

Desalination Brine Commercial Exploitation

INVESTMENT OPPORTUNITY SCORECARD

Environment Services

OCTOBER 2021

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OPPORTUNITY'S DESCRIPTION: Desalination brine supply for salts and minerals extraction.

INVESTMENT OVERVIEW

INVESTMENT HIGHLIGHTS

- Expected investment size: TBD by the investor
- Plant capacity: Contingent on the investor's needs

FUTURE OPPORTUNITIES

- Production of valorizing brine into commercially attractive products

VALUE PROPOSITION

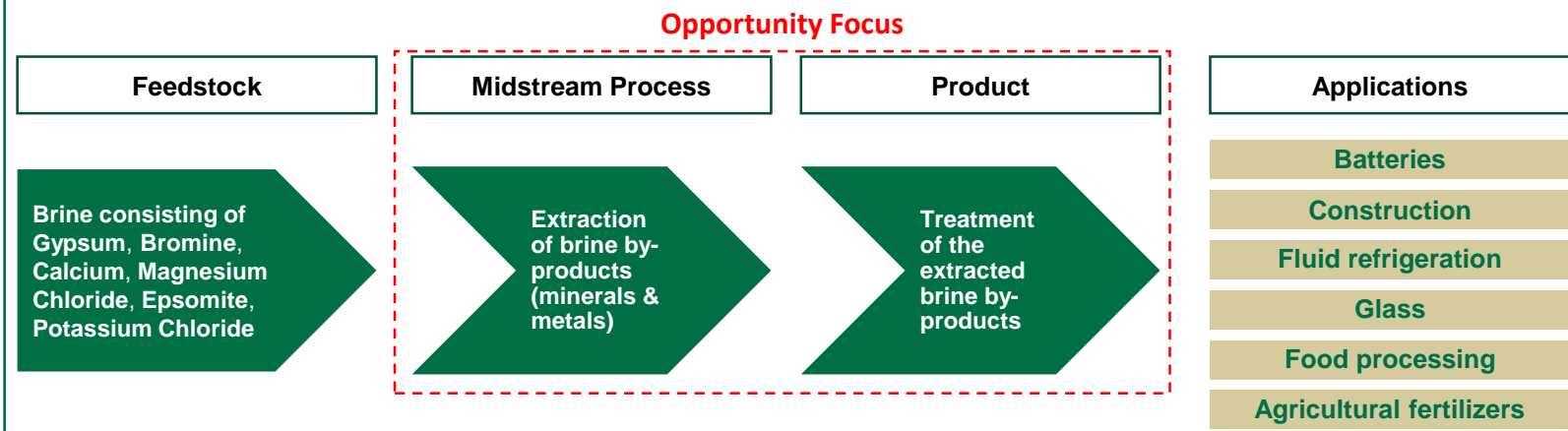
- Presence of **large quantities of desalination brine**, driven by significant local reliance on desalination for freshwater production and use
- Availability of **pre-treated brine** ready for processing and treatment
- Guaranteed availability** of desalination brine throughout the brine mining project
- Relatively low brine prices in KSA** driven by the resource abundance and the low processing costs
- Provision of land** besides the desalination plant, to ensure reduced costs for brine treatment and valorization

MARKET OVERVIEW

GLOBAL TREND

- Continued growth** in brine production driven by the need for desalination plants to produce freshwater – **KSA** is the **largest global contributor** of brine production (~20% of global share)
- Global shift towards **circular economy** and full resource recovery to minimize waste disposal and **maximize captured value**
- Ongoing trend towards development of new technologies to better **valorize brine** into **commercially attractive products** while limiting environmental impact

VALUE CHAIN ANALYSIS



KEY DEMAND DRIVERS

- Regular demand for agricultural **fertilizers** to be potentially supplied by the valorization of **Sodium** and **Potassium** from brine
- Growing demand for **Boron, Calcium** and **Magnesium** in the **construction** and **glass** production industries to be supplied by brine by-products
- Growing demand for lithium driven by the shift towards **electric vehicles** creating a market for lithium recovered from brine

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