[Magnesium Hydroxide]

INVESTMENT OPPORTUNITY

[Inorganic]

استثمر في السعودية
INVEST SAUDI

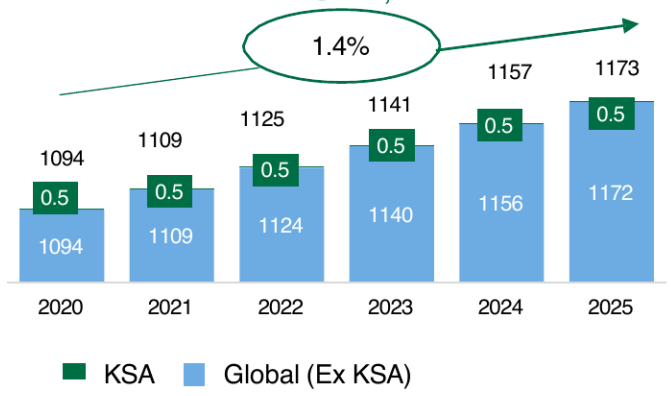
[Inorganic] Magnesium Hydroxide

High Potential | Moderate Potential | Low Potential

OPPORTUNITY DESCRIPTION: Opportunity to develop magnesium hydroxide production facility of ~30 KTA in KSA to cater regional and global demand

DEMAND

MARKET SIZE, KT



INVESTMENT OVERVIEW

INVESTMENT HIGHLIGHTS

- Expected investment size of ~USD 20 MN
- Plant capacity: 30 KTA
- Expected IRR: 15-18%

VALUE PROPOSITION

- Current production of magnesium hydroxide is 6.9 thousand metric tons as compared to the consumption of 7.4 thousand metric tons in the Middle East. Hence, capacity addition in the region will help meet the domestic demand as well as cater to the demand in the nearby regions.
- Since magnesium hydroxide is used in wastewater treatment and flue gas desulfurization applications; its usage will increase to tackle the environmental challenges. Thus, the demand for magnesium hydroxide will increase, and capacity expansions will be required to meet the increasing demand.

MARKET OVERVIEW

KEY DEMAND DRIVERS

- The largest end use for magnesium hydroxide will be in flue gas desulfurization and wastewater treatment. Ease of handling, increasing environmental markets, and the high price level of caustic soda will spur demand in these applications.
- Attempts to reduce “end-of-life” waste volumes of cars have led to lower-diameter wire and cables and lower-volume equipment in general, which has also shifted polymer consumption toward products that use magnesium hydroxide as the preferred flame retardant.

KEY PLAYERS

- QingHai Salt Lake Industry Group
- Martin Marietta Magnesia Specialties Inc.
- Zhejiang Lianda Chemical Co., Ltd.
- Dalian Keli Super Fine Powder Co.

GLOBAL TRENDS

- In 2020, global consumption of magnesium hydroxide was nearly 1.1 million metric tons.
- Magnesium hydroxide (magnesium dihydrate, MDH) is the second-most-important mineral flame retardant after alumina trihydrate (ATH).
- Magnesium hydroxide is also used in the production of other magnesium chemicals (magnesium sulfate, magnesium silicate, and others), mechanical pulp production, in pharmaceuticals as an antacid, and as a food additive.
- Mainland China is the world’s largest producer and consumer of magnesium hydroxide, followed closely by Japan.

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Public / متاح

SUPPLY

SCALABILITY AND LOCALIZATION

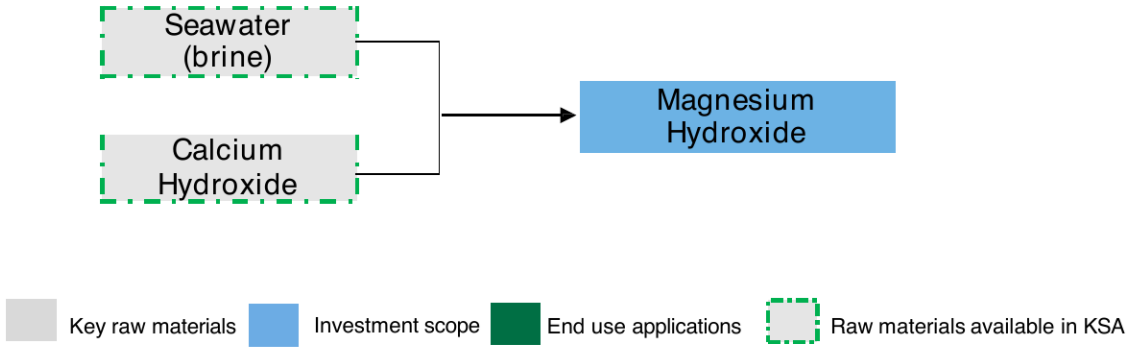
Grade: Low | **Medium** | High

- Calcium hydroxide is available from Saudi Sand Lime Industries and brine from Al Jubail desalination plant.
- Presence of all the raw materials makes it feasible to produce magnesium hydroxide in the Kingdom. Further, magnesium hydroxide can be produced to extend the portfolio to flame retardants and meet the growing demand for flame retardant cables in the construction industry.

IMPORT DEPENDENCY

- The Middle East imported nearly 5.6 thousand metric tons in 2020. The region imports primarily from China, the Netherlands, and the United States.

VALUE CHAIN



Served Applications

- Flue gas desulfurization & wastewater treatment
- Flame retardants
- Pulp & paper
- Pharmaceutical

KEY STAKEHOLDERS

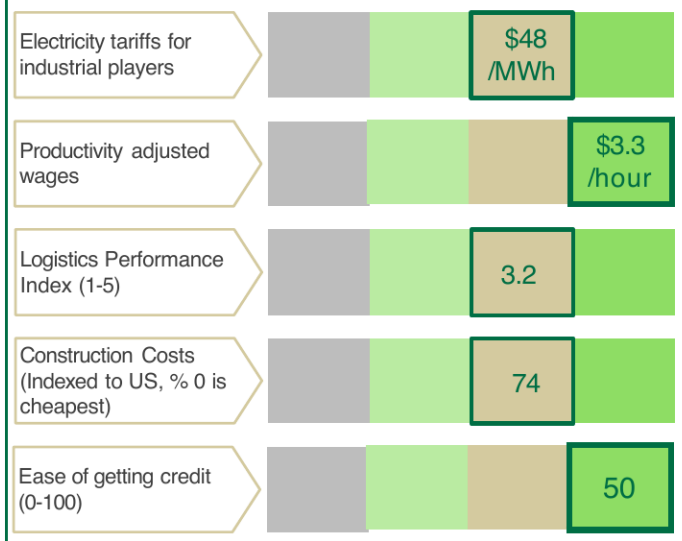
وزارة الصناعة والثروة المعدنية | وزارة الاستثمار Ministry of Investment | MODON | التجمعات الصناعية Industrial Clusters | National Industrial Development and Logistics Program | الصندوق الصناعي Saudi Industrial Development Fund

ENABLING FACTORS

ENABLERS & INCENTIVES

- Up to 75% of project financing by Saudi Industrial Development Fund (SIDF).
- 2-year grace period for the repayment of loans
- Expat worker levy waived-off for industrial manufacturers until October 2024.
- HRDF covers 30-50% of Saudi employee's monthly salaries (additional 10% for females) for 2 years, provide that it does not exceed USD 4,000

COST OF DOING BUSINESS IN KSA



Definitions

#	SCORECARD SECTION	DEFINITIONS
1	Market size	Size of market in value/volume in KSA and/or Region (MENA/GCC) covering future projections based on available estimates from published /government sources
2	Business drivers	A select number of factors that will influence future demand for the related product/service
3	Investment highlights	An overview of key financial metrics summarizing the investment opportunity along with the expected return based on the suggested investment size
4	Value proposition	Summary of key differentiators that position KSA as a strategic choice over other regional/global peers
5	Market readiness	An overview of KSA market structure, market maturity and level of participation by local and global players
6	Global trends	Latest business developments within the sector/product category
7	Scalability and localization	Ease of scaling the business across the value chain or into new adjacent products or geographies that would maximize the opportunity's investment returns and the ability and potential to locally manufacture the product and its components
8	Import dependency	An overview of the countries from which Saudi Arabia is importing the product and their value/volume and share in total imports
9	Value chain analysis	The process or activities that would potentially need to be carried out to deliver the underlying product or service
10	Key stakeholders	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
11	Enablers	Factors that enable investment in the underlying opportunity
12	Cost of doing business in KSA	Key factors that position KSA as a competitive destination for investment in the region. Productivity adjusted wages do not include cost of $1.23/hour towards annual recurring charges including work permit, resident identity (iqama) and health insurance

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