

# TITANIUM MELT AND FORGE

## INVESTMENT OPPORTUNITY SCORECARD

### MINING & METALS



## TITANIUM MELT AND FORGE

**Opportunity Description:** Opportunity to develop a 6 KTPA Titanium Forged to supply the regional and global market

### INVESTMENT OVERVIEW

#### INVESTMENT HIGHLIGHTS

- Expected investment size of USD 500 Mn
- Plant capacity: 6 ktpa (Ti Forge)
- Titanium is considered as one of the strongest metals able to withstand high temperatures, and has a high resistance to corrosion, qualities that make it ideal for many industries, including defense, medical and aerospace sectors.

#### VALUE PROPOSITION

- The KSA is developing the Titanium metallurgy value chain and also has a vision to develop value added downstream products.
- This state of the art Integrated Titanium unit from mine to metal will process ore via a beneficiation process to produce ingots, which in-turn serves as feedstock for downstream products. Forged titanium products offer excellent strength to weight ratio and corrosion resistance.
- Sustainable Titanium manufacturing can help in the development of supply chain and local ecosystem relevant to advanced sectors such as aerospace

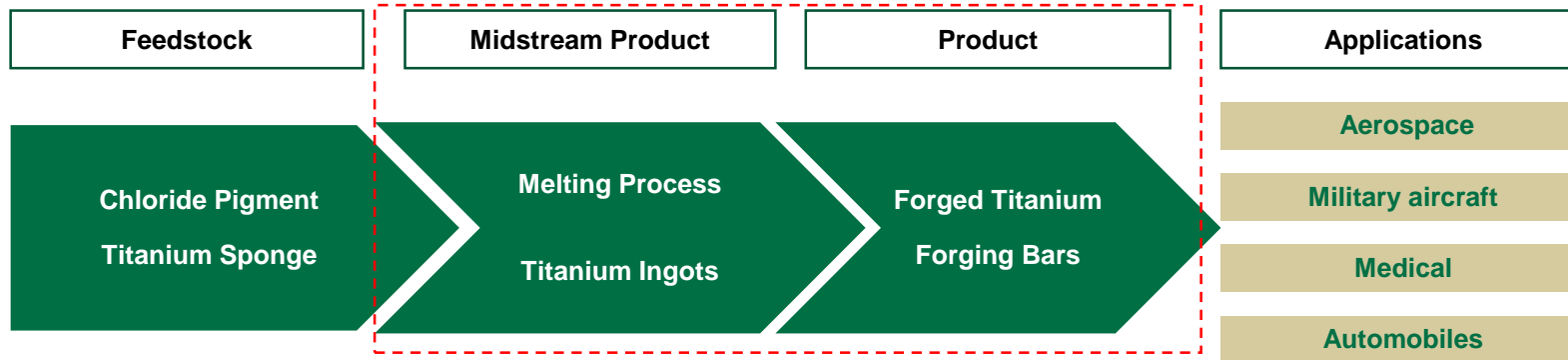
### MARKET OVERVIEW

#### GLOBAL TREND

- The Titanium market is estimated at USD 4.3 Bn in the year 2020, and is expected to witness a CAGR of 4-5% between 2020 and 2027.
- Titanium is used as a structural material, and is superior to steel in many applications. It is mainly used in the aerospace industry in spacecraft, missiles and commercial aircraft production.
- The main markets for titanium are aerospace and industrial markets that utilize mill products, while the alloy-additive market consumes lower-cost units such as scrap and sponge in order to improve formability and mechanical properties.

#### VALUE CHAIN ANALYSIS

**Opportunity Focus**



#### KEY DEMAND DRIVERS

- The overall Titanium demand in the MENA region is about 7-10 ktpa, growing at 3-4% YoY
- In addition to airplane parts and fasteners, Titanium finds usage in gas turbine engines, engine cowlings and heat shields, its resistance to heat, corrosion and acid also makes it an important material in chemical processing.
- Further, Titanium also finds niche applications in Medical devices for heart implants and rods for bone and joints fractures.
- Good export potential to Europe with focus on aerospace, medical & automotive end segments.

# 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	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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