



# DIRECT LITHIUM EXTRACTION (DLE)

# Commercially Viable, Economically Advantaged

Koch Technology Solutions (KTS), a subsidiary of Koch Engineered Solutions, is a leading provider of advanced process technologies with over 50 years of experience in commercial deployment. We bring deep expertise and execution capability to lithium production, offering one of the most commercially advanced Direct Lithium Extraction (DLE) solutions through our proprietary Lithium Selective Sorption (LSS) technology. This system is:

- ▶ Validated by real-world brine trials with over three years of continuous testing
- ▶ Field-proven at scale with deployment-ready engineering
- ▶ Designed for profitability, achieving top-quartile OPEX in lithium carbonate production



## How to engage with KTS for Full Flowsheet and LSS

#### **Brine Treatability**

- 1.000 liters of brine tested in NA and UK KTS facilities
- Determine viability of LSS process, lithium recovery and selectivity
- +/-40% CAPEX and OPEX estimate
- · One-time fee

#### Field Pilot + **Feasibility Engineering**

- 1 GPM continuous brine field pilot
- Summary report of pilot performance
- License agreement post-trials:
  - License agreement including process quarantee based on findings
- +/- 30% CAPEX and OPEX estimate
- · One-time fee

#### Licensing

- Technology Transfer Services:
  - Engineering Support
  - Critical Equipment Procurement Support

  - · Construction Inspections
  - Pre-Commissioning & Commissioning Support through to Plant Acceptance
- Flexible commercial engagement



## **Direct Lithium Extraction (DLE)**

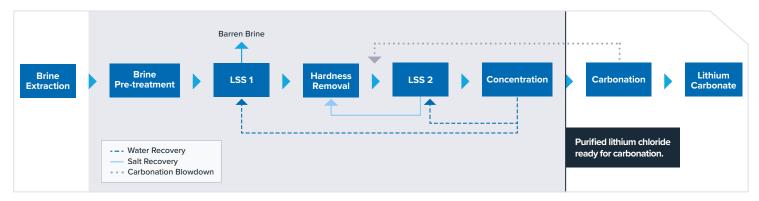
## Unlocking the Full Flowsheet: LSS at the Core of Lithium Production

At the center of KTS's direct lithium extraction (DLE) approach is our commercially proven Lithium Selective Sorption (LSS) technology. Building on this foundation, we now offer an expanded full flowsheet solution — designed to streamline lithium production and support more efficient operations.

- CAPEX-efficient design through process simplification
- Process guarantee with market-leading OPEX
- Reduced energy consumption
- Improved water balance with low water losses

- Water-only elution (no chemicals required)
- No chemical softening or other solid waste generation
- Modular, skid-mounted design
- Enhanced operability and flexibility

#### **KTS Full Flowsheet**



### **KTS Full Flowsheet Assumptions Table**

Chemicals Summary (Brine to Lithium Carbonate)	% of Chemical OPEX
Carbonation Chemicals (Soda Ash & HCI)	84%
Regeneration Chemicals BIX	5%
Pretreatment Chemicals	8%
Miscellaneous Water & Chemicals	3%
Regeneration Chemicals - Soda Ash (s)*	0%
Regeneration Chemicals - Lime Solid Waste*	0%
Regenerations Chemicals - NaCl (s)*	0%

<sup>\*</sup>The use of the chemicals has been eliminated