

HIGH-VOLTAGE EV CONNECTORS, RELAYS AND JUNCTION BOXES

INVESTMENT OPPORTUNITY SCORECARD INDUSTRIAL & MANUFACTURING

DECEMBER 2020

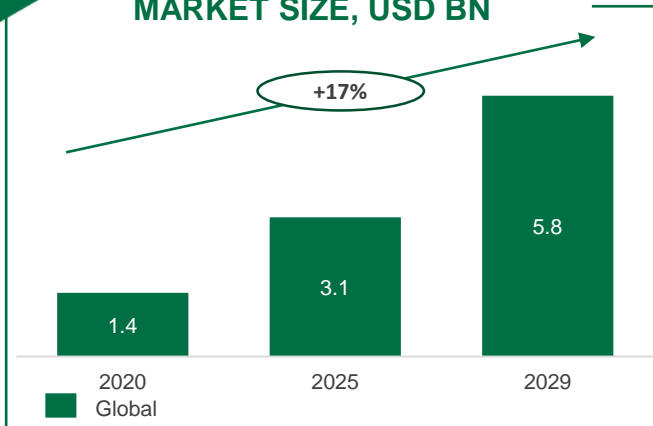


HIGH-VOLTAGE EV CONNECTORS, RELAYS AND JUNCTION BOXES

OPPORTUNITY'S DESCRIPTION: Setting up a manufacturing and assembly plant for high-voltage EV Connectors, Relays and Junction boxes in Kingdom of Saudi Arabia (KSA)

DEMAND

MARKET SIZE, USD BN



INVESTMENT HIGHLIGHTS

- Expected investment size: USD 8.9 - 9.5 Mn
- Proposed plant capacity: ~5,000,000 units
- Expected project IRR: 8.5% - 12.2%
- Expected payback period: 7.30 - 8.42 years

INVESTMENT OVERVIEW

VALUE PROPOSITION

- KSA is considered one of the largest automotive markets in the Middle East region
- KSA has favourable trade agreements. It is a member of GAFTA and therefore goods produced in KSA and exchanged between member states of GAFTA are exempted from all customs duties
- Opportunity for first mover advantage due to non-existent local PPM for electric and hybrid vehicles
- Automotive has been identified as one of the core sectors to support the Vision 2030 initiative of development of a sustainable manufacturing-based economy, for diversifying away from the oil sector
- KSA is looking to enhance EV deployment to increase energy efficiency in its transportation sector
- KSA has signed a memorandum of understanding ("MoU") with the UK to reduce carbon emissions and develop technologies including smart grids and EVs

KEY DEMAND DRIVERS

- Car penetration ratio is expected to grow from 181 cars per 1000 people in 2019 to 206 per 1000 people in 2024
- Increase in daily commute distances due to expanding cities, allowing driving permits for women and lack of viable public transportation options will continue to favor usage of personal car as the preferred mode of transport
- The Saudi Arabian standards organization (SASO) has plans to issue regulation for the use of the electric vehicle. Also, the government has established various policies and infrastructure to boost the growth of the electric vehicle market in the coming years such as providing incentives to the consumers, installing charging stations in several parts of the country, among others

MARKET OVERVIEW

MARKET READINESS

- No existing manufacturers for EV Connectors, Relays and Junction boxes in the Kingdom of Saudi Arabia

GLOBAL TRENDS

- The global electric vehicle market was valued at USD162 Bn in 2019, and is projected to reach USD 802 Bn by 2027, at CAGR of 22.6%
- Electric vehicles offer substantial operating cost savings over comparable, conventional, gasoline-fueled vehicles. Owners of electric vehicles can expect to benefit from less expensive fuel and fewer maintenance obligations
- Increasing vehicle range, better availability of charging infrastructure and proactive participation by automotive OEMs would drive the global electric vehicle market
- The availability of incentives to purchase electric vehicles, along with their continuously falling costs, has made an investment in an EV a smart energy and financial decision



INDUSTRIAL & MANUFACTURING HIGH-VOLTAGE EV CONNECTORS, RELAYS AND JUNCTION BOXES

SUPPLY

SCALABILITY AND LOCALIZATION

Grade: Low Medium High

- Easy availability of raw materials and key automotive grades in Saudi Arabia
- Capabilities exist in KSA for some of the key manufacturing processes for other industries. These can be suitably adapted for the automotive parts sector
- KSA has strong support in the electric vehicle industry and offers incentives such as benefits, subsidies, and installation of charging stations

IMPORT DEPENDENCY

- 100% of EV Connectors, Relays and Junction boxes are currently imported in to KSA

| Country | % of Saudi imports of motors in 2019 |
|---------|--------------------------------------|
| China | 17.9% |
| Germany | 14.8% |
| USA | 14.1% |
| Others | 53.1% |

Source: UN COMTRADE

ENABLING FACTORS

ENABLERS

- 100% foreign direct ownership allowed
- Low-cost industrial lands (MODON: \$0.27-1.07/m², RCJY: \$1.2/ m², KAEC: \$3.7/ m²)
- Low-cost industrial loans up to 50% of capital for up to 15 year provided by SIDF
- Low corporate income tax (20%) on profits only

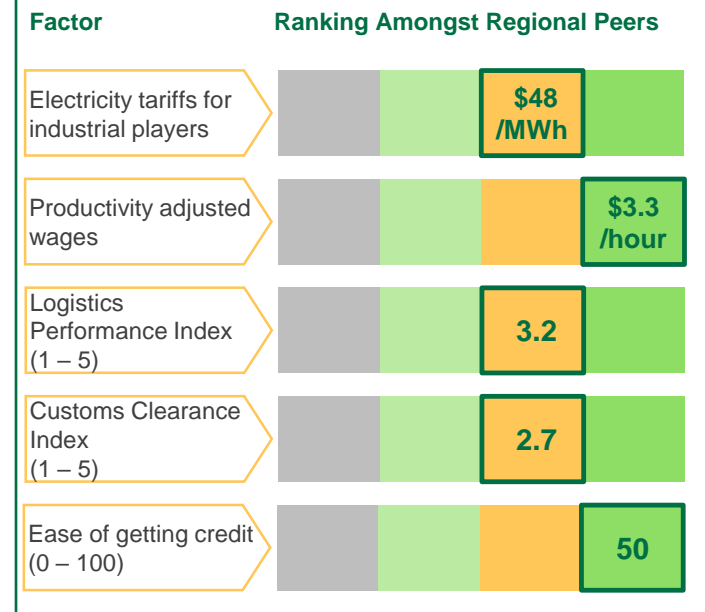
PRODUCTION VALUE CHAIN ANALYSIS

| Raw materials | Manufacturing | Assembly | End product |
|---|--|---|-----------------------|
| Connectors: <ul style="list-style-type: none"> Plastics/ Resins: Organic Polymers Gold/ Nickel/ Tin Copper/ Brass/ Metallic strip or wire | Connectors: <ul style="list-style-type: none"> Injection molding (terminal body) Stamping (terminal pins) Plating (terminal pins) | Connectors: <ul style="list-style-type: none"> Feed housing Feed terminals (and de-reel) Terminal insertion and bending Testing, Marking & Packaging | Connectors |
| Relays: <ul style="list-style-type: none"> Plastics/ Resins: Organic Polymers Copper, Gold/ Aluminum (Coil) Phosphor bronze | Relays: <ul style="list-style-type: none"> Core Relay coil Contact spring Coil assembly Housing Testing | Relays: <ul style="list-style-type: none"> Magnet circuit assembly Armature sub-assembly Heelpiece sub-assembly Contact assembly Testing, Marking & Packaging | Relays |
| Junction boxes: <ul style="list-style-type: none"> Plastics/ Resins PCB | Junction boxes: <ul style="list-style-type: none"> Frame manufacturing Injection molding Drilling | Junction boxes: <ul style="list-style-type: none"> Component feed Testing, Marking & Packaging | Junction boxes |

KEY STAKEHOLDERS



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 | 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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