Localization Booklet

ASASAT

- Strong Foundations -

24th September 2025

SAR.COM.SA

Agenda

1. ASASAT Strategy and Journey
2. Localization Introduction & Mechanisms
3. National Enablers Incentives
4. Localization Opportunities

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1. ASASAT Strategy and Journey
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In alignment with Saudi Vision 2030, SAR launched the ASASAT program to transform local industry and drive economic diversification.

ASASAT أساسات برنامج المحتوى المحلي Local Content Program

VISION STATEMENT

Powering Vision 2030 with a strong sustainable and Localized Railway Sector

MISSION STATEMENT

SAR's Empower Saudi's Small & Medium Enterprises Towards Premier Capability and Competitiveness in the Rail Sector

STRATEGIC OBJECTIVES

Develop Capabilities	Attract Investment	Realize LC Opportunities

KEY ENABLERS

Provide technical training to help local suppliers meet SAR standards.	Promote SAR's localization opportunities to investors.	Implement a localized procurement policy prioritizing local suppliers.
Partner with international companies to transfer technology.	Facilitate joint ventures between international companies and local suppliers.	Use data analytics to identify gaps where local suppliers can replace imports.
Collaborate with research institutions on localized railway solutions.	Highlight sustainable initiatives to attract eco-conscious investors.	Create mentorship and business support programs for local suppliers.

SAR ASASAT - SAR Local Content Program

Aligning SAR's Objectives with Vision 2030

SAR's Strategic Commitment to Saudi Vision 2030

The Saudi Railways Company (SAR) is a key driver of innovation and economic transformation in Saudi Arabia. In alignment with Vision 2030, SAR launched the ASASAT Program to reshape local industry and boost economic diversification.

VALUES

Achieve

Achieve a local railway industry that is **sustainable, risk-reduced,** and contributing to the national economy, in line with our vision.

Sustain

Our goal is to **sustain business through robust internal capabilities** and effective execution of Local Content (LC) programs

Advance

We strive to **advance local railway capabilities** through focused research, development and knowledge transfer

Support

We are committed to **supporting investment attraction** and enhancing investor outreach and onboarding.

Accelerate

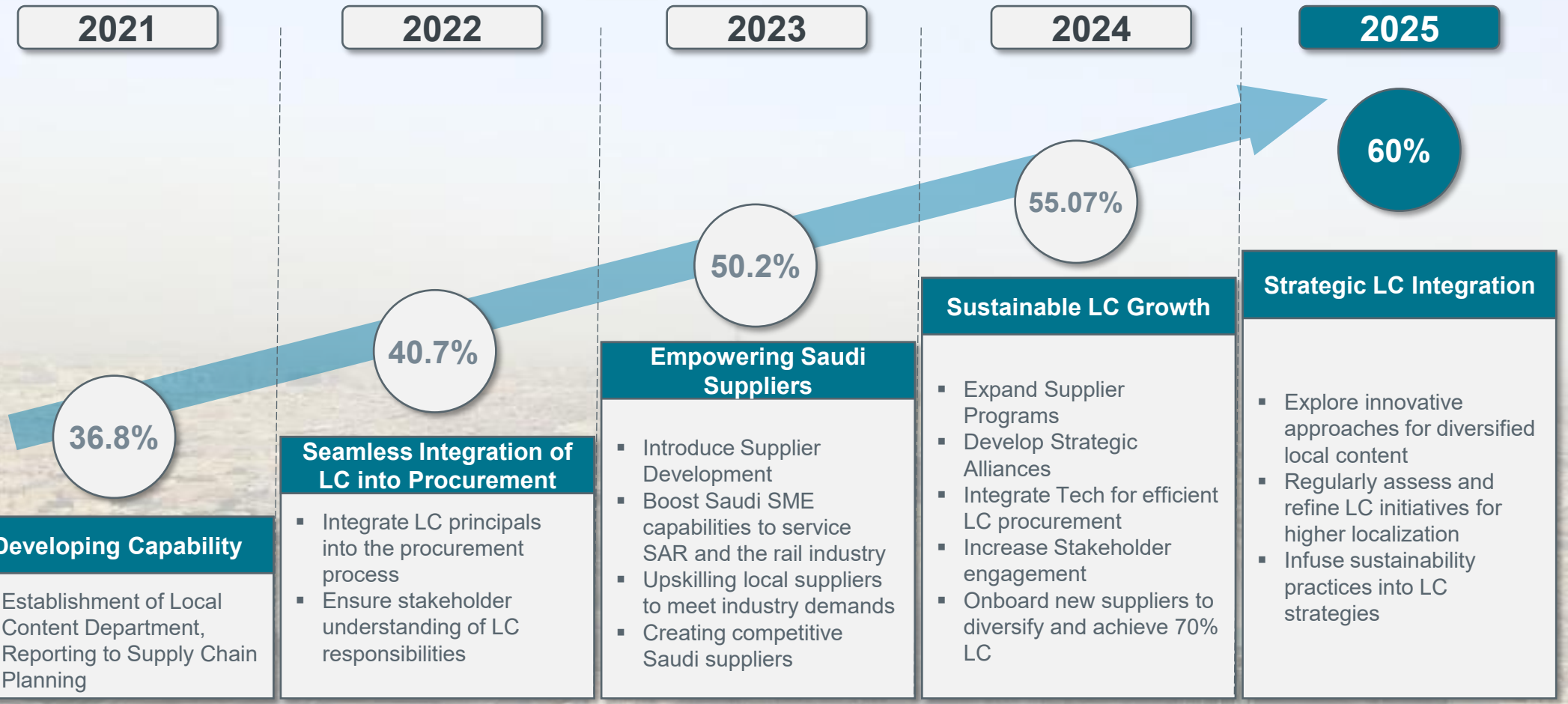
Our focus is to accelerate the procurement of local goods and services, **boosting industrial development within Saudi Arabia.**

Transform

Our vision is to transform SAR and the Saudi railway industry by leading **localization efforts and reducing risk**

SAR ASASAT Journey

SAR aims to surpass 60% LC Score by 2025 to align with PIF target



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Powering Saudi Arabia's Rail Sector Through Strategic Localization and Economic Impact

What is Localization?

The share of goods demand (or purchase) fulfilled by locally (within KSA) manufactured goods

Benefits

1 SME Growth & Ecosystem Development

- Creates opportunities for small and medium enterprises to participate in large projects
- Diversifies the supplier base and builds a competitive local ecosystem

2 Supply Chain Resilience

- Builds shorter, more reliable supply chains
- Reduces exposure to global disruptions (shipping delays, trade restrictions, geopolitical risks)

3 Reduced Import Dependence

- Lowers reliance on foreign suppliers and volatile global markets
- Strengthens national self-sufficiency in critical products

4 Technology Transfer & Capability Building

- Encourages joint ventures and partnerships that bring advanced know-how
- Enhances domestic industrial capacity and innovation

5 Economic Development & Job Creation

- Stimulates local industries, generating employment and contributing to GDP
- Keeps value-add within the country, supporting long-term growth

SAR Localization Mechanisms

Structured agreements to accelerate supplier engagement and drive sustainable local manufacturing

	Enhance Existing			Build New			
	Memorandum of Understanding (MoU)	Preferred Supplier Agreement (PSA)	Bulk Supply Agreement (BSA)	Take-off Agreement	Corporate Purchase Agreement (CPA)	Technology Transfer Agreement (TTA)	Joint Venture (JV)
Description	Non-binding agreement to explore opportunities for capacity enhancement, qualification support, future collaboration etc.	Prioritization of a local supplier up to a certain annual quantity at an agreed-upon price	Procurement of large volumes over the specified duration	Local plant setup by foreign OEM in exchange for guaranteed quantities	Foreign OEM commits to local investment in exchange for long term procurement commitment	Foreign OEM shares technical know-how to enable local production	Foreign OEM sets up local entity in partnership with a local firm to jointly manufacture
Key T&Cs	**From SAR:** ➢ Demand visibility ➢ Fast-track qualification ➢ Intent to prioritize local manufacturer **From local mfg:** ➢ Intent to expand production capacity	**From SAR:** ➢ Procure from preferred local supplier, if business need arises, for agreement duration **From Local mfg:** ➢ Capacity enhancement ➢ Price commitments	**From SAR:** ➢ Guaranteed quantities for BSA duration **From Local mfg:** ➢ Capacity enhancement by specified duration ➢ Price commitments ➢ Localization, LC, saudization commit.	**From SAR:** ➢ Guaranteed quantities for LPA duration ➢ Fast-track qualification support **From OEM:** ➢ Local plant setup by specified duration ➢ Price commitments ➢ Local plant capacity, localization, LC, saudization commit.	**From SAR:** ➢ Preferred supplier status (procurement commitment) ➢ Demand visibility **From OEM:** ➢ Local plant investment ➢ Technology transfer / R&D ➢ LC commitments	**From SAR:** ➢ Demand visibility ➢ Fast-track qualification support ➢ Prioritize purchases from local mfg. **From OEM / Local mfg:** ➢ Technical know-how transfer ➢ Local mfg. training ➢ Quality assurance ➢ Annual capacity plans / targets	**From SAR:** ➢ Demand visibility ➢ Fast-track qualification support ➢ Prioritize purchases from JV **From Local JV:** ➢ Localize technology ➢ Annual capacity plans / targets ➢ Expansion plans into other products (optional)
Agreement Parties	➢ SAR & Local Mfg.	➢ SAR & Local Mfg.	➢ SAR & Local Mfg.	➢ SAR & Foreign OEM ➢ SAR & Local mfg (in partnership with OEM)	➢ SAR & Foreign OEM	➢ Foreign OEM & Local Mfg. ➢ SAR - facilitator	➢ Foreign OEM & Local Company ➢ SAR - facilitator

SAR Key factors to determine Localization Mechanism

This localization framework supports SAR in taking informed decisions on how to engage suppliers

Selection Criteria	Enhance Existing			Build New			
	Memorandum of Understanding (MoU)	Preferred Supplier Agreement (PSA)	Bulk Supply Agreement (BSA)	Take-off Agreement	Corporate Purchase Agreement (CPA)	Technology Transfer Agreement (TTA)	Joint Venture (JV)
SAR Commitment	Low	Medium *(Procurement preference)*	High *(Guaranteed Qty)*	High *(Guaranteed Qty)*	Medium *(Procurement preference)*	Medium *(Procurement preference)*	Medium *(Procurement preference)*
Expected Demand	Medium - High	Medium - High	High	High *(Stable demand)*	High *(Stable / Increasing demand trend)*	Medium – High *(Stable demand)*	Medium – High *(Stable demand)*
Investor Risk (Capex, IRR)	Low *(No obligation)*	Capex: Medium – High IRR: Low - Medium	Capex: Medium - High IRR: Low - Medium	Capex: High IRR: Low	Capex: High IRR: Low – Medium	Capex: Low *(Existing plant expansion)* IRR: High	Capex: High *(shared investment)* IRR: Low - Medium
Product Complexity	Low - High *(Applicable across)*	Low - Medium	Medium - High	High	High	Low - Medium	Medium - High
OEM willingness to partner with local mfg.	N/A	N/A	N/A	Low *(Propreitary tech, similar mfg. capability not available)*	Low *(Propreitary tech, similar mfg. capability not available)*	High *(Similar mfg. capability exists)*	High *(Local company willing to co-invest)*

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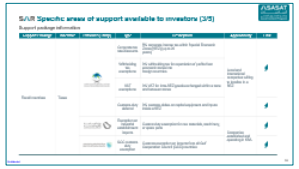
SAR National Enablers Supporting Localization Investments

Incentives and support mechanisms to reduce investor risk and drive manufacturing growth

National Enablers	Type of Incentive	Impact for Localization
SIDF صندوق التنمية الصناعية السعودي	Financing & Capital Support	• Offers discounted long-term financing for industrial and localization projects. • Lowers cost of capital and improves project IRR for investors. • Encourages suppliers to commit to setting up or expanding local manufacturing.
مدن MODON	Land & Infrastructure	• Provides subsidized industrial land and utilities (water, electricity, infrastructure). • Offers ready-built factories and long-term lease options. • Reduces setup time and operational costs, enabling quicker localization.
هيئة الزكاة والضريبة والجمارك Zakat, Tax and Customs Authority	Trade & Customs	• Grants duty exemptions on imported raw materials, machinery, and equipment not locally available. • Reduces upfront import-related costs for suppliers. • Supports competitiveness of localized products against imports.
وزارة الصناعة والثروة المعدنية Ministry of Industry and Mineral Resources	Capex Grants & Industrial Support Programs	• Provides capital expenditure (Capex) grants through the Saudi Industrial Program (SIP) for qualified products. • Reduces upfront investment barriers for suppliers setting up local manufacturing. • Makes localization projects more financially attractive and feasible.
صندوق تنمية الموارد البشرية HUMAN RESOURCES DEVELOPMENT FUND	Workforce Support	• Covers a portion of employee salaries for Saudi staff. • Funds training programs to upskill the local workforce. • Lowers labor costs for suppliers while ensuring sustainability of local employment.

S/\R Specific Areas of Support Available for Investors

Support packages are available in KSA in three categories

#	Support Package	Description	Deep Dive
1	**Financing**	Provide direct financial stimulus via access to equity, loans, subsidies, or guarantees	 
2	**Fiscal Incentives**	Provide support through favorable taxation policies and duties exemptions	
3	**Operational & Local Content Incentives**	Offer operational (e.g., guaranteed volume contracts, discounted land rates) and local content-related preferences	 

SAR Specific areas of support available to investors (1/5)

Support package information

Support Package	Incentive	Provider (Entity)	Type	Description	Applicability	Link
Financing	Preferential Loans	المركز الصناعي Industrial Center	Main Financing Products	**Saudi Industrial Incentives Program** • Supports localization in strategic industrial sectors through direct grants and tailored incentive packages. • Covers up to **35% of eligible capital expenditure** (CapEx) for approved projects. • Maximum cap of **SAR 50 million** per project.	Local and international companies willing to localize	
		SIDF صندوق التنمية الصناعية السعودي		**Project financing:** • Loan tenor of up to 20 years (dependent on location) • Loan of up to 75% of project cost (dependent on location) • Grace period of up to 4 years • Cap limit of up to SAR 3 Bn per project	Local and international companies willing to localize	
				Multipurpose financing (improving operational value such as IT systems, warehouses, vehicles, safety equipment, etc.) • Loan tenor of up to 5 years • 30% up-front disbursement	Companies established and operating in KSA	
			Incentivized Programs	**Tawteen** (driving supply chain localization in the industrial sector in partnership with KSA National Champions)2 • Minimum loan tenor of 7 years • Grace period of up to 2 years • Fast track approval for projects with purchase agreement	Local and international suppliers of PIF portfolio companies (e.g., SEC, Ma'aden, SAR)	

SAR Specific areas of support available to investors (2/5)

Support package information

Support Package	Incentive	Provider (Entity)	Type	Description	Applicability	Link
Financing	Preferential Loans	SIDF صندوق التنمية الصناعية السعودي	Incentivized Programs	**Afaq** (increasing production capacity and delivering growth for SMEs) • Loan tenor of up to 8 years • Grace period of up to 2 years • 30% up-front disbursement • Reduced net worth requirement of up to 50% of the loan amount	Local small and medium-sized enterprises (with established operations of >3 years in KSA)	
				Tanafusiya (financing technology and digitization optimization solutions) • Minimum loan tenor of 7 years • Grace period of up to 2 years	Local small and medium-sized enterprises (with established operations of >3 years in KSA)	
				Mutajadeda (financing technology and digitization optimization solutions) • Loan tenor up to 20 years • Grace period of up to 3 years • Financing up to 75% of project cost (for renewable components manufacturing only)	Local and international companies willing to localize in renewable energy	
		SME Bank بنك المنشآت الصغيرة والمتوسطة Small & Medium Enterprises Bank	Loans	**Term loan** (financing fixed assets purchases and business expansion) • Loan tenor up to 3 years • Grace period of up to 6 months • Financing amount up to SAR 15 Mn	Local small and medium-sized enterprises	
				Working capital loan (financing short-term operating expenses and raw materials) • Loan tenor up to 1 year • Financing amount up to SAR 15 Mn		

SAR Specific areas of support available to investors (3/5)

Support package information

Support Package	Incentive	Provider (Entity)	Type	Description	Applicability	Link
Fiscal Incentives	Taxes	هيئة المدن والمناطق الاقتصادية الخاصة Economic Cities and Special Zones Authority	Corporate tax rate discounts	5% corporate income tax within Special Economic Zones (SEZ) (up to 20 years)	Local and international companies willing to localize in a SEZ	
			Withholding tax exemptions	0% withholding tax for repatriation of profits from economic zones into foreign countries		
			VAT exemptions	0% VAT for intra-SEZ goods exchanged within a zone and between zones		
			Customs duty deferral	0% customs duties on capital equipment and inputs inside a SEZ		
		وزارة الصناعة والثروة المعدنية Ministry of Industry and Mineral Resources	Exemption on industrial establishment imports	Custom duty exemption for raw materials, machinery, or spare parts	Companies established and operating in KSA	
		هيئة الزكاة والضريبة والجمارك Zakat, Tax and Customs Authority	GCC customs duty exemption	Customs exemption on imports from all Gulf Cooperation Council (GCC) countries		

SAR Specific areas of support available to investors (4/5)

Support package information

Support Package	Incentive	Provider (Entity)	Type	Description	Applicability	Link
Operational & Local Content Incentives	Operational Incentives	MODON; هيئة المدن والمناطق الاقتصادية الخاصة Economic Cities and Special Zones Authority	Discounted land prices	Discounted land rental rates in SEZs (from 0.27 USD/sq. m/year)	Local and international companies willing to localize in a SEZ	
				Discounted land rental rates in Industrial Cities (from 0.27 USD/sq. m/year)		
		هيئة المدن والمناطق الاقتصادية الخاصة Economic Cities and Special Zones Authority	Discounted utilities and Energy	Access to utilities for industrial use at discounted prices (electricity 0.05 USD/kWh, potable water 1.1–2.2 USD/cu. m, gas 1.27 USD/Mn BTU)		
			Saudization exemption (SEZ)	Exemption of Saudization requirements for SEZ residents		
	Local Content Incentives	وزارة الاستثمار Ministry of Investment	Regional HQ	10-year exemption of Saudization (Nitaqat) requirements 30-year exemption of corporate and withholding taxes	International companies willing to Relocate	
		هيئة المحتوى المحلي والمشتريات الحكومية Local Content & Government Procurement Authority	Guaranteed volume contracts (part of LIKT)	Government purchase guarantee (contract) offered to companies that establish production locally. Eligibility, guarantee volume, and duration are determined through a feasibility study	International companies willing to localize	
			Mandatory list	Requirement to procure products listed in the mandatory list from local companies	Companies established and operating in KSA	

SAR Specific areas of support available to investors (5/5)

Support package information

Support Package	Incentive	Provider (Entity)	Type	Description	Applicability	Link
Operational & Local Content Incentives	Local Content Incentives	هيئة المحتوى المحلي والمشتريات الحكومية Local Content & Government Procurement Authority	Local content score in commercial evaluation	Requirement to allocate 40% weight to local content within the commercial evaluation of project contracts	Companies established and operating in KSA	
			Price preference	Mechanism to grant national products at a price preference by adding 10% to foreign products in government tenders		

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SAR Prioritized Opportunities for Localization

Forecasted spend was calculated by analyzing spend & inventory data

Selection Criteria

1 Strategic Relevance
Focused only on categories directly related to rail operations, infrastructure, or maintenance.

2 Spend Value
Considered only items with cumulative spend exceeding 1 million SAR

3 Identified Opportunity
Items already included in SAR's current localization opportunity list were filtered out to avoid overlap

4 Localization %
Items already fully localized were excluded to avoid redundancy

5 Historical Demand
Items were assessed based on recurring or stable demand trends over the past years

List of Identified Opportunities

#	Category	Product / Service	Count of Items*	Past Spend	Est. Forecasted Spend* (2031)
1	RSM	Major Overhaul for Traction Motors	1	46.9 M	144 M
2		Basic Overhaul for Traction Motor	1	50.3 M	286.9 M
3		BRAKE SHOE	6	4.3 M	104.7 M
4		FILTER ELEMENT	39	14 M	39.5 M
5		SPRING	27	17.5 M	68.6 M
6		MODULE	26	11.7 M	37.5 M
7		VALVE RELIEF	12	13.9 M	44.7 M
8		WEAR PLATE	2	6.4 M	17.3 M
9		CABLE	1	6.3 M	20.2 M
10		FORK T1	1	6.1 M	15.4 M
11		BOV MS	1	4.7 M	13 M
12	RSM / TRK	Hoses	43	3 M	15.5 M
13	TRK	Crossing HELIX	1	5.5 M	31.6 M
14	MOW / RSM	Battery Storage	7	13.4 M	33 M
15	MOW	Machine Banks	1	3.8 M	13 M
16	S&T	Scanners	4	1 M	5.4 M
			Sum	208.8 M	890 M

*Forecasted demand was calculated by multiplying highest demand for item code per year by highest price across the years by 5 (years)

Count of items*: Items with different specifications that fall under same product description

Identified Localization Opportunities

ASASAT أساسات برنامج المحتوى المحلي Local Content Program

Major Overhaul for Traction Motors

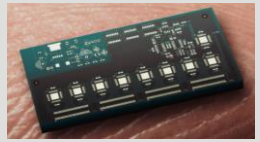
Basic Overhaul for Traction Motor

Brake Shoe

Filter Element

Spring

Module



Relief Valve

Wear Plate

Cable

Machine Banks

Fork T1

BOV (Bottom Outlet Valve)

Crossing Helix

Hoses

Battery Storage

Scanners

1

Major Overhaul for Traction Motors

A **major overhaul of traction motors** is a full maintenance process that restores these vital train components to near-original condition. Traction motors, which convert electrical energy into the motion that drives wheels, face heavy loads and wear over time, making periodic overhauls essential.

The process involves dismantling the motor, inspecting and refurbishing electrical windings and insulation, replacing worn mechanical parts, and then reassembling and testing the unit to meet safety and performance standards. This extends the motor’s service life, reduces downtime, and ensures reliable rail operations.

Major Overhaul for Traction Motors – Service

DEMAND FORECAST

POTENTIAL DEMAND

- High ●
- Medium ○
- Low ○

FORECAST

144 mn SAR till 2031

116 Major Overhauls Annually

DEMAND DRIVERS

- Fleet Expansion — ▼ H
- Overhaul Frequency — ▼ H

L M H

Other Sectors

- Industrial Machinery
- Ports & Maritime
- Aviation Ground Support

Cross Sector Demand

15 – 20%

Existing Demand

47 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness — ▼ L

L M H

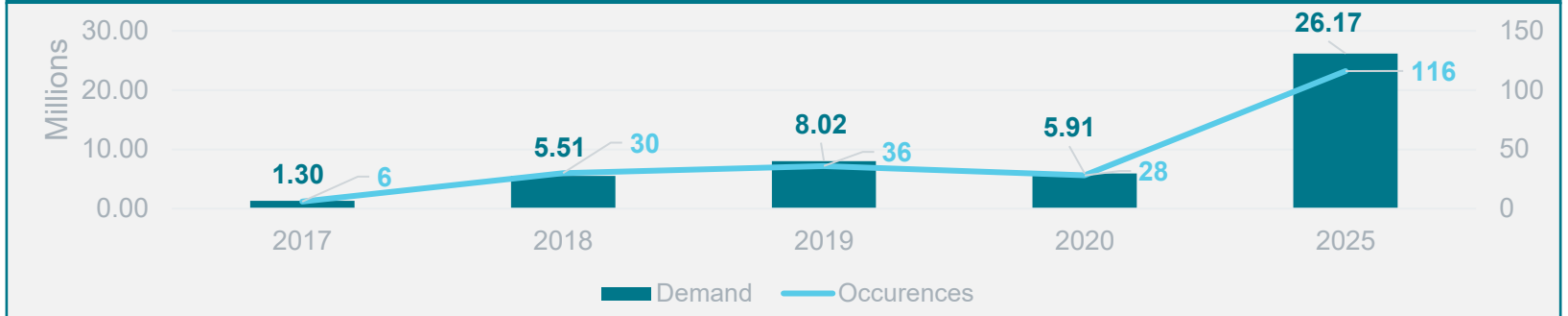
Very complex: requires motor rewinding, refurbishment, and advanced test benches. Would require global OEM partnership

OPPORTUNITIES

- *Currently performed abroad by OEMs, creating long lead times and high costs; local MRO hubs can significantly reduce downtime.*
- *There is opportunity for high demand on service for traction motor as the rail industry in the coming years is growing in KSA because of SAR's expanding projects, Riyadh Metro, and other demand generators.*
- *Opportunity to establish a regional center of excellence in traction motor maintenance serving GCC countries.*
- *Strong potential for OEM–local JV partnerships to transfer know-how and build workforce capability.*

SAR Major Overhaul for Traction Motors – Service

Previous Demand



Existing Supplier Base

Local

0

Global

2

Localization Opportunity Areas

Design & Engineering

- Overhaul standards
- Technical manuals
- Diagnostic systems

Sourcing

- Bearings
- Insulation materials
- Coils
- Lubricants

Maintenance

- Rewinding & Machining
- Refurbishment and reassembly of traction motors

Testing & Quality Assurance

- Assemble traction motor with core and windings
- Fill insulation oil
- Conduct required tests

After Sales Service

- Periodic Maintenance
- Preventive maintenance and support

2

Basic Overhaul for Traction Motors

A basic overhaul is a lighter form of maintenance carried out on traction motors between major overhauls. It includes partial dismantling, cleaning, and inspection of key parts such as bearings, insulation, and commutators.

Worn-out components are replaced, lubrication is renewed, and electrical tests are performed to ensure safe performance. This helps maintain motor reliability, prevents unexpected breakdowns, and extends the interval before a full major overhaul is required.

SAR Basic Overhaul for Traction Motors – Service

DEMAND FORECAST

POTENTIAL DEMAND

- High ●
- Medium ○
- Low ○

FORECAST

287 mn SAR till 2031

369 Basic Overhauls Annually

DEMAND DRIVERS

- Fleet Expansion
- Overhaul Frequency

L M H

Other Sectors

- Industrial Machinery
- Ports & Maritime
- Mining & Construction

Cross Sector Demand

25 – 35%

Current Consumption

50 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

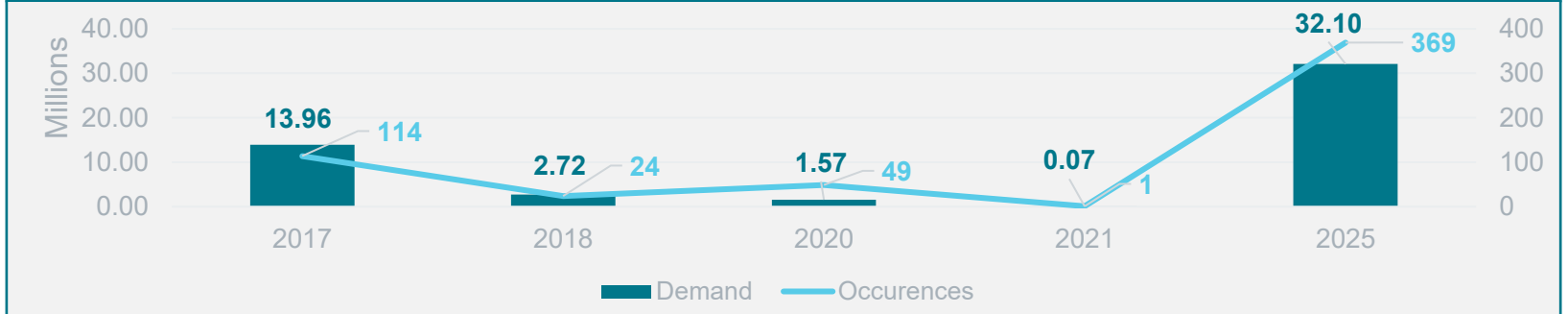
OPPORTUNITIES

- *Serves as a localization entry point (lower technical complexity vs. major overhauls).Can be implemented by local workshops in partnership with OEMs, reducing dependence on overseas facilities.*
- *Provides quick wins in cost savings and reduced downtime for SAR and other operators.*
- *Builds local workforce skills and technical expertise, laying the foundation for future major overhaul localization.*
- *Potential for KSA to position itself as a regional hub for light-to-medium traction motor servicing.*

Traction motor repair workshops exist in KSA but with a limited scope (Cleaning, bearing replacement, etc.) Not all rail-grade safety standards are available.

SAR Basic Overhaul for Traction Motors – Service

Previous Demand



Existing Supplier Base

Local

3

Global

3

Localization Opportunity Areas

Design & Engineering

- Maintenance procedures and standards
- Service manuals for basic overhaul

Sourcing

- Bearings
- Brushes and insulation materials
- Lubricants

Maintenance

- Disassembly and inspection of traction motors
- Cleaning, lubrication, and minor part replacements
- Refurbishment of parts

Testing & Quality Assurance

- Assemble traction motor with core and windings
- Fill insulation oil
- Conduct required tests

After Sales Service

- Periodic Maintenance
- Preventive maintenance and support

3

Brake Shoe

Brake shoes are critical safety components that apply friction against the wheel tread to slow or stop the train. Over time, they wear down due to constant use and high pressure during braking.

Their periodic replacement ensures effective braking performance, shorter stopping distances, and compliance with safety standards.

SAR Brake Shoe – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High ○
- Medium ●
- Low ○

2031 FORECAST

105 mn SAR till 2031

258 k units Annually

DEMAND DRIVERS

	L	M	H
Fleet Expansion			▼
Mileage & Replacement Freq.			▼
Environmental Conditions			▼

Other Sectors

- Automotives
- Mining & Construction
- Industrial Machinery

Cross Sector Demand

80 – 90%

Current Consumption

19.2 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

	L	M	H
Local Supplier Readiness		▼	

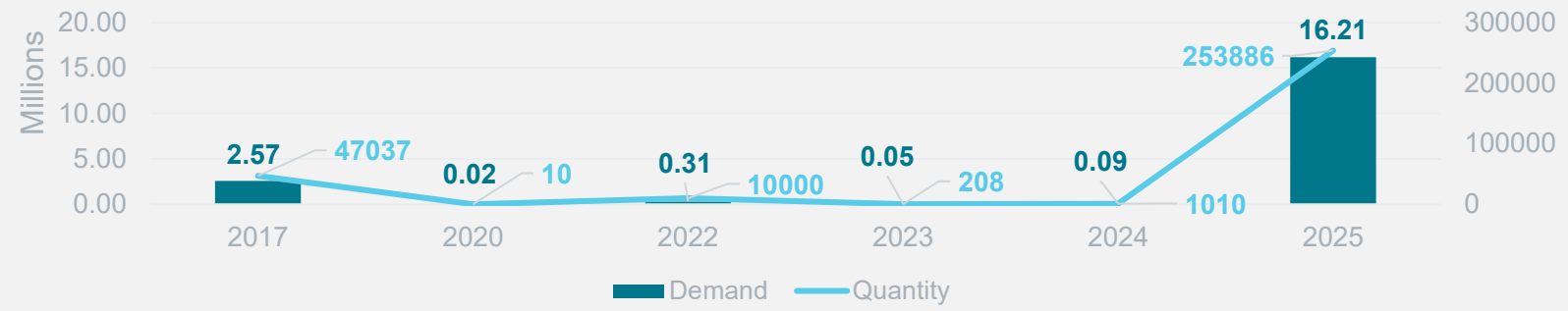
KSA has foundry industries, but adaptation to rail spec is missing

OPPORTUNITIES

- *Brake shoes are currently imported; local production will reduce dependency and ensure availability.*
- *There is opportunity for high demand on brake shoes as the rail industry in KSA is expanding due to SAR's projects, Riyadh Metro, and other demand generators.*
- *Easy localization opportunity as brake shoes are low-tech consumables, ideal for SME entry.*
- *Local steel and casting industries can directly support localization.*

SAR Brake Shoe – Products

Previous Demand



Existing Supplier Base

Local

0

Global

11

Localization Opportunity Areas

Design & Engineering

- Brake shoe specifications and design standards

Sourcing

- Steel backing plates
- Friction materials (powders, fibers)
- Resins and binding agents

Manufacturing

- All required fabrication and finishing processes including: Casting, pressing, machining, bonding, etc.

Assembly & Testing

- Assemble manufactured parts into final brake shoe
- Conduct required tests

After Sales Service

- Periodic Maintenance
- Preventive maintenance and support

4

Filter Element

Filter elements are used in locomotives and rolling stock to protect engines, compressors, and auxiliary systems from dust, dirt, and contaminants. Whether installed in air, fuel, or oil systems, filters safeguard the performance and longevity of equipment.

Regular replacement during scheduled maintenance ensures efficiency, prevents costly failures, and supports environmental compliance.

SAR Filter Element – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

40 mn SAR till 2031

9.6 k units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Automotives
- Aviation
- Mining & Construction
- Industrial & Energy

Cross Sector Demand

90 – 95%

Current Consumption

14 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

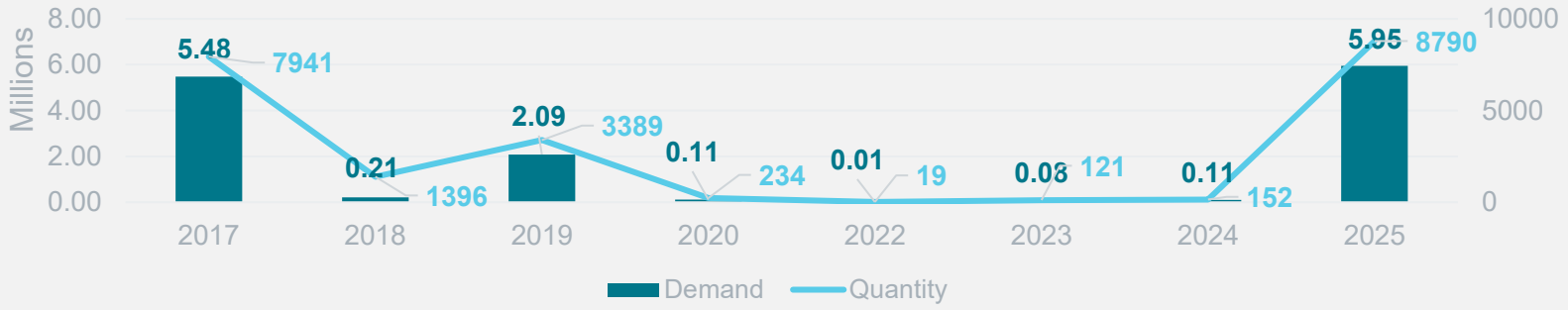
Considered as a quick win, with minimal technology transfer.
Base industry exists, but rail grades is required.

OPPORTUNITIES

- *Filters are consumables with high recurring demand due to mileage and harsh conditions.*
- *Currently imported; local production would cut cost, reduce lead times, and improve availability.*
- *Existing domestic automotive/industrial filter factories can adapt for rail standards, making this a quick localization win.*
- *Quick localization opportunity since existing automotive/industrial filter factories can adapt production to rail standards.*
- *With SAR, Riyadh Metro, and other demand generators growing their fleets, demand will steadily increase in the coming years.*

SAR Filter Element – Products

Previous Demand



Existing Supplier Base

Local

1

Global

13

Localization Opportunity Areas

Design & Engineering

- Filter design specifications and performance standards

Sourcing

- Filter media (paper, synthetic fibers, mesh, etc.)
- Casings and housings (metal or plastic)
- Sealants and adhesives

Manufacturing

- Fabrication processes (cutting, pleating, molding, bonding, etc.)

Assembly & Testing

- Assemble filter media into casings
- Conduct required tests

After Sales Service

- Replacement and Recurring Maintenance Support

5

Spring

Springs play a vital role in train bogies and braking systems by absorbing shocks, supporting loads, and maintaining stability on the tracks. With continuous stress and vibration, springs gradually lose elasticity or may fracture.

Timely renewal of springs is essential to ensure ride comfort, protect other components from excessive wear, and maintain overall safety.

SAR Spring – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High ●
- Medium ○
- Low ○

2031 FORECAST

69 mn SAR till 2031

30 k units annually

DEMAND DRIVERS

	L	M	H
Fleet Expansion			▼
Mileage & Replacement Freq.			▼
Environmental Conditions		▼	

Other Sectors

- Automotives
- Industrial Machinery

Cross Sector Demand

75 – 80%

Current Consumption

17.5 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

	L	M	H
Local Supplier Readiness		▼	

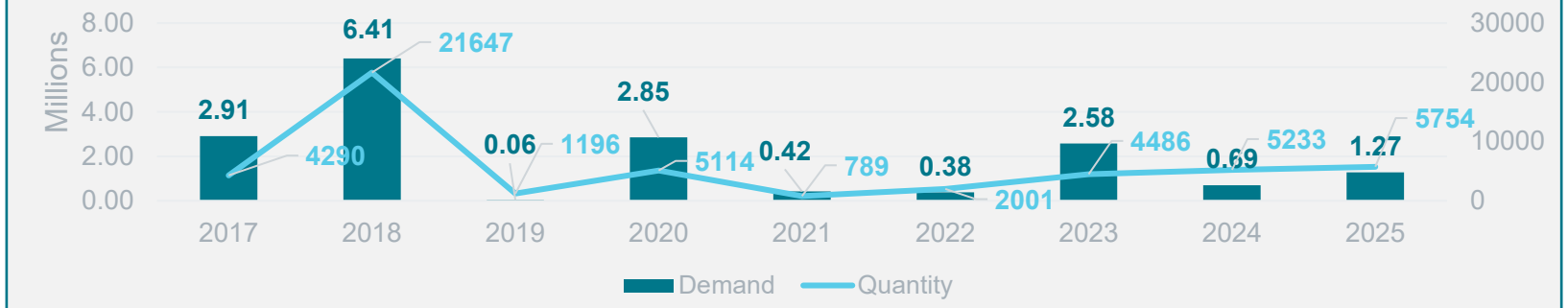
Local suppliers exist for industrial valves; however, rail-grade quality & certification gaps remain.

OPPORTUNITIES

- *Springs are critical components in rail bogies and suspension systems, requiring regular replacement under heavy freight loads and passenger operations.*
- *High localization potential given availability of local steel and fabrication industries; requires upgrades in precision processes and quality standards.*
- *Cross-sector synergies with automotive, mining, and construction equipment increase economies of scale and justify local investment.*
- *Recurring replacement demand creates an opportunity for local aftermarket supply chains, reducing reliance on imports*

SAR Spring – Products

Previous Demand



Existing Supplier Base

Local

1

Global

12

Localization Opportunity Areas

Design & Engineering

- Spring specifications and performance standards

Sourcing

- Spring steels
- Lubricants and protective coatings

Manufacturing

- Forming and coiling of spring steel
- Heat treatment and surface finishing

Assembly & Testing

- Conduct required tests

After Sales Service

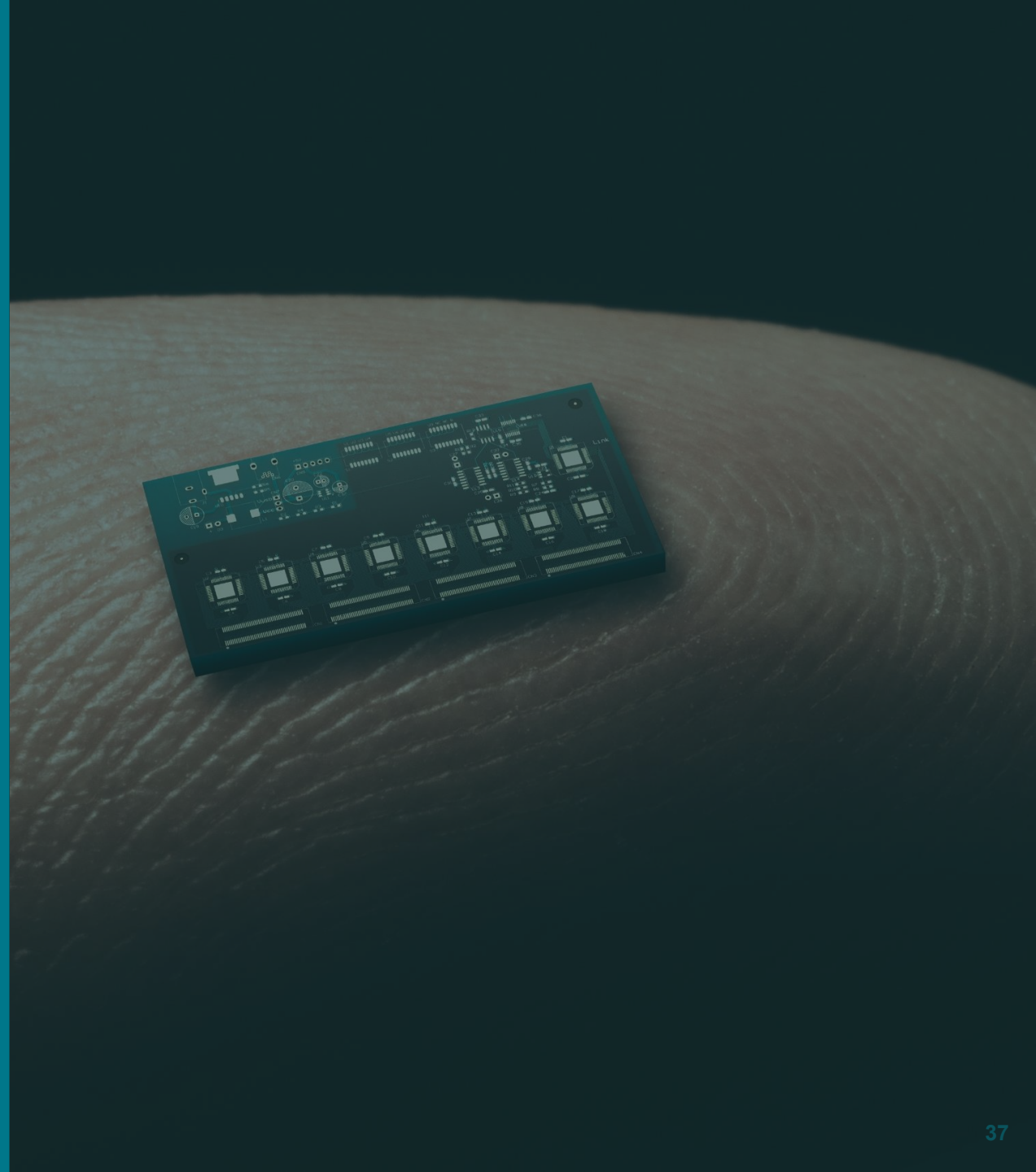
- Replacement and Recurring Maintenance Support

6

Module

Modules are sub-assemblies that form part of electronic, signaling, or traction control systems in rail vehicles. These can include control boards, converters, or communication units. When modules age or fail, they compromise the performance of larger systems.

Overhauling or replacing modules ensures uninterrupted train operations, reliability of control systems, and reduced downtime.



SAR Module – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

38 mn SAR till 2031

244 k units annually

DEMAND DRIVERS

	L	M	H
Fleet Expansion			▼
Technology Upgrades		▼	
Reliability & Safety Compliance			▼

Other Sectors

- Industrial Automation
- Energy / Power Controls
- Aviation Electronics

Cross Sector Demand

10 – 15%

Current Consumption

11.7 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

	L	M	H
Local Supplier Readiness			▼

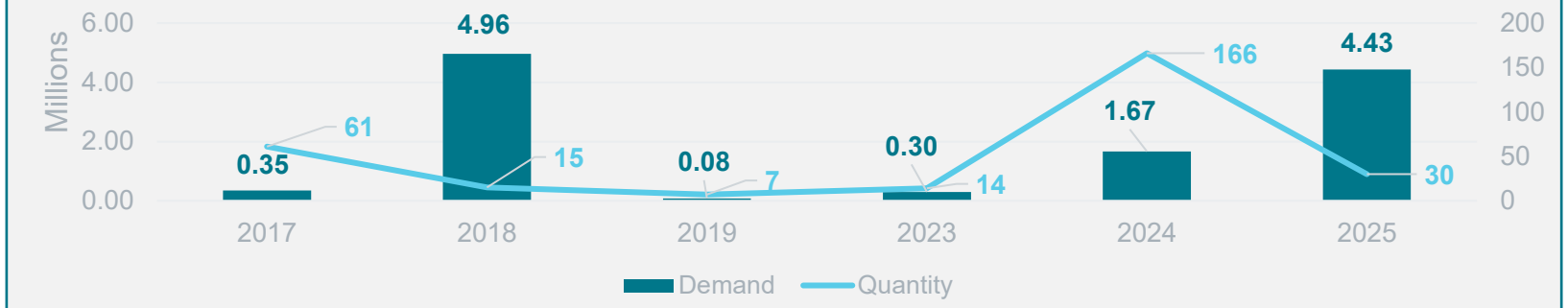
Would require OEM partnerships and investment in specialized facilities.

OPPORTUNITIES

- *High dependency on imports today; establishing local production, repair and overhaul centers would significantly reduce downtime and operating costs.*
- *Partnerships with OEMs are essential to transfer technology, provide certification, and build local electronic maintenance capability.*
- *Localization would align with Vision 2030's advanced manufacturing and digital industries agenda, positioning KSA as a regional hub for rail electronics support.*

SAR Module – Products

Previous Demand



Existing Supplier Base

Local

1

Global

7

Localization Opportunity Areas

Design & Engineering

- Electronic design specifications and software integration
- Compliance with rail safety standards

Sourcing

- Printed circuit boards (PCBs)
- Electronic components (chips, capacitors, resistors, connectors)
- Casings and housings

Manufacturing

- Assembly of electronic components onto boards
- Preparation of wiring and harness connections

Assembly & Testing

- Integration of boards into housings
- Software and signal validation
- Conduct required tests

After Sales Service

- Diagnostic and repair services
- Module replacement and software updates

7

Relief Valve

Relief valves regulate air and hydraulic pressures within braking and auxiliary systems. They protect equipment from overpressure conditions that could cause damage or system failure.

Regular calibration and replacement of relief valves as part of scheduled maintenance ensure consistent performance and safeguard both rolling stock and passenger safety.

SAR Relief Valve – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

45 mn SAR till 2031

950+ Units Annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Aviation Hydraulics
- Mining & Construction
- Industrial & Energy

Cross Sector Demand

60 – 70%

Current Consumption

14 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

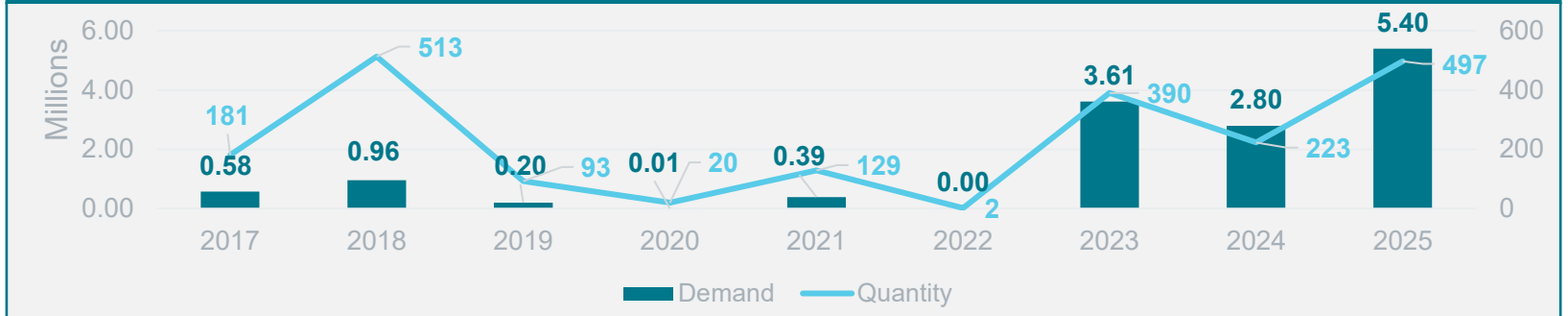
Local machining and pressure-control know-how exists but lacks rail-grade certification

OPPORTUNITIES

- *KSA already has a strong valve and fittings manufacturing base in oil & gas and petrochemicals, with precision machining and pressure-testing capabilities.*
- *With limited adaptation and OEM support, local suppliers can upgrade to rail-certified relief valves that meet safety and reliability standards.*
- *Localization would reduce reliance on imports, shorten lead times for replacements, and create export opportunities to GCC rail and industrial markets.*

SAR Relief Valve – Products

Previous Demand



Existing Supplier Base

Local

0

Global

12

Localization Opportunity Areas

Design & Engineering

- Relief valve specifications and performance standards

Sourcing

- Steel and metal alloys
- Seals and gaskets

Manufacturing

- Machining and fabrication of valve parts

Assembly & Testing

- Assembly of body, seals, and springs
- Conduct required tests

After Sales Service

- Periodic Maintenance
- Preventive maintenance and support

8

Wear Plate

Wear plates are protective parts installed in bogies, couplers, and other high-friction areas to prevent damage to main structures. They absorb the friction and wear that would otherwise affect expensive assemblies.

Replacement of worn plates is a cost-effective way to maintain structural integrity and ensure smooth train operations.

SAR Wear Plate – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

17 mn SAR till 2031

13.7+ k units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Cement & Steel Industry
- Mining & Construction
- Industrial & Energy

Cross Sector Demand

75 – 85%

Current Consumption

6.4 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

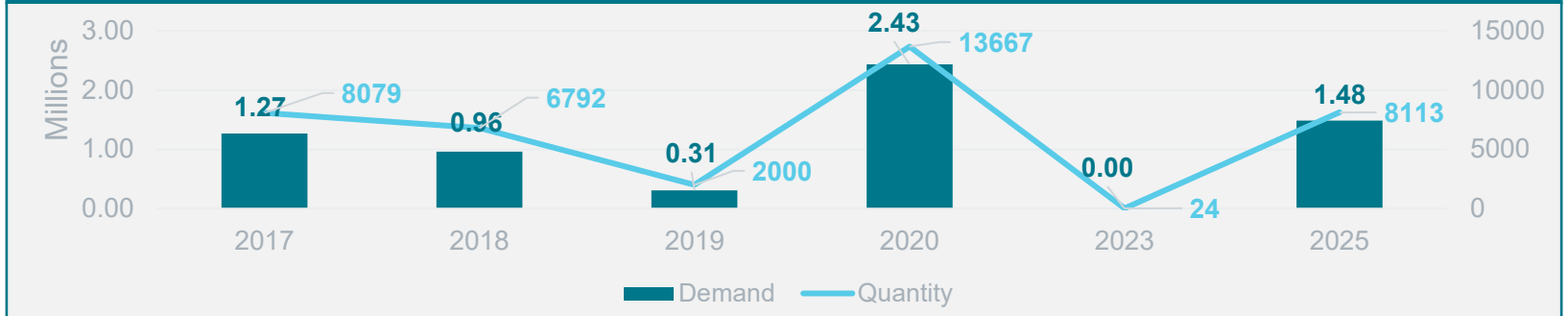
Considered as Quick win as KSA has steel, casting, and fabrication industries capable of producing wear plates

OPPORTUNITIES

- *A consumable, high-wear component made from steel and alloys, ideally suited to KSA's domestic steel mills and foundries.*
- *Easy to localize, with low technical barriers, allowing SMEs and steel players to quickly enter the rail supply chain.*
- *High potential for regional exports, positioning KSA as a hub for cost-effective rail consumables in GCC and MENA.*
- *Supports Vision 2030 objectives by stimulating SME participation and industrial diversification.*

SAR Wear Plate – Products

Previous Demand



Existing Supplier Base

Local

1

Global

6

Localization Opportunity Areas

Design & Engineering

- Wear Plate specifications and design standards

Sourcing

- High-strength steel plates
- Coating and surface treatment materials

Manufacturing

- Cutting and shaping of steel plates
- Heat treatment and hardening processes

Assembly & Testing

- Conduct required tests

After Sales Service

- Periodic Replacement
- Preventive maintenance and support

Cable

Cables are the nervous system of rail vehicles, carrying power and signals between traction, braking, and control systems. Exposure to heat, vibration, and environmental factors causes insulation to degrade over time.

Regular inspection and replacement of cables prevent short circuits, failures, and safety hazards, ensuring reliable operation of all train systems.

SAR Cable – Products

DEMAND FORECAST

POTENTIAL DEMAND

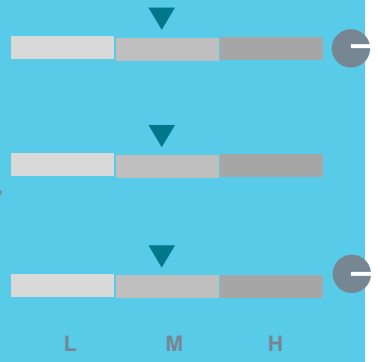
- High
- Medium
- Low

2031 FORECAST

20 mn SAR till 2031

1.9+ k units annually

DEMAND DRIVERS



Other Sectors


Power Distributions


Telecom & Energy


Industrial & Energy

Cross Sector Demand

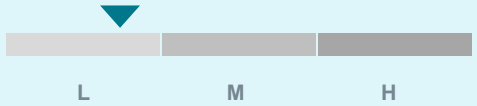
60-70%

Current Consumption

6.3 mn SAR

2017 – 2025

KSA SUPPLIER READINESS



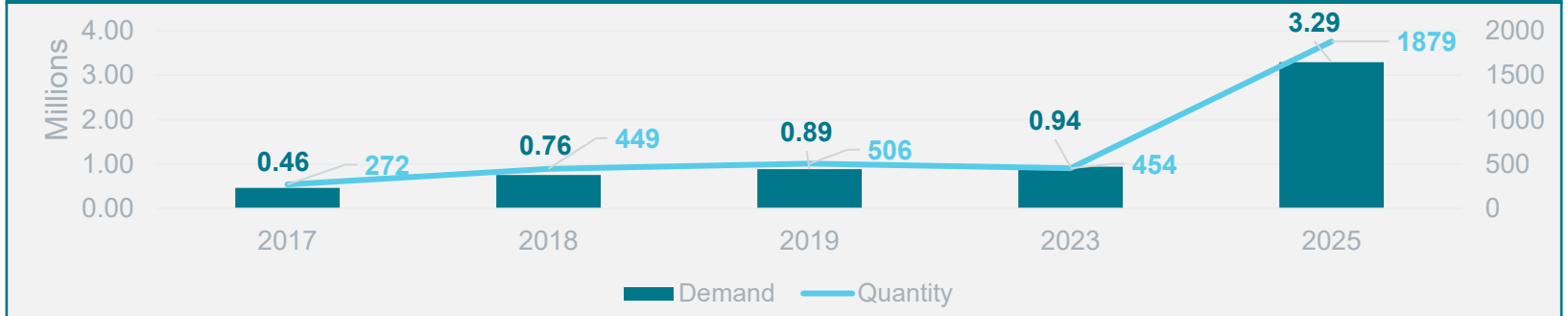
Would require OEM support and technology transfer as it requires rail specific requirements

OPPORTUNITIES

- *Specialized product with stringent requirements for fire resistance, flexibility, and durability under harsh desert environments.*
- *KSA has a developed cable manufacturing sector (serving power, telecom, and construction) that could adapt capabilities with technology transfer from OEMs (e.g., Wabtec).*
- *Local assembly and testing hubs could be established, creating supply resilience and opportunities to scale into other rail and metro projects across GCC.*
- *Localization would reduce costs and ensure faster response times for replacements and upgrades.*

SAR Cable – Products

Previous Demand



Existing Supplier Base

Local

0

Global

2

Localization Opportunity Areas

Design & Engineering

- Cable specifications and design standards

Sourcing

- Copper conductors
- Insulation and protective materials
- Connectors

Manufacturing

- Extrusion and insulation of cables

Assembly & Testing

- Conduct required tests including but not limited to: (Electrical performance and safety testing, durability and fire-resistance checks)

After Sales Service

- Replacement, Installation and Maintenance Support

Fork T1

Fork components, such as the “Fork T1,” are mechanical elements within bogies or coupler systems that support alignment and load transfer. These parts experience high mechanical stresses and wear during service.

Timely renewal helps maintain stability, ensures smooth coupling or bogie performance, and avoids costly structural damage.

SAR Fork T1 (Bogie / Suspension Component) – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

15.4 mn SAR till 2031

100+ units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Heavy Equipment
- Construction Machinery

Cross Sector Demand

40 – 45%

Current Consumption

6.1 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

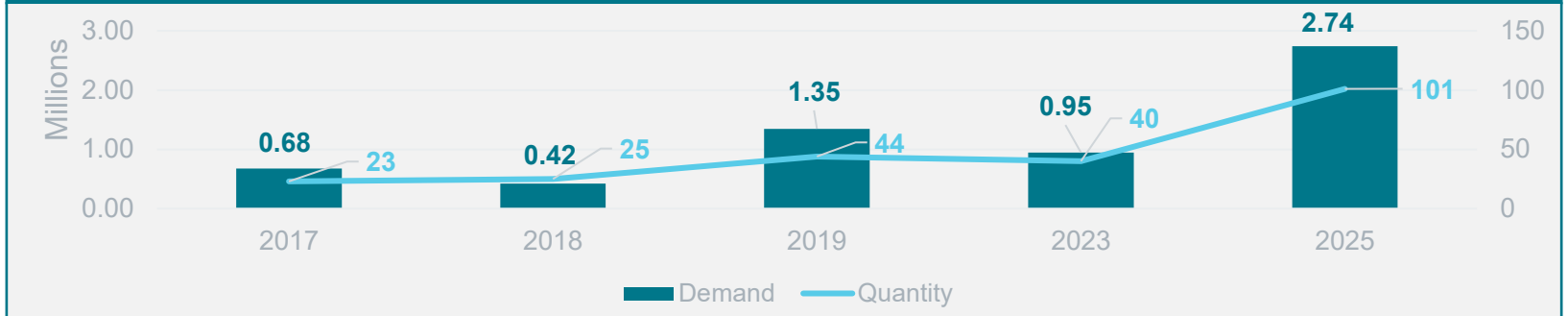
OPPORTUNITIES

- *KSA has an established forging and fabrication base that can be leveraged for rail parts production.*
- *To meet rail standards, local suppliers would need to upgrade capabilities in precision machining and fatigue testing, which can be achieved through targeted OEM partnerships and technology transfer.*
- *Quick-win localization potential as a low-to-medium complexity component, enabling SMEs to enter the rail supply chain while developing long-term expertise in rail-certified manufacturing.*
- *Reduces import dependence for basic parts and helps diversify domestic fabrication sector capabilities*

Local forging & fabrication industries exist, but would require precise machining and fatigue testing capabilities to meet rail standards

SAR Fork T1 (Bogie / Suspension Component) – Products

Previous Demand



Existing Supplier Base

Local

0

Global

3

Localization Opportunity Areas

Design & Engineering

- Fork T1 specifications and design standards

Sourcing

- Alloy steel materials
- Coatings for protection

Manufacturing

- Forging and precision machining
- Surface finishing and treatment

Assembly & Testing

- Conduct required tests

After Sales Service

- Replacement, Installation and Maintenance Support

11

BOV (Bottom Outlet Valve)

The Bottom Outlet Valve is a critical fitting on tank wagons and tank containers. Installed at the lowest point, it provides tight shut-off during transport and enables safe, controlled discharge of liquids or powders during unloading.

Continuous service can cause seal and seat wear, corrosion, or product build-up leading to sticking or leakage. Regular inspection, cleaning, and timely seal replacement are essential to prevent spills and ensure operational and environmental safety.

SAR BOV (Bottom Outlet Valve) – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

13 mn SAR till 2031

140+ units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Oil and Gas & Petrochemicals
- Water & wastewater Mngt.
- Agriculture

Cross Sector Demand

60-70%

Current Consumption

4.7 mn SAR

2017 – 2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

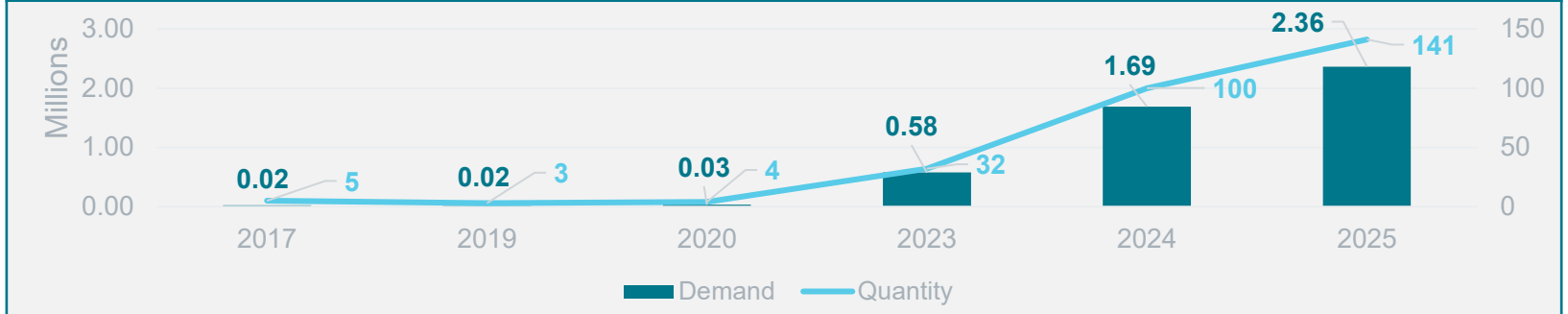
OPPORTUNITIES

- *Shares strong synergies with the valve manufacturing industry in KSA, which already produces industrial-grade valves.*
- *Requires adaptation to rail-specific standards (UIC/EN/AREMA) for safety and compliance.*
- *Opportunity for local SMEs and valve manufacturers to diversify into rail, supported by OEM knowledge transfer.*

Local companies already produce industrial-grade valves but would need technology transfer and OEM partnerships to adapt designs, materials, and testing to rail specifications

SAR BOV (Bottom Outlet Valve) – Products

Previous Demand



Existing Supplier Base

Local

0

Global

2

Localization Opportunity Areas

Design & Engineering

- BOV specifications and design standards

Sourcing

- Cast steel and metal alloys
- Seals and gaskets

Manufacturing

- Casting and machining of valve components

Assembly & Testing

- Assembly of body, seals, and mechanisms
- Conduct required tests including but not limited to (Leaking and pressure testing)

After Sales Service

- Replacement, Installation and Maintenance Support

Crossing Helix

Crossing Helix is a critical part of a railway turnout (switch/point system), located at the crossing (where two rails intersect). It is the precision-machined steel insert that guides train wheels safely across the gap at the rail intersection.

Regular inspection, repair, or replacement is essential to ensure track safety, smooth operations, and to reduce derailment risk.

SAR Crossing Helix – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

31.6 mn SAR till 2031

30+ units annually

DEMAND DRIVERS

- Track Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Automotives
- Mining & Construction
- Industrial & Energy

Cross Sector Demand

60-70%

Current Consumption

5.5 mn SAR

2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

Would require OEM partnerships and investment in specialized facilities.

OPPORTUNITIES

- *Strong synergies with domestic construction steel and heavy fabrication industries, which can be adapted to produce rail-grade crossing components*
- *With OEM support and knowledge transfer, local suppliers can upgrade to rail-certified crossing helix that meet safety and reliability standards.*
- *Potential to establish KSA as a regional supplier of crossing systems, exporting to GCC rail operators as demand grows with regional network expansion*

SAR Crossing Helix – Products

Previous Demand

Existing Supplier Base

Local

0

Global

1

Localization Opportunity Areas

Design & Engineering

- Crossing Helix specifications and design standards

Sourcing

- High-strength steel and alloys
- Materials for surface hardening

Manufacturing

- Casting and machining of crossing components
- Heat treatment and surface finishing

Assembly & Testing

- Conduct required tests

After Sales Service

- Replacement, Installation and Maintenance Support

13

Hoses

Hoses are essential components across railway systems, serving multiple functions including air brake systems, fuel transfer, hydraulic control, cooling, and dust extraction. They are manufactured in a variety of materials such as rubber, steel, PVC, and Teflon, designed to withstand high pressure, temperature, and environmental stress. Railway hoses ensure safe and reliable operations in locomotives, rolling stock, and track maintenance machines. Failures can result in safety risks, downtime, and increased maintenance costs.

Regular inspection, replacement, and adherence to OEM specifications are critical to ensure system integrity, minimize leakage, and reduce operational disruptions.

SAR Hoses – Products

DEMAND FORECAST

POTENTIAL DEMAND

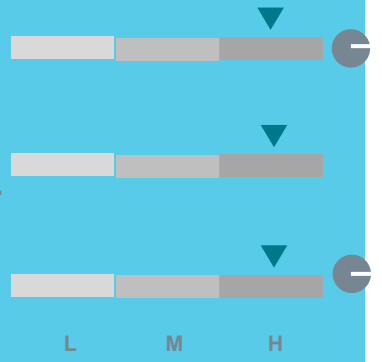
- High
- Medium
- Low

2031 FORECAST

15.5 mn SAR till 2031

21+ k units annually

DEMAND DRIVERS



Other Sectors

Cross Sector Demand

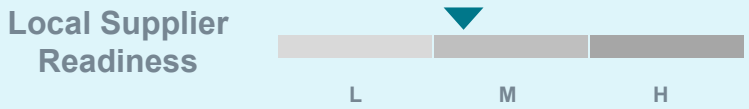
70-80%

Current Consumption

3 mn SAR

2025

KSA SUPPLIER READINESS



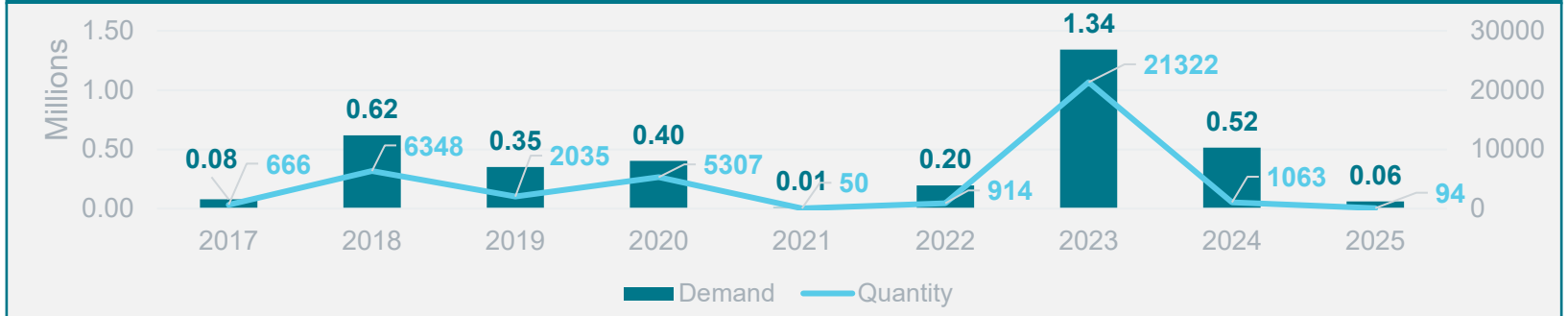
OPPORTUNITIES

- *Strong synergies with domestic rubber, plastics, and steel processing industries that can be adapted to produce rail-grade hoses.*
- *With OEM support and knowledge transfer, local suppliers can manufacture certified hoses (air, hydraulic, brake, and fuel) that meet rail safety standards.*
- *Potential to establish KSA as a hub for hose production, with opportunities to export to GCC rail and industrial sectors*

Local suppliers have basic capabilities in rubber and plastics but require OEM partnerships and investment in specialized facilities (extrusion, braiding, and testing) to meet rail-grade standards

SAR Hoses – Products

Previous Demand



Existing Supplier Base

Local

3

Global

27

Localization Opportunity Areas

Design & Engineering

- Hose specifications and design standards for rail applications (air brake, hydraulic, fuel, and cooling)

Sourcing

- Rubber compounding and reinforcement materials.
- Steel wires, plastics, and specialty polymers (e.g., Teflon, PVC).

Manufacturing

- Extrusion, braiding, and molding of hoses.
- Surface finishing, coupling integration, and high-pressure assembly.

Assembly & Testing

- Pressure, leakage, and endurance testing to rail standards.

After Sales Service

- Replacement, installation, tagging, and maintenance support.

14

Battery Storage

Battery Storage is a critical component in railway operations, providing reliable backup and primary power supply for locomotives, rolling stock, and track maintenance equipment. Rail-specific storage batteries are engineered to withstand heavy vibration, deep discharge cycles, and extreme operating conditions found in railway environments.

Regular inspection, charging, and replacement are essential to ensure safety, prevent system failures, and extend the service life of rolling stock and auxiliary equipment.

Battery Storage – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

33 mn SAR till 2031

4.7+ k units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Automotives
- Telecom
- Renewable Energy

Cross Sector Demand

65-75%

Current Consumption

13.4 mn SAR

2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

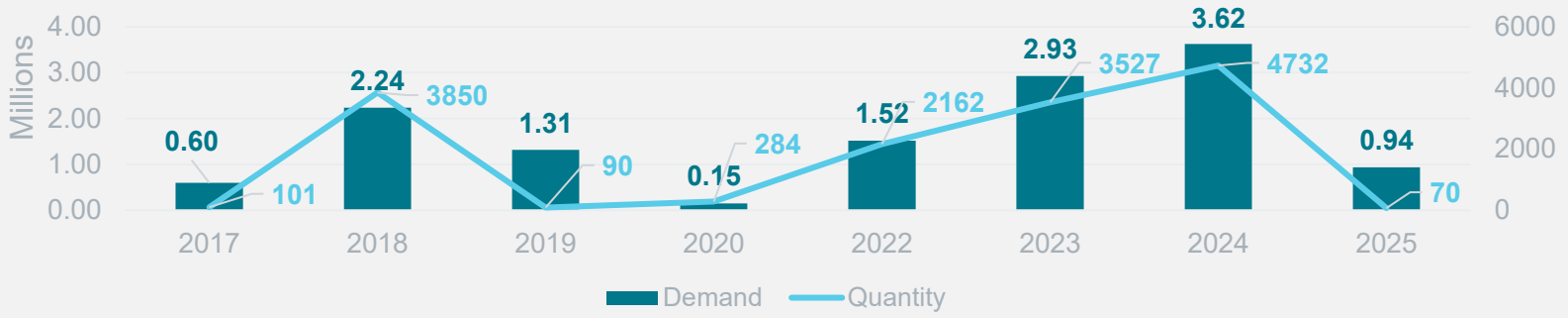
OPPORTUNITIES

- *Strong synergies with domestic automotive and industrial battery manufacturers that can be adapted to rail requirements.*
- *With OEM support and technology transfer, local suppliers can produce certified locomotive and auxiliary batteries that meet international rail standards.*
- *Potential to develop KSA as a regional hub for heavy-duty rail batteries, with export opportunities to GCC and wider industrial markets.*

Local companies produce automotive and industrial batteries, but adaptation to rail-grade requirements would require OEM partnerships

Battery Storage – Products

Previous Demand



Existing Supplier Base

Local

2

Global

15

Localization Opportunity Areas

Design & Engineering

- Rail-specific battery specifications and design standards

Sourcing

- Lead, lithium, and other active materials.
- Casings, separators, and connectors.

Manufacturing

- Assembly of battery cells and modules.
- Formation, charging, and performance conditioning.

Assembly & Testing

- Conduct required rail standard tests including but not limited to (Cycle Life, Capacity, Vibration)

After Sales Service

- Replacement, Installation and Maintenance Support

Machine Banks

Machine Banks are critical electrical assemblies installed on track maintenance machines such as tampers, stabilizers, and ballast regulators. They serve as the central power and control units, integrating multiple circuits for hydraulic, pneumatic, and electronic functions.

Designed to handle heavy-duty operations, machine banks ensure stable power distribution, safe switching, and reliable coordination of machine subsystems. Their performance directly impacts the availability, safety, and efficiency of track maintenance fleets.

Regular inspection, replacement of worn-out components, and adherence to OEM standards are essential to minimize downtime and extend machine life.

SAR Machine Banks – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High ○
- Medium ●
- Low ○

2031 FORECAST

13 mn SAR till 2031

8+ units annually

DEMAND DRIVERS

- Fleet Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Utilities
- Industrial & Energy

Cross Sector Demand

60-70%

Current Consumption

3.8 mn SAR

2025

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

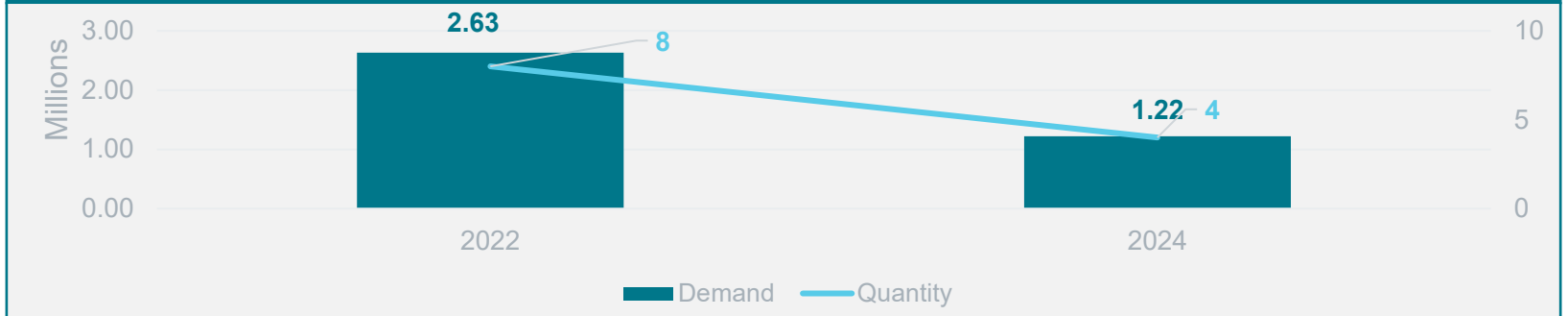
Would require OEM partnerships and investment in specialized facilities to produce machine banks with rail specifications

OPPORTUNITIES

- *Strong synergies with domestic industries producing electrical and mechanical assemblies.*
- *With OEM support and knowledge transfer, suppliers can build certified machine banks that meet safety and reliability standards for tamping and track maintenance machines.*
- *Potential to localize production in KSA, reducing import reliance and enabling exports to regional rail operators.*

SAR Machine Banks – Products

Previous Demand



Existing Supplier Base

Local

0

Global

1

Localization Opportunity Areas

Design & Engineering

- Specifications and design standards for machine bank assemblies

Sourcing

- Electrical components, switchgear, and control units.
- Protective casings and connectors.

Manufacturing

- Assembly of electrical banks and integration of subsystems.
- Wiring, cabling, and safety mechanisms.

Assembly & Testing

- Conduct rail-specific testing, including functional, endurance, and safety assessments under vibration, thermal, and load conditions.

After Sales Service

- Replacement, Installation and Maintenance Support

16

Scanners

Scanners are advanced monitoring devices installed across railway infrastructure and rolling stock to detect heat, vibration, and other anomalies in axles, bearings, and signaling systems. They play a critical role in health monitoring, fault detection, signaling integrity, and overall safety assurance.

By enabling early detection of risks, scanners support preventive maintenance, reduce operational failures, and ensure safe, uninterrupted railway operations.

SAR Scanner – Products

DEMAND FORECAST

POTENTIAL DEMAND

- High
- Medium
- Low

2031 FORECAST

5.4 mn SAR till 2031

10+ units annually

DEMAND DRIVERS

- Track Expansion
- Mileage & Replacement Freq.
- Environmental Conditions

L M H

Other Sectors

- Utilities
- Aerospace Safety Systems
- Industrial Automation

Cross Sector Demand

60-70%

Current Consumption

1 mn SAR

2023 - 2024

KSA SUPPLIER READINESS

Local Supplier Readiness

L M H

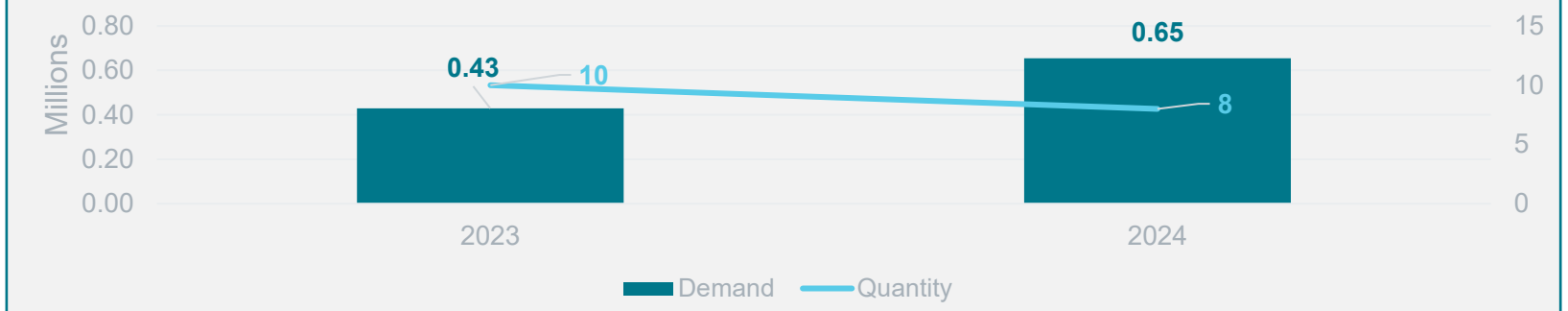
OPPORTUNITIES

- *Strong synergies with local industries in electronics and sensor manufacturing can support partial localization of scanner components.*
- *With OEM support and knowledge transfer, Saudi suppliers can develop capabilities for calibration, testing, and servicing of scanners that meet rail-specific standards.*
- *Potential to establish local facilities for assembly and after-sales service, reducing dependence on imports and enabling future exports to regional rail operators.*

Would require OEM partnerships, investment in calibration and testing facilities, and development of local capabilities in electronics and sensor integration to meet rail-specific standards.

SAR Scanner – Products

Previous Demand



Existing Supplier Base

Local

0

Global

3

Localization Opportunity Areas

Design & Engineering

- Specifications and design standards for scanner assemblies and housings

Sourcing

- Electronic sensors, cables, connectors, and protective casings

Manufacturing

- Assembly of scanner units and integration with signaling systems

Assembly & Testing

- Conduct rail-specific testing, including but not limited to functional, endurance, vibration, load, and thermal assessments tests

After Sales Service

- Calibration, replacement, installation, and maintenance support

Thank You

SAR.COM.SA