[Polyaluminum Chloride (PAC)]

INVESTMENT OPPORTUNITY

[Inorganic]

استثمر في السعودية
INVEST SAUDI

[Inorganic]
Polyaluminum Chloride (PAC)

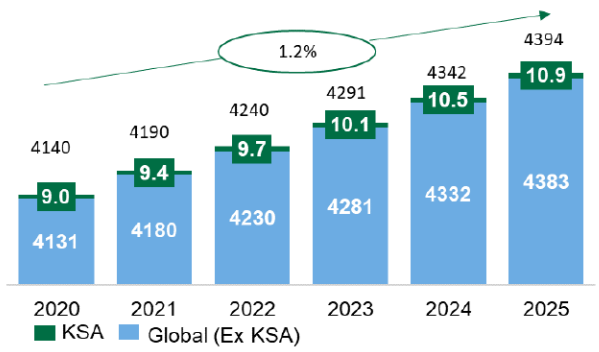
Public / متاح

High Potential | Moderate Potential | Low Potential

OPPORTUNITY DESCRIPTION: Opportunity to develop Polyaluminum Chloride (PAC) 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 25-30 MN
- Plant capacity: 30 KTA
- Expected IRR: >15%

VALUE PROPOSITION

- In Middle East, PAC which s primarily used as a coagulant in the clarification of surface and wastewater, is being used increasingly in industrial and municipal wastewater treatment.
- KSA plans to increase investment in the water sector to ensure drinking water supply and wastewater treatment across large parts of the country.
- Investment in water treatment chemicals including PAC within KSA will reduce import dependency and will utilize feedstock availability, and support long term initiatives towards National Water Strategy

MARKET OVERVIEW

KEY DEMAND DRIVERS

- PAC outperforms other grades as a coagulant and flocculant since it produces less and drier sludge, more effective in pH control, and more effective for treating cold water.
- Moreover, the increased use of recycled paper to produce linerboard increases the pH of the system, which can be more effectively neutralized with PAC.
- Regulations concerning the quality of water treatment by new industrial installations are becoming more demanding and necessitate an increase in the use of water treatment chemicals including PAC.

KEY PLAYERS

- Kemira
- Geo Specialty Chemicals
- USAL CO.
- Ecolochem GmbH
- Venator
- Feralco
- Jingmen Yangfeng Yuanda

GLOBAL TRENDS

- PAC Consumption is estimated at more than 4.1 million metric tons in 2020. Over 80% is consumed in water treatment as coagulation and flocculation agents. This includes both purification of potable and industrial water, and treatment of wastewater streams from both municipal water treatment plants and industrial processing plants..
- Asia accounts for around 40% of the global PAC demand followed by Western Europe and North America at 17% and 5% respectively.
- Capacity for PAC is estimated at over 6.5 million metric tons. Over 30% of global capacity is located in Other Asia and Oceania, particularly in Indonesia where most PAC is consumed in pulp and paper mills. Mainland China is the next largest producer with 26% of global capacity, followed by Western Europe with 19%.

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SUPPLY

SCALABILITY AND LOCALIZATION

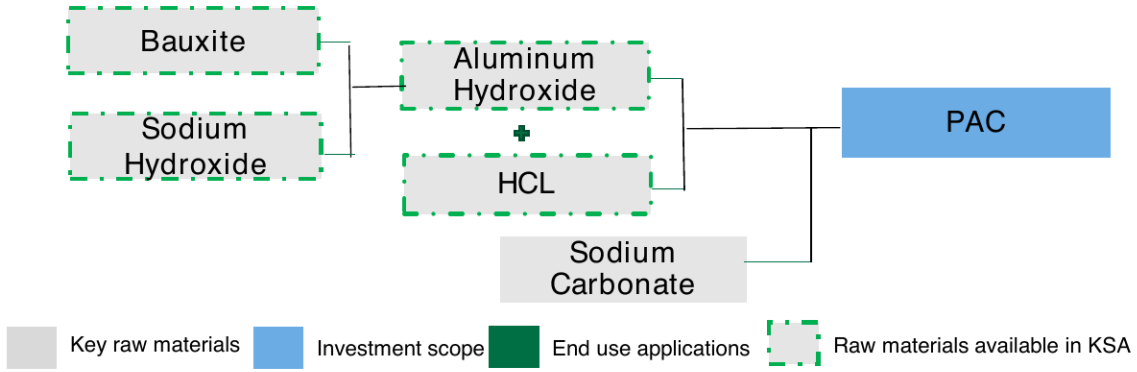
Grade: Low | Medium | **High**

- KSA has reserves of bauxite in the country. Sadara, SADAF, Petrokemya, and SAMAPCO are the key producers of sodium hydroxide in KSA. Ma'aden is a producer of aluminum hydroxide. Sadara, Ibn Hayyan, JANA, and BCI are the key producers of HCL in KSA.
- There are plans to enter the sodium carbonate market as a plant is under construction for 30 KTA capacity in Al Jubail scheduled to start in 2024.
- With raw material availability and initiatives planned by the Kingdom in water sector, PAC could be an attractive opportunity to invest to cater to rising domestic and regional demand.

IMPORT DEPENDENCY

- Consumption of PAC in the Middle East is around 30 KTA. KSA demand is around 9 KTA and is dependent on imports, predominantly from Western Europe and China.

VALUE CHAIN



Served Applications

- Wastewater Treatment
- Water Purification
- Pulp & Paper

KEY STAKEHOLDERS

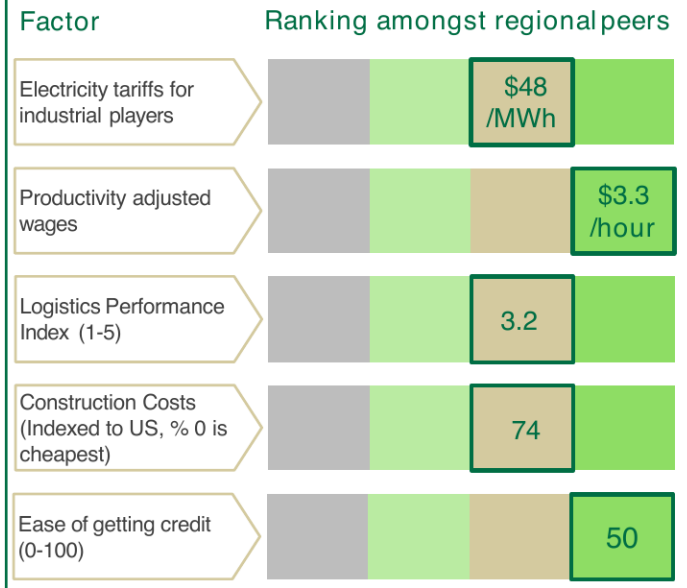
وزارة الطاقة MINISTRY OF ENERGY | وزارة الصناعة والثروة المعدنية Ministry of Industry and Mineral Resources | وزارة الاستثمار Ministry of Investment | مدن MODON | التجمعات الصناعية Industrial Clusters | National Industrial Development and Logistics Program | SIDF صندوق التنمية الصناعية السعودي

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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