Standard LITHIUM

NYSE : SLI | TSX.V : SLI | FSE : S5L

The Future of Lithium in North America

Creating a Sustainable U.S. Lithium Business

SEPTEMBER 2024

www.standardlithium.com

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This presentation also includes certain estimates and projections that are based on internal models. Although the estimates are based upon assumptions and analysis that we believe to be reasonable, there can be no assurance that actual results will not differ, perhaps materially, from the estimates presented in this presentation.

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Forward-Looking Statements

Except for statements of historical fact, this Presentation contains certain "forward-looking information" within the meaning of applicable Canadian securities legislation and "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 (collectively referred to herein as "forward-looking information"). The statements relate to future events or the Company's future performance. All statements, other than statements of historical fact, may be forward-looking information. Information concerning mineral resource and mineral reserve estimates also may be deemed to be forward-looking information in that it reflects a prediction of mineralization that would be encountered if a mineral deposit were developed and mined. Forward-looking information generally can be identified by the use of words such as "seek", "anticipate", "plan", "continue", "estimate", "expect", "may", "will", "project", "predict", "propose", "potential", "target", "intend", "could", "might", "should", "believe", "scheduled", "implement" and similar words or expressions. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking information.

In particular, this Presentation contains forward-looking information, including, without limitation, with respect to the following matters or the Company's expectations relating to such matters: the Company's planned exploration and development programs (including, but not limited to, plans and expectations regarding advancement, testing and operation of the lithium extraction pilot plant and expected collaboration with Equinor ASA); commercial opportunities for lithium products; filing of technical reports; expected results of exploration; accuracy of mineral or resource exploration activity; accuracy of mineral reserves or mineral resources estimates, including the ability to develop and realize on such estimates; whether mineral resources will ever be developed into mineral reserves, and information and underlying assumptions related thereto; budget estimates and expected expenditures by the Company on its properties; regulatory or government requirements or approvals; the reliability of third party information; continued access to mineral properties or infrastructure; payments obligations pursuant to property agreements; fluctuations in the market for lithium and its derivatives; expected timing of the expenditures; performance of the Company's business and operations; changes in exploration costs and government regulation in Canada and the United States; competition for, among other things, capital, acquisitions, undeveloped lands and skilled personnel; changes in commodity prices and exchange rates; currency and interest rate fluctuations; the Company's funding requirements and ability to raise capital; geopolitical instability; war (such as Russia's invasion of Ukraine and the war in the Middle East); the continued impact of the COVID-19 outbreak, including with regard to the health and safety of the Company's workforce; health and safety protocols and their efficacy and impacts on timelines and budgets; and other factors or information.

Forward-looking information does not take into account the effect of transactions or other items announced or occurring after the statements are made. Forward-looking information is based upon a number of expectations and assumptions and is subject to a number of risks and uncertainties, many of which are beyond the Company's control, that could cause actual results to differ materially from those that are disclosed in or implied by such forward-looking information. With respect to forward-looking information listed above, the Company has made assumptions regarding, among other things: current technological trends; ability to fund, advance and develop the Company's properties; the Company's ability to operate in a safe and effective manner; uncertainties with respect to receiving, and maintaining, mining, exploration, environmental and other permits; operation of a joint venture ownership structure with Equinor ASA; pricing and demand for lithium, including that such demand is supported by growth in the electric vehicle market; impact of increasing competition; commodity prices, currency rates, interest rates and general economic conditions; the legislative, regulatory and community environments in the jurisdictions where the Company operates; impact of unknown financial contingencies; market prices for lithium products; budgets and estimates of capital and operating costs; estimates of mineral resources and mineral reserves; reliability of technical data; anticipated timing and results of operation and development; inflation; war (such as Russia's invasion of Ukraine); and the impact of health and safety protocols on the Company and its business. Although the Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable, the Company can give no assurance that these assumptions and expectations will prove to be correct. Since forward-looking information inherently involves risks and uncertainties, undue reliance should not be placed on such information.

Cautionary Statement

Forward-looking information involves known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Such factors include, but are not limited to: general economic conditions in Canada, the United States and globally; industry conditions, including the state of the electric vehicle market; governmental regulation of the mining industry, including environmental regulation; geological, technical and drilling problems; unanticipated operating events; reliance upon joint venture partners and disagreements surrounding project development; competition for and/or inability to retain drilling rigs and other services and to obtain capital, undeveloped lands, skilled personnel, equipment and inputs; the availability of capital on acceptable terms; the need to obtain required approvals from regulatory authorities; uncertainties associated with estimating mineral resources and mineral reserves, including uncertainties relating to the assumptions underlying mineral resource and mineral reserve estimates; whether mineral resources will ever be converted into mineral reserves; uncertainties in estimating capital and operating costs, cash flows and other project economics; liabilities and risks, including environmental liabilities and risks inherent in mineral extraction operations; health and safety risks; risks related to unknown financial contingencies, including litigation costs, on the Company's operations; unanticipated results of exploration activities; unpredictable weather conditions; unanticipated delays in preparing technical studies; inability to generate profitable operations; restrictive covenants in debt instruments; lack of availability of additional financing on terms acceptable to the Company; intellectual property risk; stock market volatility; volatility in market prices for commodities; liabilities inherent in the mining industry; inflation risks; risks related to war (such as Russia's invasion of Ukraine); global pandemics (such as COVID-19); changes in tax laws and incentive programs relating to the mining industry; other risks pertaining to the mining industry; conflicts of interest; dependency on key personnel; and fluctuations in currency and interest rates, as well as those factors discussed in the section entitled "Risk Factors" in the Company's AIF.

Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended.

Readers are cautioned that the foregoing lists of factors are not exhaustive. All forward-looking information in this this Presentation speaks as of the date of this Presentation. The Company does not undertake any obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, except as required by law. All forward-looking information contained in this Presentation is expressly qualified in its entirety by this cautionary statement. Additional information about these assumptions and risks and uncertainties is contained in the Company's filings with securities regulators, including the Company's most recent MD&A for our most recently completed financial year and, if applicable, interim financial period, which are available on SEDAR+ at www.sedarplus.com and EDGAR at www.sec.gov.

Currency

Except where otherwise indicated, all references to currency in this Presentation are to US Dollars ("$").

NI 43-101 Disclosure

Scientific and technical information in this Presentation has been reviewed and approved by Steve Ross, P. Geol., Vice President Resource Development, of the Company, who is a "qualified person" under National Instrument 43-101 – ***Standards of Disclosure for Mineral Projects*** ("NI 43-101").

Further information about the Lanxess Property ("Lanxess") Project, including a description of key assumptions, parameters, methods and risks, is available in the NI 43-101 technical report titled "NI 43-101 Technical Report for the Definitive Feasibility Study for Commercial Lithium Extraction Plant at Lanxess South Plant", dated October 18, 2023 ("Lanxess DFS"), available under the Company's SEDAR+ profile.

Further information about the South West Arkansas ("SWA") Project, including a description of key assumptions, parameters, methods and risks, is available in the NI 43-101 technical report titled "NI 43-101 Technical Report South West Arkansas Project Pre-Feasibility Study" dated September 18, 2023 (the "South West Arkansas PFS"), available under the Company's SEDAR+ profile.

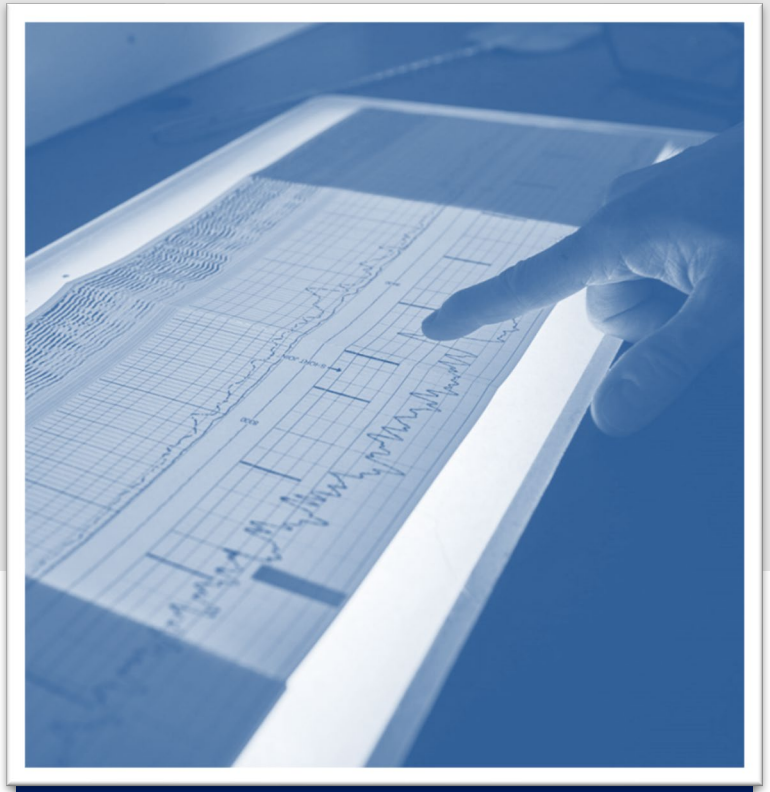
The mineral resources and mineral reserves contained in this Presentation have been prepared in accordance with the requirements of securities laws in effect in Canada, including NI 43-101, which governs Canadian securities law disclosure requirements for mineral properties. NI 43-101 differs from the requirements of the United States Securities and Exchange Commission ("SEC") that are applicable to domestic United States reporting companies. Any mineral resources or reserves reported by the Company herein may not be comparable with information made public by United States companies subject to the SEC's reporting and disclosure requirements.

Non-GAAP Measures

This Presentation includes certain performance measures ("non-GAAP measures") which are not specified, defined, or determined under generally accepted accounting principles (in the Company's case, International Financial Reporting Standards, or "IFRS").

These are common performance measures in the lithium mining industry, but because they do not have any mandated standardized definitions, they may not be comparable to similar measures presented by other issuers. Accordingly, the Company uses such measures to provide additional information and readers should not consider them in isolation or as a substitute for measures of performance prepared in accordance with generally accepted accounting principles ("GAAP").

Standard Lithium is on the path to becoming a leading low-cost sustainable American lithium producer



We aim to achieve highly value-accretive near-term commercial-scale production by applying innovative technologies to our world class assets in Arkansas and Texas

Building projects with our global partners, in a region with regulatory certainty and broad stakeholder support

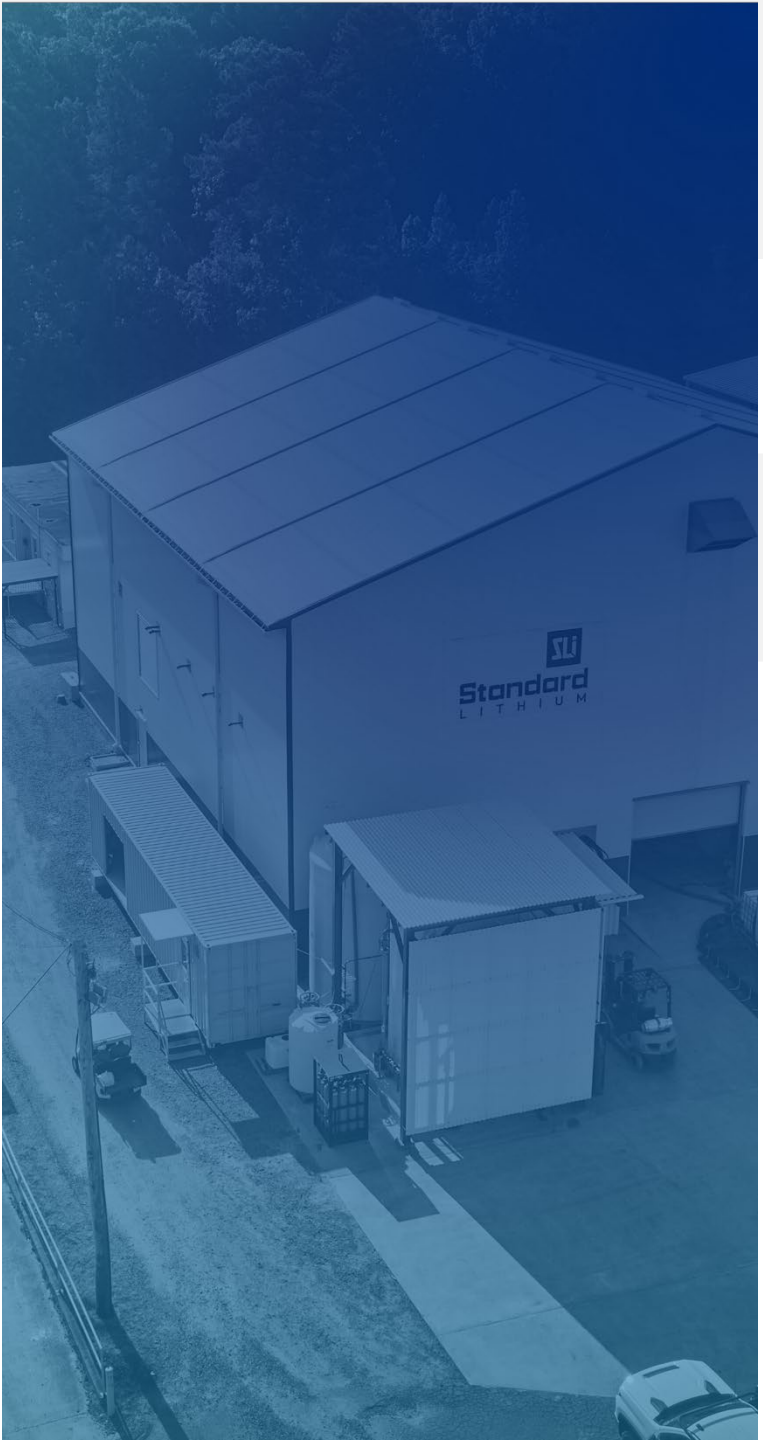
Standard LITHIUM

Investment Highlights

Premier Lithium Brine Resource in North America	Smackover is North America's highest grade lithium brine – ***concentrations up to 597 mg/L in Arkansas[1] and up to 806 mg/L in East Texas[2]***
Arkansas Projects in Advanced Stages of Development	***Disciplined development strategy*** with FEED study underway at our flagship SWA Project and definitive feasibility study published at our Phase 1A Project with LANXESS
$225 Million Conditional DOE Award	*South West Arkansas Project selected for up to* ***$225 million award negotiation from the U.S. Department of Energy ("DOE"),*** *one of the largest ever awarded to a U.S. critical minerals project*
Advantaged Cost Structure	High grade resource, proven commercial-scale technology, and infrastructure drives low operating costs –expected to rank in ***bottom quartile of global cost curve***
Attractive Long-Term Market Fundamentals	Global EV adoption expected to drive significant demand – ***~50% of lithium supply shortfall by 2035[3]***
Aligned with World-Class Partners	Partnerships bring additional resources and expertise: Equinor provides subsurface expertise, Koch aids in development of our refining flowsheet and technology, and LANXESS offers significant experience in brine operations

1. Standard Lithium press release on August 8, 2023
2. Standard Lithium press release on October 25, 2023
3. IEA Global Critical Minerals Outlook 2024 – represents percentage of demand met by current and announced projects

Brine to Battery – A Clear Path



SECURE THE BEST RESOURCE

Entered Smackover - highest lithium brine grades in North America - with Tetra Option Agreement (2017) and Lanxess MOU (2018) and ongoing leasing in East Texas

LANXESS
Energizing Chemistry

UNLOCK THE RESOURCE WITH BEST TECHNOLOGY

Signed Joint Development Agreement with Koch (2021) to develop and commercialize Direct Lithium Extraction ("DLE") flowsheet

KOCH
TECHNOLOGY SOLUTIONS

DERISK THE PROJECT

Commenced operations at Demo Plant (2020) – 4 years continuous brine flow and testing

DEVELOP PROJECT WITH RIGHT PARTNERS

Strategic partnership with Equinor (2024) and DOE (2024)[1]

equinor

EXECUTION OF STRATEGY

Targeting 2027-2028 for delivery of sustainable and scalable lithium production

1. The $225 million provisional grant is dependent on completing successful final negotiations with the DOE

Our Strategic Approach

Standard Lithium is positioning itself to achieve highly value accretive, globally significant production scale, in a sustainable and responsible manner

Resource & Location

- Recent drilling results in the Smackover Formation reveal highest reported lithium-in-brine grades in North America - up to 806 mg/L[1]
- Assets located in Arkansas and Texas, areas with established natural resource extraction industries, infrastructure, and skilled workforce
- Three scalable project areas provide substantial capacity for future production

Phased Development

- Over four years DLE runtime and flowsheet optimization at demonstration plant
- Tailoring of DLE process replicable across Smackover Formation
- Phased stages of expansion – Definitive Feasibility complete at Phase 1A, Pre-Feasibility complete at SWA, pursuing resource study in East Texas

Partnerships & Responsible Capitalization

- Shareholder focused by prioritizing non-dilutive sources of capital (strategic partnerships, offtake financing, federal funding, low-cost project debt)
- Strategic partnerships bring significant technical support in addition to financial strength
- Focus on maintaining balance sheet strength, positive working capital, and low "burn-rate" through project execution

Fundamentals

- Significant lithium demand growth forecasted – ~500% increase in demand by 2030[2]
- Inflation Reduction Act incentives require 80% of critical minerals found in EV batteries to be extracted or processed in U.S. by end of 2026[3]
- Standard Lithium's projects expected to rank among 1st quartile on global lithium cost curve

1. Standard Lithium press release on October 25, 2023
2. Fastmarkets news release on April 3, 2024
3. Final regulation from US Department of Treasury and Internal Revenue Service on May 3, 2024

Smackover: A World Class Lithium Brine Asset

Smackover Formation is a high-quality lithium brine resource

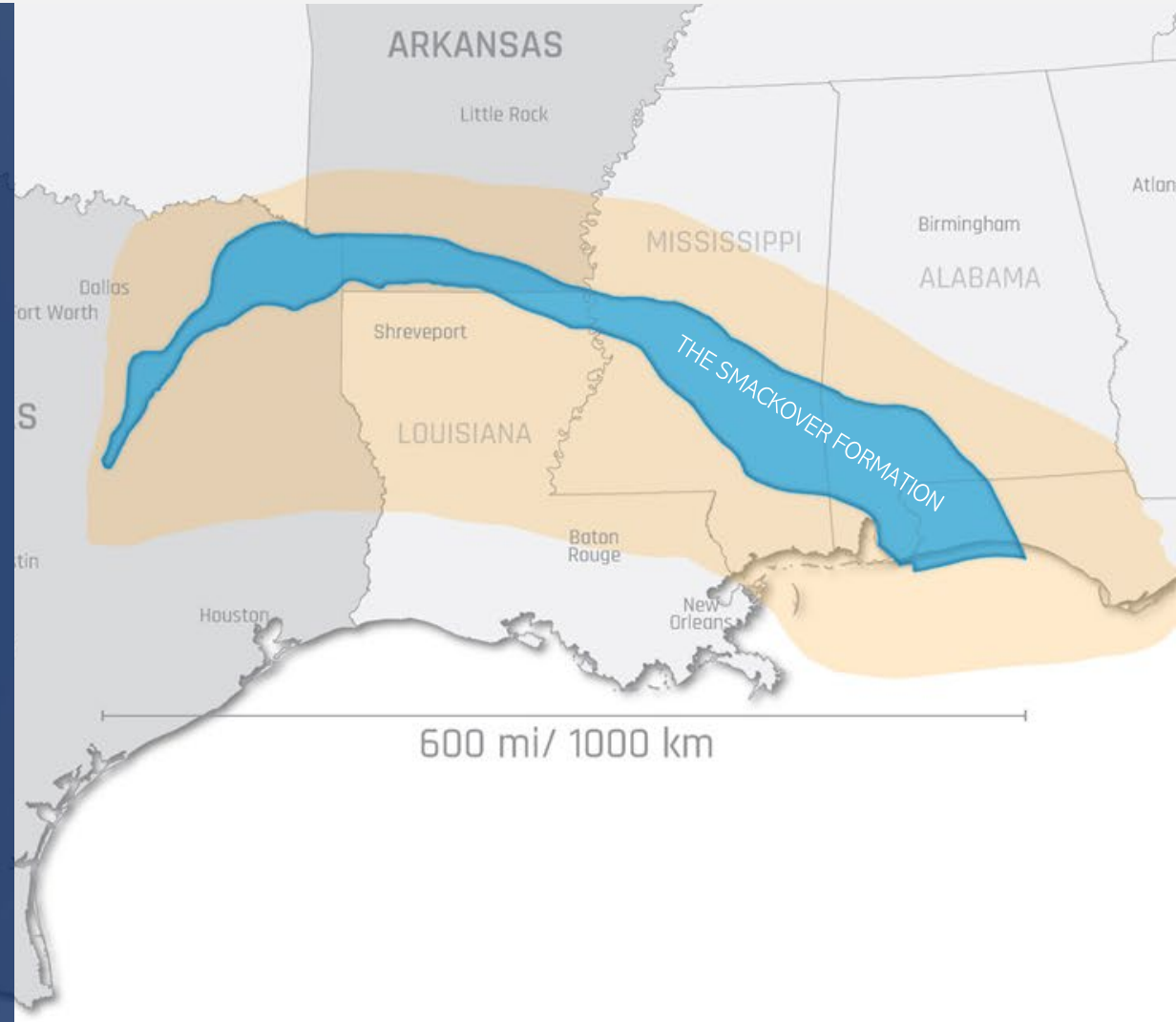
- Elevated lithium concentrations are some of the highest recorded outside of South America
- In Arkansas, +8 billion gallons of brine extracted, processed and reinjected annually for bromine production

Proven reservoir with significant geological understanding

- Over 100 years of conventional energy operations in the Smackover Formation
- Geologic data from thousands of wells highlights zones with optimal brine potential and formation characteristics
- Over six decades of continuous mineral extraction operations

Significant infrastructure to support growth

- Region is home to one of North America's largest brine processing industries with 60+ years of operations
- Availability of water, power, natural gas, road, rail and skilled labor
- Gulf Coast chemical industry provides ease of access to key reagents



Project Overview

EAST TEXAS JV

Ownership:
55% Standard Lithium[1]

Key Feature:
Average concentration of 644 mg/L with results **up to 806 mg/L**, including significant potash and bromine concentrations[2]

Production:
Targeting a resource-based capacity for potential production of **100,000+ TPA lithium carbonate equivalent ("LCE")**

SOUTH WEST ARKANSAS JV

Ownership:
55% Standard Lithium[1]

Key Feature:
Average concentration of **437 mg/L** with results **up to 597 mg/L**[3]
Finalizing **$225mm grant** from DOE[4]

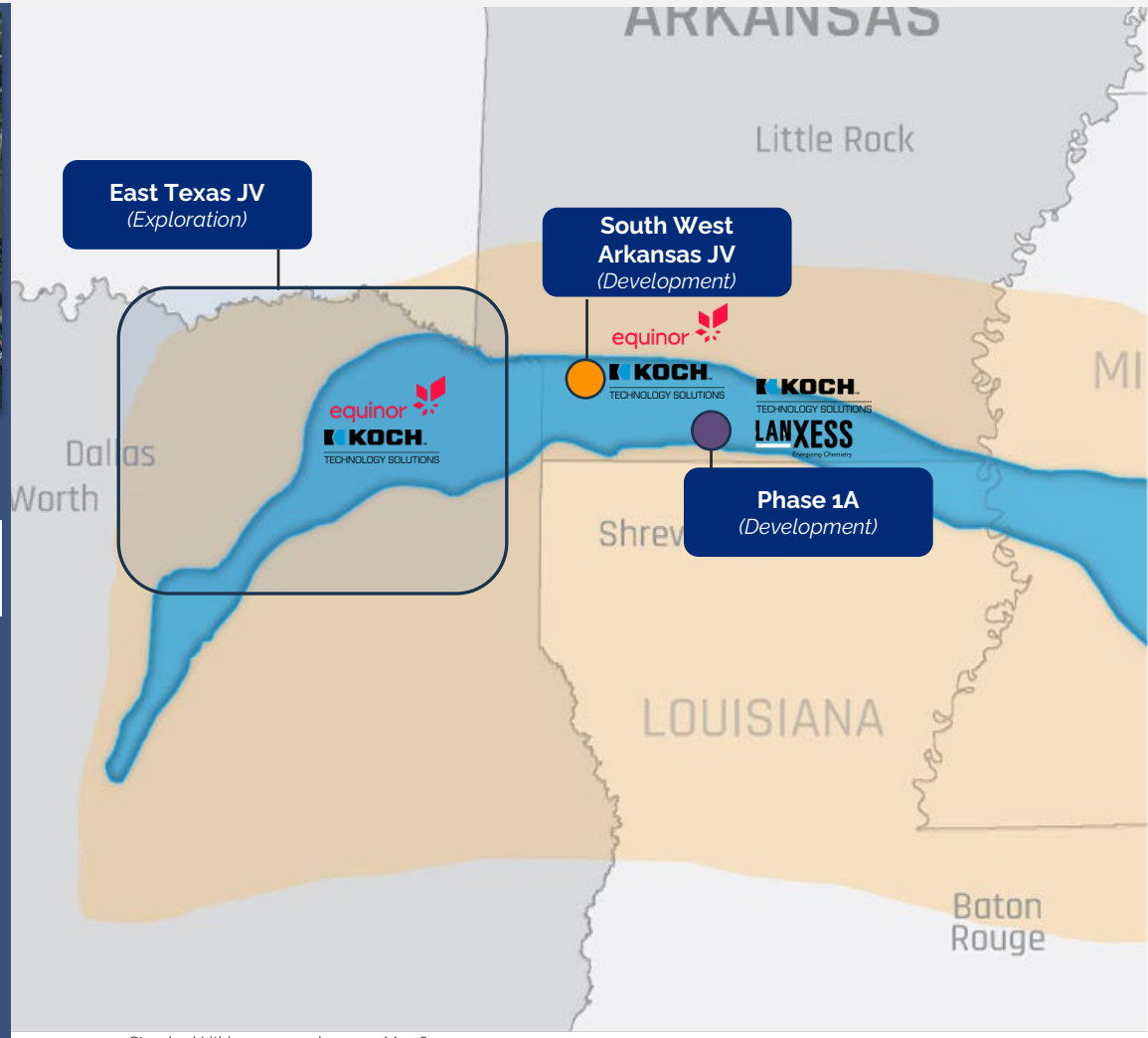
Production:
Targeting a total output of **45,000 TPA lithium carbonate**, to be developed in two phases of 22,500 TPA each[5]

PHASE 1A

Ownership:
100% Standard Lithium[6]

Key Feature:
Existing infrastructure providing brine flow of 3,000 gallons per minute; average lithium grade of 217 mg/L[7]

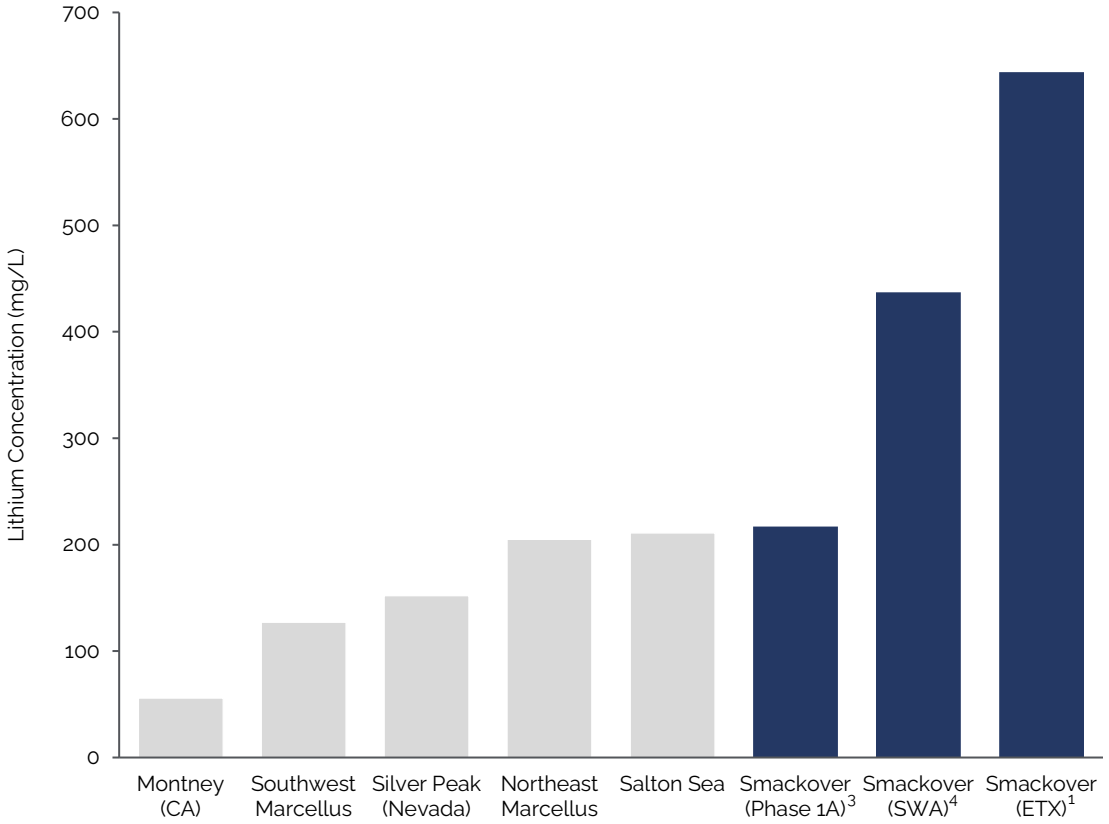
Production:
Initial production of 5,700 TPA lithium carbonate[7]



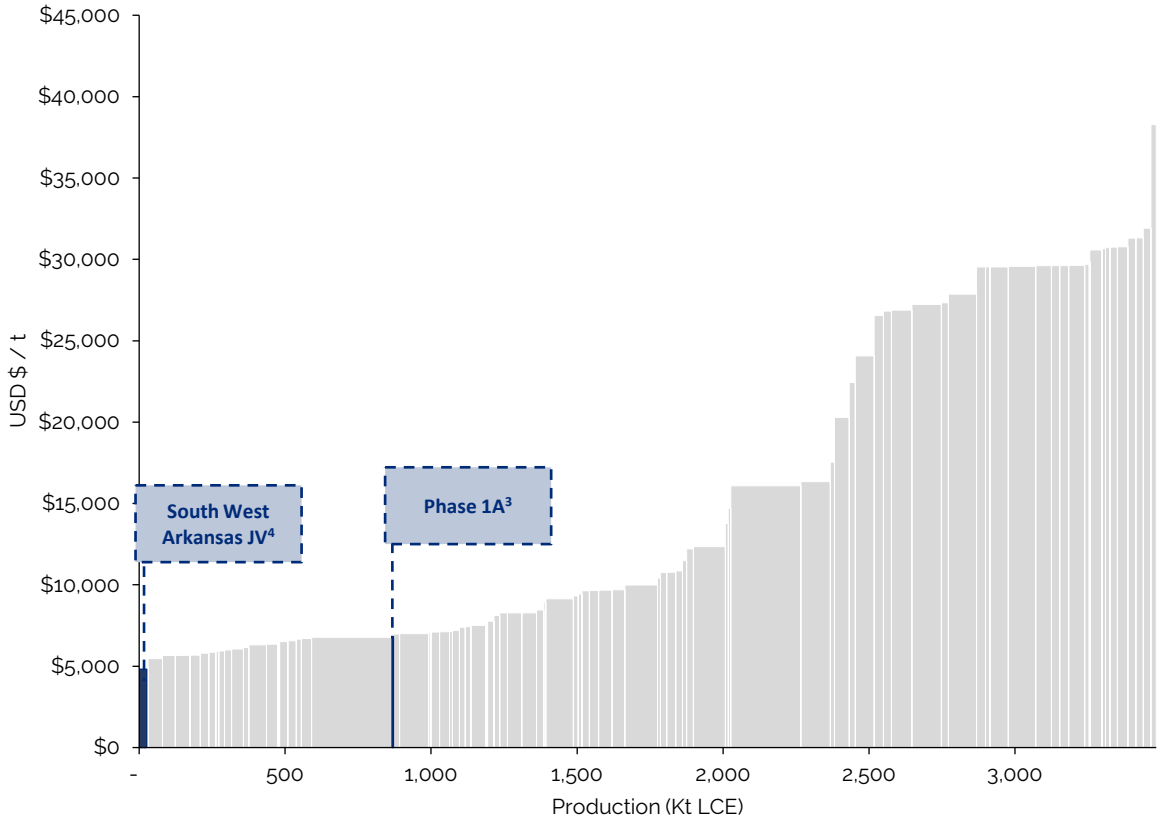
1. Standard Lithium press release on May 8, 2024
2. Standard Lithium press release on October 25, 2023
3. Standard Lithium press release on August 8, 2023
4. The $225 million provisional grant is dependent on completing successful final negotiations with the DOE
5. The project's design is being updated from its original Preliminary Feasibility Study (PFS). A Definitive Feasibility Study (DFS) and Front-End Engineering Design (FEED) are currently underway to support this expansion.
6. Standard Lithium press release on December 4, 2023
7. Definitive Feasibility Study as filed October 18, 2023

High Grades Drive Compelling Economics

The Smackover Formation's high lithium concentration drives low-cost estimates – Standard Lithium anticipates projects to rank among top quartile on global lithium cost curve



NORTH AMERICAN BRINE LITHIUM GRADES



GLOBAL LITHIUM PRODUCTION COST CURVE²

1. Standard Lithium press release on October 25, 2023
2. Source: Benchmark Minerals Q2 2024 Lithium Forecast. Costs include mining, processing, reagents, transport, loading & storage, G&A, energy, labor, maintenance, royalties and other costs where relevant. For non-integrated hard-rock operations, cost of feedstock is included. Excludes by-product credits, extraordinary items, and interest costs. Based on 2030 LCE production and cost.
3. Lanxess Definitive Feasibility Study as filed October 18, 2023. Operating costs based on average annual production of 5,400 tonnes Li_2CO_3.
4. SWA Preliminary Feasibility Study dated September 18, 2023. Operating costs based on average annual production of 30,000 tonnes lithium hydroxide monohydrate ("LHM"). $741/t royalties based on PFS (does not include lease-fees-in-lieu of royalties).

Capital Formation "Pyramid"

Standard Lithium is committed to maximizing shareholder returns through a strategic and methodical approach to capital formation

Leveraging strategic partnerships to maximize project success

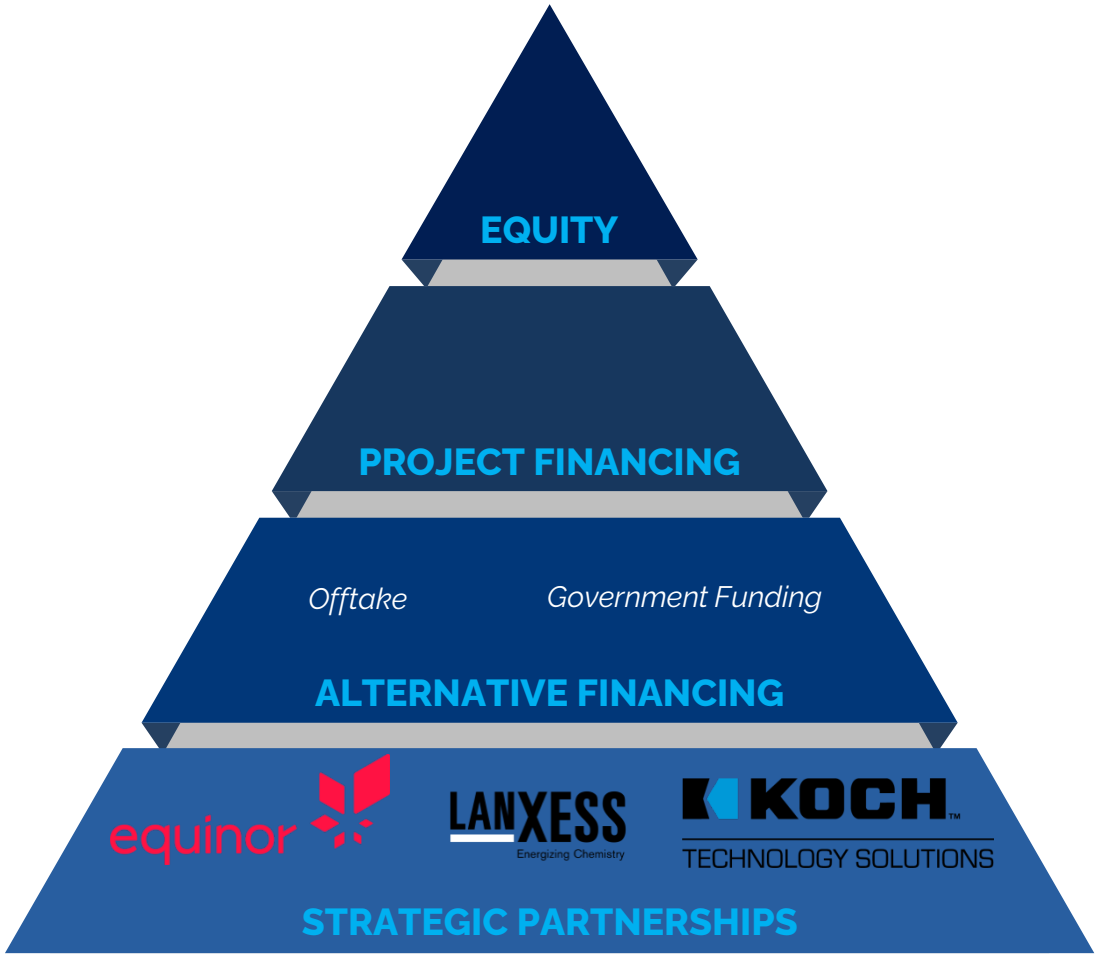
- Standard Lithium has secured investments from Koch Industries and Equinor
- Industry-leading partners bring technical, operational, and strategic capabilities in addition to their financial strength

Prioritizing low-cost, limited-recourse financing

- Recently announced $225 million provisional grant awarded to South West Arkansas Project by DOE[1]
- As projects move toward Final Investment Decisions, focus will turn to securing offtake agreements and limited recourse project finance

Focused on maximizing shareholder value by limiting dilution

- Equinor investment done at the project level without issuance of any Standard Lithium shares
- **Prioritize and execute at the "base of the pyramid and build on up",** lowering the cost of capital as we de-risk the projects, minimizing parent company equity raise requirements



1. The $225 million provisional grant is dependent on completing successful final negotiations with the DOE

DOE Grant to South West Arkansas Project

SWA Lithium LLC has been selected for up to US$225 million award negotiation from the DOE[1], one of the largest ever awarded to a U.S. critical minerals project

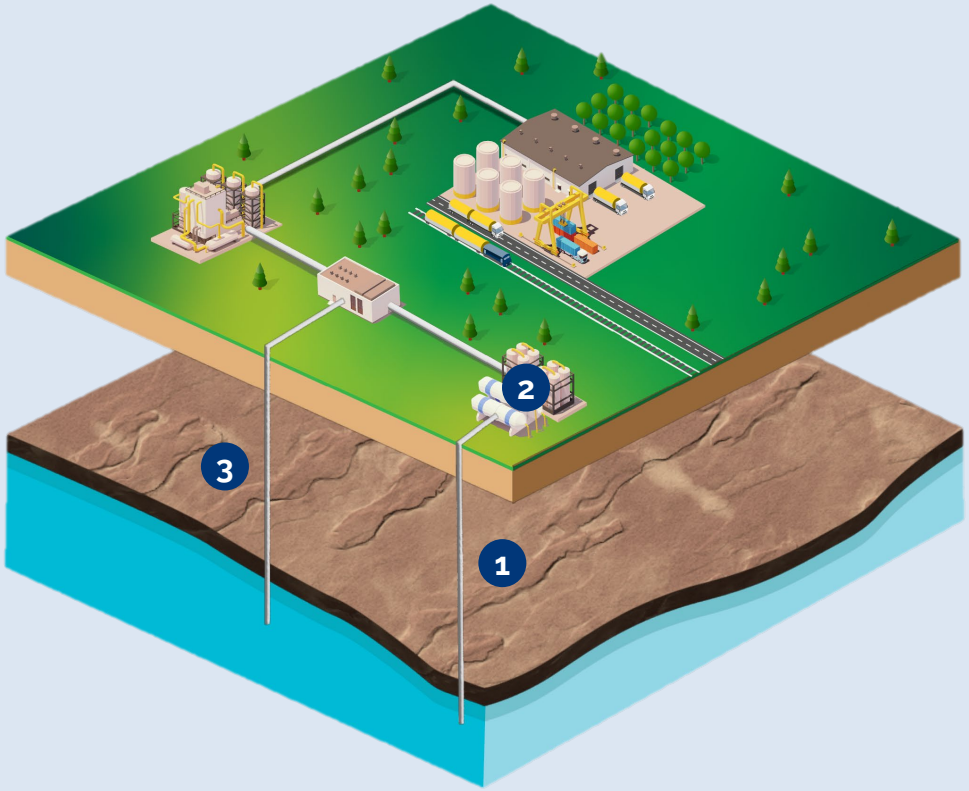
DOE PARTNERSHIP HIGHLIGHTS

- **$225 million funding** by the DOE will support the construction of the Central Processing Facility ("CPF") for Phase 1 of the South West Arkansas project[2]
- The selection is part of the second wave of funding under the Infrastructure Investment and Jobs Act aimed at expanding domestic manufacturing of all segments of the battery supply chain and increasing production of critical minerals in the U.S
- Project is expected to **create up to 300 construction and up to 100 direct jobs**
- Additional community benefits include infrastructure improvements, community health initiatives, educational partnerships, and workforce development programs

1. The provisional grant is dependent on completing successful final negotiations with the DOE
2. The project's design is being updated from its original Preliminary Feasibility Study (PFS), and now targets a larger total output of 45,000 TPA of lithium carbonate, to be developed in two phases of 22,500 TPA each. A Definitive Feasibility Study (DFS) and Front-End Engineering Design (FEED) are currently underway to support this expansion, targeting a final investment decision in 2025.

Strategic Partnerships: More than Capital

From Brine to Battery Grade Lithium – Leveraging Strategic Partnerships



Refining and Direct Lithium Extraction

- Utilizing Koch's proprietary Lithium Selective Sorption ("LSS") process across the Smackover
- Standard Lithium has regional exclusivity in the Smackover for the LSS process

KOCH TECHNOLOGY SOLUTIONS

1 2 3

Reservoir and Well Development

- Elevated lithium concentrations are highest recorded outside of South America
- In Arkansas, +8 billion gallons of brine extracted, processed and reinjected annually

equinor LANXESS Energizing Chemistry

Production and Reinjection

- Equinor also brings significant experience in designing and delivering onshore facilities
- Standard Lithium's demonstration plant provides valuable learnings to apply to go forward production

equinor LANXESS Energizing Chemistry

Equinor: Strategic Partnership at South West Arkansas and Texas

Equinor acquires 45% interest in the South West Arkansas (SWA) Project and East Texas Properties

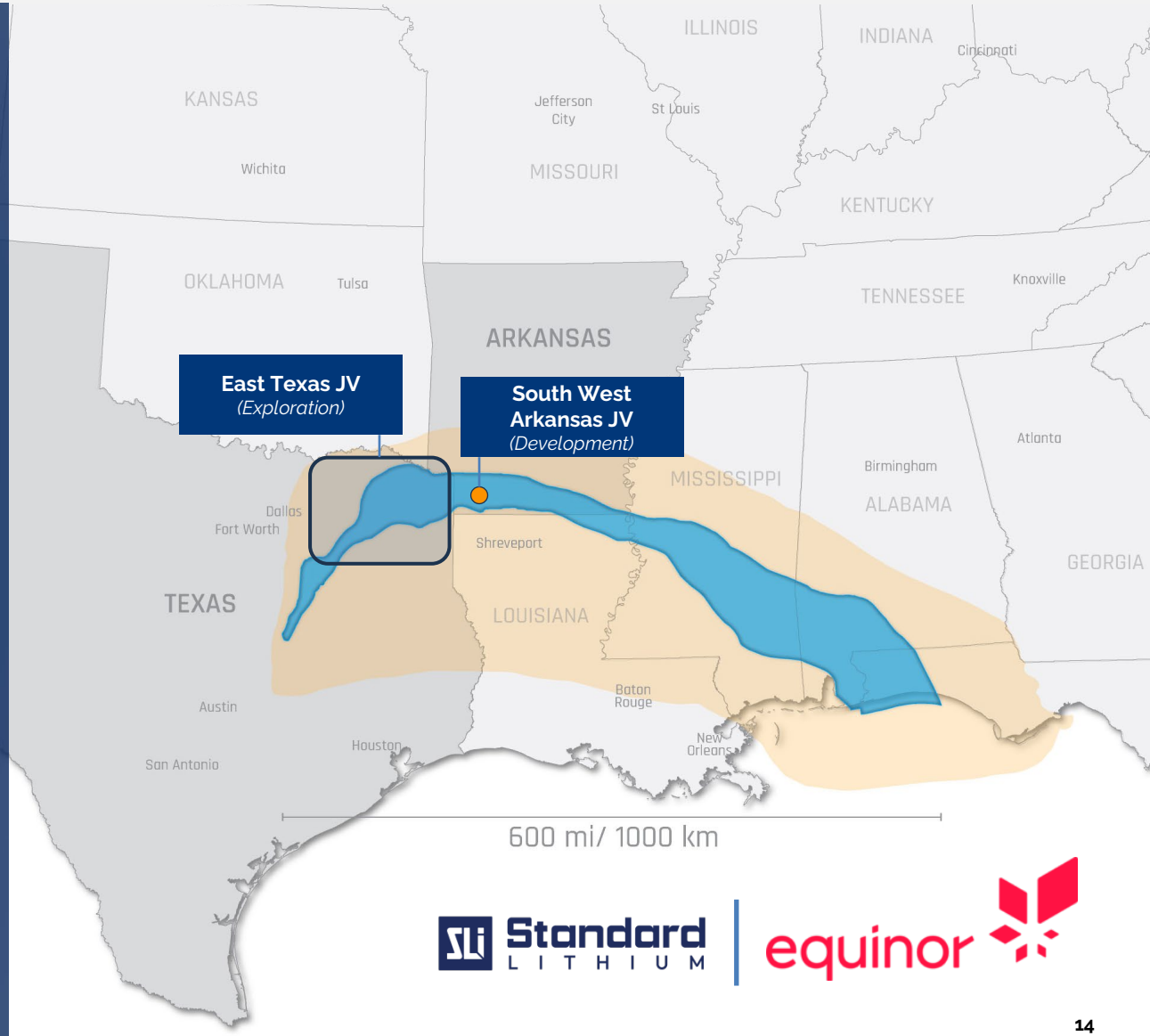
- Equinor committed to contribute up to a gross US$160 million to advance projects
- Standard Lithium remains majority owner and operator with 55% interest

Partnership is strategic and complementary

- SLI brings unparalleled DLE and Smackover brine processing expertise
- Equinor provides deep experience in sub-surface assessment and production, project development, financing, construction and operations
- Strong alignment between SLI and Equinor to develop a sustainable lithium business, adhering to high levels of environmental and social responsibility

Partnership significantly de-risks project execution

- Initial capital commitment provides sole funding for work program to progress SWA Project to Final Investment Decision and East Texas to initial resource study
- Partners fund their pro rata share of expenditures post cost-carry by Equinor



Standard LITHIUM | equinor

Proven Technology at Commercial-Scale

- Standard Lithium successfully installed and commissioned the Li-Pro TM Lithium Selective Sorption (LSS) commercial scale unit supplied by KTS
- This unit is believed to be the largest known commercial-scale column operating in a DLE facility
- Column has been operating continuously since April 2024 exceeding design parameters
  - Avg. lithium **recovery of 97.3%**
  - Avg. key **contaminant rejection of +99%**
  - Avg. boron rejection of +95%
- Over **8,500 operational cycles** using Li-ProTM LSS technology at the demonstration plant[1]
- Over **17 million gallons** of Smackover brine processed[1]

KOCH™
TECHNOLOGY SOLUTIONS

Note: Results are from a representative 2-week period in April 2024 as disclosed in the Company's press release dated April 24, 2024.
1. Operational figures reflect results as of the end of March 2024

Large Demonstration Plant in Operation Since 2020

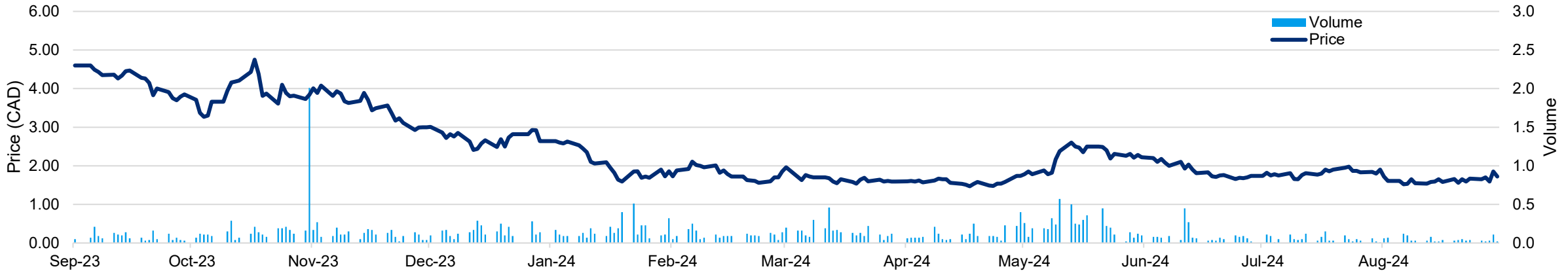
Capitalization & Liquidity

Financial Highlights

- Positive working capital with no outstanding indebtedness at June 30, 2024
- Recently selected for up to US$225 million award negotiation from the DOE[3], one of the largest ever awarded to a U.S. critical minerals project
- Largest shareholder (Koch, Inc., > 7.0% of total outstanding shares) is strategic partner with significant alignment across the organization[4]
- High insider ownership (~6.0% of total outstanding shares) indicates alignment between Company's management and shareholders[4]

Liquidity & Capitalization[1] (CAD millions)

Cash	$52.9
Debt	$0
Shares Outstanding (mm)[2]	184.58
Share Price (CAD)	$1.72
Market Capitalization	$317.5



Source: FactSet
1. Liquidity as of June 30, 2024, trading data as of August 31, 2024,
2. Shares Outstanding as of September 24, 2024 Management's Discussion and Analysis
3. The provisional grant is dependent on completing successful final negotiations with the DOE
4. Ownership figures as of September 20, 2024

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Appendix

SEPTEMBER 2024

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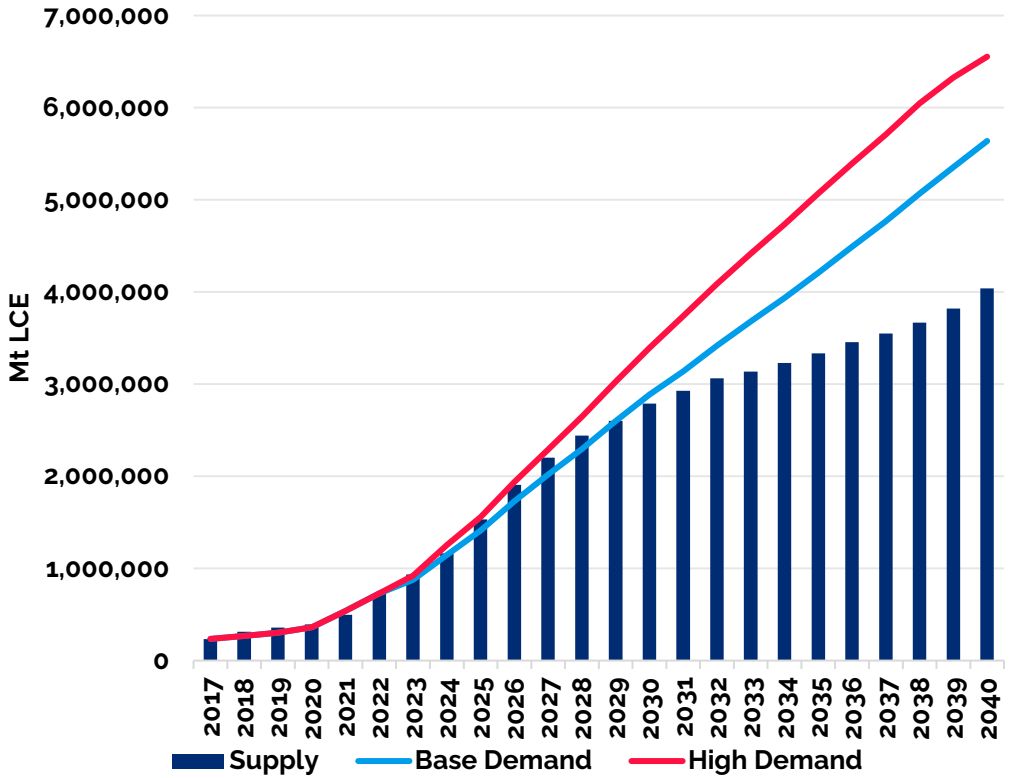
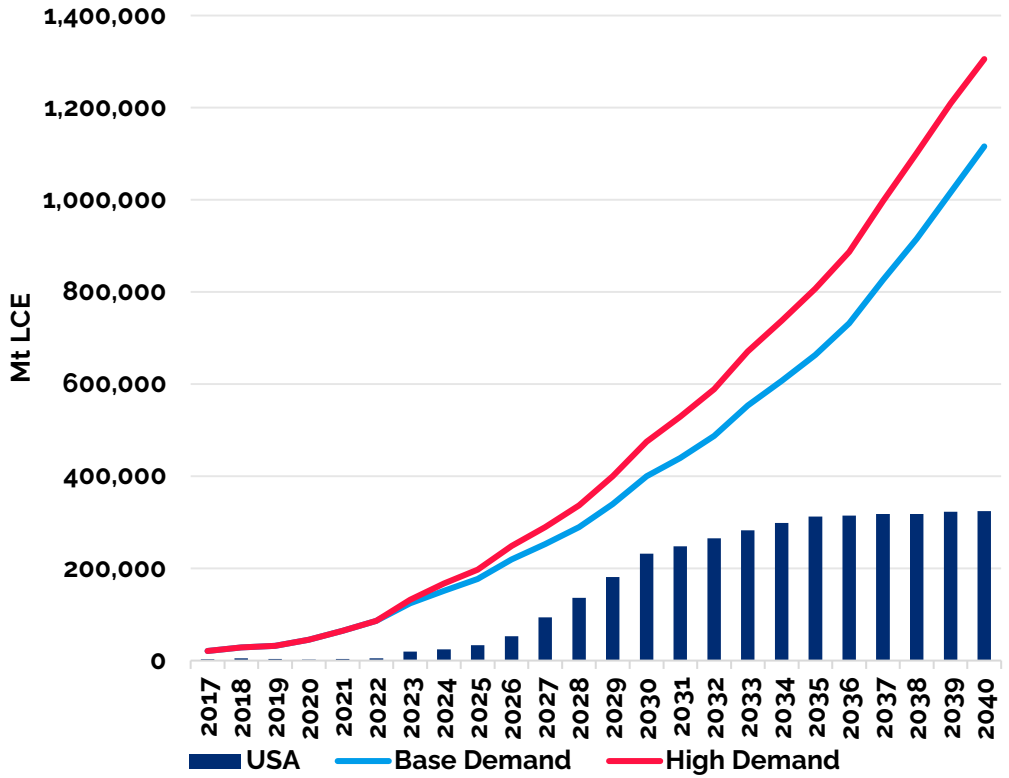
Compelling Market Fundamentals

A looming global supply gap, and a substantial market deficit in North America driven by US policy demands, presents a compelling opportunity for new projects

GLOBAL SUPPLY DEMAND BALANCE



REGIONAL SUPPLY DEMAND BALANCE



Source: Benchmark Minerals Q2 2024 Lithium Forecast.

Koch | Experts in Mineral Processing

Koch Industries brings significant expertise and experience throughout the energy chain

KOCH

A multinational conglomerate with over 80 years experience in delivering life's necessities – from today's basic needs to tomorrow's technological breakthroughs

Second-largest privately held company in America, with over 80 years of experience in energy and chemicals

- Founded as an engineering and refining company, the Koch family of companies have a deep understanding of the energy value chain
- With operations across 60 countries, Koch employs over 120,000 people

Significant alignment between Standard Lithium and Koch Industries

- Working relationships with Koch Minerals and Trading, Koch Engineered Solutions, and Optimized Process Designs ("OPD")
- Joint Development Agreement with Koch Technology Solutions ("KTS") to collaborate on technology & process solutions for commercial Direct Lithium Extraction
- Koch Investments Group is the largest shareholder in Standard Lithium

Equinor | International Pioneers in the Energy Transition

Equinor are energy experts and world-leaders in renewable and low carbon solutions

An international energy company headquartered in Stavanger, Norway with operations in oil and gas, renewables and low carbon solutions

Equinor is a leading multinational energy company with operations across 36 countries

- Historically focused on oil & gas, Equinor has expanded its presence in renewables & low carbon as well as innovation and digital
- Equinor has a strong commitment to sustainability, evidence of which can be found in its commitment to the battery value chain

Equinor is a global premier resource developer with significant experience in project development and onshore facilities

- In addition to significant experience in sub-surface assessment and production, Equinor has a track record of project development and execution with onshore facilities around the world
- Equinor's ability to provide resource development combined with facilities expertise significantly de-risks project execution

Equinor is one of the world's largest energy companies

- Equinor brings a multi-billion dollar market cap and investment grade balance sheet to support project execution

South West Arkansas (SWA) Project[1]

STATUS: Front-End Engineering Design

The SWA Project with…

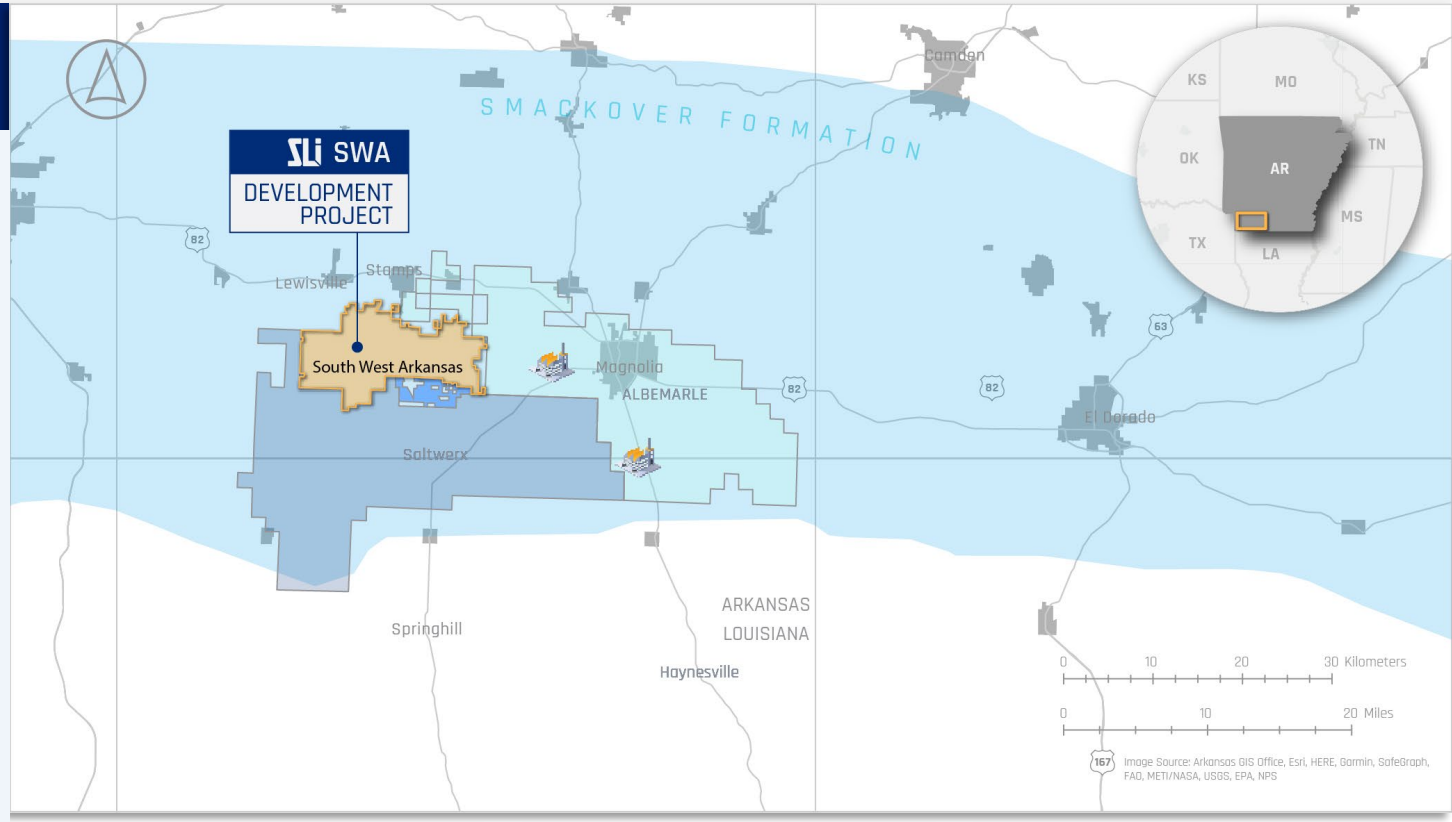
- Lithium avg. Grade of 437 mg/L (max of 597 mg/L)[2];
- Planned annual output of +30,000 tonnes lithium hydroxide;
- Existing project and regional infrastructure;
- Strong local workforce;
- Friendly regulatory environment; and
- Path to FID in 2025…

…results in the SWA project being a globally significant potential source of lithium

Location: Adjacent to Albemarle's brine operations and Exxon Mobil's lithium exploration project, the SWA project benefits from infrastructure, regional expertise and established regulatory regime

Lithium Grade: The SWA Project boasts an average lithium grade of 437 mg/L with a max grade of 597 mg/L, higher than other North American brine projects

Significance: Base case production of 30,000 tonnes per annum (TPA) of battery-quality lithium hydroxide, with an upside case of 35,000 TPA, based on the 2023 Preliminary Feasibility Study. Potential for higher total production rates with project optimization



1.4 / 0.4Mt
LCE Estimated Indicated / Inferred Resource[3]

30K
Tonnes Per Annum BQ Li Hydroxide

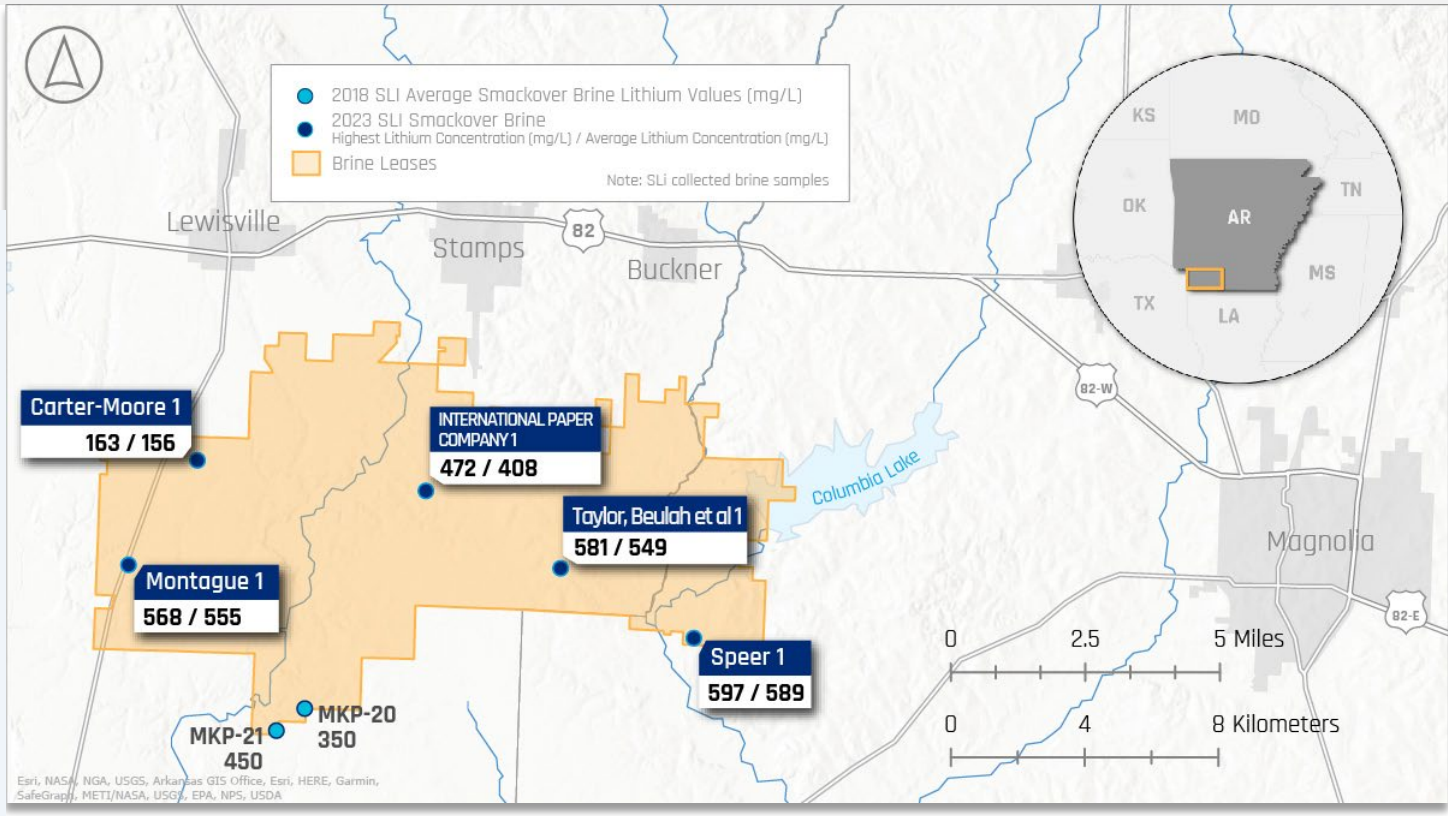
$3.1B
(8%) Post Tax NPV[1]

1. The project's design is being updated from its original Preliminary Feasibility Study (PFS). A Definitive Feasibility Study (DFS) and Front-End Engineering Design (FEED) are currently underway to support this expansion.
2. Pre-Feasibility Study as of Q3 2023; all model outputs are expressed on a 100% project ownership basis.
3. Includes Indicated Resource of 1.4Mt and Inferred Resource of 0.4Mt LCE at an average grade of 437 mg/L

South West Arkansas (SWA) Project[1]

Located near Magnolia, Standard Lithium has drilled some of the highest confirmed lithium-in-brines grades in Arkansas: 597 mg/L

Summary Metrics (US$)[2]	Base Case	High Case
Annual Production	30,000 tonnes LHM	35,000 tonnes LHM
Ind. / Inf. Resource[3]	1.4 Mt / 0.4 Mt LCE	1.4 Mt / 0.4 Mt LCE
Development Capex[4]	$1.274 billion	$1.360 billion
Operating Life	20 years	20 years
Average Opex[5]	$4,073 per tonne	$3,964 per tonne
NPV (8%) After-Tax @ $30,000/t	$3.1 billion	$3.7 billion
IRR After-Tax	32.8%	35.4%



437 mg/L
Average Lithium Concentration[3]

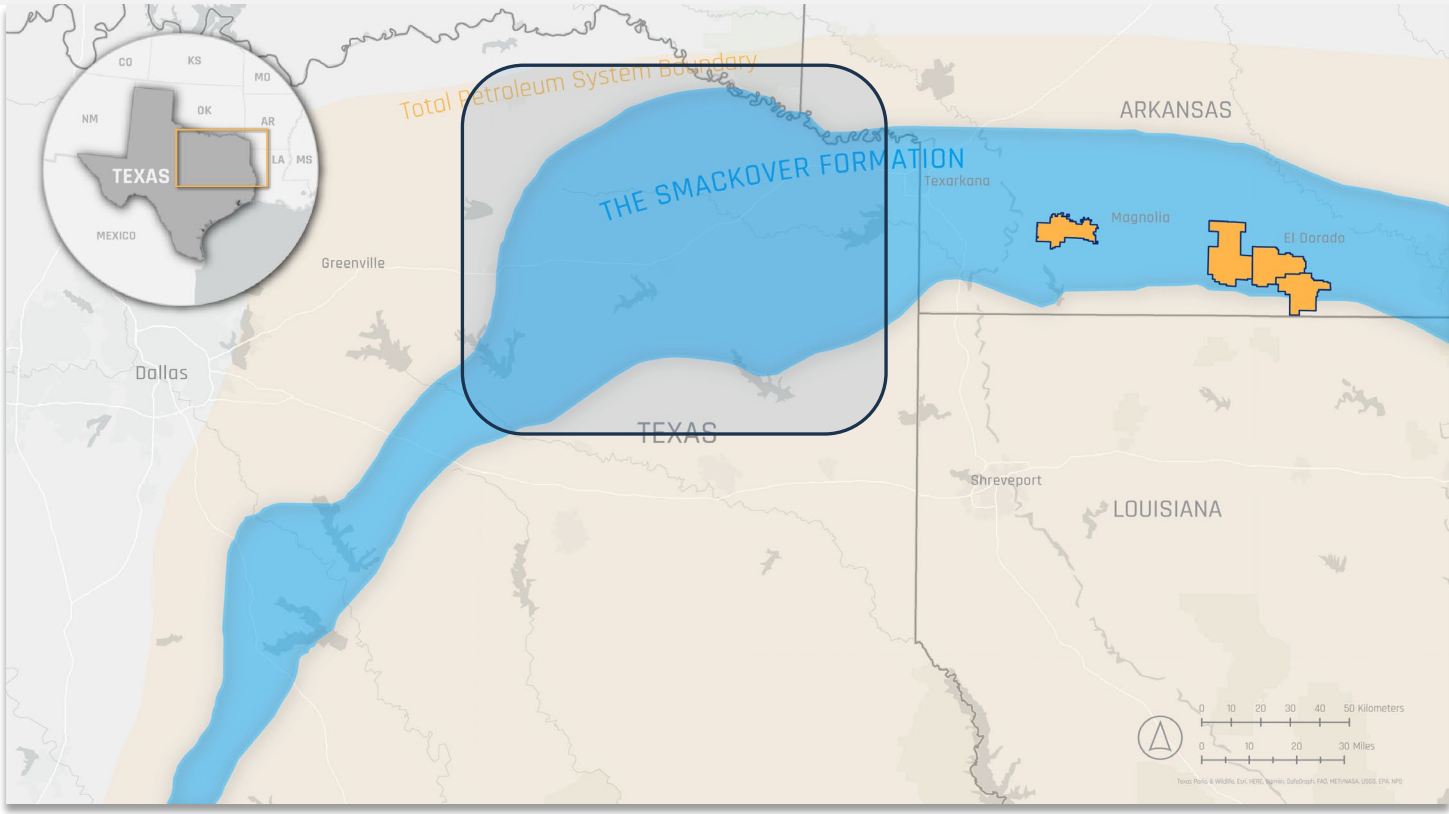
36k+
Acres of Proposed Unitized Brine Leases

400+
Wells Drilled in Area

1. The project's design is being updated from its original Preliminary Feasibility Study (PFS). A Definitive Feasibility Study (DFS) and Front-End Engineering Design (FEED) are currently underway to support this expansion.
2. Pre-Feasibility Study as of Q3 2023; all model outputs are expressed on a 100% project ownership basis.
3. Includes Indicated Resource of 1.4Mt and Inferred Resource of 0.4Mt LCE at an average grade of 437 mg/L.
4. Includes 20% contingency on capital costs.
5. Operating cost per tonne over life of the project.

East Texas Greenfield Exploration

Standard Lithium has secured a significant brine lease position, drilled, and sampled lithium brine showing significant potential to develop a resource and future production



644 mg/L
Average Lithium Concentration[1]

806 mg/L
Highest Lithium Concentration[1]

Opportunity to develop large-scale, industry-leading lithium projects in Texas

1. Standard Lithium press release on October 25, 2023

East Texas Greenfield Exploration

Targeting locations with optimal brine grades to secure a foothold for large-scale production

STATUS: Resource Definition

- Team of Smackover specialists have been working for the past 4 years to identify the most prospective areas to secure high-quality brine resources in East Texas
- Ongoing leasing in key project areas
- Three wells drilled with additional wells planned for 2024 to 2025
- Samples collected to date were tested by third parties to confirm **lithium concentrations ranging from 298 to 806 mg/L[1]**
- To the understanding of management, these are some of the **highest tested lithium brine concentrations in North America**

1. East Texas samples from March 28, 2023 and October 25, 2023 press releases

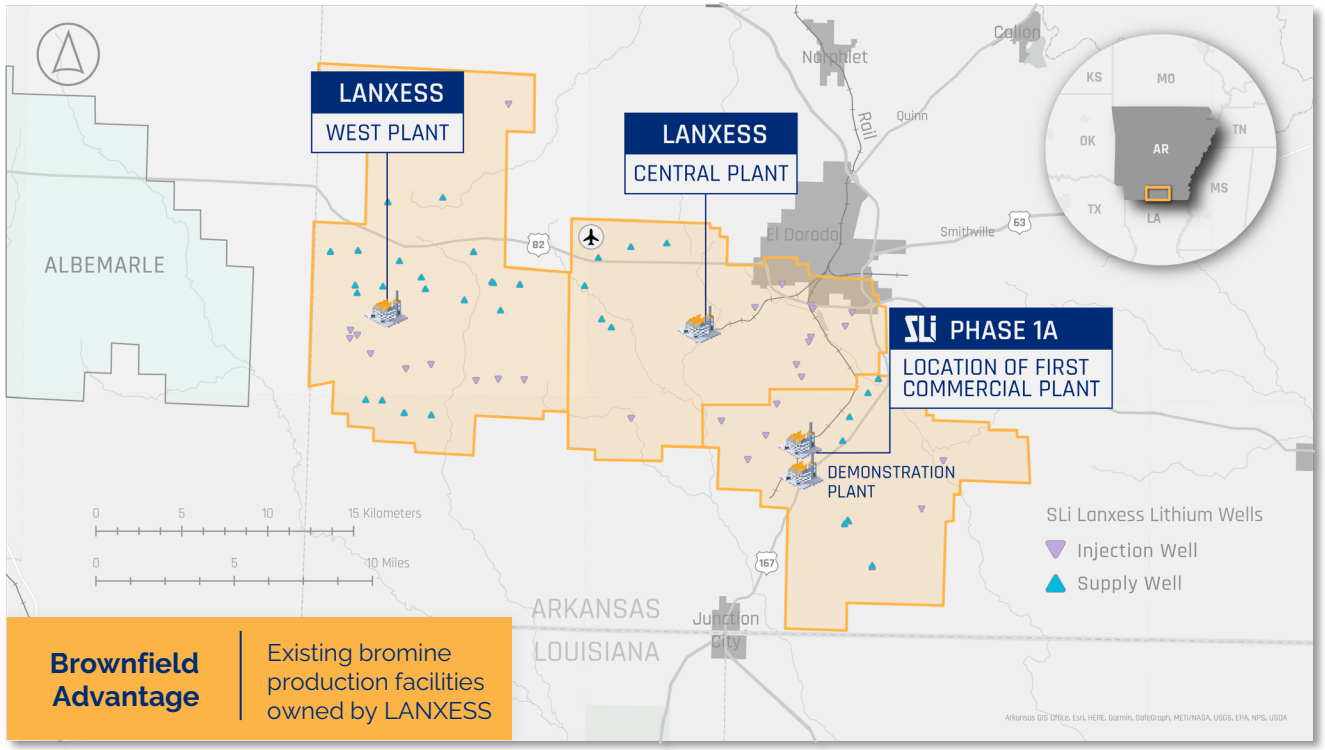
Phase 1A | Premier Resource with Derisked Facility

STATUS: Project Definition & Commercial Agreements

One of the industry's most advanced large-scale lithium extraction projects over the country's highest-grade lithium brine aquifer

Summary Metrics (USD)[1]	
Average Annual Production[2]	**5,400 tonnes Li_2CO_3**
Proven and Probable Reserves	**208 kt LCE**
Development Capex[3]	**$365 million**
Operating Life	**25 years minimum**
Average Opex[4]	**$6,810 per tonne**
NPV (8%) Pre-Tax	**$772 million**
IRR Pre-Tax	**29.5%**

1. Definitive Feasibility Study as filed October 18, 2023; all model outputs are expressed on a 100% project ownership basis
2. Average Annual Production over operating life, LANXESS Definitive Feasibility Study October 18, 2023.
3. Includes 15% contingency on both direct and indirect capital costs.
4. Assumed flat prices and operating cost per ton over life of the project.



4 Years in operation for Industrial scale Demonstration Plant

40 Staff Operators and Engineers on Site

Modest Scale-up Required

50 to 3,000 gpm Scale up from existing brine supply and disposal system

Koch Engineered Solutions JDA in place on DLE with performance warranty

Phase 1A | Definitive Feasibility Study Summary

Significant field and engineering work completed as part of the Definitive Feasibility Study, allowing SLI the option to advance Phase 1A to the final technical frontier toward FID and commercialization (depending on market conditional and lithium prices)

Key Highlights[1]

- Support for **25+ year** operating life
- Commercially viable annual operating costs of $6,810/t over asset lifetime
- Capex needs of $365mm anticipated
- Phase 1A represents approximately 5% of the total Measured and Indicated Resources of 2.8 MT LCE
- Total Measured and Indicated Resource of **2.8 MT LCE** at the LANXESS project at average concentration of **148 mg/L**

Fully Vetted Third Party Validation

- **Haas & Cobb Petroleum Associates used for LANXESS project resource assessment**
  - Industry leaders in the areas of brine resource production & management and reservoir analyses
- **DFS prepared by a multi-disciplinary team**
  - Included geologists, reservoir engineers, civil, mining, metallurgical, and chemical engineers
  - Deep experience in brine geology, resource modeling and estimation, processing, and project development

1. Definitive Feasibility Study as filed October 18, 2023

Standard LITHIUM

Leading a new era of responsible lithium production in America

NYSE:SLI | TSX.V:SLI | FSE:S5L

Vancouver Head Office

1075 West Georgia - Suite 1625

Vancouver, BC, Canada

V6E 3C9

Arkansas Office

116B E. Elm Street

El Dorado, Arkansas, USA

71730

Texas Office

3600 N. Capital of TX Hwy, Bldg. B, Ste. 230

Austin, TX, USA

78746

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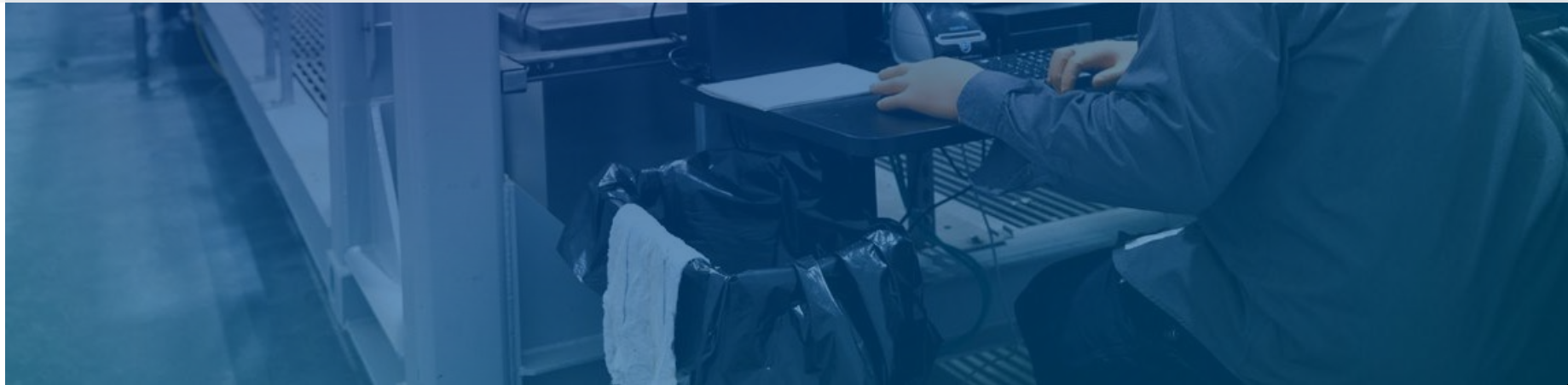

www.standardlithium.com