



**SPARK**  
ENERGY MINERALS

## High-Grade Lithium Exploration in Brazil's Lithium Valley

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Focused on Battery  
Metals & Minerals

CSE: [SPRK](#) | OTC: [SPARF](#) | FSE: [8PC](#)

September 2024

# Forward Looking Statements



This presentation contains forward-looking statements within the meaning of Canadian securities law requirements. All statements, other than of historical fact, that address activities, events or developments that Spark Energy Minerals Inc. (“Spark Energy Minerals Inc.” or the “Company”) believes, expects or anticipates will or may occur in the future (including, without limitation, statements regarding the estimation of mineral resources, exploration results, potential mineralization, potential mineral resources and mineral reserves) are forward-looking statements. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements. Factors that could cause actual results or events to differ materially from current expectations include, among other things, failure to establish estimated mineral resources, the possibility that future exploration results will not be consistent with the Company’s expectations, changes in structure of transactions, world metals markets and other risks. Information disclosed in this presentation is current as of September 2024, except as otherwise provided herein, and any forward-looking statement speaks only as of the date on which it is made. Except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement.

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\*Scientific and technical information disclosed in this presentation has been reviewed and approved by Jonathan Victor Hill BSc Hons, FAUSIMM, a Qualified Person consistent with NI 43-101.

# Investment Highlights



Demand for lithium is expected to increase by **13 to 15** times by 2040, driven by the growing adoption of electric vehicles<sup>1</sup>



## Brazil's Emergence as a Tier-1, Hard-Rock Lithium District:

Promising portfolio of new projects focused on exploring deposits of the lithium-rich mineral spodumene - With three operational plants and eight more in the pipeline, Brazil's output of lithium carbonate equivalent (LCE) reached 29,976 metric tons in 2023.



## Minas Gerais, a pro-mining State of Brazil:

Minas Gerais is home to over 300 operating mines including projects owned by BHP, Anglo American and Vale.<sup>2</sup>



## Launch of "Lithium Valley Brazil" in May 2023:

Initiative launched by the state government of Minas Gerais and other municipal government agencies aimed at streamlining and facilitating lithium development and production to position it as a key global player in the lithium supply chain.<sup>3</sup>



## Access to Infrastructure:

Highways, Hydroelectrical grid power, water from the nearby Jequitinhonha River and proximity to commercial ports, providing direct shipping routes to global trade partners: Porto de Ilhéus and Porto de Vitória.<sup>4</sup>



## Spark Energy Holds the Largest Contiguous Land Tenement Package in Brazil's Lithium Valley

+60,000 Hectares strategically located in a high-potential Lithium region - 30KM from Sigma Lithium, Lithium Ionic & Latin Resources

"Lithium Valley" is becoming an established Hard-Rock Lithium district



- Pilbara Minerals Acquisition of Latin Resources' Flagship Salinas Lithium Project
- Potential to become a top 10 hard rock lithium operation globally
- Resource Estimate: The Salinas Lithium Project has an estimated resource of 77.7Mt @ 1.24% Li<sub>2</sub>O

Market Cap: ~\$327 million



- Lithium Ionic is actively moving forward with permitting for the Bandeira lithium project
- Resource Estimate: The Bandeira project has a measured and indicated resource of 7.57Mt @ 1.40% Li<sub>2</sub>O, with strong growth potential

Market Cap: ~\$125 million



- Sigma Lithium is one of the world's largest lithium producers
- Grota do Cirilo project boasts a total resource of 45.7Mt @ 1.38% Li<sub>2</sub>O, positioning it as a world-class lithium resource
- Sigma has received BNDES funding to expand its cobalt-neutral production, doubling capacity from 270,000 tonnes to 520,000 tonnes per year

Market Cap: ~\$1.15 billion

1). International Energy Agency 2). Crux Investor 3.4). Lithium Valley Brazil

# Lithium Market



## Powering the Future of Electric Vehicles

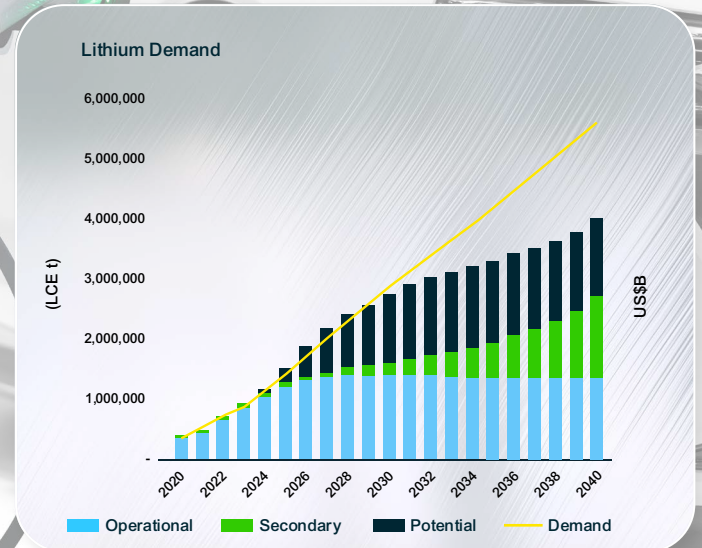
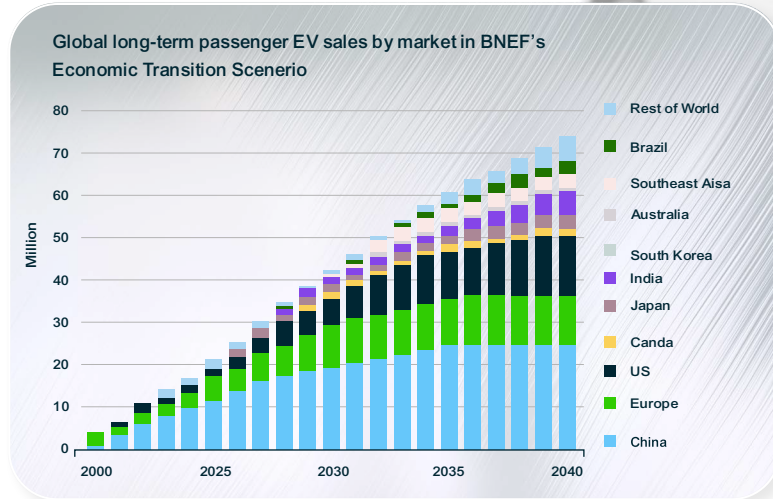
Rising EV battery demand is the greatest contributor to increasing demand for Lithium

**Transformative EV adoption:** From a mere 60,000 EVs in 2011, the number surged to an impressive 41.78 million by 2023

EV sales are expected to grow to **73 million per year** in 2040, contributing to 73% of global car sales<sup>1</sup>

Long-Range EVs Drive Demand for High-Grade Spodumene Lithium

Lithium demand is expected to increase to **3 million metric tons** of Lithium Carbonate Equivalent (LCE) by 2030 from 1.2 million metric tons LCE in 2024 – **almost triple the current demand within six years**<sup>2</sup>



1). Lithiumharvest.com 2). Bloomer NEF

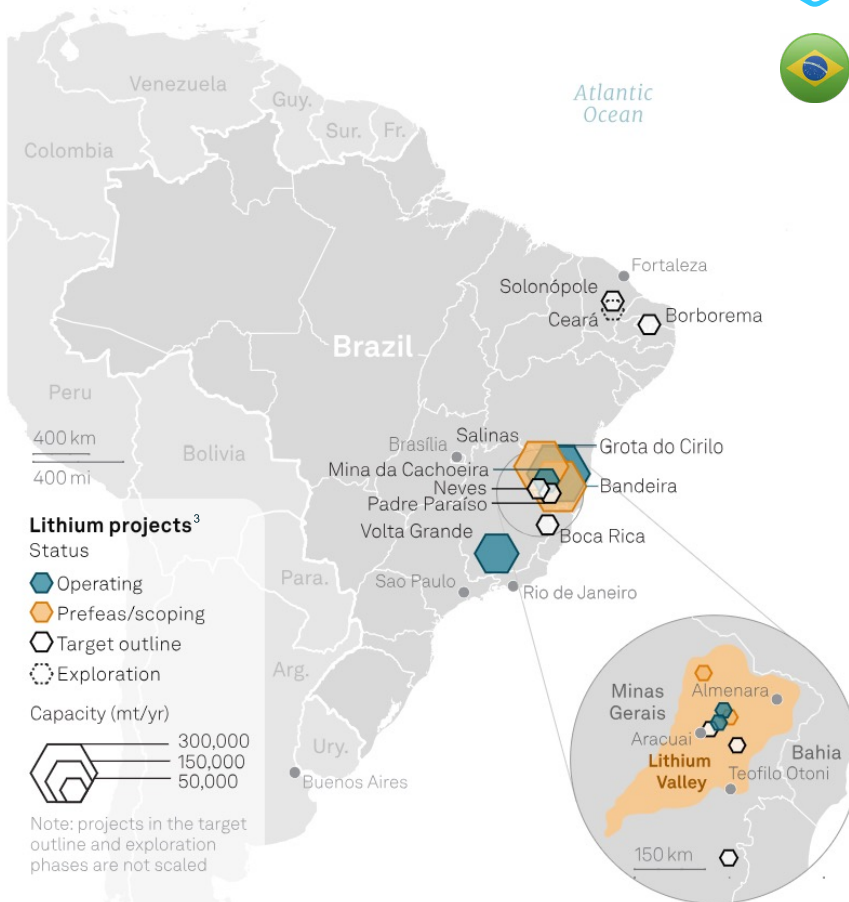
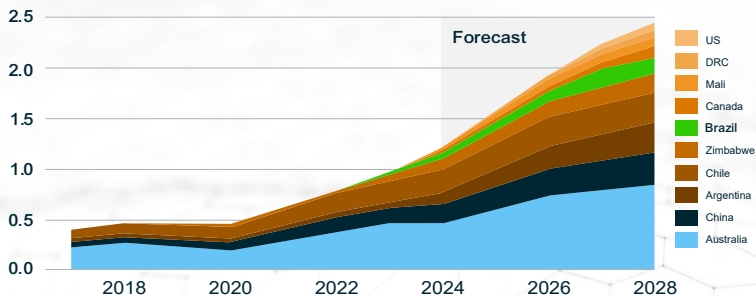
# Brazil Advantage



## Brazil is emerging as a World-Class Lithium Jurisdiction as Lithium mining accelerates in the country

- Research indicates 45 large lithium deposits with high potential for economic exploration. Thus, Brazil has the potential to multiply its proven lithium reserves by 20x
- With three operational plants and eight more in the pipeline, Brazil's output of lithium carbonate equivalent (LCE) reached 29,976 metric tons in 2023
- Potential for this production to 5X by 2028<sup>1</sup>

Brazil emerging as one of the world's top Lithium producers<sup>2</sup>



# Brazil's Strategic Exposure to Key Battery Markets



**Brazil's Minas Gerais is strategically located for the electric vehicle supply chain:** Regular infrastructure including roads, water, clean energy and access to ports. The changes taking place in global supply chains indicate opportunities for expanding these networks in Minas Gerais.

**Short distance to the USA:** Atlantic port access offers the advantage of faster delivery, reducing shipping costs and lowering the carbon footprint

New EU Critical Raw Minerals proposal to make trade agreements with the aim of securing supply from Latin America.

## US & Canada

- 24% of 2030 battery demand
- Growing at ~32% CACG to 2023

## Europe & UK

- 26% of 2030 battery demand
- Growing at ~27% CACG to 2023

## Asia Pacific

- 45% of 2030 battery demand
- Growing at ~17% CACG to 2023

Minas Gerais is home to Brazil's largest proven Lithium reserves & Industrial ports

Figure 1). Rho Motion EV & Battery Quarterly Outlook Q2 2024.

# Minas Gerais State, Brazil

## Brazil's Lithium Valley

Minas Gerais is Brazil's third-largest economy and home to over 300 active mines

### ✓ Emerging hard-rock lithium producing district

Renowned for high-grade spodumene deposits ideal for high-quality Lithium Carbonate Equivalent (LCE) production

### ✓ Launch of "Lithium Valley Brazil" in May 2023:



Initiative launched by the state government of Minas Gerais and other municipal government agencies aimed at streamlining and facilitating Lithium development and production to position it as a key global player in the lithium supply chain



#### Geopolitical Advantage<sup>1</sup>

- Minas Gerais is a tier-1 mining jurisdiction
- Pro mining local government, rapid processing of permits
- Strategic location well connected to North America & European battery markets



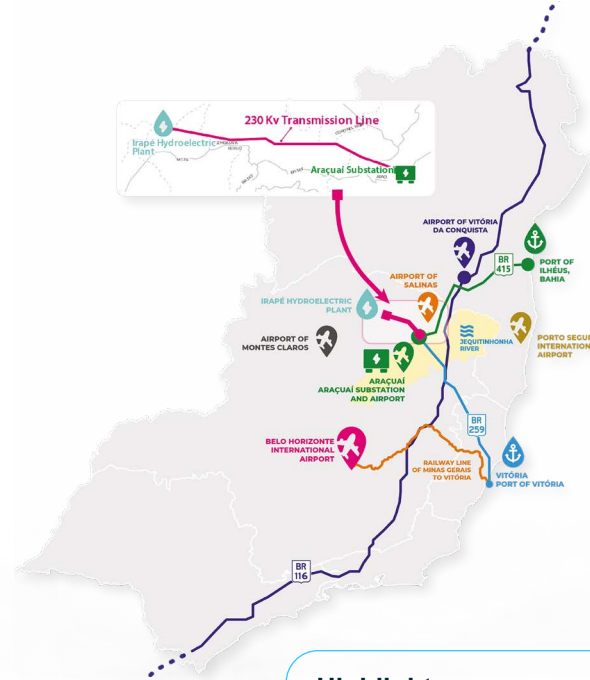
#### ESG Considerations<sup>2</sup>

- Power grid supported by hydroelectric energy
- Robust social structures are already in place
- Use of dry-stacked tailings for waste management
- Solid backing from both the government and the local communities



#### Asset quality & speed to market<sup>3</sup>

- Potential to rank among the top 10 hard-rock spodumene producers globally
- Anticipated low-cost operations
- Flexibility for near-term production, depending on market conditions, customer needs, and funding



### Highlights:

- 40% of biggest mines in Brazil
- 67% of Brazilian mines with production of over 3 million tons/year
- Sole domestic producer of lithium
- Responsible for over 30% of all mineral production in Brazil

1,2,3). Lithium Valley Brazil

# Flagship Project

## Minas Gerais Lithium Valley

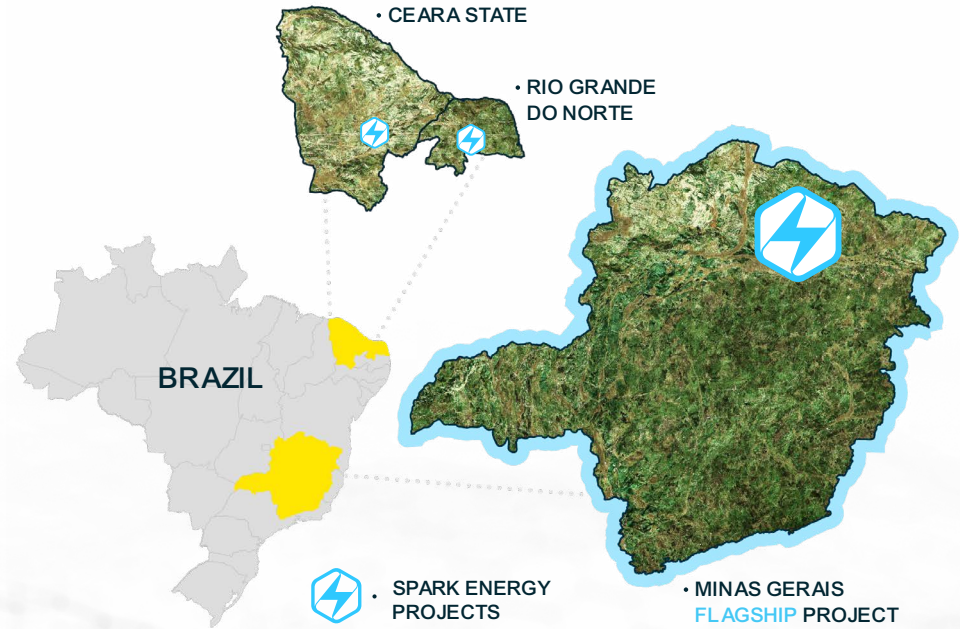


Spark Energy Minerals is a Canadian exploration company actively exploring its [Lithium portfolio in Brazil including the largest continuous land package in Brazil's Lithium Valley](#)

### Flagship district-scale Project in Brazil's Lithium Valley

- Spanning 63,079 Ha in Minas Gerais state
- Brazil's Lithium Valley, an emerging world-class hard-rock Lithium District
- Coarse mineralogy enables simple, sustainable processing with low costs, making it competitive with top Australian hard-rock projects

The company also owns prospective projects in Brazil's Ceara State and Rio Grande Do Norte



+60,000 Ha exploration portfolio,  
largest continuous land package  
in Brazil's Lithium Valley



# Flagship Project

## Minas Gerais Lithium Valley



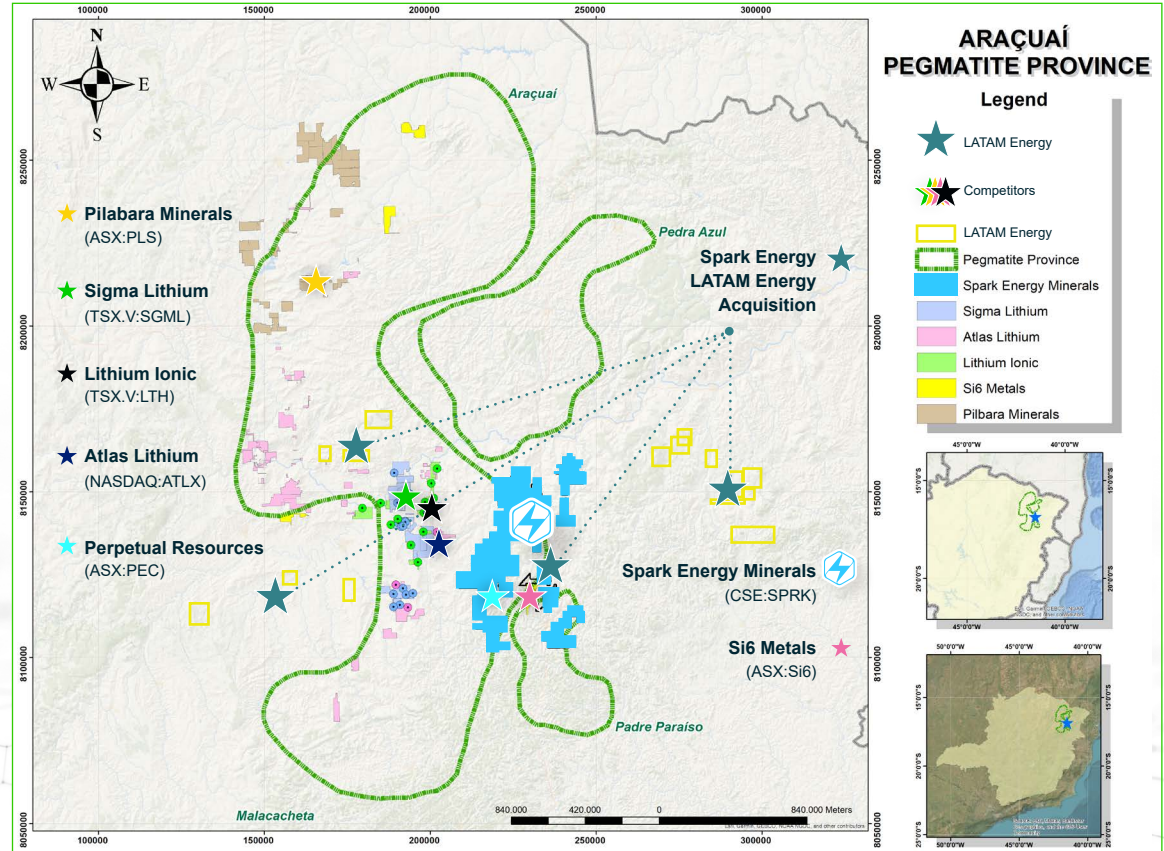
**Largest Contiguous Tenement:** Spark Energy controls the largest continuous land package in the region, spanning over 60,000 hectares in Brazil's Lithium Valley.

**Prospective Geology:** Geophysical data suggests lithium-bearing pegmatites exposed in erosional windows through regolith cover.

**Untapped Potential:** Presence of spodumene particles in heavy mineral concentrates panned from streams highlight the untapped potential on Spark's property.

### Strategic Location

Proximity to established developers & producers



# Flagship Project

## Minas Gerais Lithium Valley

### The Right Host Rock

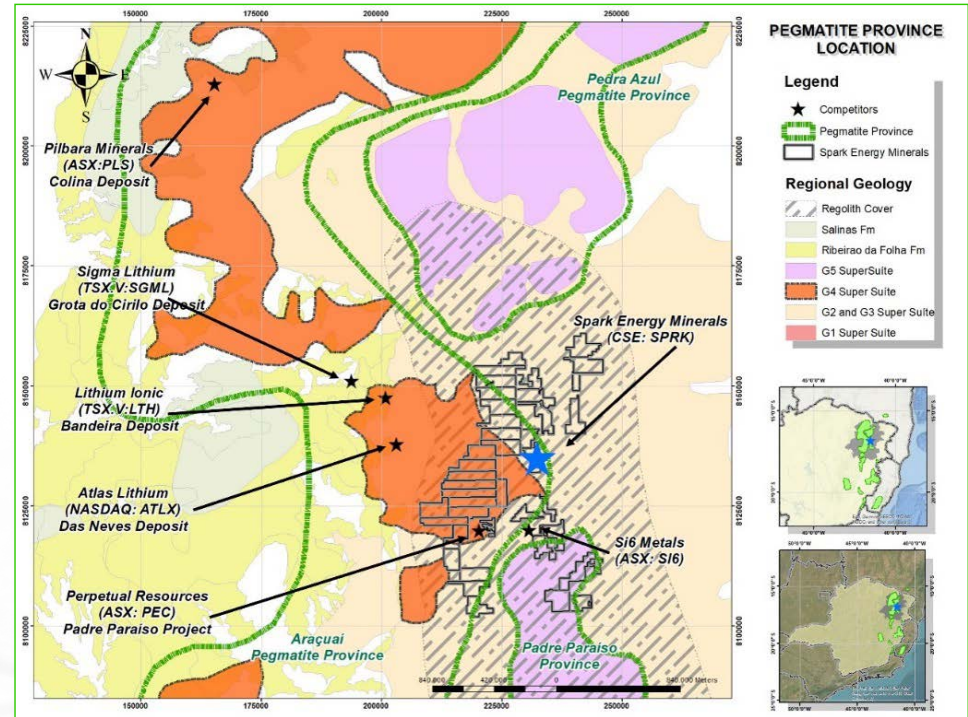
Focused on confirming spodumene pegmatite lithium potential across multiple licenses

The priority is the exploration of outcropping pegmatites across this extensive acreage, targeting Brazil's premier lithium region

**Geological map** that highlights the central position of the **fertile G4 Granite**, along with the surrounding basement schist and granite-gneiss complexes and importantly the location of shallow regolith cover.

G4 granite in Brazil is associated with lithium deposits, particularly in pegmatite intrusions near these granites. These deposits are significant for hosting lithium-rich minerals like spodumene.

It also indicates the location of **shallow regolith cover**, which plays a key role in the geological structure and mineral potential.



Map showing Spark Energy Metals 65 kHa contiguous tenement package relative to the main producing lithium mines and development projects and the associated geology

# Flagship Project

## Advanced Exploration & Target Generation



Spark's geological team completed comprehensive target generation using geophysical, geochemical, remote sensing, and multi-spectral data

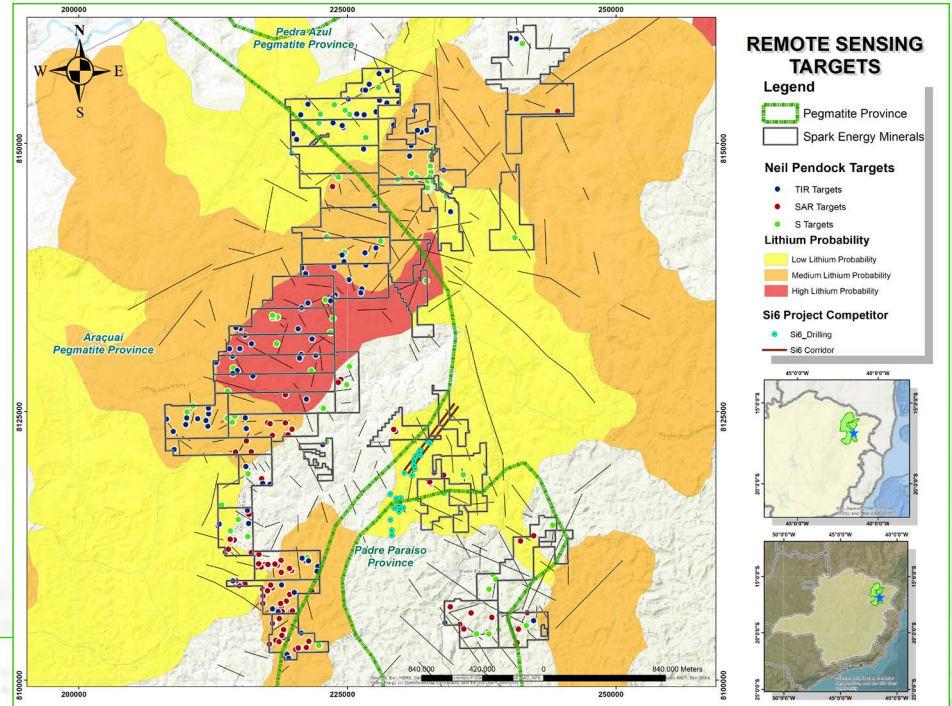
**Key Targets:** Spark's remote sensing and geophysical data have identified lithium targets distributed across the tenement area.

**Confirmed Lithium Potential:** Confirmed spodumene particles in stream sediments within Spark's tenements, despite cover formations.

Government reports show anomalous lithium and pathfinder elements (Nb, Ce, Sn, Ta, Be, B).<sup>1</sup>

This map clearly shows the most prospective (red, orange and yellow) catchment basins reported in the 2023 study, based on regional stream sediment and heavy mineral pan concentrates.

Spark's tenement package is overlaid on the 2023 Brazilian Government Lithium Probability Map, showing highly prospective (red, orange, yellow) catchment basins.

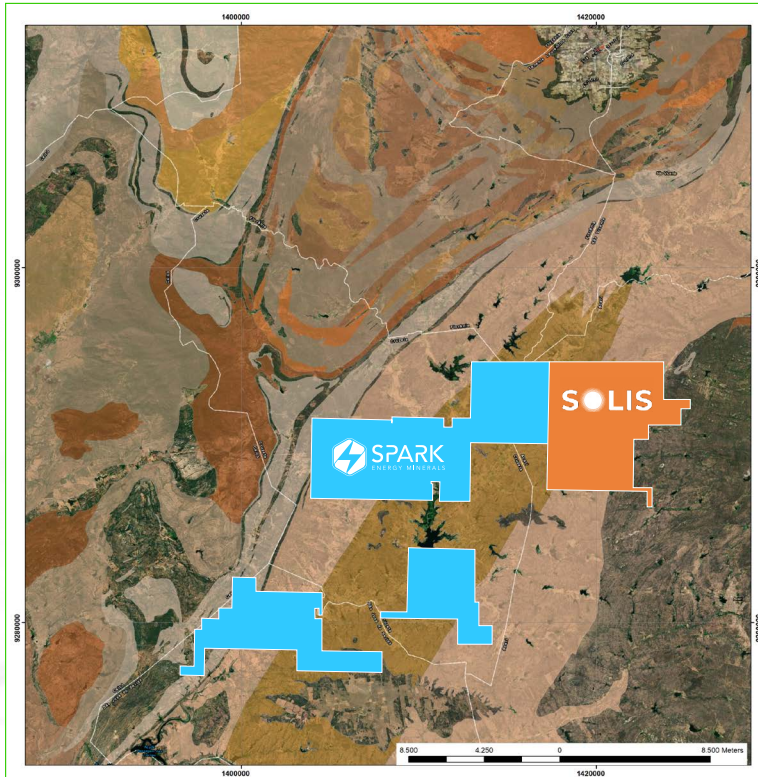


1). Government Report

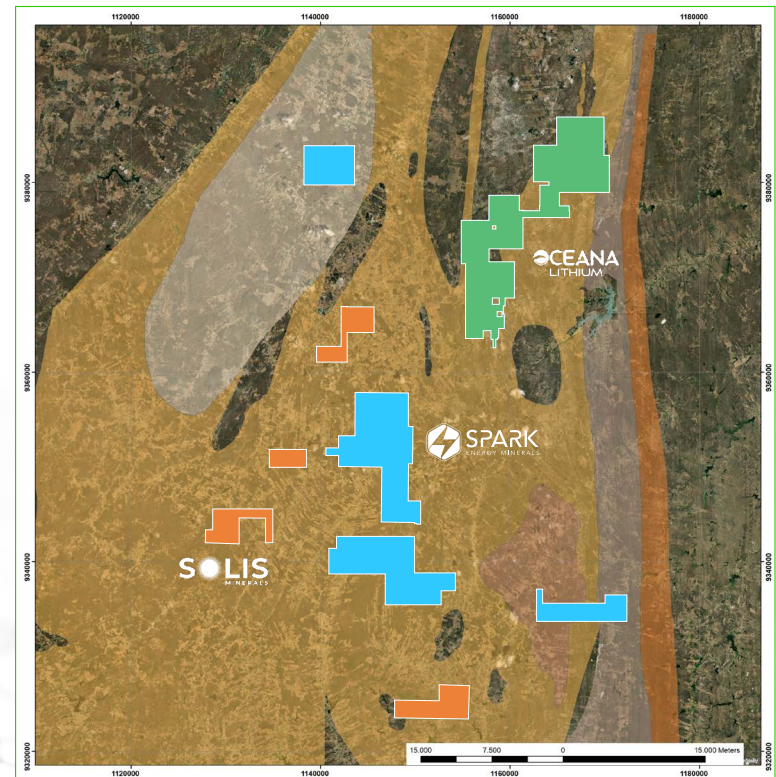
# Secondary Lithium Projects in Brazil



## Ceara State Project



## Rio Grande Do Norte Project



# Lithium Neighbors in Minas Gerais, Brazil



Spark Energy Minerals compared to its peers within the same “Lithium Valley” of Brazil

	LOCATION	PROJECT NAME	TOTAL RESOURCE (MT @ Li <sub>2</sub> O)	EV / RESOURCE (C\$/T LCE)	MARKET CAP (C\$) <sup>1</sup>	EXCHANGE/ STOCK SYMBOL
	Brazil	N/A	N/A	N/A	<b>\$9.8M</b>	CSE: SPRK   FSE: 8PC OTC: SPARF
	Brazil	Bandeira	7.57Mt @ 1.40% Li <sub>2</sub> O	\$66	\$109M	TSX: LTH OTCQX: LTHCF
	Brazil	Neves	2.38Mt @ 1.32% Li <sub>2</sub> O	N/A	\$206M	NASDAQ: ATLX
	Brazil	Grota do Cirilo	45.7Mt @ 1.38% Li <sub>2</sub> O	\$352	\$1.5B	NASDAQ: SGML TSX.V: SGML
	Brazil	Salinas	45.2Mt @ 1.34% Li <sub>2</sub> O	\$120	\$497M	ASX: LRS
 <sup>2</sup>	Australia	Pilgangoora	309Mt @ 1.26% Li <sub>2</sub> O	N/A	\$7.95B	ASX: PLS

1. September 6, 2024

2. Showcasing value of Pilbara Minerals given the recent acquisition of Latin Resources

# Management Team & Advisors



**EUGENE HODSON**

President, Chair & CEO

Eugene has held senior positions in both the capital markets and in the public sector for the Northwest Territories and British Columbia governments.

His experience includes First Nations negotiations, corporate, public and financial strategy, as well as investment banking.

He served on the Board of Directors of numerous companies including Trait Biosciences Inc., Grandfield Pacific Corporation, Arimex Resources Inc., Equitable Real Estate Investment Corp., Sea Breeze Power Corp., Silvermex Resources Inc., Pacific Cascade Minerals (as Chair), and CFO/Director of Timmins Gold Corp.



**CHRIS FOSTER**

CFO

Chris Foster is a consultant providing accounting and financial management services for both public and private companies across a broad spectrum of industries.

Chris is current Chief Financial Officer for DGTL Holdings Inc, former Chief Financial Officer for Perpetua Resources Corp, former Controller for the Ivanhoe Group's Global Mining Management Corporation and Peregrine Diamonds Ltd, Roca Mines Inc., and former accountant at Canadian Forest Products Ltd.



**JOHNATHAN HILL**

VP Exploration, Country  
Manager & Director

Jonathan Hill brings over 30 years' experience of global exploration, mining operational and project development experience including, Africa, Australia, and the Americas. He is a former geologist with Ashanti Gold where he was directly involved in several world class, greenfield and brownfield discoveries.

His experience includes, exploration and development of projects including due diligence, corporate development, mine geology and management.

Jonathan is a Non – Executive Director of Royal Road Minerals Limited and Stratabound Minerals Corporation, both TSX-V listed companies.

Jonathan Hill holds a BSc (Hons) Economic Geology 1988 (University of Cape Town), and a BAppSc. Applied Geology 1985 (Queensland University of Technology), and is a fellow of the AUSIMM.

Ex Greenfields Exploration Manager for Brazil - AngloGold, Ex Vp Exploration and Geology Jaguar Mining  
Ex Greensfield Exploration Manager Columbia AnglaGold Ashanti



**MIKE STIER**

Proposed Director

Mike Stier is educated in business management and finance, with 15 years of experience in capital markets.

He specializes in corporate structure, finance, business development, IPOs, M&A, and wealth management, having served as a CIBC IROC licensed Senior Financial Advisor and senior analyst for a private equity company.

Currently, he holds executive and directorship roles with private companies and publicly listed issuers, providing consultation across industries including mining, oil & gas, fintech, VR, eSports, health, life sciences, and biotech.

Mr. Stier has acted for several public entities and currently serves on the board of Rekrton Group Inc., La Fleur Minerals Inc., GoldHaven Resources Corp., and Saga Metals Corp.

# Management Team & Advisors



**ANDREW LEE SMITH, P. GEO BSC.**

Chairman, Technical Advisory Board

Andrew Lee Smith is an accomplished Professional Geologist. He has over 25 years of experience successfully exploring, developing, and operating North American and African base and precious metals mining projects.

Andrew also holds directorships and management positions in several other junior mineral exploration companies.

In 2015, Mr. Smith competed in the International Corporate Directors Education Program and received the ICD.D accreditation –the only professional designation for Canadian directors recognized both nationally and internationally.



**IAN GENDALL**

Technical Advisory Board

Ian Gendall is the President & CEO of DLP Resources and was previously with Gencor, Billiton, Anglo American, Antofagasta and more recently, OceanaGold.

While working with Billiton, Mr. Gendall led the team that was responsible for the discovery of an entirely new porphyry copper district in southern Ecuador. One of the companies that acquired part of the district was subsequently sold to CRCC- Tongguan Investment Co., Ltd. for \$679M.

Ian has extensive knowledge of operating in Brazil and was previously COO of Magellan Minerals, which was purchased in 2016 by Anfield Gold Corp.



**MICHAEL SKEAD**

Technical Advisory Board

Michael Skead is a geologist with over 30 years of international experience in mining exploration and development. He holds a BSc. Honours degree in geology from the University of Cape Town, (RSA) and MSc. in Exploration Geology, from the Rhodes University, Grahamstown, (RSA).

Michael worked as the Vice President of Project Development at GT Gold Corp., which was recently acquired by Newmont Corp. for C\$393 million. While at GT Gold Corp., he delivered the geological model and resource for the gold rich copper porphyry Saddle North Project which comprised an Indicated resource containing 1.81 B lbs. copper and 3.47 M oz. gold, and an Inferred resource containing 2.98 B lbs. copper and 5.46 M oz. gold.

He was Director of Geoscience at Newmont Corp. and has previously held senior management positions in a number of internationally recognised mining companies including Goldcorp, Randgold Resources, and Dundee Precious Metals.



**LEONARDO SOUZA**

Consulting Geologist

Leonardo Souza is a Consultant Geologist at Canopus Geologia e Projetos, and an Associated Partner at Orion Group.

He brings expertise in mineral exploration and project management from his lengthy experience developing mineral exploration projects across a spectrum of sizes and types, from metallic to gems, and business development within the sector, particularly in fostering partnerships and negotiating deals for domestic and international markets.

Leonardo's skills extend to preparing business plans to attract investments and managing relationships with investors and investment funds, focusing on mining, mineral commodities, and exploration projects in Brazil and abroad.

# Management Team & Advisors



**PHILIPPE MARTINS**

Legal Counsel

Philippe Martins is a seasoned lawyer with a Bachelor's Degree from University Ceuma in Maranhão, Brazil, and advanced qualifications in Business Law from Fumec and Mining Law from CEDIN, both in Belo Horizonte, and Minas Gerais, Brazil.

He brings over 12 years of expertise as a Director and General Legal Counsel, specializing in Greenfields, Brownfields, and mining operations projects, currently serving on the board of Resouro Inc. (TSXV: RAU).

His influential network extends across various Brazilian municipal, state, and federal levels, particularly in the production chain and mineral sector, corporate law, and academic institutes.



**SHERYL DHILLON**

Corporate Secretary

Sheryl Dhillon is an experienced corporate secretary with over fifteen years of handling corporate matters for a variety of companies.

Ms. Dhillon has extensive knowledge in the area of corporate governance, as well as strong management skills and excellent corporate communications.



**AARON WONG**

VP Corporate Development

Aaron Wong is an experienced capital markets consultant with a strong background in corporate development and a proven track record over 10 years in the capital markets.

He currently serves on the board of directors of several public companies where he brings his expertise in strategic decision-making and governance.

He previously held a leadership role in the business development group at Fortuna Investments for four years. Prior to Fortuna Investments, Mr. Wong worked as an accountant at Ernst & Young LLP.

Mr. Wong earned his bachelor's degree in business administration, specializing in finance, from Western Michigan University.



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# Proven Blueprint in “Lithium Valley”



## Sigma Lithium Corp

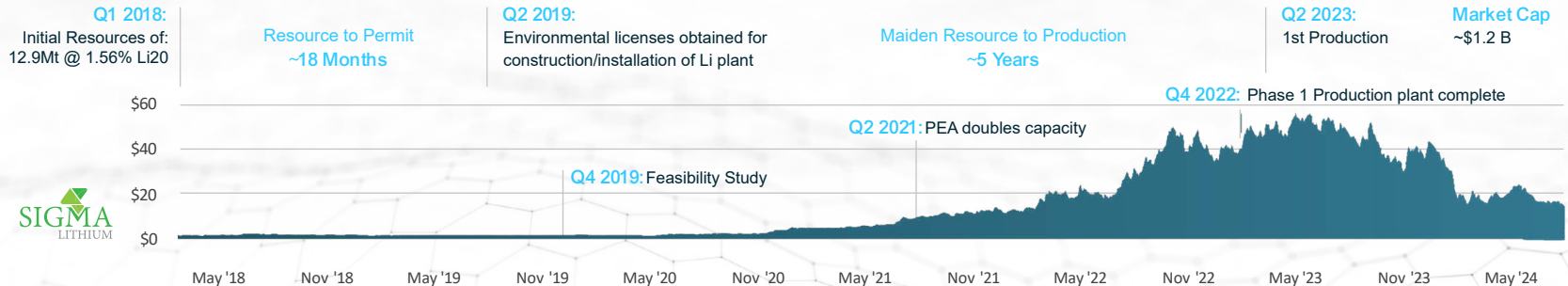


Sigma ranks as one of the largest lithium operations globally and holds the biggest hard rock lithium deposit in the Americas.

Sigma's current market capitalization of approximately US\$1.2 billion offers an attractive valuation benchmark.



### Sigma's rapid timeline to production:



# Recent Takeover in “Lithium Valley”



## Pilbara Minerals acquires Latin Resources in an all-share deal for \$373 million USD



Owning 100% of the largest independent hard-rock lithium operation in the world.

The Pilgangoora Operation has outstanding scale, a long life and is a low-cost operation with a current estimated mine life of 34 years. It produces high quality products, is supported by strong and reliable customers and an outstanding team.

Market Cap: **~\$7.95B**

Sept 6, 2024



### Pilbara acquires 100% ownership of Latin Resources for approximately US\$369.4M

Latin Resources' Salinas Lithium Project (Salinas) is an advanced stage, Tier 1, hard-rock lithium development project

#### Location

- Located in Lithium Valley, in the State of Minas Gerais, Brazil
- Well-established Tier 1 mining jurisdiction

#### Mineral Resource

- Large existing Salinas Mineral Resource of 77.7Mt @ 1.24% Li<sub>2</sub>O<sub>2</sub>
- >85% Measured and Indicated

Potential to become a top 10 hard-rock lithium asset  
by production globally (ex.Africa)

# Capital Markets Profile



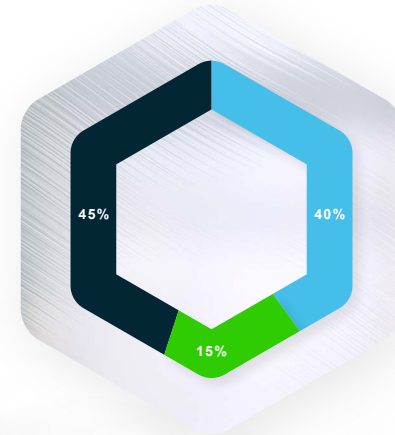
CSE: **SPRK** | OTC: **SPARF** | FSE: **8PC**

Sept 13, 2024

Recent Trading Price **C\$0.11**

Shares Outstanding **73,816,075**

Market Capitalization **C\$7.5M**



Insiders & Strategic (45%)

Retail (40%)

Institutions (15%)



Thank You



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