

# HYDROGEN FLUORIDE

## INVESTMENT OPPORTUNITY SCORECARD

### CHEMICALS

FEBRUARY 2021



# CHEMICALS HYDROGEN FLUORIDE

Public / متاح

High Potential

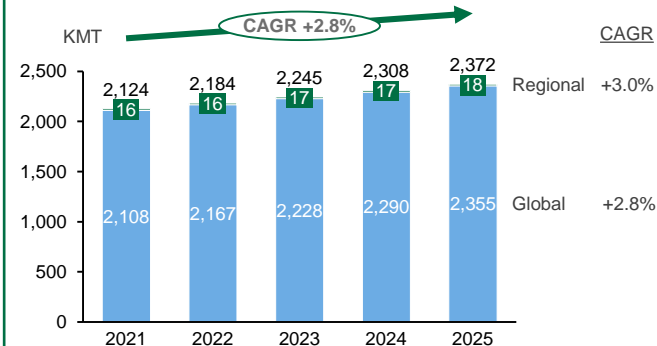
Moderate Potential

Low Potential

**OPPORTUNITY DESCRIPTION:** Opportunity to setup hydrogen fluoride manufacturing plant with 40 – 45 KMT capacity in KSA to serve regional/global market

## DEMAND

### MARKET SIZE, KMT



### INVESTMENT HIGHLIGHTS

- Expected investment size of USD 176 Mn
- Plant capacity: 40 – 45 KMT
- Expected IRR: More than 12%

## INVESTMENT OVERVIEW

### VALUE PROPOSITION

- KSA has a strategic location and access to feedstock enabling it to serve emerging markets like India, Africa and South East Asia
- KSA can leverage favorable trade agreements (eg: GAFTA) and strong logistics infrastructure to enhance export capability
- KSA is one of the largest chemical producers in the world and contributes ~10% to the global output
- Opportunity for first mover advantage due to non-existent local production of Hydrogen Fluoride and lack of competition from major global manufacturers

### KEY DEMAND DRIVERS

- Demand for hydrogen fluoride is driven by its usage as one of the key ingredients for manufacturing refrigerants, herbicides, pharmaceuticals, high-octane gasoline, aluminum and plastic products, electrical components, and fluorescent light bulbs
- Hydrogen fluoride is used in oil fields, used for petroleum alkylation and is a key raw material for producing aluminum fluoride used majorly for the automotive industry. Large-scale investments and increasing growth of the automobile industry in the region is expected to result in continuous demand for hydrogen fluoride

## MARKET OVERVIEW

### GLOBAL TRENDS

- Hydrogen Fluoride (HF) market is predominantly driven by the rising demand for Hydrofluorocarbons (Hfcs), Hydrofluorolefins (Hfos) and Fluorine compounds that are used in multiple end use industries
- In recent years, there has been increased demand due to growing opportunities from untapped markets such as glass etching & cleaning applications for HF manufacturers
- Strict regulations on Fluorocarbon refrigerants use and high transportation cost of Anhydrous Hydrogen Fluoride (AHF) grade variant pose challenge to manufacturers of HF across the globe
- Leading global manufacturers include: Lanxess Aktiengesellschaft and Fluorchemie (Germany), Yingpeng Chemicals, Do-Fluoride Chemicals, Sinochem Corporation (China), Solvay S.A. (Belgium), Honeywell International (USA), Daikin Industries (Japan), and Mexichem (Mexico)



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## SUPPLY

### SCALABILITY AND LOCALIZATION

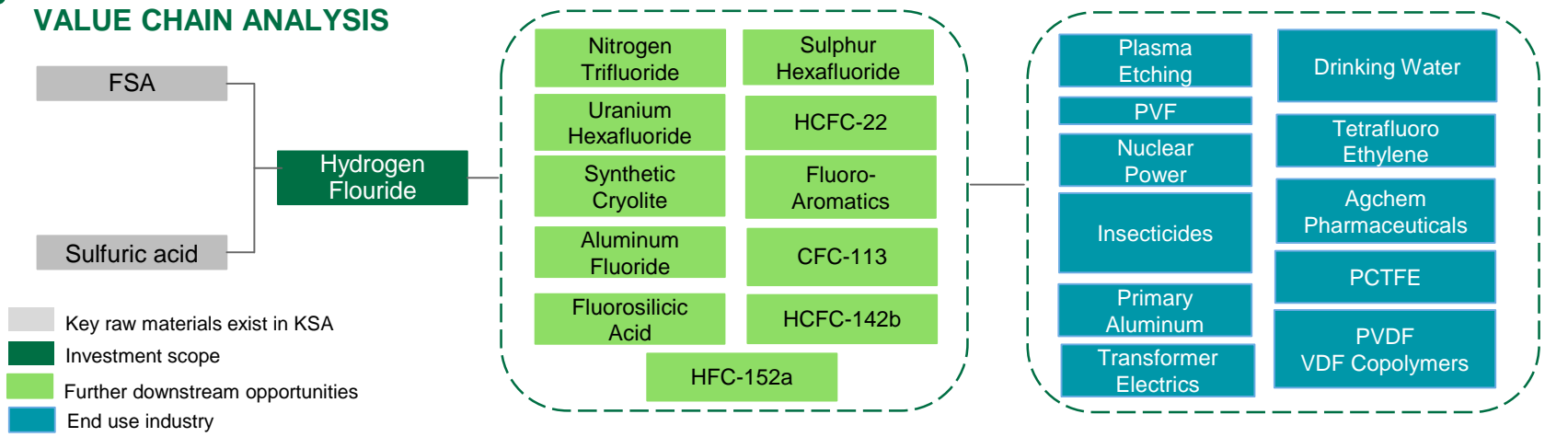
Grade: Low Medium High

- Availability of key raw materials in KSA such as Fluosilicic acid (FSA) and Sulfuric acid (both produced by Ma'aden)
- KSA has strong logistics infrastructure and supportive regulatory value chain to support export of hydrogen fluoride globally

### IMPORT DEPENDENCY

- No local production of hydrogen fluoride in Saudi Arabia; currently 100% of the local demand is met by imports

### VALUE CHAIN ANALYSIS

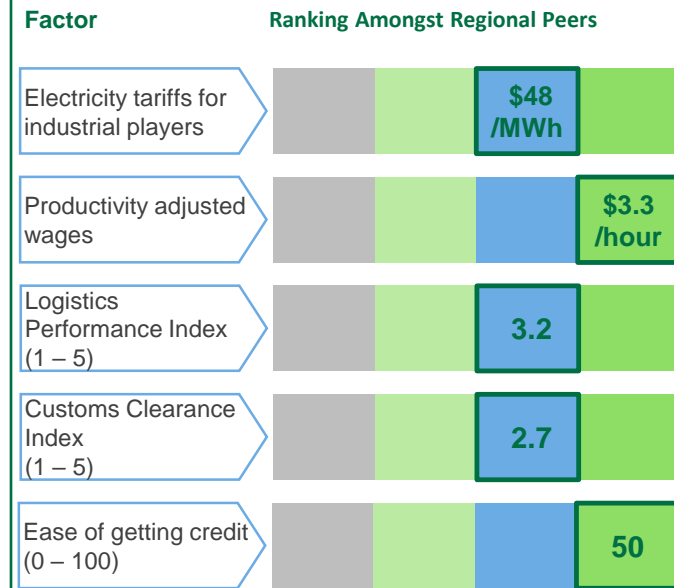


## ENABLING FACTORS

### ENABLERS

- 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

### COST OF DOING BUSINESS IN KSA



### KEY STAKEHOLDERS



Bottom 25% | Top 75% | Top 50% | Top 25%

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# DEFINITIONS

#	SCORECARD SECTION	DEFINITIONS
1	<b>Market size</b>	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	<b>Demand drivers</b>	A select number of factors that will influence future demand for the related product/service
3	<b>Investment highlights</b>	An overview of key financial metrics summarizing the investment opportunity along with the expected return based on the suggested investment size
4	<b>Value proposition</b>	Summary of key differentiators that position KSA as a strategic choice over other regional/global peers
5	<b>Market readiness</b>	An overview of KSA market structure, market maturity and level of participation by local and global players
6	<b>Competitor analysis</b>	List of the local & international players manufacturing the underlying product in Saudi Arabia and their market share
7	<b>Global trends</b>	Latest business developments within the sector/product category
8	<b>Scalability and localization</b>	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
9	<b>Import dependency</b>	An overview of the countries from which Saudi Arabia is importing the product and their value/volume and share in total imports
10	<b>Value chain analysis</b>	The process or activities that would potentially need to be carried out to deliver the underlying product or service
11	<b>Key stakeholders</b>	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
12	<b>Enablers</b>	Factors that enable investment in the underlying opportunity
13	<b>Cost of doing business in KSA</b>	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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