ventures.

The Northvolt announcement in late November involved what they termed a “state-of-the-art” sodium-ion battery, developed for the expansion of cost-efficient and sustainable energy storage systems worldwide. The cell has been validated for an energy density of over 160 watt-hours per kilogram at the company’s R&D and industrialization campus at Västerås, Sweden.

The sodium-ion technology, which has been developed together with research partner Altris, is intended to provide the foundation for Northvolt’s next-generation energy storage solutions.

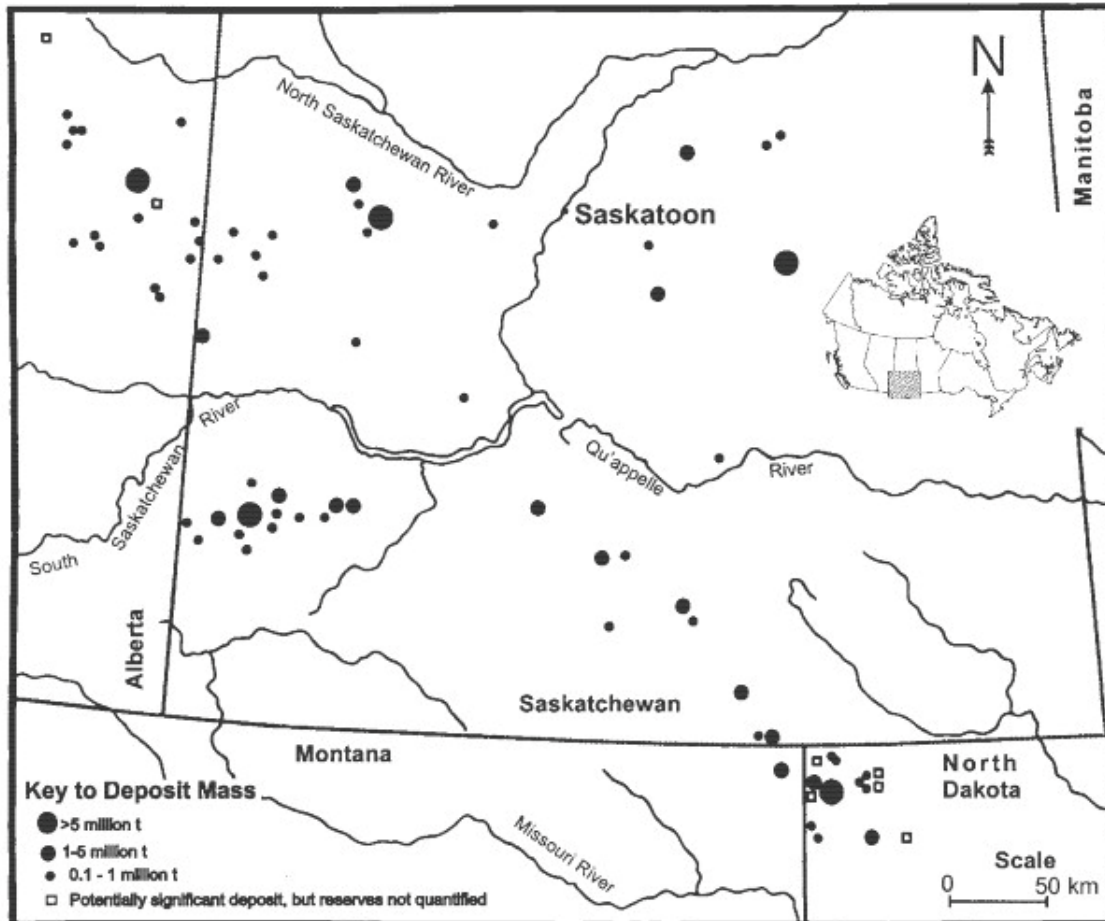
Northvolt claim that their validated cell is more safe, cost-effective, and sustainable than conventional nickel, manganese and cobalt (NMC) or iron phosphate (LFP) chemistries. It is based on a hard carbon anode and a Prussian White-based cathode, and does not employ lithium, nickel, cobalt and graphite. Northvolt plans to be the first to industrialize Prussian White-based batteries and bring them to commercial markets.

Interestingly, Northvolt’s first generation of sodium-ion cell is designed primarily for energy storage, which suggests that this mode will be the Trojan Horse which will penetrate market niches and eventually, maybe, lead to higher energy density opening opportunities to enable cost-efficient electric mobility (read EV) solutions.

### **Saskatchewan and Sodium Sulphate**

Sodium sulphate has been mined from evaporite deposits in Saskatchewan since 1918. It is widely viewed that groundwater discharge, manifested by seeps and springs in and around the lakes, supplied (and continues to supply) dissolved ions to the lakes. The ions are concentrated by evaporation. The brines reach saturation, and salts, primarily mirabilite  $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ , are precipitated. Previous workers have

offered various hypotheses regarding the nature of the groundwater discharging at the deposits and the ultimate source of dissolved ions, but none of the hypotheses have been tested.



### Regional Geology

Natural sodium sulphate deposits occur in many shallow hypersaline lakes in southern Saskatchewan, northwestern North Dakota, northeastern Montana, and east-central Alberta. This region is underlain by a thick (in excess of 1000 m) sequence of near-horizontal sedimentary rock. The Paleozoic section consists predominantly of carbonates and evaporites, whereas the Mesozoic rocks are dominantly marine clastic sedimentary rocks. The Cenozoic section is composed of nearshore and terrestrial clastic sedimentary rocks.

The region was subjected to multiple episodes of glaciation during the Pleistocene. The unconsolidated glacial, glaciofluvial and glaciolacustrine sediment (drift) that mantles the bedrock is over 300 m thick in places, and averages about 100 m thick in southern Saskatchewan (Simpson, 1997). The drift is derived primarily from the Cretaceous marine shale (principally the Bearpaw Formation) that underlies the southern part of the province.



The deposits are generally recognized to be post-glacial accumulations, developed on thick glacial till, in internally drained basins. The region is characterized by flat to gently rolling topography, and a large portion of the region is internally drained. The plains region is subject to a cold, semi-arid climate, with mean daily temperatures ranging from approximately  $-20^{\circ}$  to  $+20^{\circ}$  C. The low humidity, high winds and warm summer temperatures are responsible for annual evaporation/precipitation ratios.

Below can be seen a closeup of the ground on Edison's new concessions:



### Sources

A summary of the opinions on the source of these deposits speculates that they originate from:

- till (derived primarily from underlying Cretaceous marine shales) containing abundant smectite with exchangeable sodium,
- Cretaceous or older marine rocks containing bentonite with exchangeable sodium,
- connate water from marine rocks
- dissolution of deeply buried ( $>1000$  m) Paleozoic evaporites

And the modes by which they arrive at surface are:

- Meteoric waters flowing over the land surface (runoff)
- Shallow flow systems, involving groundwater of recent (meteoric) origin and/or Pleistocene (glacial) origin that circulates through fractured till and/or intertill aquifers
- Flow systems of intermediate depth that involve recent meteoric water, Pleistocene water, or Cretaceous connate water
- Deeply-circulating flow systems involving Paleozoic connate water or water that dissolved salt from the Devonian Prairie Evaporite or other evaporites in the Western Canada Basin.

Both the origins and the modes remain only hypotheses at this time. But what is known and has been observed is that new resources are being replenished constantly.

### **Production**

Most Saskatchewan companies that produce  $\text{Na}_2\text{SO}_4$  do so by pumping brine into crystallization ponds, where it is concentrated by evaporation over the summer. In the autumn, as the ambient temperature cools, Glauber's salt (the commercial name for mirabilite) crystallizes and accumulates on the pond liner. The pond is then drained of any remaining liquid, and the Glauber's salt is harvested from the pond. At one operation, intermittent and permanent crystal is mined from the lakebed using a dredge-mounted excavator. Solution mining has been employed in the past but is not currently being used.

### **Argentina - The Saudi of Lithium?**

Deng Xiao Ping is most famous in mining circles for his oft-repeated aside from the 1980s that whereas "Saudi Arabia has oil, China has Rare Earths". All these years later, one could paraphrase Deng by replacing "China has Rare Earths" with Argentina has Lithium.

For a long while, Chile synonymous with sourcing Lithium from brine lake Lithium deposits (*salares*) but in a curious own-goal situation Chile has squandered that advantage by trying to keep a tight control on the number of players and advantaging the two incumbents. The predictions now are that Argentina will overhaul Chile in terms of Lithium production by 2030.

The result of the Chilean torpor at welcoming new entrants is that the surprisingly more *laissez-faire* attitude in Argentina has made it the **go-to** place for those wishing to stake positions in *salares*. Argentina has become something like, to paraphrase Deng, the Saudi Arabia of Lithium.

### **Imminent Political Change?**

The Fernandez/Kirchner Administration is now gone with the handover on the 10<sup>th</sup> of December. Change in macro policy looks certain, but nothing is expected in the area of mining specific rules.

With Milei's win the exchange rate oddities will not survive long into the new Administration, but neither

is it likely that the new incumbent will have a smooth ride.

### **Ministerial Weight**

Despite rumours to the contrary that the new Secretary of Mining was to be Sergio Arbeleche, a prominent mining lawyer, the appointee is going to be Flavia Royon, the former Secretary of Mining at the provincial level for Salta. She will be taking over from Fernanda Avila, who was formerly the secretary of mining in Catamarca province. In her international appearances (a contrast to previous stay-at-home secretaries) she left a trail of goodwill and good vibes at mining events around the world, particularly in London where we met with her.

### **Edison Enters the Lithium Triangle**

Edison Lithium's involvement in the Lithium brine space in Argentina dates back to mid-June 2021 when the company entered into an agreement to acquire Resource Ventures S.A. (ReVe), an Argentine corporation that controlled the rights to over 148,000 hectares (365,708 acres) of Lithium brine claims in the province of Catamarca. The claims were principally located in the two geologic basins known as the Antofalla Salar and the Pipanaco Salar in the famed Lithium Triangle.

Edison agreed to acquire ReVe and a 100% interest in its properties for a purchase price of \$1.85mn paid by the issuance of ten million common shares of the company at a deemed price of \$0.185 per share.

### **Then Partially Exits...**

In mid-December 2023 the company announced that it had entered into a letter of intent with Meteor Energy, LLC, of Dallas, Texas, for the sale of 100% of the company's interest in its Argentina subsidiary, Resource Ventures S.A. for consideration of US\$5mn. The parties agreed to use commercially reasonable efforts to enter into a definitive agreement within 60 days to give effect to this transaction on terms and conditions acceptable to both parties.

The sale terms include Meteor paying EDDY:

- US\$25,000 on signing of the LOI,
- further payment of US\$475,000 upon signing of the definitive agreement
- US\$4.5mn payable upon closing

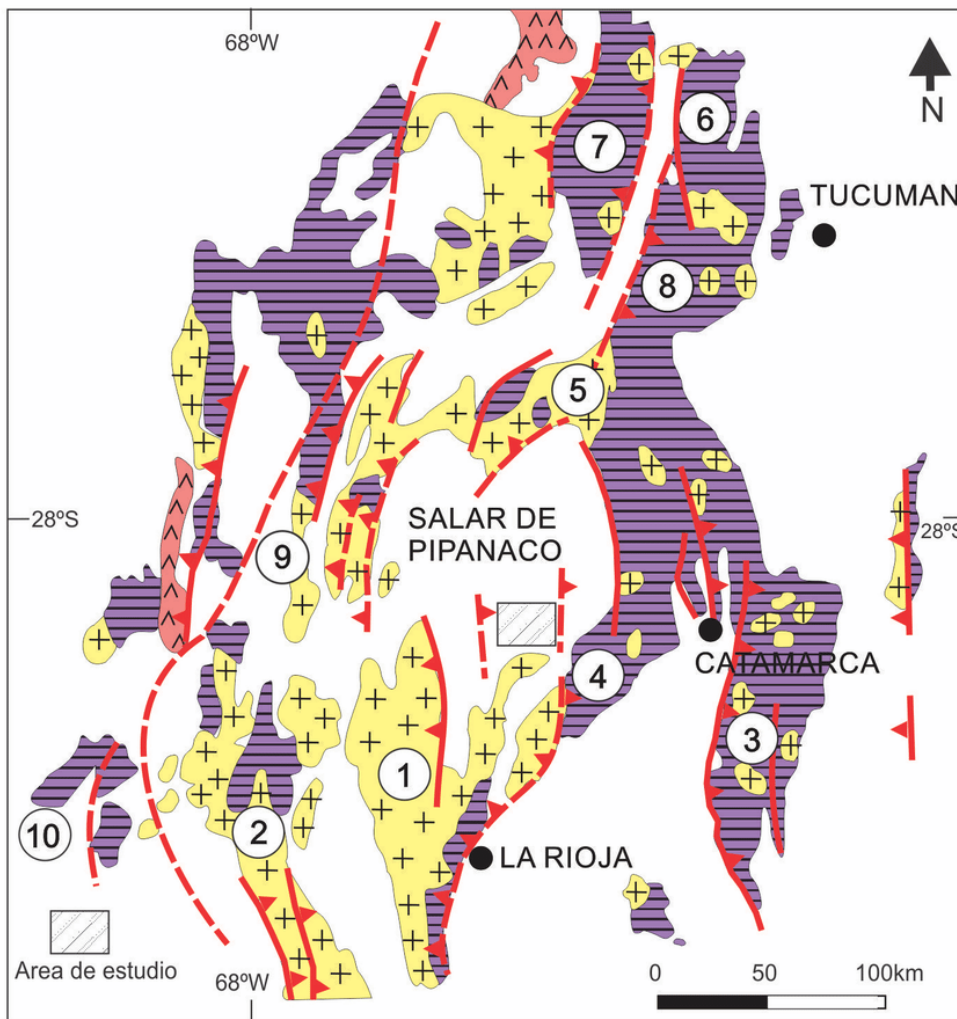
Prior to the sale, ReVe will carve out the Pipanaco claims and one of the LEXI claims to be retained in a new subsidiary. These consist of eight mining concessions, covering approximately 28,766 hectares area in Catamarca. These amount to around 20% of the total area that ReVe held previously.

The deal is somewhat masterful in that the company has sold for \$5mn part of the portfolio it bought for only a quarter of that amount some two and a half years ago, while retaining what it feels is the most strategic part of the asset package.

The LOI remains subject to the satisfactory completion of due diligence, the negotiation and execution of a definitive agreement and approvals from the TSX Venture and shareholders, if required.

### Salar de Pipanaco

As mentioned above EDDY intends to carve out ReVe's claims on the Salar de Pipanaco and keep them for its own development purposes.



1) Sierra de Velasco, 2) Sistema de Famatina, 3) Sierra de Ancasti, 4) Sierra de Ambato, 5) Batolito de Capillitas, 6) Cumbres Calchaquies, 7) Sierras de Quilmes, 8) Sierras del Aconquija, 9) Sierra de Fiambalá, 10) Sierras de Toro Negro y Cumichango (Adaptado de Caminos, 1979).

These consist of over 41,000 hectares (101,311 acres) of core areas in this *salar*, which is located approximately 50 km due west of Catamarca city. These properties are in the very early stages of exploration with minimal surface samples having been collected to date.

This *salar* is at a much lower altitude than Antofalla and was drilled more than ten years ago in a program

for the federal government of Argentina to identify new sources of fresh water. Based on those drilling reports, the company believes that these Pipanaco holdings, which are located at only 700-750 meters above sea level, could represent a favorable site for a Lithium extraction facility or a potash mine, as well as being a potential location to create a regional Lithium processing facility located less than a two-hour drive from Catamarca city.

### **Strategy**

Management feels that the claims in the Salar de Pipanaco, while only early-stage exploration, may prove to be strategic for a potential regional Lithium processing facility located less than 50km from the city of Catamarca.

### **Capital Structure & Financing**

Beyond the 18.4mm common shares outstanding, the company has 1.3mn options outstanding, which are fully vested and exercisable over a five-year period.

The most recent financing, announced in early September of 2023, was a non-brokered private placement of up to four million units at a price of \$0.12 per Unit for aggregate gross proceeds of up to \$480,000. Each unit consists of one common share and one warrant to purchase one share at a price of \$0.20 for a period of 24 months from the date of closing. On October 24<sup>th</sup> the company announced it had closed the private placement for proceeds of \$480,000.

As for warrants these are all at a 20cts strike price.

### **Cobalt – If You Love Them Set them Free**

In its journey to its current incarnation, the company had pursued Cobalt, the more challenging battery element where, despite much effort, no-one has brought forward a new project in the West in recent years (despite the stop-start efforts of Jervois Global).

In late March of 2023, Edison Lithium provided an update regarding the proposed spinout of its cobalt assets in northeastern Ontario into a newly incorporated subsidiary.

The company had flagged its intention to do this in May of 2022, but Cobalt was going through one of its periodic swoons, so it remained on the back burner. Despite the metal having risen in price and then retreated it was resolved that the spin-out should get back on track.

### **The Transaction**

Tentatively the management view is that the transaction will take place around May of 2024. It is proposed that the spin-out will be carried out by way of statutory plan of arrangement and the shares of Cobalt SpinCo will be distributed to shareholders of Edison on the basis of one share in the SpinCo for every eight common shares of Edison held on the record date.

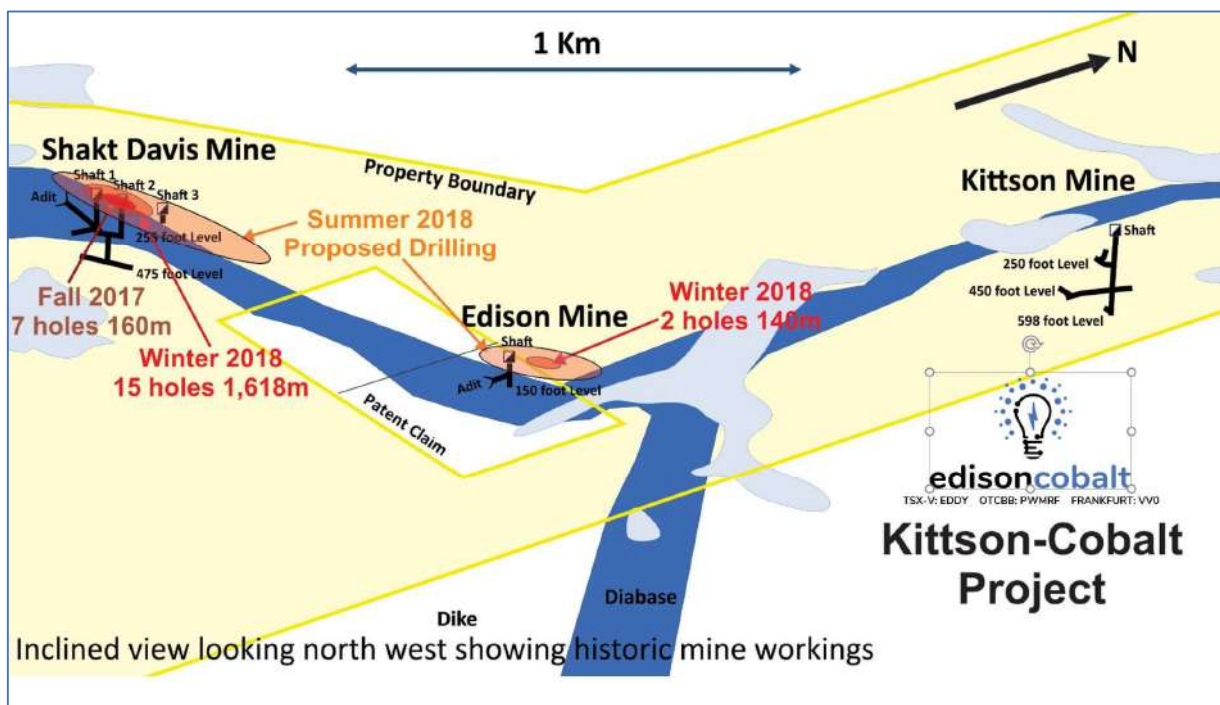
The proposed demerger will be subject to the terms of an arrangement agreement to be entered into between Edison and SpinCo, approval of shareholders at a meeting of Edison shareholders, approval of the British Columbia Supreme Court, and approval of the TSX Venture Exchange.

Upon completion of the demerger, the SpinCo will undertake a private placement of up to 30,000,000 units at \$0.05 per Unit for gross proceeds of up to \$1.5mn. Each unit will consist of one SpinCo Share and one warrant, each warrant will be exercisable into one SpinCo Share at an exercise price of \$0.12 per SpinCo Share, for a period of two years from the date of issuance.

The private placement is expected to close concurrently with listing on the TSX-v. The placement shares and warrants will be subject to a four-month statutory hold period from the closing date of the financing.

### The Cobalt Assets

The company's project is located near the town of Cobalt in northeast Ontario, Canada, and hosts the historic Thomas Edison, Shakt-Davis and Cobalt-Kittson mines, as well as numerous historic workings, the deepest extending down to 628 feet, and over 2,500 feet of lateral workings.

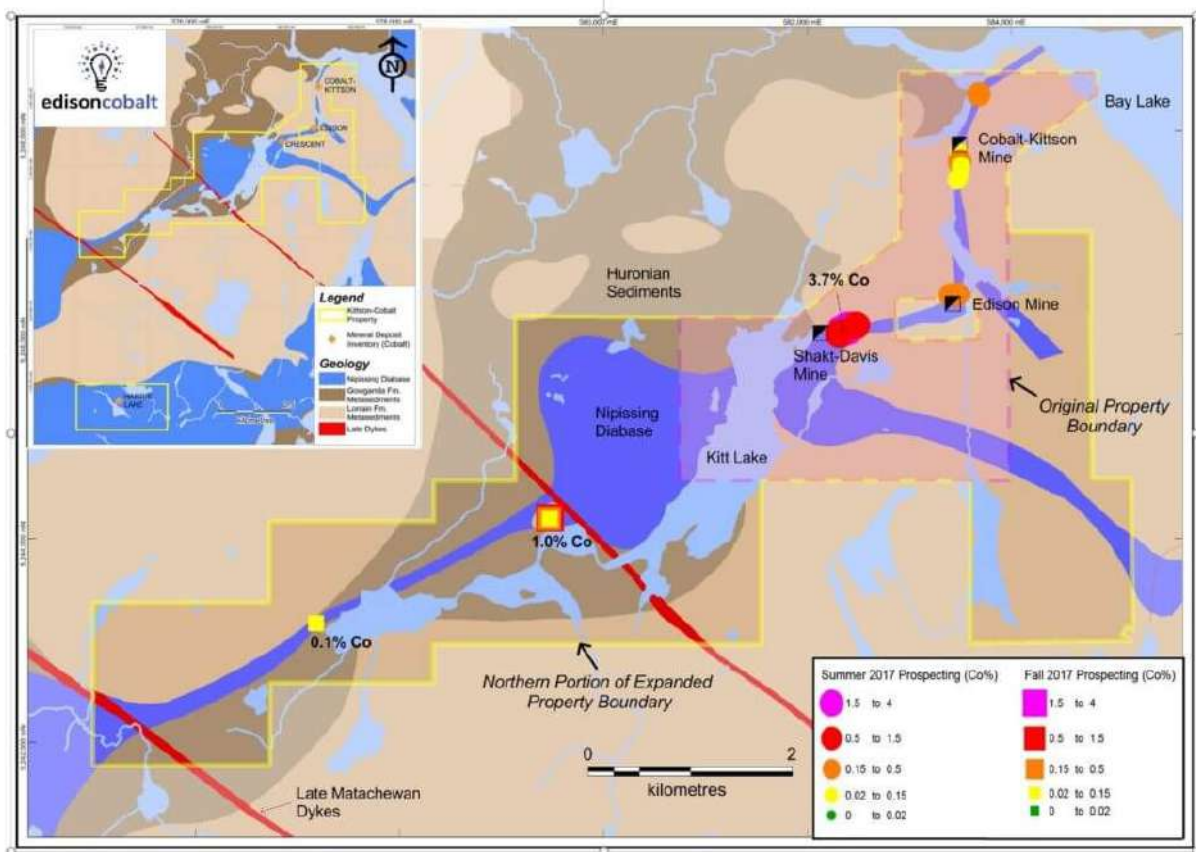


The Shakt-Davies mine saw intermittent development from 1906-64, with the bulk of the underground working completed between 1924-26. No production records remain, however historic reports indicate values of 1.5% cobalt over 1.37 meters and select grab samples returning up to 4% cobalt and 93.3 g/t gold. Sampling in 1987 of the mine waste pile by the Ontario Geological Survey personnel returned 0.25% cobalt, 0.75 % nickel, 0.05% copper and 3.4 g/t gold.

The Thomas Edison mine, as the name implies, was developed by the famous inventor and entrepreneur Thomas Edison. He acquired the Darby property (now the Thomas Edison Mine) in 1905. From 1905 to 1907, Edison remotely directed operations at the mine which included sinking two shafts to 150 feet, which were connected by an adit, as well as several exploration drifts and crosscuts. Between 6 and 8 tons of ore of unknown grade are reported to have been extracted, but no commercial production is recorded.

### Geology

The Kittson-Cobalt mine is hosted in a ~70 m wide diabase dyke cutting arkoses of the lower Lorrain Formation near the Gowganda-Lorrain contact. Chalcopyrite, smaltite and pyrite occur in several northtrending calcite veins which are vertically oriented and 4 to 100 cm wide.



The veins are hosted in fractured and faulted zones parallel to the dyke. Assay results from Johns (1985) indicate 0.08 and 0.20 oz/t gold. The total production of the mine was 600 pounds of smaltite (cobalt sulpharsenide) from the 598 ft level.

Cobalt mineralization occurs in Proterozoic-aged quartz-carbonate veins hosted in brittle shears in Nipissing diabase. This style of mineralization is similar to that of the famous Cobalt Silver Camp which is located ~15 km east of the property. That camp produced 420 million ounces of silver with cobalt as a

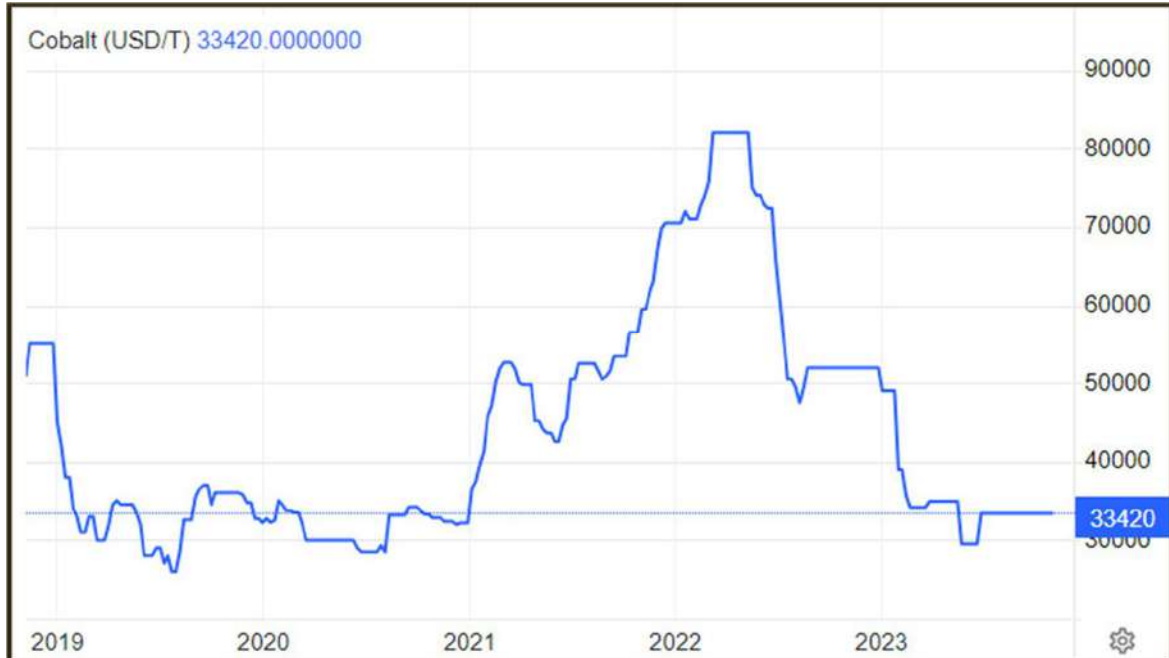
significant by-product. Veins hosting the mineralization at the Kittson-Cobalt Project differ from the typical Cobalt Silver Camp veins in that they are lower in silver but richer in cobalt. They are also associated with significant gold.

Historic reports from the Shakt-Davis mine indicate values of 1.5% Co over 1.37 metres and select grab samples returning up to 4% Co and 93.3 g/t Au. Locally significant nickel, copper and to a lesser extend lead, zinc and bismuth also occur within the quartz-carbonate veins.

### On the Dynamics of Cobalt

The forces driving Cobalt in recent times are well-rehearsed but we might note that the pressures are unchanging. The metal is mainly produced as a by-product of nickel or copper mining and as such the volumes produced are dictated by the output of mines in the major base metals. There is only one primary Cobalt mine of note (in Morocco) though there have been a few others in the past.

Despite several periods of soaring Cobalt prices since the turn of the century there has been no appreciable addition to Western production of Cobalt, while an underlying trend has been the increasing corraling of Cobalt, particularly from the DRC under China's control. The Western powers have continuously bemoaned the situation but have done nothing proactive or concrete to reverse the trend.



### Team & Board

**Nathan Rotstein**, CEO, has over 45 years of experience in the financial markets. He has consulted with numerous companies in the energy metals sectors including but not limited to cobalt, manganese,



graphite and Lithium. He also has an extensive global network comprising international funds and high net worth individuals.

**Dr. Luisa Moreno**, Chief Operating Officer, has over 12 years of experience in technical and economic research, with particular expertise in strategic minerals and related processes. She is currently Co-founder and Managing Partner at Tahuti Global. Prior to this, she spent seven years as a financial and equity analyst at Canadian financial research and investment banking firms, including four years covering the specialized field of industrial minerals.

She holds a Ph.D. in Materials Science & Mechanics from Imperial College London and has published advanced technical reports on strategic materials. She has also been a consultant to mining and processing companies and industrial end-users. She is on the board of several junior mining companies developing strategic materials like Lithium, Cobalt, Tantalum and battery-grade Manganese.

**James A. (Jay) Richardson**, CFO, is a chartered accountant. He has practiced as a Partner of Clarkson Gordon Arthur Young (now Ernst & Young, Canada and Singapore) and a Partner of KPMG (UK) prior to establishing his own practice as a company doctor in Toronto, Canada in 1993. Specializing in interim management in troubled situations, he has served as the CEO or Chairman of listed public companies on five occasions and in many other CFO and private company situations.

He has extensive public company governance experience from over a dozen Board memberships including recently having served as Interim Chairman of the Argus Corporation. In his very extensive charitable and community activities particularly in the visual arts, having served among others as the Chairman of the Royal Canadian Academy Foundation. He is also the President and CEO of EnerSpar Corp (ENER).

**Roger Dahn**, non-executive director, has over 40 years' experience in the mining and exploration industry. His experience includes over 16 years with Noranda and Hemlo Gold Mines, Exploration Manager of Eastern Canada for Battle Mountain Gold as VP Exploration with Olympus Pacific Minerals, and most recently Tri-Star Resources plc. He is currently Chairman of Manganese X Energy Corp (TSX-V: MX), another company we have long had under coverage. He brings extensive mineral exploration experience and is a geologist and QP as defined by National Instrument 43-101.

**Gordon Jang**, non-executive director, was previously the Vice-President of Finance and Accounting at Fortuna Silver Mines and held senior positions at Augusta Resources, Lundin Mining and Pan American Silver and brings a wealth of experience in the capital markets, mergers and acquisitions, SOX compliance, tax planning, corporate structuring, process improvements and regulatory compliance.

## Risks

We shall leave to the side the potential risks in Cobalt as this asset is imminently going away. Amongst the risks related to the Lithium & Sodium assets in the project portfolio are:

- Lithium price risk
- Exploration has been limited, but promising, thus far

- Argentina is, to say the least, an erratic jurisdiction in the political sense
- If sodium-ion batteries do not receive massive take-up then the upside for the new assets in Saskatchewan could be crimped
- Cobalt price risk
- Financing is a challenge that comes and goes in the mining space and its sub-sectors

Lithium has been subject to several price swoons over the last decade so it should not be taken as a given that the price always rises. Supply is rising but so is demand. As we have seen over the last decade the supply-demand balance oscillates one way then the other producing surges and slumps. And even this “real” imbalance” can then be impacted by expectations such as when some ridiculous projections from a Wall Street firm about 2025 “oversupply” sunk the 2017’s Second Lithium Boom into a slough of despond. Major projects entering production will inevitably produce step-changes in available supplies rather than some smooth rise. For the moment the outlook for prices looks good as demand appears to be accelerating faster than projects can be brought into production.

Exploration potential at the Lithium properties is an unknown thus far.

Catamarca is dedicated to mining and is reaping the benefits of the interest in Lithium (and other metals). It is unlikely to swing against mining. National governments of both the *Kirchnerista* slant and the Right are fans of the mining industry for its jobs and foreign exchange potential. That however does not guarantee that the current government may not resort to the type of kneejerk measures that troubled the industry mid-decade. Most troublesome at the moment are the foreign exchange restrictions and the parallel exchange rates that have evolved with them.

Cobalt has been up and down quite dramatically over the years since the start of this century. However, we would note that the Cobalt exposure is essentially exiting with the SpinCo.

Financing conditions rise and fall with sentiment towards the battery metals space and with other dynamics. The last year has been a quantum better on the financing front for junior explorers in battery metals (and generally). The biggest threat now that battery metals have gained a consistent momentum is that broader equity and capital markets take a step back (or down) due to revived pandemic fears and/or a move to higher interest rates in an attempt to damp down the now rising tide of inflation. A broader market retreat will make financing more difficult no matter the state of the EV revolution.... at least temporarily.

## **Conclusion**

The Battery Metals “booms” of the past 14 years have been mere passing squalls compared to the typhoon that has been whipped up since 2020 in the Lithium space. In this latest instance the enthusiasms are solidly backed by a tailwind of real EV demand and, finally, a wave of construction of Lithium-Ion battery plants in China and in the West. In 2019, only 50 such factories were on the drawing boards, today that number has risen to over 230, each being a multi-billion-dollar investment to cater for EV numbers which are forecast to grow from 14mn vehicles in the world today to somewhere between 150mn and

500mn in 2030. The overall Lithium requirement by 2030 for these battery plants represents vast multiples of the overall tonnes of Lithium sold into world markets today.

However, Lithium-ion batteries are not cemented in the mind of OEMs as the last word on EV power storage modes. LFP batteries are on the rise and sodium-ion batteries are being actively considered as credible alternatives for some of the applications that Lithium-ion batteries do not serve adequately or do so at too high a price-point.

It's still early days in EDDY's push into the Sodium-ion space, with exploration, resource definition (and presumably more territorial expansion) still lying ahead.

As for price targets the whole battery metals/minerals space has been marked lower. This should turn about at some point and meanwhile, EDDY should be the beneficiary of some uplift when the Cobalt spinout comes in sight. Further upside from our target price awaits results from initial work in Saskatchewan or corporate actions in Argentina.

In light of all this, we have afforded Edison Lithium a **LONG** rating with a twelve-month target price of CAD\$0.68.



## Important disclosures

I, Christopher Ecclestone, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers.

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