

**Copper Windings**  
INVESTMENT OPPORTUNITY  
**Machinery & Equipment**



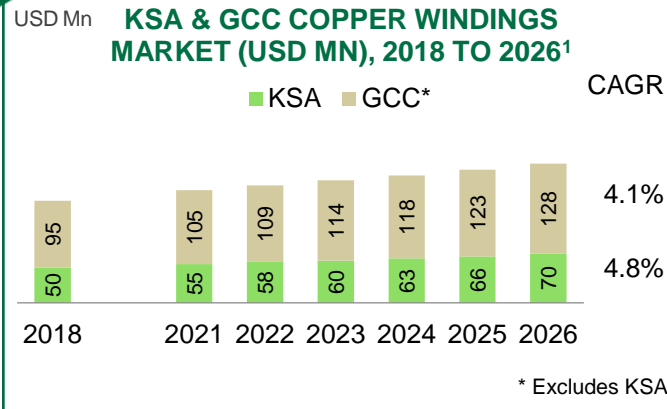
# Machinery & Equipment

## Copper Windings

**OPPORTUNITY DESCRIPTION:** Localized manufacturing of copper windings that would feed into domestic localization of motors and transformers, and address export demand

### DEMAND

#### MARKET SIZE, USD



### INVESTMENT OVERVIEW

#### INVESTMENT HIGHLIGHTS

- There are no local manufacturers that can supply copper windings at the quality and purity required to manufacture energy efficient transformers and motors in KSA
- Such facility can support further localization of transformer and motor industry (and beyond e.g., fans) in the KSA and cater to the domestic and regional demand
- Expected Investment Size<sup>#</sup> : USD 15 to 20 Mn
- Plant Capacity<sup>#</sup> : 10,000 MT annually
- Job Creation\* : 120 to 140

#### VALUE PROPOSITION

- Over reliance on imports - ~76% of motors and ~35% of transformers are imported into KSA. A shift towards local manufacturing will create a demand for locally manufactured copper windings, amongst other components
- Export potential – Setting up in KSA allows access to trade routes that account for 12% of world trade
- Infrastructure - Special economic zones and Industrial townships provide world class infrastructure and competitive access to utilities

#### KEY DEMAND DRIVERS

- 2 high growth segments - Power and Industrial - are the largest end user segments for motors (60% share), with pumps being the biggest use case with ~50% share<sup>2</sup>
- Demand for copper windings in motors and transformers is strongly linked to proposed developments and investments in the power, industrial and water sectors
- Increase in desalination capacity from 2.54 Mn cubic metres per day in 2021 to 7.50 Mn cubic metres per day by 2027<sup>3</sup> and proposed additions to transmission (~ 4,700 to 5,000 circuit-km annually) and distribution (~ 35,000 to 38,000 circuit-km annually)<sup>4</sup> networks will be key drivers for demand in copper windings

#### RAW MATERIALS

- Electrical grade copper
- High di-electrical insulation material

### MARKET OVERVIEW

#### GLOBAL TRENDS

- The global focus on increasing efficiency motors and transformers is driving the demand for highly efficient copper winding wires – underscoring its criticality for mainstream products
- The increasing demand for the efficient traction motors in the NEVs and the introduction of the regenerative braking systems in electric vehicles and trains is an additional application for energy-efficient winding wires that would find relevance in KSA as well

Source: <sup>1</sup>Team Analysis of published strategy documents, reports from SEC, SWCC & IKTVA publication, independent market reports, UN Comtrade data, General Authority of Statistics data and industry interactions; <sup>2</sup>NIDC report on Motors; <sup>3</sup>SWPC Announcement; <sup>4</sup>SEC – National Grid (provided by MISA Energy team). <sup>#</sup>Expert interviews (assumptions), financial statements of peer companies, team analysis

Note: Market estimates for copper windings cover demand from Motors and Transformers. This opportunity is for a component that is manufactured with a range of other components in a facility. No facility is expected to be constructed for manufacturing this component exclusively. Hence, the insights on capacity and investment are indicative - these would vary based on the decision an investor takes on the mix of components to manufacture. CAGR – Compound Annual Growth Rate, NEV – New Energy Vehicles, MT – Metric Tonne, GCC – Gulf Cooperation Council, USD – United States Dollar, Mn – Million. Opportunity potential is defined basis current import dependency – High refers to >80%, medium >50 to 80% and low <=50%. \*Job Creation covers direct and indirect job



# Machinery & Equipment

## Copper Windings

### SUPPLY

#### SCALABILITY AND LOCALIZATION

Grade: Low Medium High

- Copper windings are one of the prominent materials that make up 60-70% of total transformer cost, and account for 10 - 15% cost in induction motors
- Both transformers and induction motors are expected to be significantly localized, driving the need for copper windings
- Copper windings are extensively traded globally, and this facility can achieve higher scales by addressing regional demand

#### IMPORT DEPENDENCY

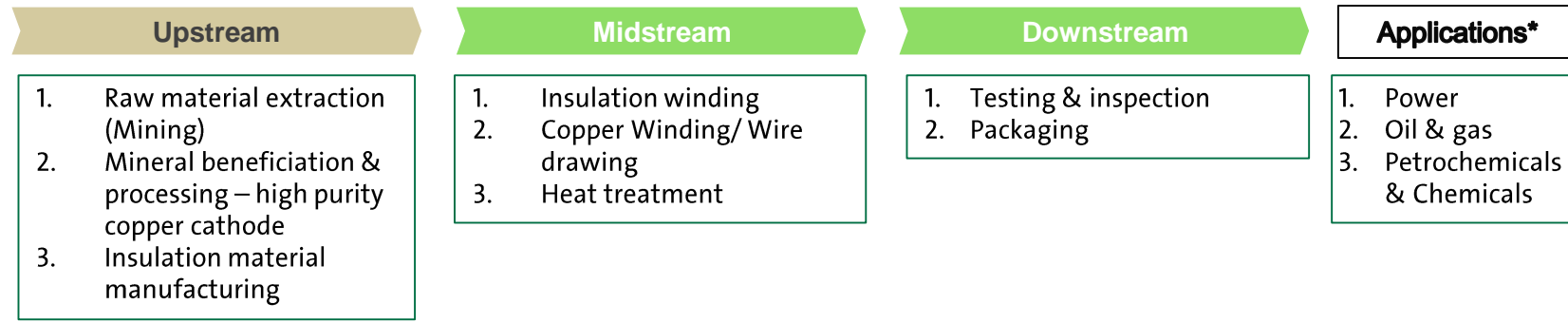
- Around 80% of the power transformers are imported in KSA, 60% from High-Cost Countries (HCC)<sup>5</sup>
- Around 93% of the induction motors are imported – fully built or part of a larger assembly<sup>6</sup>
- There is nearly 100% import dependency on copper windings currently for these applications

### ENABLING FACTORS

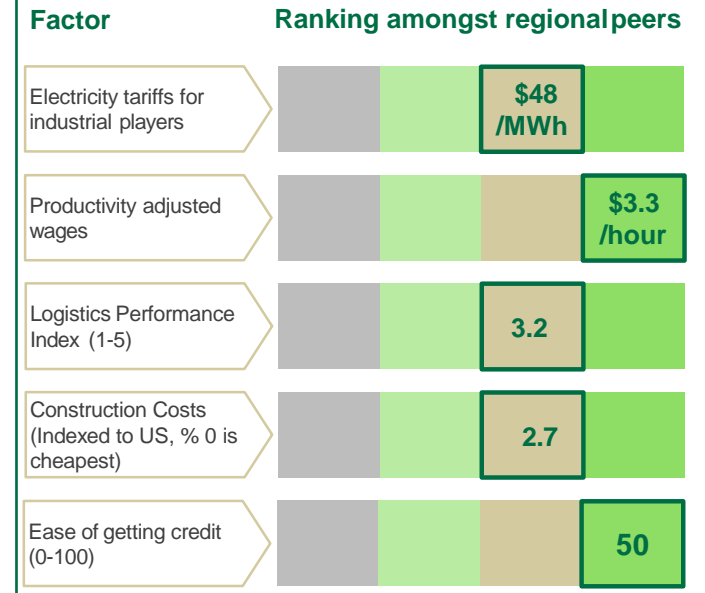
#### ENABLERS & INCENTIVES

- Customs duties** exemption on imported machinery, equipment, raw materials and spare parts utilized for industrial purpose
- Access to **local content initiatives and programs** at demand centers
- HRDF **covers monthly salaries of up to 30%** for Saudi employees (extra 10% for females) for 2 years
- Expat worker **levy waived off** for industrial manufacturers
- Tax rebates** on exports, raw material imports, and **50% tax credit** on Saudi national worker's payroll & training costs for 10 years
- 2-year **grace period** for the repayment of loans
- Unprecedented access to a **diversified value chain** - especially raw materials (steel, aluminum, polymers, and industrial minerals)

#### VALUE CHAIN



#### COST OF DOING BUSINESS IN KSA



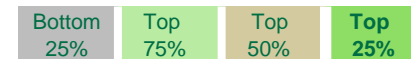
#### KEY STAKEHOLDERS



Logos sourced from entity website

Source: <sup>5,6</sup> UN Comtrade

Note: HRDF – Human Resource Development Fund  
 Scalability & Localization Grade is defined as high – if the set up can support localization of multiple product categories, medium – if multiple products within a category can be localized and low – if it supports localization of a single product only. \*Only key applications are highlighted



# 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>Business 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>Global trends</b>	Latest business developments within the sector/product category
7	<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
8	<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
9	<b>Value chain analysis</b>	The process or activities that would potentially need to be carried out to deliver the underlying product or service
10	<b>Key stakeholders</b>	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
11	<b>Enablers</b>	Factors that enable investment in the underlying opportunity
12	<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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