

THE
**LITHIUM
VOICE**



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OECD'S Due Diligence Guidance

The Inflation Reduction Act

In conversation with
Frank Ha Chun Shing

LITHIUM, WATER AND YOU



ILiA Connections



The ILiA team met in person for training in Istanbul, Türkiye, in September. It was a rare treat to all be in the same time zone! On the second day we visited ILiA-member Akcoat for a fascinating site visit.



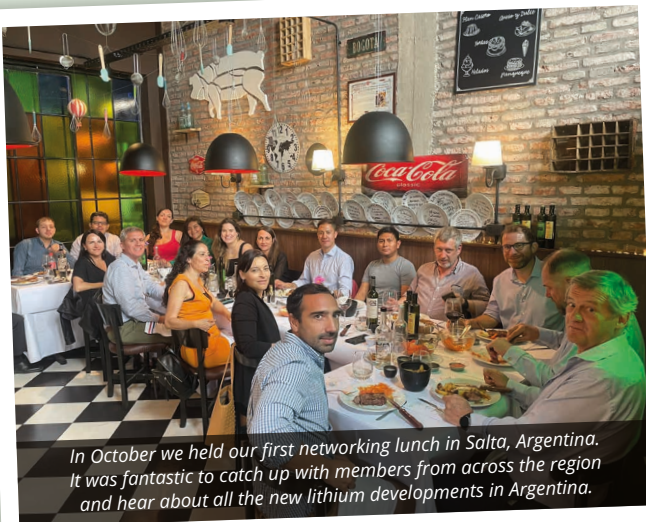
During London Metals Week in the UK ILiA sponsored a lithium networking reception at the official residence of the Argentine Ambassador, Hon. Mariana Plaza. Guests included Dr Luis Lucero, Secretary of Mining for Argentina.



ILiA's new Operations Manager and South American Representative, Jorge Mora, represented the Association at the Foro del Litio in Santiago, Chile.



At the Global Battery Alliance's AGM in Shanghai, China, ILiA's Martin Ma met with SQM's Felipe Miranda and Stefan Debruyne. ILiA has been a member of GBA since 2022 and sits on its CCMAG Steering Committee.



In October we held our first networking lunch in Salta, Argentina. It was fantastic to catch up with members from across the region and hear about all the new lithium developments in Argentina.



While in Jujuy, Argentina, to attend Panorama Minero's lithium conference Roland Chavasse and Jorge Mora visited Arcadium Lithium's Sales de Jujuy, an incredible place to visit. Thank you Maria Marta Nicolini and colleagues!

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December 2024

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Chair's WELCOME



Welcome to the 8th edition of *The Lithium Voice*, with a cover story all about how lithium naturally occurs throughout the world. It is commonly found in everyday food and drink, and even in your body, but don't be alarmed, this is quite normal and natural!

Although doctors still have not worked out what role lithium plays in our bodies, it appears to be an important micronutrient and there have been some interesting studies looking at how a lack of lithium in your diet might influence a range of health issues. There is no need to take it as a dietary supplement though, as we all naturally get sufficient lithium in fruit, vegetables and water to meet our bodies' requirements.

This quarter we are *In Conversation* with Frank Ha Chun Shing, Director & Chief Executive Officer at Tianqi Lithium Corporation, one of the world's leading integrated lithium producers and a founding Core Member of ILiA. Mr Ha shares his insights about the global lithium market and tells us about his passion for education which led to creating Discovery Li, the lithium science museum created by Tianqi Lithium in Chengdu, China.

Like many of you we have been watching the recent US elections with interest, particularly since Tesla's Elon Musk endorsed President-elect Trump. We have asked leading lithium analysts around the world how the recent election results could influence the lithium market in the US with regard to the Inflation Reduction Act, one of the previous administration's flagship policies. Their answers might not be what you expect.

And finally, don't forget to visit our website www.lithium.org to find the latest list of all the lithium conferences and events around the world from now until July 2025!

Anand Sheth
Founding Chairman

LITHIUM, WATER AND YOU

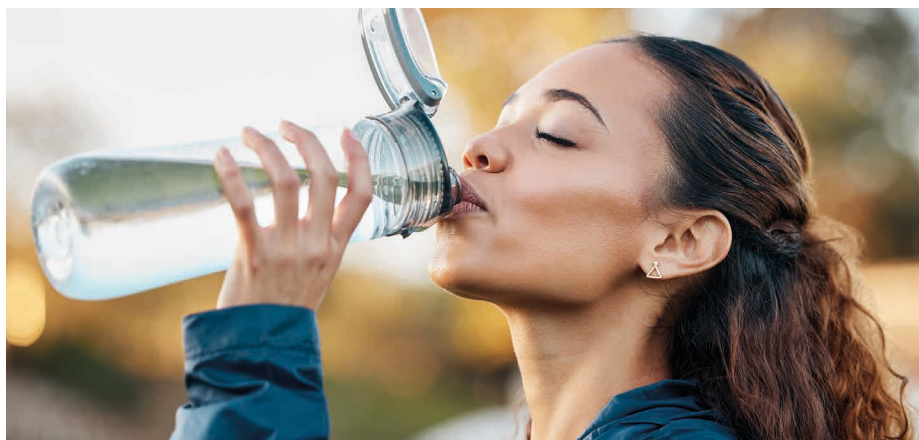
Regular readers of *The Lithium Voice* will know that lithium is produced industrially from rocky minerals and saline brines. But where else can you find lithium in the natural world? The answer is almost everywhere, including in you!

How did it get there?

Lithium is the 30th most common element in the Earth's crust, averaging 0.002% or 20 parts per million (ppm). Lithium atoms are very small, light and highly soluble in water. In addition, some of them have been around since the Big Bang, 13.8 billion years ago, which has given them plenty of time to become widely dispersed in nature.

Life first appeared on Earth about 4 billion years ago in oceans containing dissolved lithium salts (0.17 ppm). Over millennia, as life evolved, lithium has always been present in and around all living creatures, including humans. In fact, our bodies naturally contain lithium and we all consume trace amounts of it every day, in the food we eat and in the liquids we drink.

Whenever we make a cup of coffee using tap water (which is often groundwater), rehydrate with branded mineral waters in a gym, or enjoy a glass or wine or beer after work with friends, we will take in a tiny amount of lithium too. But don't be alarmed, this is quite normal and safe; after all, our ancestors have



survived for millions of years on a similar diet.

Lithium in your body

"Lithium is an important micronutrient in the human diet", Dr Romain Millot, a French geochemist and expert in lithium isotopes, explained to *The Lithium Voice*.

The average 70kg adult human body is estimated to contain about 7 milligrams of lithium (about 0.1 ppm), which is mostly found in your brain, kidneys and bones. This amount is thought to remain fairly constant; what we consume passes through us and out again relatively quickly.

"The exact molecular function of lithium as an essential trace element is not fully understood yet", Dr Millot explained. Perhaps because of this uncertainty the World Health Organisation (WHO) does not currently list lithium as an essential nutrient or give a recommended daily intake. However, several studies have suggested a correlation between higher levels of lithium in our diet and lower risks of dementia, reduced Alzheimer disease mortality and less suicide risk.

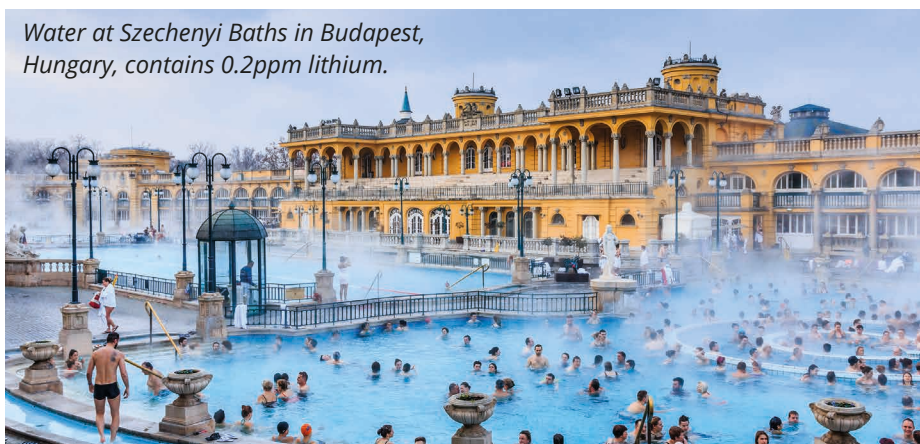
But while the role of lithium might be unclear, a recent paper by Dr Gerhard Schrauzer at the University of California, San Diego, in the US, claimed that an adult human does have a daily requirement of lithium, but only of ~1 mg per day.

Perhaps the fashion for lithium-enriched spas and drinks from the 1860s to the 1920s was on the right track, after all?

Lithium-rich waters

Since prehistoric times sources of clean water have been highly valued and arguably none more so than natural springs and wells, which were often the only safe sources of water that could be drunk without

Water at Szechenyi Baths in Budapest, Hungary, contains 0.2ppm lithium.



boiling it first. The association between spring water and health is therefore deeply rooted.

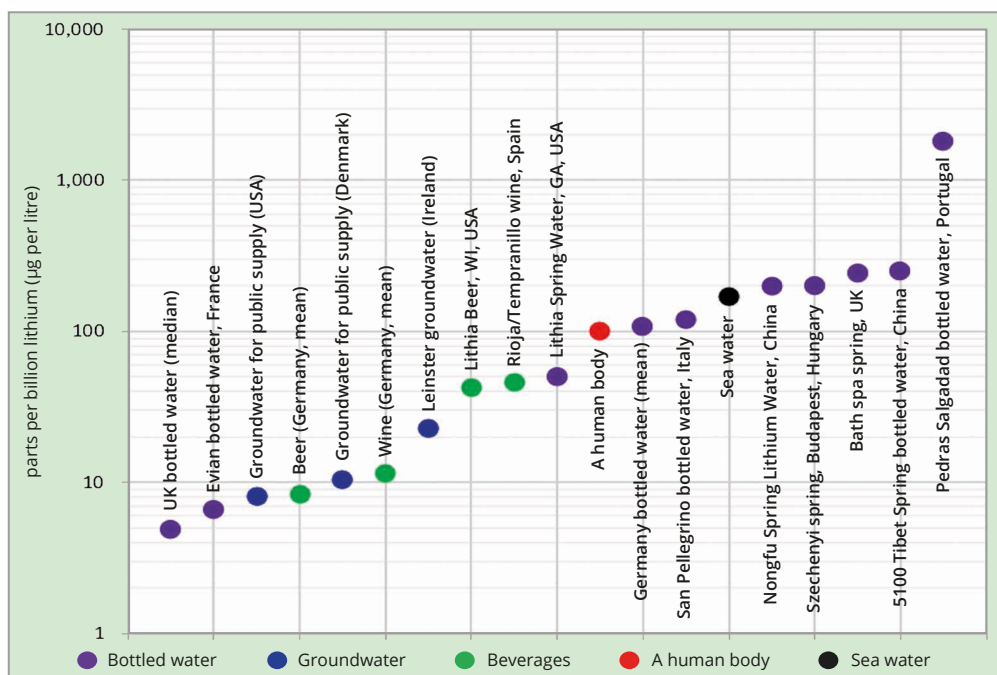
In Europe natural mineral waters were first bottled and traded in the mid-16th century, for example at Spa in Belgium and Vichy in France. In the 1860s techniques were developed to analyse the minerals dissolved in water and lithium was found to occur in many natural springs across the world, including at Baden-Baden in Germany, Bath in the UK, Lithia Springs in Georgia, USA, and the Uchinomaki Onsen on Mount Aso, Japan.

Often spas, hotels and public baths were built for tourists to “take the water” at natural springs and by the late 19th Century they were big business. Adverts would prominently feature the unique chemical analysis of the water at that resort; “proving” the health benefits with science, or so it was claimed.

Each natural water is unique in composition and taste, and not all of them contain lithium. A comprehensive study of groundwaters used for public and domestic use in the US found that lithium levels varied widely, with concentrations ranging from less than 1 part per billion (ppb or µg/L) to 1,700 ppb. Higher concentrations of lithium in the groundwater were typically found in arid regions and older groundwater, and the study suggests that natural influences, such as local rock chemistry, climate and mixing with saline waters, are the primary contributors to increase lithium levels.

‘Healthy’ drinks

In the late 19th century as the railway network expanded, shipments of mineral water from springs to cities increased rapidly, popularising the ‘healthy’ waters far and wide. To take advantage of this



Lithium in selected liquids and a human body (ppb or µg/l)

(Sources available on request)

trend many lithium-enriched drinks were developed which claimed similar health benefits but often tasted a lot better. By the early 20th Century in the US one could purchase Lithia Coke (Coca-Cola syrup mixed with lithium-bearing water), Lithia Beer (brewed in West Bend, Wisconsin) and Bib-Label Lithiated Lemon-Lime soda (which today we know as 7Up, but which no-longer contains lithium).

Lithium in modern drinks

If you are seeking a lithium-containing bottled water then it is not hard to find, although admittedly lithium is rarely listed on the contents label as the level contained is usually far lower than magnesium, sodium and other elements. Examples of lithium-rich bottled waters include the Italian water San Pellegrino (0.12 ppm) and from China 5100 Tibet Spring (0.25ppm) and Nongfu Spring Lithium Water (>0.2ppm).

Lithium is common in other drinks too. A 2020 study of 160 different drinks in Germany found that on average the lithium content in red wine was 17 parts per billion (ppb), white wine 8 ppb, cola drinks 8 ppb,

energy drinks 24 ppb and beers ranging from 3 to 20 ppb.

Should we take lithium as a dietary supplement?

No, this is not necessary since we naturally consume sufficient lithium to meet our bodies' requirements. Nor are such supplements easily available; in the author's experience France is the only country where you can buy lithium dietary supplements without a prescription (as ampoules of lithium citrate or lithium gluconate).

In conclusion, lithium does appear to play an important role as a micronutrient in the human diet, even if scientists are still trying to identify what that role is. The good news is that we need very little dietary lithium and it is freely available in many types of food and drink. Lithium occurs throughout the universe, all over the world and even in our bodies (100 ppb). Lithium is natural, everywhere and (for reasons doctors still don't fully understand) an important element for life.

Medical notice: The level of dietary lithium discussed in this article is approximately 1/1000th the typical daily dose of medical lithium, a powerful mental health medicine which should only be taken after professional medical advice. Medical lithium should never be taken as a dietary supplement.

THE INFLATION REDUCTION ACT

ON 4TH NOVEMBER, 2024

After President Donald Trump was elected for a second term as President of the United States we asked leading lithium analysts how this could influence the green transition in the US with regard to one of the previous administration's flagship policies.

President Trump has had the Inflation Reduction Act ("IRA") in his sights for some time and prior to his election his rhetoric around what he would do about it was strident. But how will the geography of the election results and the involvement of Tesla's Elon Musk in the new administration influence those views when it comes to putting them into practice?

The Inflation Reduction Act

To recap briefly. On August 16th 2022, President Joe Biden signed the IRA into law. Although in name the act focused on inflation, the vast majority of it was focused on infrastructure funding and tax credits that addressed US energy security and climate-related projects. It sought to boost the economic

viability not only of manufacturing, transportation and agricultural industries, but also green energy.

Two particularly important characteristics of the IRA are that it has been both built to last for 10 years and to withstand political attacks. Approximately half of it is directed toward the extension of investment tax credits ("ITC") and production tax credits ("PTC") for the wind, solar and battery energy storage industries. The latter point is particularly important since historically tax extensions were renewed every few years, meaning that developers faced challenges with longer-term planning for their projects.

A new administration

During his first term in office (2017 - 2021) President Trump's

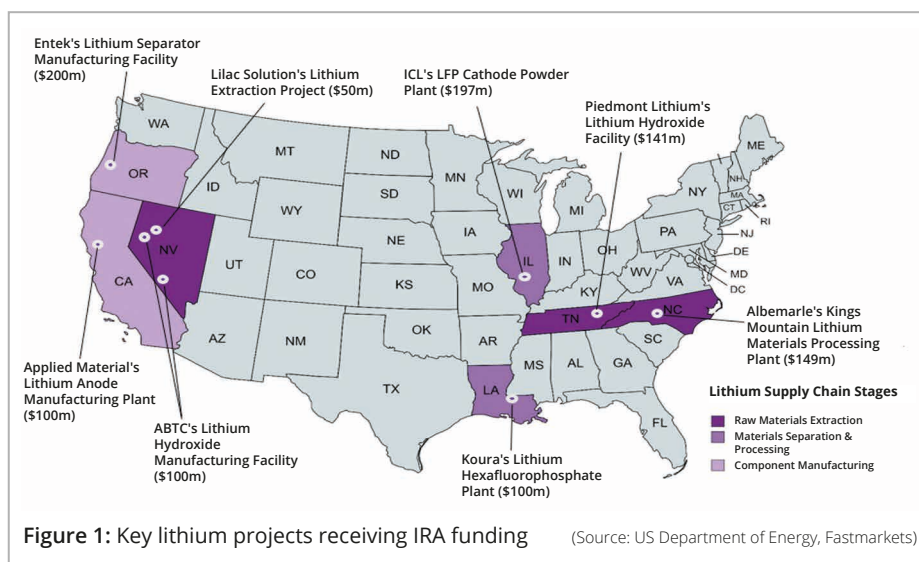
"It remains to be seen what Elon Musk's influence in a Trump administration would be, but as a large part of the campaign and a keen supporter of electrification, he may temper Trump's instincts in this market."

Thomas Kavanagh, Argus Media

administration displayed a scepticism about the notion of climate change. More recently, prior to his re-election, he has made clear his aversion to the IRA, describing it as Washington's "green new scam". Indeed, one of his explicit campaign trail "undertakings" was to scrap the IRA and cancel any unspent funding.

However, as all politicians around the world discover when they are in power, the difficulties of governing a country can force them to compromise on what they previously said they would do and in this Mr Trump will not be exempt. But this is not to be disparaged; as Napoleon Bonaparte almost said, "No plan survives contact with reality", or in the words of the Nobel-prize winning US economist Paul Samuelson, "When the facts change, I change my mind". And this is where it gets interesting.





IRA in the crosshairs

Amongst the most significant challenges President Trump would face trying to remove the IRA are firstly that a lot of grant money has already been spent; and secondly that he cannot abolish the act without the approval of the US Congress, although since this body holds a Republican majority one assumes it would follow his lead.

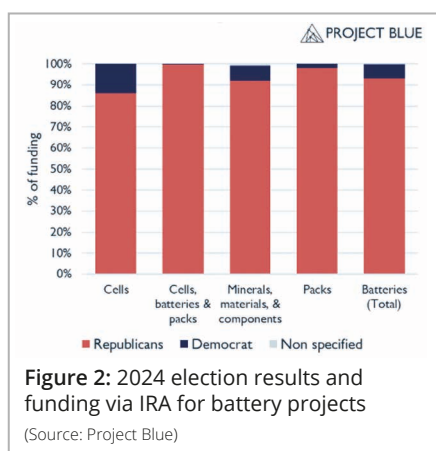
The election of November 5th saw a significant Republican victory. The party won the Presidency, control of both bodies of Congress and the popular vote. It is undeniable that President Trump has won a very powerful mandate.

On the ground the Republican's success means that over 90% of the funds already dispersed under the IRA have been invested in states

that voted Republican in the 2024 election (see figures 1 and 2).

Money talks and Republican politicians in Washington may not look favourably on threats to both economic development and jobs growth in their districts. One might venture that they are unlikely to vote against an industrial renaissance happening in their back yards, no matter how it was initiated or by whom.

Corporations across America have made significant investments on the back of IRA support too, and it is likely they would advocate against a repeal of the act. As Allan Pedersen of Wood Mackenzie explained, "Any changes [in production subsidies] could jeopardise the significant investments already made by vehicle manufacturers to the detriment of employment and economic growth."



The electric vehicle question

Among the provisions of the IRA aimed at accelerating the transition to clean energy are major incentives for electric vehicles (EVs), renewable energy and battery manufacturing. Historically, President Trump was not particularly keen on EVs and occasionally mocked them. In addition he has also railed against, and said he will get rid of, a regulation governing (and limiting) exhaust pipe pollution, something

he gave the moniker of the "EV mandate". And, in August 2024, he even said he would consider backing a full repeal of the EV tax credits in Congress.

Because of the pivotal role it plays in EV batteries and other renewable energy technologies, moves against the IRA could affect the lithium industry in North America. Although the extent to which this might happen hand the potential permanence of any such effects remains debatable, the forecasts were bleak.

Enter Mr Musk

Arguably everything changed when Elon Musk endorsed President Trumps re-election campaign. Mr Musk has a reputation of someone who thinks big, and such was the strength of this support that within days of gaining his endorsement, President Trump said publicly "I'm for electric cars".

Mr Musk is a man with several business interests, not least Tesla and SpaceX. The former business benefits from a USD7,500 tax credit per EV, subsidising their cost to the public. Tesla also earned USD1.79 billion from selling carbon credits it earns by producing EVs to industries that do not meet production-related emissions targets, according to its most recent annual report. SpaceX holds multi-billion-dollar contracts with the US government, including for space transport and satellite communications.

Dismantling the IRA?

Should President Trump still wish to dismantle the IRA, there are some parts which are more vulnerable than others, from a lithium point of view:

- **EV and clean energy and Incentives**

The IRA includes billions of dollars in tax credits and subsidies for clean energy technologies, including EVs, solar, wind and batteries.

continued on page 8

continued from page 7

If these subsidies are either eliminated or reduced then demand for both renewable energy storage solutions and EVs could grow less quickly since one of the biggest issues is their affordability. Analysis by Fastmarkets suggests that EV sales in the US will continue to increase under President Trump, growing from 1.6m vehicles this year to 6.7m by 2030, albeit at a slightly lower level than if the Democrats had won the election.

- **Climate and carbon emission goals**

The IRA is nothing if not ambitious in its targets for reducing US greenhouse gas emissions. Currently the government not only provides financial incentives to industries to decarbonize, but it also supports developing technologies around, for example, carbon capture, clean hydrogen and renewable energy storage which is heavily reliant on lithium batteries.

A key question will be whether President Trump's administration takes the US out of the Paris Climate Agreement, as he suggested he would before the election. Such a move could signal the start of the introduction of relaxed, or reversed, climate-related regulations and emissions-reduction targets. This could ultimately lead to a slowing in the expansion of industries that rely on lithium for energy storage.

- **Critical minerals and domestic sourcing**

Lithium is on the official US list of critical minerals and its importance to the defence industry is well understood in Washington. A key component of the IRA is its emphasis on sourcing critical minerals like lithium domestically in the US or from its allies.

Mr Trump's win could delay demand for EVs over the coming years through a scaling back of emissions targets and reduced support for the IRA. This could lead to fewer EVs being eligible for the tax credit and less haste to electrify for both OEMs and consumers.

Dr Rob Burrell, Project Blue

In seeking to reduce the country's reliance on others for lithium and other critical minerals, the legislation offers incentives to companies that source materials either within North America or from countries that have free trade agreements signed with the US. President Trump has a strong interest in and support for

strengthening the US economy, including its supply chains, which suggests that this aspect at least is unlikely to be dismantled. As Bryan Bille of Benchmark Mineral Intelligence explained, "The big goals of the IRA are broadly in line with Trump's 'America First' policy."

- **Investment in green technology manufacturing**

The IRA allocates substantial funding to help build US manufacturing capacity in green technologies, including lithium-ion battery production facilities and EV manufacturing plants. Were these funds to be re-directed investment in domestic battery and EV production could lead to a slowdown in the growth of industries that rely on lithium.

Conclusion

All politicians inevitably find that the reality of governing a country can require compromises to the promises that were made on the campaign trail. While Mr Trump made disparaging comments about EVs early in his campaign to be re-elected, he has since praised them and the reality is that the vast majority of IRA-supported investments and new jobs have been in states that voted for him. In addition, the central role of Mr Musk in the new administration and his potential opportunity to influence EV sales in the US should not be underestimated.

At time of writing, just a fortnight after the election, there is a lot which remains unclear regarding how the election results will lead to changes in the IRA and wider EV supply chain in North America.

It is, however, safe to say that a strong EV supply chain and lithium industry in North America is a good thing for the US economy, and that although the global energy transition may not always follow a straight line, we believe in the long term it is unstoppable.



View from EUROPE

From David Merriman of Project Blue

The lithium industry within Europe made notable strides in the third quarter of 2024, though challenges persist in the development of a diverse and integrated supply chain within the region.

In Germany, the start of commissioning at the Bitterfeld-Wolfen lithium refinery by AMG Lithium represents the first large-scale processor of lithium compounds within Europe for some time. Once commissioning is finalised, the refinery will move the EU closer to fulfilling its domestic refining targets set out in the EU Critical Raw Materials Act (CRMA). Across the border in Poland, the commissioning of Ascend Elements and Element Strategic Metals' recycling joint venture, AE Elemental, will also move the EU towards meeting its ambitious recycling targets in the CRMA, with AE Elemental looking to recover lithium from black mass from 2026.

With weaker market conditions persisting throughout much of 2024, the continued development of lithium operations globally has often required investment from public bodies to maintain progress. European Investment Bank (EIB) supported-Vulcan Energy Resources began commissioning its lithium hydroxide production facility near Frankfurt, Germany, which looks to become Europe's first geothermal lithium operation and integrated lithium processor.

The EIB also provided a EUR150 million credit to Sibanye-Stillwater's Keliber lithium project in Finland, to support the development of lithium mining and refining capacity in Kaustinen.



AMG Lithium GmbH's new lithium hydroxide plant in Bitterfeld-Wolfen, Germany.

(Credit: AMG Lithium GmbH).

Elsewhere within Europe, a memorandum of understanding between Rio Tinto and Green Lithium in the UK hints at Rio Tinto diversifying processing options for lithium concentrates within Europe, though it is unclear how the recent acquisition of Arcadium Lithium will impact any future co-operation. Remaining in the UK, Cornish Lithium began demonstration scale test work at the Treleavour lithium project targeting a lepidolite concentrate and ultimately the return of metal mining to the historical mining region of Cornwall.

The successful development of lithium mine and refining production in Europe continues to face headwinds however, with social and environmental regulation causing delays to projects. The development of the Jadar project in Serbia by Rio Tinto continues to be marred by protests and an increasingly tense political situation between the EU Commission and

Serbian government. In France, Imerys are also facing challenges after an initial public consultation for the Beauvoir project highlighted local concerns on potential water contamination, energy consumption and reagent usage for processing, despite the project being awarded *Projet d'Intérêt National Majeur* status by the French government earlier in 2024.

In summary, European lithium operations continue to make progress at all stages of the supply chain, though the speed of development remains hampered by EU regulations, local social and environmental concerns, and difficulties accessing finance as prices have fallen while costs have climbed.



View from Europe represents the opinions of Project Blue and does not reflect the opinions of ILiA.



INTRODUCING THE OECD'S DUE DILIGENCE GUIDANCE

Businesses that operate internationally are often faced with complex supply chains involving many different actors in distant geographies. It can be challenging to address all the potential social and environmental risks. Having a due diligence system in place can be an efficient way to identify and mitigate those risks on time. This is a topic which is central to the work of ILiA's Responsible Production and Sourcing Subcommittee.

A foundational work on this topic was created by the OECD in 2018, their Due Diligence Guidance for Responsible Business Conduct. This guidance has a broad approach and can be applied to other sectors besides mining, such as clothing and agriculture.

It grew out of the OECD's earlier work on conflict minerals, the 2011 Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (further referred to as "Mineral Guidance"). This guidance was created in parallel to the US Dodd-Frank Act which required all US-listed companies to declare the origin of their minerals sourced to the U.S. Securities and Exchange Commission (SEC). The Mineral Guidance was a direct reaction to the illegal and conflict-affected mining of tin, tungsten, tantalum and gold (3TG) mining in eastern Democratic Republic of Congo (DRC) in the 2000s.

The Mineral Guidance not only supports companies in navigating their supply chain, but also helps

them to engage in high-risk areas. It provides a practical guide with recommendations for companies involved in mineral supply chains, based on a 6-step approach:¹

Step 1: Embed Responsible Business Conduct (RBC) into company policies and management systems.

- Devise, adopt and disseminate a policy – or combination of policies – on RBC issues articulating the enterprise's commitments to the principles and standards contained in the Mineral Guidance.
- Embed the enterprise's policies on RBC into oversight bodies and management systems.
- Establish a system of controls and transparency over the mineral supply chain.

Step 2: Identify and assess adverse impacts associated with enterprise operations, products or services.

- Carry out a scoping exercise to identify all areas of the business where RBC risks are most likely to

be present and most significant.

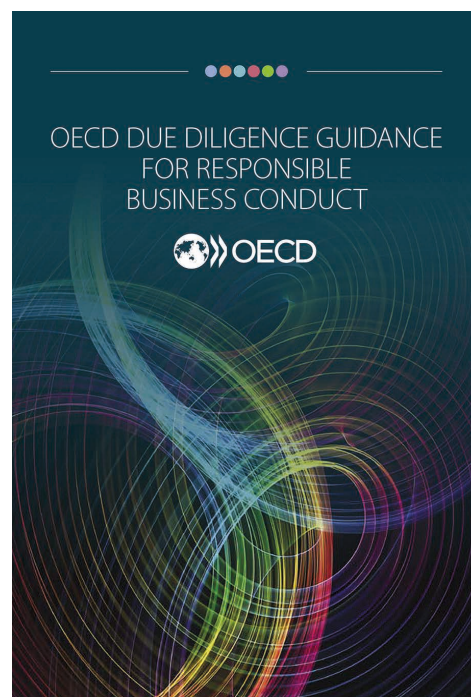
- Based on significant areas of risk identified, map and carry out in-depth assessments of prioritised operations, suppliers and other business relationships to identify specific RBC impacts.
- Assess the enterprise's involvement with the impacts identified to determine the appropriate responses.

Step 3: Cease, prevent, and mitigate adverse impacts.

- Cease activities that are causing or contributing to adverse environmental impacts and implement plans to mitigate those impacts.
- Identify the suppliers responding to information requests and those who don't. Develop corrective action plans with suppliers.

Step 4: Track implementation and results.

- Track the implementation and effectiveness of the enterprise's due diligence activities.



¹Source: OECD (2018), OECD Due Diligence Guidance for Responsible Business Conduct

<https://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf>

- Use lessons learnt to improve future due diligence processes.
- Monitor and track risk mitigation efforts and report back to designated senior management.
- Carry out third-party audit of supply chain due diligence at identified points in the supply chain. Companies at identified points should have their due diligence practices audited by independent third parties.

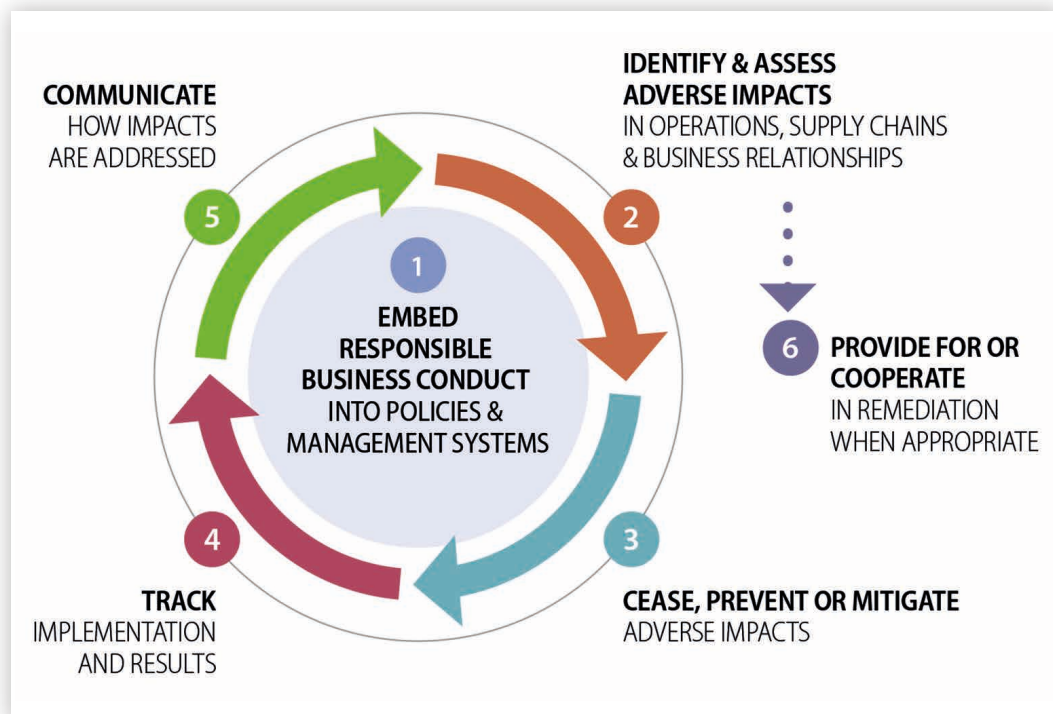
Step 5: Communicate how impacts are addressed.

- Communicate externally relevant information on due diligence policies, processes, activities conducted to identify and address actual or potential adverse impacts.
- Publish information in an easily accessible and appropriate way.
- Publish the audit reports of due diligence practices, in line with business confidentiality and other competitive rules and responses to identified risks.

Step 6: Provide for or cooperate on remediation when appropriate.

- Provide for remediation where the enterprise has caused or contributed to adverse impacts.
- Provide for or cooperate with legitimate remediation mechanisms.
- The process to enable remediation will depend upon legal obligations, stakeholder preferences, availability of mechanisms, the nature of the adverse impact and where the adverse impact occurs.

The OECD emphasises that out of these 6 steps, step 1 is of crucial



importance, since it influences the effectiveness and efficiency of the other 5 steps: “From our standpoint, it’s essential that companies at all stages of mineral supply chains have the right management systems in place to collect, analyze and share information on factual circumstances of production and trade”, explained Louis Maréchal, a Senior Advisor Minerals and Extractives at the OECD, in an exclusive interview with *The Lithium Voice*.

By now, many regulatory frameworks integrate the OECD Minerals Guidance. This applies not only to the US and EU, but also to the DRC and United Arab Emirates. Furthermore, the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (CCCMMC) and the London Metal Exchange (LME) have integrated the guidelines into their codes. Today hundreds of companies and industry initiatives across minerals supply chains apply the OECD’s framework to ensure responsible production and sourcing.

According to Marie-Alice Small, Chair of ILIA’s Responsible Production and Sourcing

Subcommittee (and Group Manager Sustainability at Pilbara Minerals), “Supply chain due diligence offers benefits beyond mitigating conflict risks. It is evolving from a compliance-focused approach to a catalyst for sector-wide improvements. Increasing an understanding of your supply chain where possible, works to enhance overall supply chain management and drive increased resilience, responsibility and growth.”

Additionally, upstream companies are faced with ever more increasing demands on transparency and responsibility in their production by their off-takers in the mid- and downstream. Especially the latter – such as OEMs – keep putting more pressure on mining companies when it comes to due diligence.

As Mr Maréchal pointed out, “Downstream companies are under increasing pressure to demonstrate that the products they put on the market are manufactured with mineral resources that have been produced responsibly.” This in turn obliges upstream companies to have solid management systems in place, enabling them to adapt to changing situations.

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View from

NORTH AMERICA

From Adriana Carvalho, Senior Managing Editor, Metals
S&P Global Commodity Insights

Mexico's lithium ambitions derailed by nationalization policies

Despite Mexico's substantial lithium resources and a growing electric vehicle market, the development of its own lithium industry has been hindered by recent nationalization policy decisions, market observers contend. S&P Global Commodity Insights projects that lithium production in Mexico may not begin until 2028 – years after deposits were first discovered and numerous private-sector investments announced.

On November 1st newly-elected President Claudia Sheinbaum enacted an additional constitutional reform for “strategic areas and enterprises,” reshaping the legal framework of the nation's energy sector. This move reversed a 2013 measure that had opened the energy sector to private investment under former President Enrique Peña Nieto.

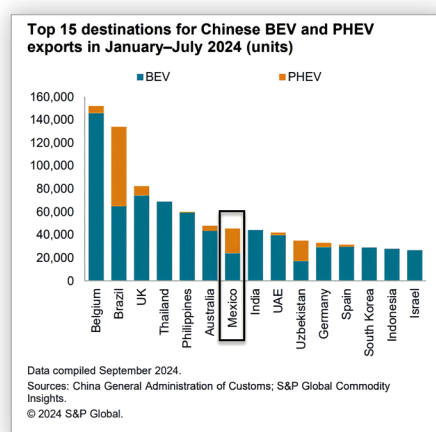
The country's two largest energy companies, Petróleos Mexicanos (PEMEX) and Comisión Federal de Electricidad (CFE), have been reclassified as public state enterprises.

The latest measure follows the Mexican government's 2022 nationalization of lithium and critical minerals, and the Senate's 2023 approval of reforms to the Mining Law that shortened concession periods and streamlined permit cancellations.

Sheinbaum's assertion that energy resource exploration, including lithium, will only proceed through federal concessions will further curtail private investment and slow the development of its lithium

industry, analysts contend.

According to national geological data, Mexico has estimated lithium reserves of 1.7 million metric tons (mt), with 82 lithium deposits across 18 states – 13 in Sonora alone. Sheinbaum's administration aims to consolidate the lithium industry under state control, prioritizing PEMEX and CFE for lithium and other resources over private entities.



Notably, lithium reserves in Sonora and other regions are embedded in clay, necessitating the development of specialized extraction technologies beyond those the Mexican government currently possesses.

LitioMx, established under the national Sonora Plan, seeks to facilitate lithium extraction utilizing technology developed by the Mexican Petroleum Institute (IMP) and the National Council of Humanities, Sciences, and Technologies (CONHACYT).

Investments and projects delayed, as EV market grows

Investments in lithium exploration across Mexico are reported to

exceed USD1.5 billion.

The Sonora Lithium Project, acquired by China's Ganfeng Lithium in 2021, was initially allocated nearly USD400 million for a lithium hydroxide processing plant expected to begin operations by 2026.

However, the nationalization process in 2022 revoked concessions previously granted to private companies like Ganfeng, which Mexico stated was due to the "non-completion of certain investment obligations."

At the same time, Mexico's low-cost labour pool and status as an export hub make it an attractive market for automakers such as BMW, General Motors and Ford, which have expanded production capabilities there, as well as companies such as DiDi which plans to deploy 100,000 electric taxis.

In 2023, China emerged as the leading EV supplier to Mexico, exporting 40,000 units worth USD1 billion to the country, as reported by the Mexican Ministry of Economy.

Additionally, some Chinese EV manufacturers, including BYD, are exploring factory sites in Mexican states like Durango, Jalisco, and Nuevo León, which would give an economic boost to the region – counterbalancing government policies that effectively rule out foreign investment in its lithium and energy sectors.

View from North America represents the opinions of S&P Global Commodity Insights and does not reflect the opinions of ILIA.

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View from

SOUTH AMERICA

From Daniel Jiménez of iLiMarkets

We have seen some significant developments in South America's lithium sector in recent months.

Chile's government has reinforced its commitment to its National Lithium Strategy, designed to increase production and maintain national control over resources. The state-run mining company ENAMI has shortlisted six companies for lithium projects in the Altoandinos salt flats, including global players like Rio Tinto, BYD, and LG Energy. With partnerships expected to formalize by March 2025, this initiative aims to attract diversified expertise and financial strength to drive lithium production in Chile.

At the same time, the Ministry of Mining has shortlisted six salt flats it will assign to private bidders during March 2025. Chile's Supreme Court recently rejected an appeal by China's Tianqi Lithium to halt a lithium deal between SQM and state-owned Codelco. It is rumored that Codelco is also actively working on establishing a partnership to develop the Maricunga salt flat. Ganfeng Lithium, China Minmetals and Rio Tinto are mentioned as parties who have shown interest in such an JV.

In **Argentina** developments were also significant. Rio Tinto announced a USD6.7 billion all-cash acquisition of Arcadium Lithium, which includes Arcadium's two existing lithium operations and one project in Argentina. To this we must add Rio's Rincon project. The deal, unanimously approved by both boards, is expected to close by mid-2025. On the other side, increasing exports from Ganfeng Lithium's and Lithium Argentina's Exar joint project indicates that after starting production in 4Q 2023, it is already

producing at 70-80% of nameplate capacity and expects to reach around 20-25,000 MT in 2024 which could mean that by 2025 it will be Argentina's largest lithium producer.

On the projects side, in Salta, Eramet announced that its 24,000 MT/y lithium carbonate (Li_2CO_3) Centenario Ratones project is on track to start exports in 2025.

Facing a lithium price slump, Ganfeng Lithium announced it would prioritize projects with immediate returns, temporarily halting long-term investments. The company's cautious approach reflects broader concerns across the lithium market, where oversupply and slower-than-expected demand have pushed spot prices to a three-year low. In this environment the focus of Ganfeng Lithium will most likely be Argentina, particularly bringing Exar to full production and the startup in 2025 of its Mariana project. Argosy Minerals cited low prices for temporarily stopping its project.

Brazil's approach has been distinguished by a strong commitment to lithium production. Sigma Lithium recently secured a development loan from the National Brazilian Bank for Economic and Social Development to fund a second plant at Vale do Jequitinhonha. The new facility is expected to double Sigma's production capacity to approximately 520,000 MT of 6% spodumene concentrate (SC6) by 2025.

Also, Atlas Lithium Corporation received an operational permit for its Neves Project in Brazil's Minas Gerais, enabling it to develop open-pit mining and operate a lithium processing plant. This milestone moves Atlas closer to becoming a

lithium producer, supporting local jobs.

Lastly, Pilbara Minerals, the Australian producer, acquired Latin Resources, gaining its Salinas lithium project in Brazil. The acquisition, expected to increase Pilbara's lithium resources by 20%, strengthens its position in emerging markets like Europe and North America.

Bolivia meanwhile, has made technological advancements in lithium production. State-owned Yacimientos de Litio Bolivianos (YLB) increased daily production at its Salar de Uyuni plant and has plans to reach an annual output of 15,000 MT. In a landmark move, Bolivia partnered with Russia's Uranium One Group to construct the country's first direct lithium extraction (DLE) facility, leveraging advanced Russian adsorptive extraction technology. Scheduled to begin operations in 2025, this facility represents a breakthrough for Bolivia, which has long sought to elevate its lithium output but faced challenges with traditional extraction methods.

South America is showing a diverse approach to lithium resource management, foreign partnerships, and technological advancement. Chile mixes state control and private partnerships, Argentina emphasizes private export-oriented growth, while Bolivia favours state control and DLE. Finally, Brazil's policy to open its lithium production and expedite permitting adds an important capacity to the region, enhancing its attractiveness in the global lithium market.

View from South America represents the opinions of iLiMarkets and does not reflect the opinions of ILiA.



In conversation with

FRANK HA CHUN SHING

Mr Ha is Director & Chief Executive Officer at Tianqi Lithium Corporation, a founding Core Member of ILiA

Please tell us about your background and how you became involved in the lithium industry?

I joined Tianqi as the President and Executive Board Member in the beginning of 2021, and have been in the industry for around four years. Before that, I spent more than two decades in management in the manufacturing sector, working with multinational groups such as Steyr Motors, Swarovski, etc. Also, I am currently a PhD candidate for Enterprise Management at the Shanghai University of Finance and Economics.

What are your thoughts on the future of the lithium industry?

Global climate change is becoming increasingly severe, and carbon emissions pose a challenge that the entire world must address. Amid the global decarbonization headwind, we see the lithium industry's pivotal and vital role in supporting the global energy transition to cleaner energy. The burgeoning demand for electric vehicles and energy storage systems further reinforce our strong outlook for long term lithium demand.

Currently the global lithium-ion battery may face challenges such as resource redistribution, geopolitical tension and market's volatility in the short-term. We are still optimistic about the market long term growth and huge potential to be unlocked via collaborative innovation, product quality advancements and high ESG standards.

What inspired Tianqi to create Discovery Li, the museum dedicated to lithium in Chengdu, China?

Lithium is a natural resource with unique properties that significantly contribute to the high-quality advancement of human society. To develop and utilize lithium resources responsibly, reduce global carbon emissions, and continuously make positive contributions to nature, we established the world's first "Lithium Science Museum." Our aim is to advocate for lithium, educate people about its history and current significance, envision its bright future, narrate the scientific journey of lithium, and promote harmony between humanity and nature.

Since opening on October 15th, 2023, the Lithium Science Museum has become a key platform for science education, business collaboration, and international exchange. It has welcomed distinguished guests, including high-profile government officials such as the President of Chile, the Premier of Western Australia, renowned scholars, and industry experts. We have built strong partnerships with universities and local schools, enriching youth science education and fostering a regional network for science outreach.

As an industry leader, what is Tianqi Lithium doing to set high ESG standards and lower its carbon footprint?

We established a dedicated ESG team in 2016 and being the first



Chinese lithium producer to release the ESG report in 2017 and began systematic carbon management in 2020.

We believe that a sustainable lithium industry meets the current and future demand for lithium resources while minimizing negative environmental impacts and making a positive contribution to social and economic development. Our company aligns with the United Nations SDGs and integrates ESG management indicators into the KPIs of our executives. We follow the PDCA (Plan-Do-Check-Act) management cycle to develop our global sustainability action plan, focusing on key issues such as climate change, resource recycling, labour rights, and responsible supply chain management.

Tianqi is also strongly engaging in community investment, consulting with local residents to develop public welfare initiatives and volunteer programs that focus on community development, environmental care, and education.

With regards to lowering the company's carbon footprint, since 2018, Tianqi has been developing a carbon emissions database and launched systematic carbon management in 2020.

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Currently, Tianqi has established a coordination mechanism for both domestic and international operations, completed carbon inventory assessments at four domestic production sites and the company headquarters, and evaluated the environmental footprints of all major products, which have been certified through third-party verification in line with international standards.

Tianqi is the first company to release its net zero white paper in 2023 in the lithium industry. We have set clear net zero targets: a 42% reduction in total emissions and a 50% reduction in intensity by 2030, aiming for net zero by 2050. We are committed to using renewable energy in our production processes whenever possible, and we are reducing the carbon footprint of our products through green procurement, energy-saving upgrades, electrification, and digital management. We are also inviting partners from the whole supply chain to join our "Net Zero Initiation".

How does Tianqi Lithium engage with the local community in locations where you extract lithium? What initiatives are in place?

We consistently manage the impact of our business activities on the local communities in a responsible manner. We firmly respect the local culture and customs, acknowledge the legitimate behaviours and rights of the communities, and take initiatives to seek stakeholder engagement. We also encourage open communication within the communities and strive to

contribute to their development, achieving harmony and compatibility within the local areas.

Using Tianqi's investment in Australia as an example, we emphasize the mutual prosperity of industry and community. We continuously engage with local communities and have achieved notable success in our public welfare initiatives. For instance, the town of Greenbushes, home to our lithium mine, won 'Tidy Towns Sustainable Communities Awards' for two consecutive years.



Discovery Li, the lithium science museum created by Tianqi Lithium in Chengdu, China.

Additionally, we have long supported primary schools in Western Australia by providing Chinese language courses and arts education, helping local youth understand the new energy sector and plan their careers. And we have a long-term cooperation with the West Australian Symphony Orchestra and launched the Crescendo Music Education Program, which provides free violin or cello lessons for primary school students in socially and economically disadvantaged schools. We also donated the Tianqi Connection Gallery to the Western Australia Museum. These efforts have fostered cultural exchange

between China and Australia, earning us high praise and trust from the local community.

Recently it was reported that you are considering investing in battery materials and production facilities in Europe. What can you tell us about this strategy?

We currently don't have any investment in Europe but the European market being the second largest EV market after China, has its demand size and customer base advantage. Moreover, Europe has shown a strong commitment to the transition toward net-zero emissions and clean energy with new local policies, such as Critical Raw Materials Act, the EU Battery Regulation and the Net-Zero Industry Act. Thus, we see opportunities from both demand and supply sides.

With globalization always as Tianqi's core strategy focus, therefore, we consider the region a relevant focus in our global strategy and look forward to engaging in proactive discussions with different partners in Europe to leverage each other's advantage to unlock the market profit and opportunity.

Do you have any advice for students who are considering a career in the lithium industry?

With the lithium-ion battery thriving in foreseeable future, there is no doubt being a participant in the sector is a wise and promising decision. When people talk about lithium, they may think of batteries first, which may lead to engineers in electric chemistry major.

However, as the industry evolves and matures, there are various options from upstream to downstream for students to consider based on their talent and interest.

With new battery materials and technologies, battery solutions, and application markets emerging constantly, the industry also demands ongoing learning and innovation from a strong talent pool to help uphold the growth of the industry.

Besides rechargeable batteries, what are your favourite applications for lithium and why?

If you have the chance to visit our Lithium Science Museum, you will learn about several lithium usages in general industry and our daily life, such as in pharmaceutical and foods and beverages. Personally I am intrigued by lithium's applications in high-tech materials for construction and spacecraft equipment. Lithium's lightweight and high-strength characteristics make it ideal for aerospace components, where every gram counts. That also echoes with our slogan "changing the world with lithium", now it extends to the universe as well!

Do you drive an electric vehicle?

Electric vehicles (EVs) bring several key benefits that align with the shift towards sustainable transportation. They reduce operating costs thanks to their energy efficiency and lower maintenance needs. Plus, they contribute to reducing carbon emissions, making them vital for a greener future. With ongoing technological innovations, EVs are also "future-proof", enhancing performance and user experience. More and more people I know are shifting to EVs.



Frank Ha, Frank Lee and Szetoo Yuway welcome Anand Sheth, Founding Chairman of ILiA, to the Lithium Science Museum in April 2024 (Credit: Tianqi Lithium)

Tianqi Lithium is one of the founding Core Members of ILiA. How do you see ILiA's role in the lithium industry?

We are honoured to be one of the Core Members of the International Lithium Association (ILiA) with other peers in the industry. We thank for what ILiA has committed to the association and industry, and recognize ILiA's pivotal role in shaping a global platform to exchange lithium players' thoughts and sharing the future of the lithium industry in a sustainable and standard way.

ILiA also serves as a unified global voice for all lithium producers, advocating for sustainable and responsible development within the industry, and also it promotes environmental, social, and governance (ESG) standards, which are essential for the long-term viability and reputation of the lithium sector. As a result, this year saw the release of the world's first Product Carbon Footprint (PCF) Guidance for lithium products, organized by ILiA and in which we participated as one of the lead editors. We are continuing to participate in the development of documents related to Product Water Scarcity Footprint (PWSF) Guidance.

We commend the continuous efforts of the ILiA team and believe that through the members' collective dedication, our industry

will be more prosperous and unified. We hope that the association will continue to support cooperation, transparency, and shared progress within the global lithium community. By fostering a collaborative environment, we also hope ILiA will promote more meaningful dialogue and partnerships across borders, enhancing our collective efforts to advance the industry and ensure a sustainable future for all stakeholders involved.

Do you have any messages for the lithium industry?

We are a witness of the lithium industry, born from lithium and thriving with lithium. Ups and downs in the cycles are normality. We will stick to our core vision to continue delivering the best quality lithium products to our customers.

We are also committed to upholding the highest standards of ESG practices, taking all our stakeholders' interests into consideration for enduring and sustainable development of our company and lithium industry.

We warmly encourage all industry players to embrace the same principles as we are to navigate the challenges and opportunities in the industry together, and to maximize the joint initiatives to strengthen our industry role and enhance our supply chain resiliency.

Photo credit: Tianqi Lithium

SPOTLIGHT ON SUSTAINABILITY

Building a sustainable future

In this issue of the Sustainability Spotlight we asked Andrada Mining, how a mining company can build a foundation for sustainable growth that will endure beyond the closure of their mine. Here, Arno Barnard, Head of Sustainability and Tailings, shares with the Lithium Voice how Andrada approaches sustainability holistically at its operations at Uis, central Namibia.

Guided by their comprehensive Sustainability Roadmap, Andrada Mining implements an integrated approach to ensure long-term sustainability that will continue after the end of mining operations. This strategy drives continuous improvement across its operations and projects, with a range of strategic initiatives working in concert to achieve these goals.

One key pillar is their corporate social investment strategy, which is focused on education, skills development, health, and economic diversification. This social approach is complemented by robust environmental protection efforts.



Students visiting the mine site at Uis, Namibia.

The company believes that the concepts of nature and mining are not necessarily adversaries but can very well work in harmony. To support this value, the company is developing a comprehensive biodiversity strategy which focuses on nature-based solutions and planetary boundaries, aiming to enhance biodiversity, improve water security, and act as carbon sinks, while creating sustainable livelihood opportunities for local communities through ecosystem restoration projects in Namibia.

Andrada's comprehensive climate change scenario analysis goes beyond emission reduction strategies and addresses broader sustainability initiatives, such as social equity, biodiversity conservation, and economic resilience.

In a region where mining companies have traditionally sometimes struggled to build trust in the local community, Andrada is working hard to reshape the narrative. In the first half of 2024 alone, Andrada held 108 community engagement meetings to address local concerns and hear feedback directly from stakeholders.

Another initiative the company has implemented is a grievance mechanism that is aligned with the International Finance Corporation's (IFC) model that is used to address environmental and social complaints and concerns from stakeholders. This, together with Andrada's formal stakeholder engagement plan, ensures the local community is involved in every stage of the mining project. Andrada's CEO, Anthony Viljoen, captures the company's mission: "At Andrada Mining, we're not just extracting resources; we're building a sustainable future."

Andrada's integrated approach exemplifies how junior mining companies can take a lead on sustainability. It shows that with the right mindset and strategies, smaller players can also be driving positive change in the mining sector.

With a commitment to embedding sustainability into every operation, Andrada is not just extracting resources – it's helping to build resilient communities and ecosystems in Namibia, setting a new standard for responsible mining. As Andrada's CEO Anthony Viljoen points out "As we continue to expand, our commitment to sustainable practices and social responsibility remains at the core of everything we do."



A community outreach meeting.

THE CURRENT

Catch up with ILiA's work at a glance

ILiA & Eurometaux lead on joint industry position on the new RMOA proposed by ANSES

In October the French chemical regulator ANSES completed a risk management options analysis (RMOA) and opened it for consultation [Note: this RMOA is independent of ILiA's RMOA project; see below].

ILiA and Eurometaux coordinated with leading associations in the lithium value chain to create a joint industry position and submitted it to the regulators. A webinar on this topic was held for ILiA members on October 17th.

Our key messages:

- Lithium is essential for the global energy transition. While its use in lithium-ion batteries is the most known, uses in other products are also essential and often irreplaceable.
- International disagreements remain on the classification as toxic to reproduction.
- Important data gaps should be filled before reaching conclusions on other endpoints and on the actual risks. The lithium industry is ready to cooperate to fill those data gaps.
- Appropriate safety measures can and should be developed now to tackle risk where it may occur.
- Risk management measures should be based on sound and robust scientific data, as disproportionate risk management measures

based on incomplete data would undermine the decarbonization effort of the EU and its competitiveness.

We believe that risk management measures should be based on sound and robust scientific data, as disproportionate risk management measures based on incomplete data would be detrimental to the decarbonization effort of the EU, and it would be in direct contradiction with the need to boost the EU competitiveness, as recently highlighted by the Draghi report, the mission letters of the new Commissioners, the Antwerp Declaration, and the French President Emmanuel Macron.

The final recommendations of ANSES should therefore take these

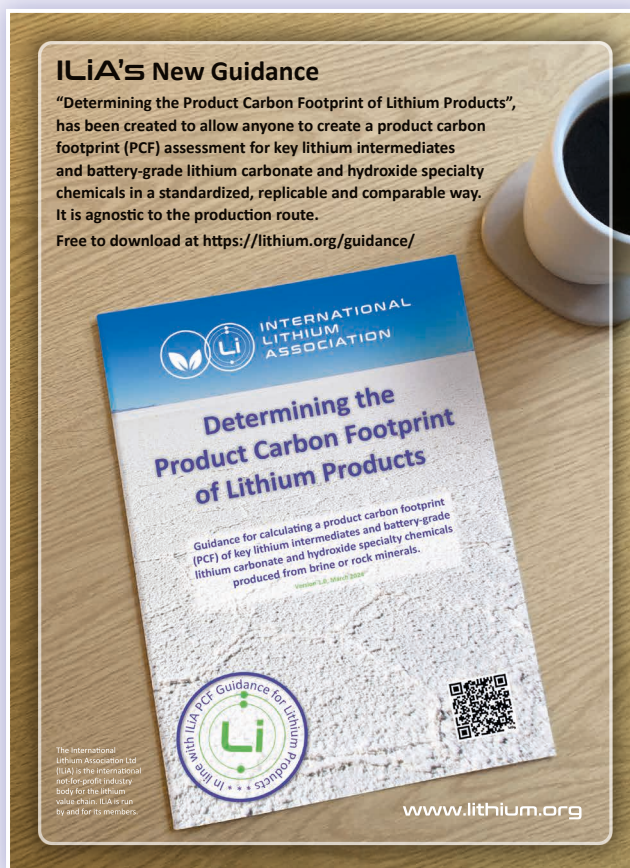
elements into account, and refrain from suggesting risk management measures not supported by adequate data on risks, exposure, and emissions. The lithium industry acknowledges the limitations of some datasets and remains ready to cooperate with ANSES and authorities at large to generate more data to assess the actual risks and set up appropriate risk management measures. Industry is also carrying out its own industry RMOA exercise and will share the main outcomes.

Industry RMOA update

The RMOA commissioned by ILiA and managed by the Association's Health and Safety Subcommittee (HSS) is expected to be completed before the end of December 2024.

The ILiA RMOA will help regulators and industry participants to better understand the life cycle of lithium and its three most commonly used salts. The RMOA is examining the current research on lithium, identifying gaps, and helping support an informed discussion by regulators. The lithium industry believes that classifications should be based on clear, compelling and comprehensive scientific evidence.

Neither ILiA nor its members question the need for substances to be proportionally regulated to protect workers' safety. This project is generously underwritten by ILiA's Core Members.





THE LITHIUM VOICE

INTERNATIONAL LITHIUM ASSOCIATION (ILIA)

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