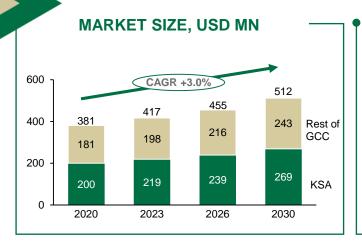


MINING & METALS Sand Casting

OPPORTUNITY'S DESCRIPTION: Establish local manufacturing of sand casting plant to serve demand of energy products in the Kingdom of Saudi Arabia and GCC





INVESTMENT HIGHLIGHTS

Opportunity to consider different operating models

– FDI with 100% ownership or joint venture with local private sector player(s)

INVESTMENT OVERVIEW

VALUE PROPOSITION

- Mining and Metals Industry set to become the "third pillar" of the Saudi industrial base due to KSA's rich deposits of minerals
- KSA's geographical advantage and trade agreements with neighboring countries make exporting favorable
- First mover advantage given limited presence of large-scale local fabrication and lack of any next generation sand casting player in KSA
- KSA is working to develop sustainable and globally competitive value-added semi-finished and finished metal industries (downstream) that support the Kingdom's goals of diversification

KEY DEMAND DRIVERS

- Saudi Arabia account for 50% of the sand casting market in GCC
- Demand for sand casting metal components such as pumps (bearing brackets), and valves (Ball valves, gate valves, butterfly valves, globe valves, check valves) from the energy industry are predicted to grow at a stable pace over next 5 – 10 years
- High utilization of sand casting components in pumps is mainly due to increasing exploration and production activities in the oil and gas sector, and is expected to keep growing

MARKET OVERVIEW

GLOBAL TRENDS

- 70% of ferrous castings and 25% of the non-ferrous castings are casted using the sand casting process
- The global ferrous casting market size is estimated at 68.4 MMT in 2020 and is expected to grow at a CAGR of 4.5 % to reach 74.46 MMT in 2022. The non-ferrous casting market is estimated at 6 MMT in 2020 and is expected to grow at a CAGR of 4% to reach 6.5 MMT in 2022
- China contributes to nearly 46% of the global sand castings production, followed by India and the US
- Main end-market industry applications for sand castings are automotive, general industrial application, building & construction and Energy
- Automotive industry is main driver for the growth of sand casting globally as it accounted for more than 42% of the demand



Source for global trends: Beroe



SCALABILITY AND LOCALIZATION

Grade:

Medium

Low





Low cost of construction, labor wages and utility fees to support low capital and operating expense for the investor and enable extending geographic footprint within the region

- Easy and consistent availability of key raw material, for sand casting such as metals (steel, aluminum, and copper /brass) in the Kingdom
- KSA offers attractive cost base including one of the lowest logistics, land and utilities costs amongst EU & NA production hubs

IMPORT DEPENDENCY

In 2019, KSA imported sand casting from below countries:

Country	% of Saudi imports in 2019
India	24.5%
USA	19.8%
Germany	14.1%
Others	41.6%

ENABLING FACTORS

ENABLERS

- Up to 75% of project financing by Saudi Industrial Development Fund (SIDF), with two-year grace period for the repayment of loans
- HRDF covers monthly salaries for 30-50% of Saudi employees (extra 10% for females) for 2 years, provided it does not exceed USD 4,000

VALUE CHAIN ANALYSIS

Mold and pattern manufacturing

· High potential to manufacture molding sands as KSA has a high volume of silica (KSA is a net exporter of Silica sand), Olivine and binders

Input materials

- · Steel billets and ingots to be manufactured locally as KSA has imposed a ban on ferrous scrap exports to support industry
- · Aluminum is available in sufficient volumes in KSA. Ma'aden Aluminum is the largest and most efficiently integrated Aluminum complex in the world
- · Future plans to produce copper in the Kingdom. Ma'aden Barrick Copper Company (MBCC) is set up to mine and process copper ore from Jabal Savid copper mine

Casting

- Absence of large-scale casting equipment and limited process automation capabilities for precision casting in KSA
- · However, equipments for mold manufacturing and casting process such as slurry tanks, stiffening machines, thermocouple probes, metal melting furnaces, etc. can be localized in KSA

Value added services

- Value added services such as cleaning, inspection, testing and heat treatment can be either conducted inhouse or outsourced
- · Limited presence of metal testing and heat treatment facilities in KSA
- · Limited availability of CNC lathes and other precision machining equipment for finishing

COST OF DOING BUSINESS IN KSA

Factor Ranking Amongst Regional Peers			
Electricity tariffs for industrial players		\$48 /MWh	
Productivity adjusted wages	>		\$3.3 /hour
Logistics Performance Index (1 – 5)		3.2	
Construction costs (Indexed to US, % 0 is cheapest)	>	74	
Ease of getting credit (0 – 100)	>		50

KEY STAKEHOLDERS













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	Demand 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	Competitor analysis	List of the local & international players manufacturing the underlying product in Saudi Arabia and their market share
7	Global trends	Latest business developments within the sector/product category
8	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
9	Import dependency	An overview of the countries from which Saudi Arabia is importing the product and their value/volume and share in total imports
10	Value chain analysis	The process or activities that would potentially need to be carried out to deliver the underlying product or service
11	Key stakeholders	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
12	Enablers	Factors that enable investment in the underlying opportunity
13	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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