

Nonmetallic

Materials & Oil and Gas Workshop

Business Opportunities Review

This presentation may contain certain forward-looking statements. All statements other than statements relating to historical facts are, or may be deemed to be, forward-looking statements. Forward-looking statements include, but are not limited to, statements related to future events or to the company's future financial or operating performance such as the company's expectations and projections regarding its growth, initiatives and strategies, capital expenditures and investments, customer and partner relationships, major projects and product development. These statements may generally, but not always, be identified by the use of words such as "target," "goal," "aim," "believe," "expect," "commit," "anticipate," "intend," "estimate," "should," "will," "shall," "may," "likely," "plan," "strategy," "initiative," "project," "outlook" or similar expressions, including variations and the negatives thereof.

Forward-looking statements reflect the company's expectations, beliefs, estimates, forecasts, projections and assumptions, only as of the date such statements are made, and are subject to known and unknown risks, uncertainties and other important factors beyond the company's control that could cause the company's actual results, performance or achievements to be materially different from the expected results, performance, or achievements expressed or implied by such statements. Factors that could cause actual results to differ materially from the company's expectations include, among other things, the following: global supply, demand and price fluctuations of oil, gas and petrochemicals; global economic conditions; competition in the industries in which the company operates; climate change concerns, weather conditions and related impacts on the global demand for hydrocarbons and hydrocarbon-based products; risks related to the company's ability to successfully meet its ESG targets, including its failure to fully meet its GHG emissions reduction targets by 2050; conditions affecting the transportation of products; operational risk and hazards common in the oil and gas, refining and petrochemicals industries; the cyclical nature of the oil and gas, refining and petrochemicals industries; political and social instability and unrest and actual or potential armed conflicts in the MENA region and other areas; natural disasters and public health pandemics or epidemics; the management of the company's growth; the management of the company's subsidiaries, joint operations, joint ventures, associates and entities in which it holds a minority interest; exposure to inflation, interest rate risk and foreign exchange risk; risks related to operating in a regulated industry and changes to oil, gas, environmental or other regulations that impact the industries in which the company operates; legal proceedings, international trade matters, and other disputes or agreements; and other risks and uncertainties that could cause actual results to differ from the forward-looking statements in this presentation, as set forth in the latest periodic reports filed by the Saudi Arabian Oil Company ("Aramco") with the Saudi Exchange. For additional information on the potential risks and uncertainties that could cause actual results to differ from those presented please see Aramco's most recent annual periodic report filed with the Saudi Exchange and any subsequent filings thereto.

We undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by this cautionary statement.

Workshop Agenda

No.	Title of the Investment Opportunity	Presenters
	Introduction	Sara Al Dolaijan
1	Epoxy Resin	Dakhel Al Dakhil
2	Polyurethane	Dakhel Al Dakhil
3	Glass Fiber	Faisal Al Shammari
4	3D Printing Filament Manufacturing	Faisal Al Shammari
5	Carbon Fiber Pressure Vessels	Sara Al Dolaijan
6	Industrial Hoses	Jood Baabdullah
7	Shop Fabricated FRP Tanks	Jood Baabdullah
8	Marine & Drilling Hoses	Abdullah Bakhshwin
9	Lay-Flat Hoses	Abdullah Bakhshwin
10	Composite Pressure Vessels and Towers	Abdullah Bakhshwin
	Closing remarks	Sara Al Dolaijan

iktva Program Overview (1/2)

The In-Kingdom Total Value Add (iktva) program is designed to drive increased investment, economic diversification, job creation, and workforce development within the Kingdom

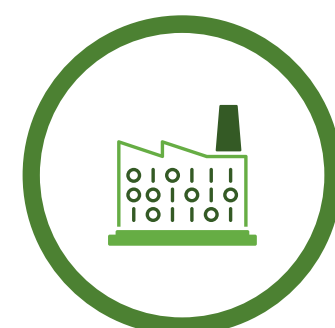
Saudi Aramco aims to achieve 70% local content



iktva in Procurement

2000+
Service
contracts

290+
Corporate
purchase
agreements



Business Opportunities

12
Sectors

200+
Business
Opportunities

\$28 bn
Annual
Market
Size

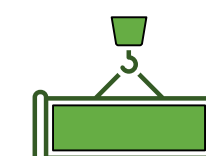


Anchor Projects

6 Anchor projects



IMI



SPARK



Tuwaiq



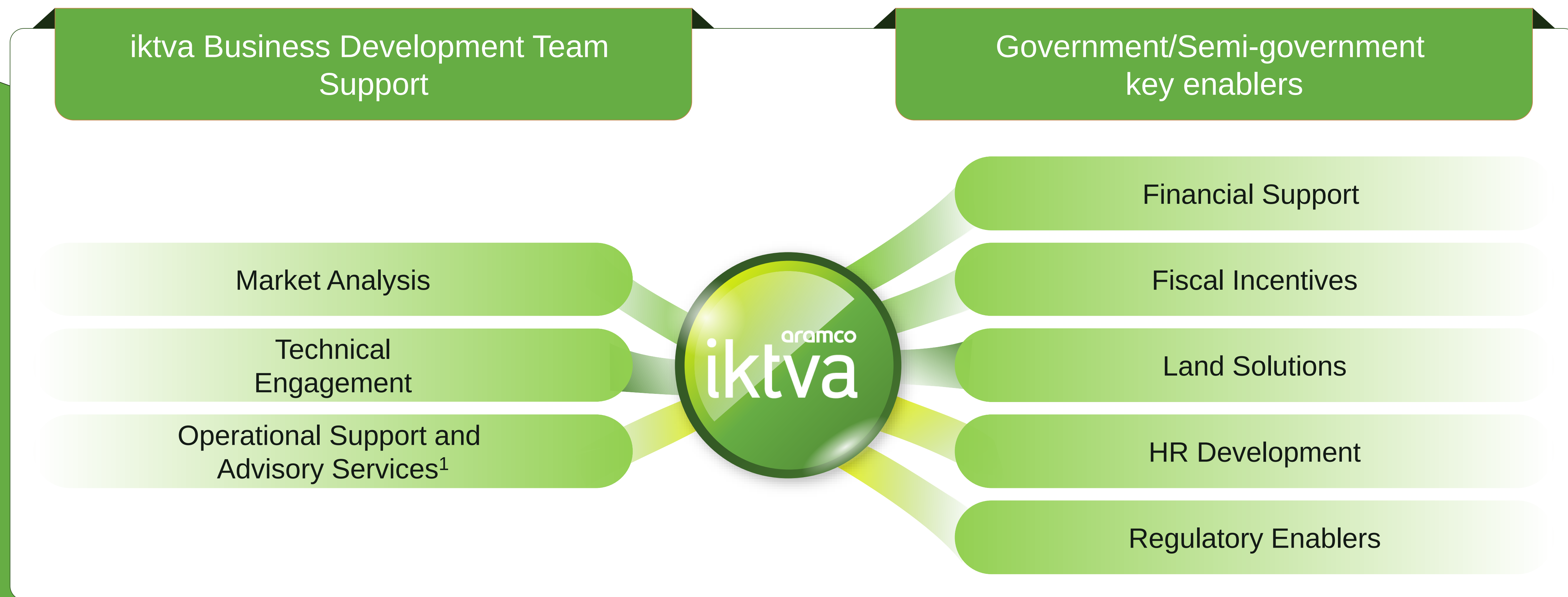
Local Workforce Development

16
National training
centers

90+
Programs

Driving Prosperity

Note: IMI = International Maritime Industries; SPARK = King Salman Energy Park



Driving Prosperity

1. Includes broad range of support services provided by the team: user requirements, advisory on available financial and fiscal incentives, guidance on localization process in line with local regulations and standards, action plan development etc.

Why invest in KSA?

Non-exhaustive

 Strong GDP growth and healthy economy	 Big market and game-changing opportunities	 Government incentives and enablers	 Ease of doing business	 Strategic global location	 Favorable demographics
Top 20 economies globally	5 Special Economic Zones drive innovation	\$1.3T+ invested in private sector by 2030	 one of world's most rewarding tax systems	12-15% of global trade passes via Red Sea	17% population growth from 2013-2023
GDP growth among highest projected in 2025 in top economies	6 giga projects driving urbanization and industry	5.7% contribution of FDI to GDP by 2030	Top 5 in the MENA region for ease of doing business	 KSA container ports are among the most efficient globally	67% of population below the age of 35

Driving Prosperity

Note: FDI = Foreign Direct Investment
Source: IMF; MISA; Vision 2030 Key Performance Indicators; Shareek Program; World Bank

1 Subsidies and financial programs

Loans financing up to 75% of the industrial project provided by SIDF to foster industrial development

2 Tax incentives and exemptions

Tax exemptions for earnings from exports and up to 50% tax credit on Saudi nationals' payroll and training costs for 10 years

3 Industrial Zones and Economic Cities

Industrial zones like KAEC provide specialized infrastructure and logistical services essential for nonmetallic materials production

4 Customs and import duty reductions

MoCI offers zero import duties for localization of selected raw materials, machinery, & equipment

5 Visa and legal support

Streamlined visas for investors and skilled workers, with legal support via MISA for fast business setup and compliance



How do we define what is an opportunity?



Growing market

High growth high spend markets



**Limited local players
& import driven**

*Markets with few local contributors
and high import resilience*



**Technological
& labor feasibility**

*Markets with accessible or
standardized technology and
available skilled labor*

Nonmetallic

Materials

Business Opportunities Review

13th January 2025

Nonmetallic Materials Market Overview

KSA Nonmetallic Materials market snapshot

Four opportunities to be discussed today

\$1734MM
 5.4% CAGR¹

2024 KSA market size for opportunities
in today's workshop

- 1 Epoxy resin
- 2 Polyurethane
- 3 Glass fiber
- 4 3D printing filaments manufacturing

Epoxy Resin

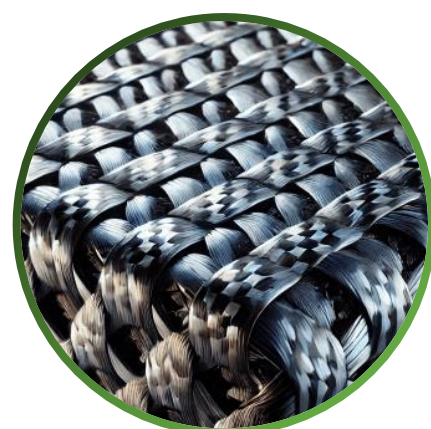
Presenter: Dakhel Al Dakhil

Opportunity profile – Epoxy Resin

1

KSA in high need of Epoxy Resin to realize ongoing mega-projects

Epoxy resins examples



Bisphenol based



Novolaks



Aliphatic

2

Epoxy Resin market is sizeable with significant forecasted growth

\$724MM

Estimated 2024 KSA market size

4%

Forecasted 5-year CAGR

3

Attractive investment opportunities in for the Epoxy Resin value chain

KSA value chain opportunities



Raw material



Production

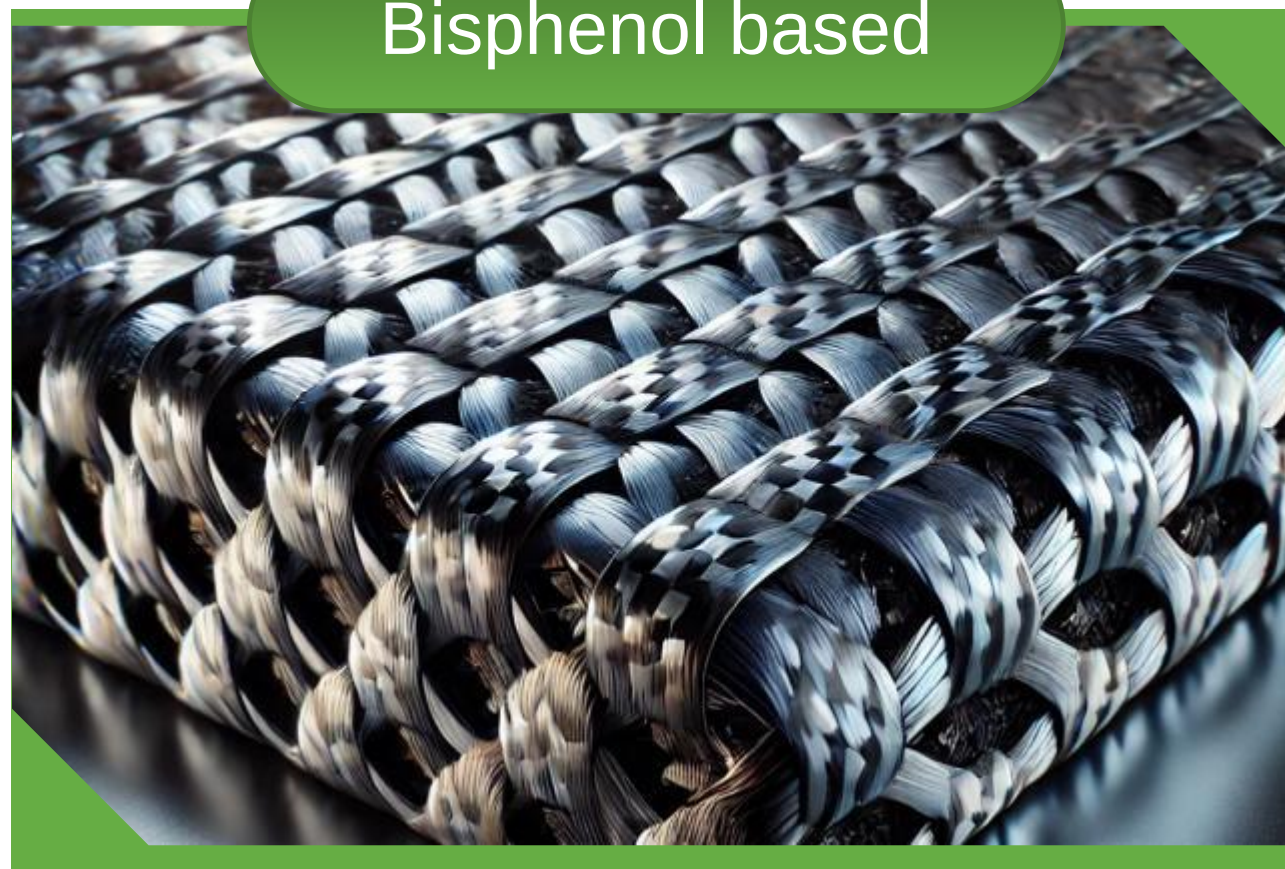
KSA enablers

- Localization subsidies and loans
- Affordable setup in economic zones
- Duty exemptions for exported goods

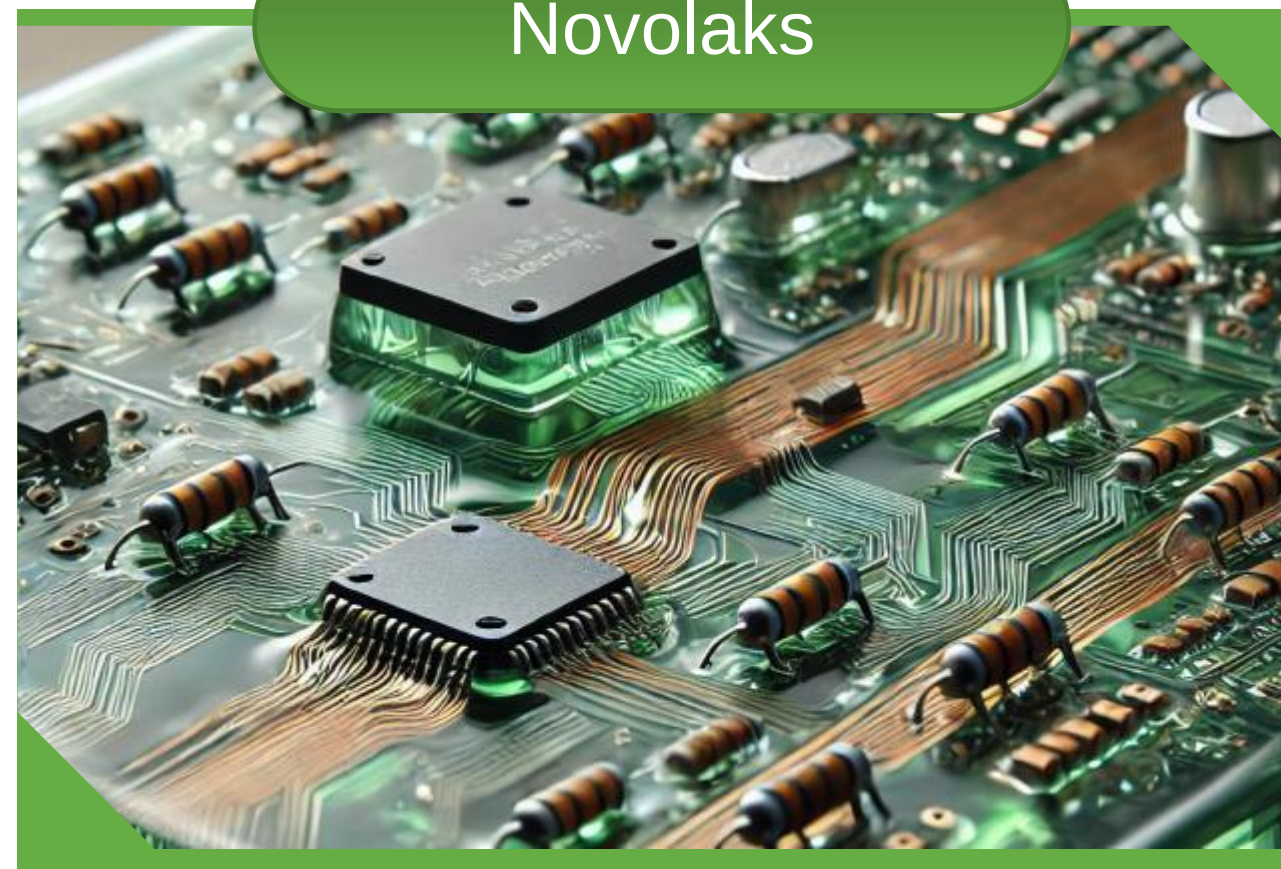
Driving Prosperity

Potential Epoxy Resin localization categories

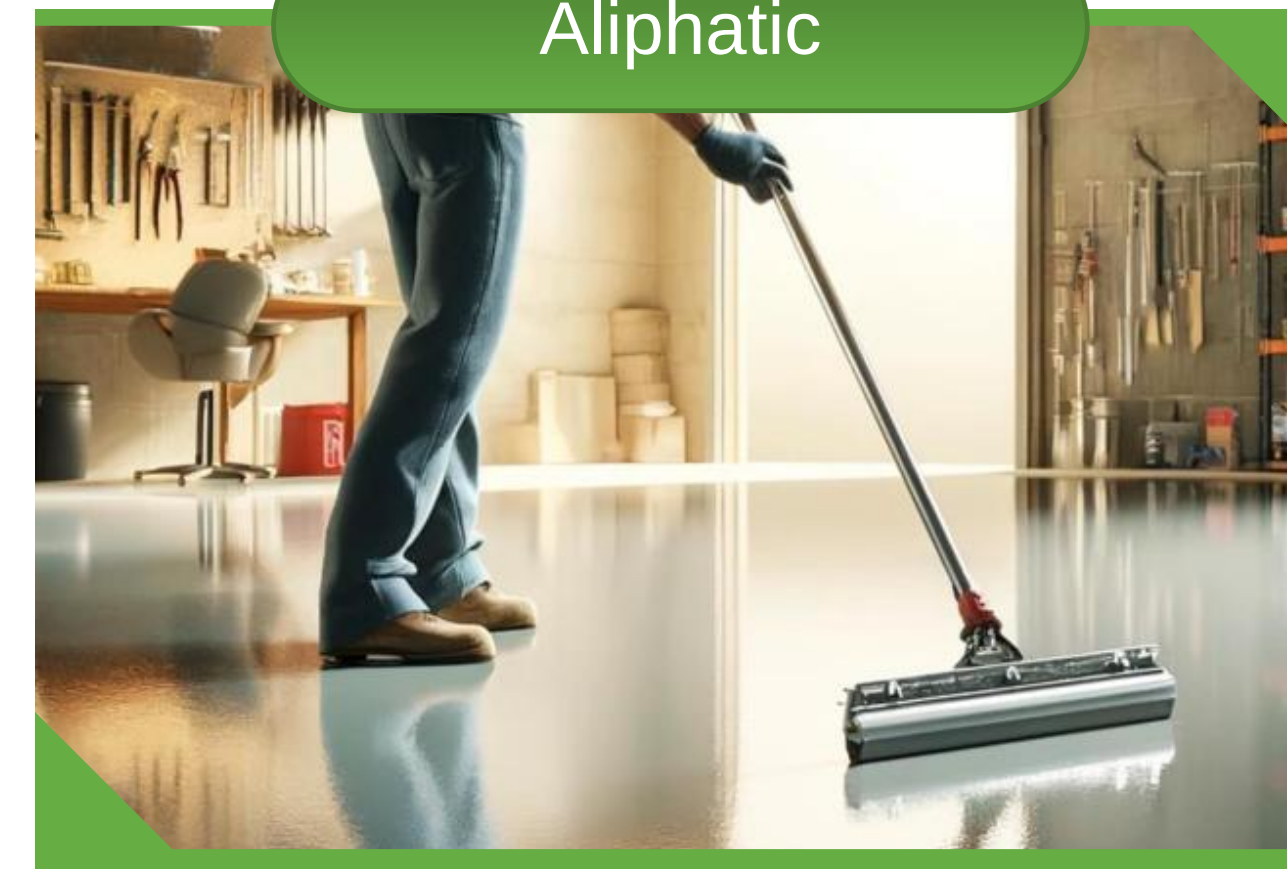
Bisphenol based



Novolaks



Aliphatic



Applications

- Composite (e.g., GFRE, CFRE)
- Pipes (e.g., RTP, GRP)
- Pipe coatings
- Structural bonding adhesives

- Insulation for PCBs
- Heat resistant coatings
- Adhesives for automotive

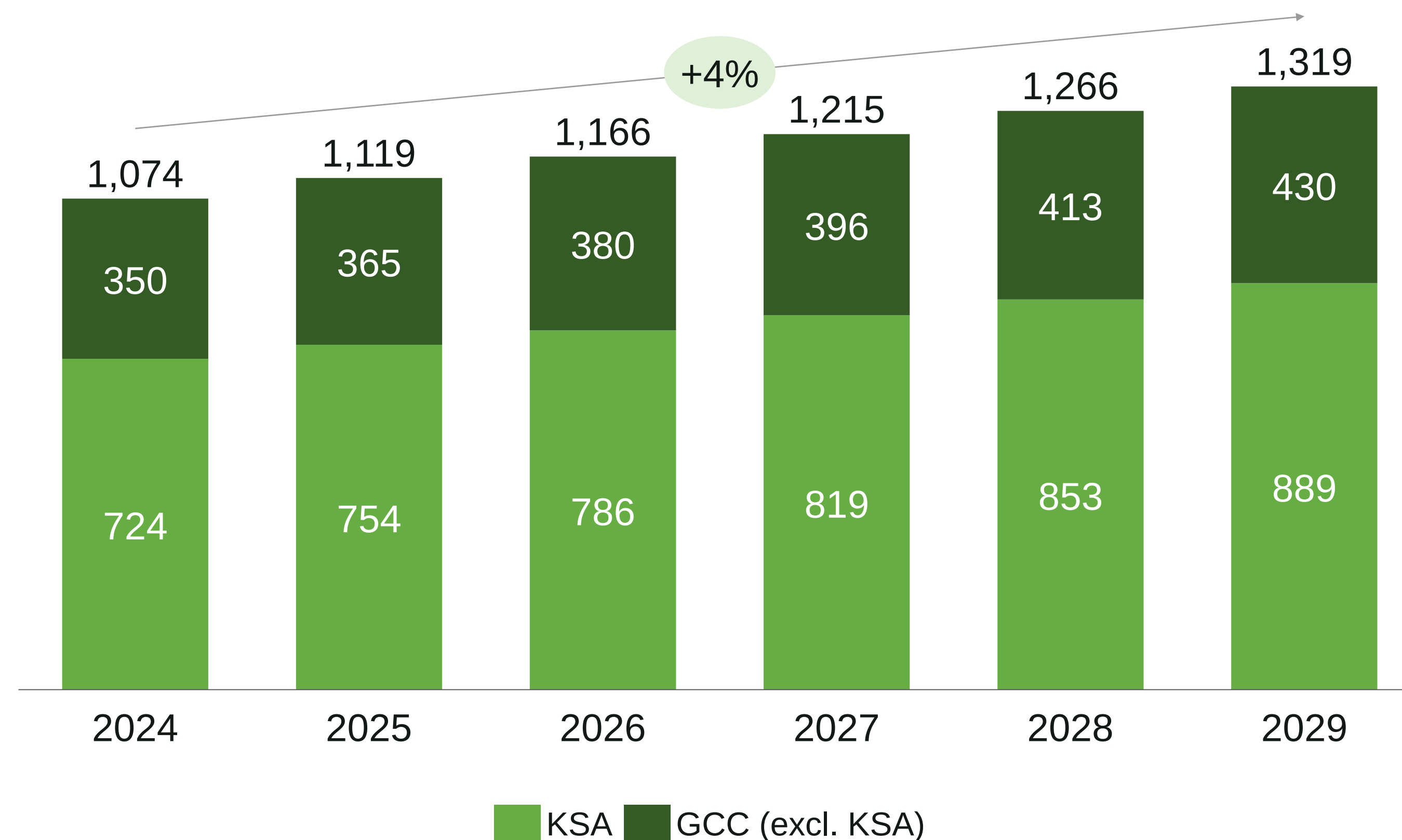
- Solar panel coatings
- High-gloss marine deck finish
- Composites for wind blades
- Epoxy flooring

Driving Prosperity

Note: Non-exhaustive; GFRE = Glass Fiber Reinforced Epoxy; CFRE = Carbon Fiber Reinforced Epoxy; RTP = Reinforced Thermoplastic Pipe; GRP = Glass Reinforced Plastic;
International standards: ASTM D1763; ISO 18280
Source: Team analysis

Epoxy Resin demand, customers, and drivers

Forecasted KSA and other GCC Epoxy Resin market 2024-2029 (\$MM)



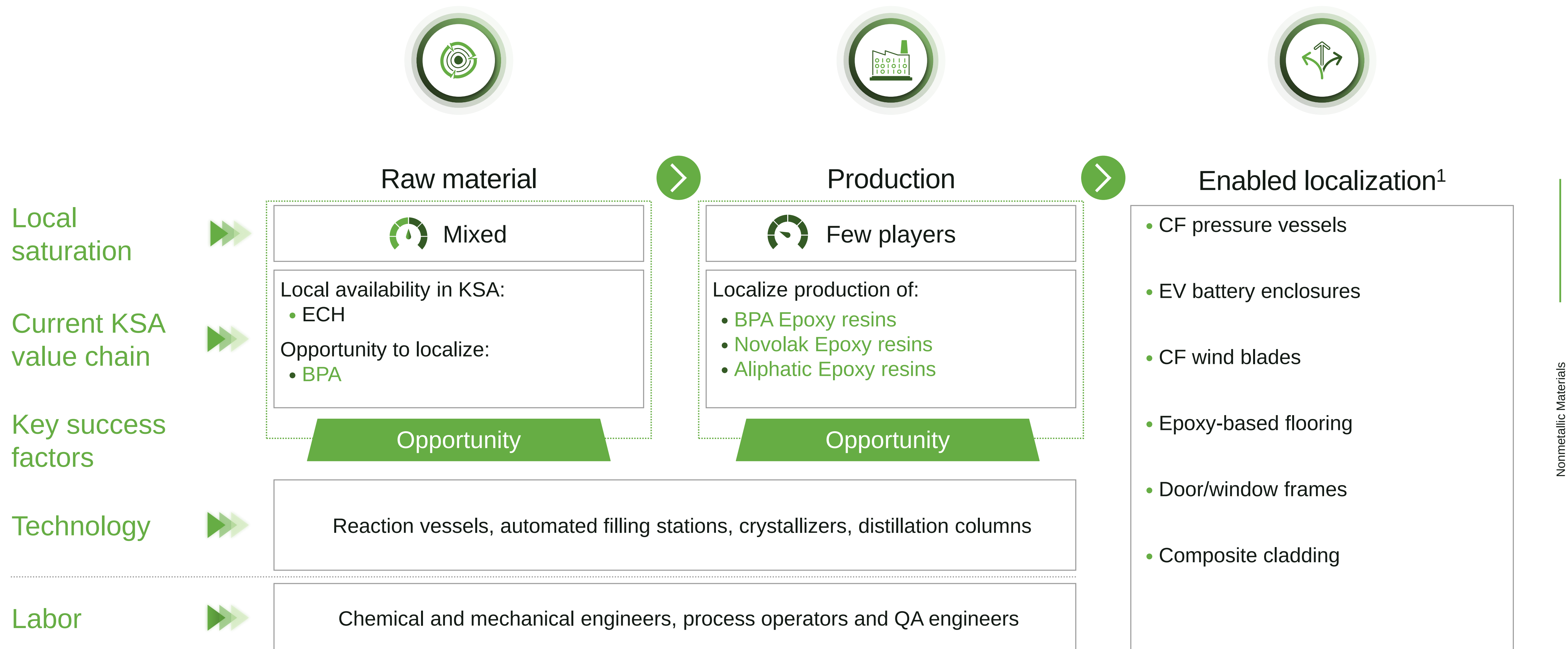
Typical Epoxy resin customers in KSA

-  Construction materials manufacturer
-  Automotive component producers
-  Oil & gas equipment producers

Key KSA demand drivers

- Construction material development:** Trend to lightweight composites in construction driving continued demand
- Industrial expansion:** Expansion of local manufacturing sector in KSA expected to drive increased demand for epoxy resins

Value chain and key localization opportunities



Driving Prosperity

1. Non-exhaustive
Note: CF = Carbon fiber; EV = Electric vehicle
Source: Team analysis

Investment opportunity and enablers

Non-exhaustive

Example KSA enablers to drive success



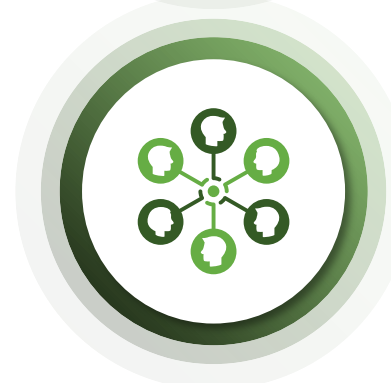
Financial Incentives: SIDF offers working capital loans in the initial phase and benefits for SMEs under Afaq program for plant setup



Infrastructure enablers: Subsidized land lease options for chemical manufacturing in designated zones like Jubail Industrial City II



Investment support: Accelerated extension of investor license through MoI and investor support center on a regional level



Fiscal Benefits: IC & MoCI offers duty exemption on import of formulation inputs, machinery, and specialized raw materials

Where is the opportunity



Raw material

Localize manufacturing of BPA for epoxy resins



Production

Opportunity to establish facility for production of epoxy resins

Polyurethane

Presenter: Dakhel Al Dakhil

Opportunity profile – Polyurethane

1

Localization of PU will unlock several key in-kingdom applications

Types



PU Rigid Foam



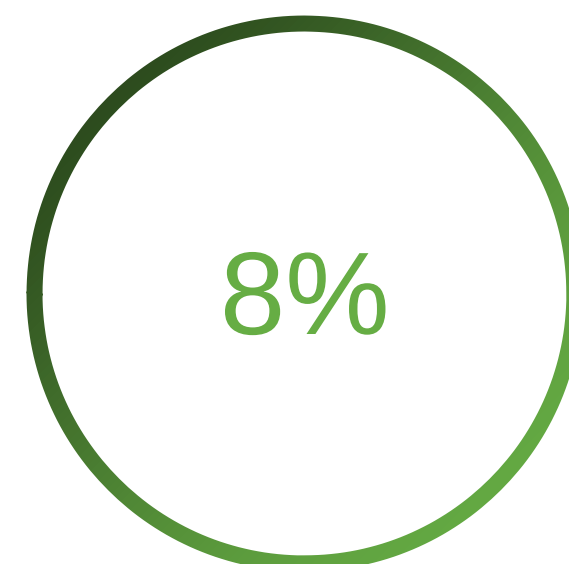
PU Resins

2

PU market is sizeable with high forecasted growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

3

Attractive investment opportunities in for the PU value chain

KSA value chain opportunities



Manufacturing

KSA enablers

- Financial support and subsidies
- Commercial research support
- Certification funding

Driving Prosperity

Potential polyurethane localization categories

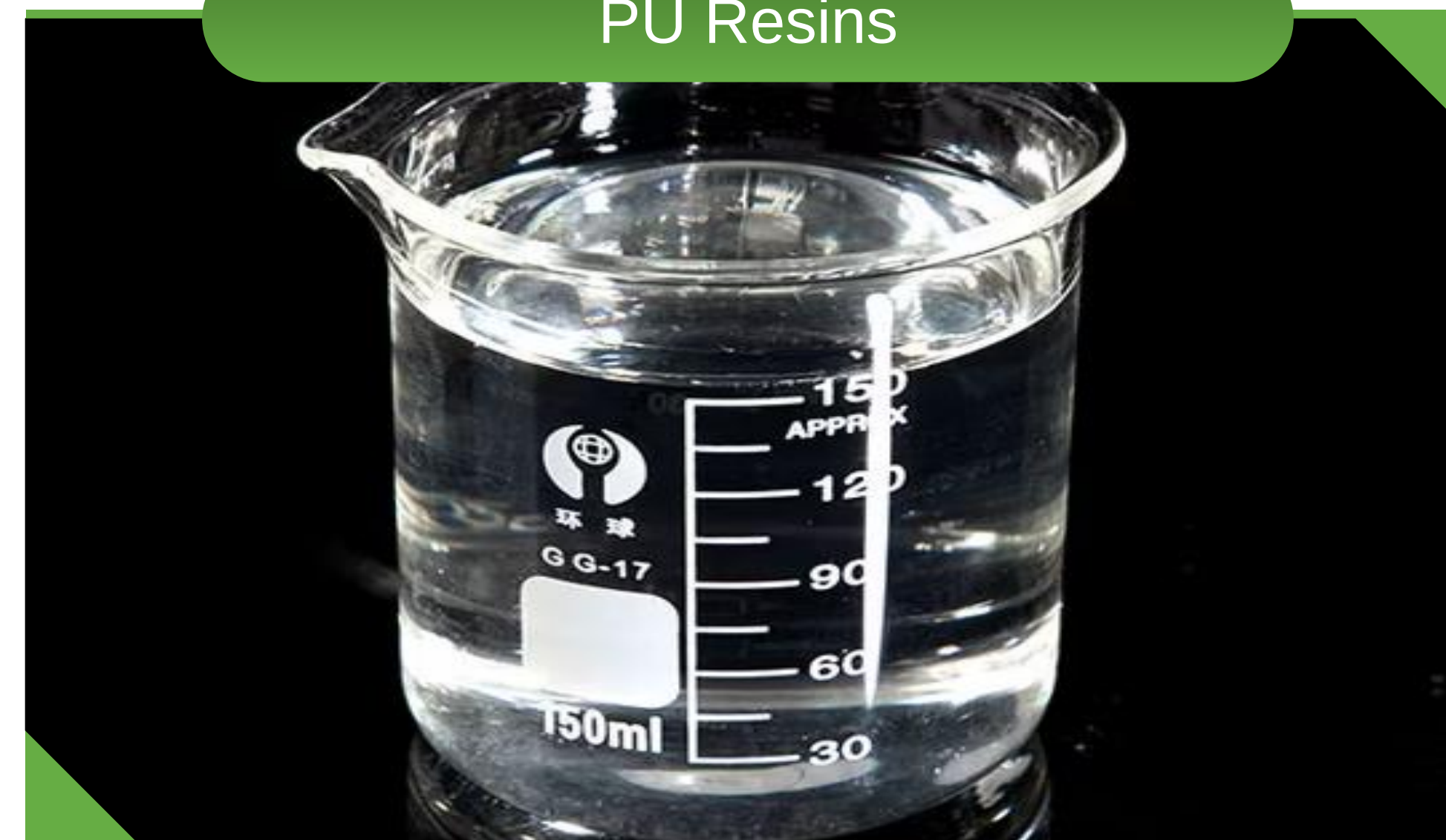
PU Rigid Foam



Applications

- Building insulation (e.g. cold storage facilities)
- Structural insulated panels
- Thermal packaging protection (e.g. cold-chain)

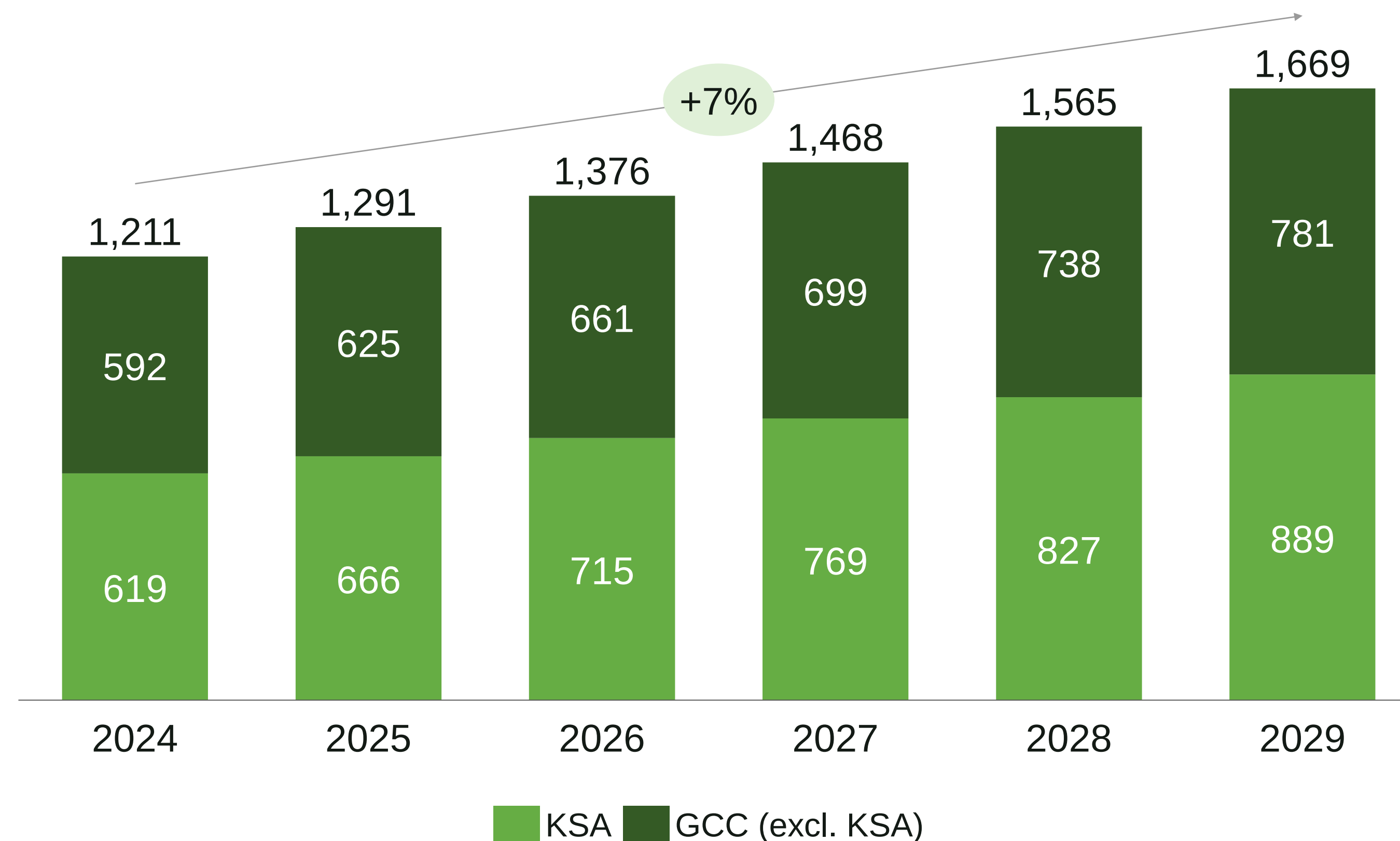
PU Resins



- Construction adhesives (e.g. cladding)
- Protective pipe coatings (e.g. offshore pipelines)
- Elastomers for gaskets
- Structural composites (e.g. electrical poles)

Polyurethane demand, customers, and drivers

Forecasted KSA and other GCC Polyurethane market
2024-2029 (\$MM)



Typical PU customers in KSA



Construction companies



Oil and gas operators



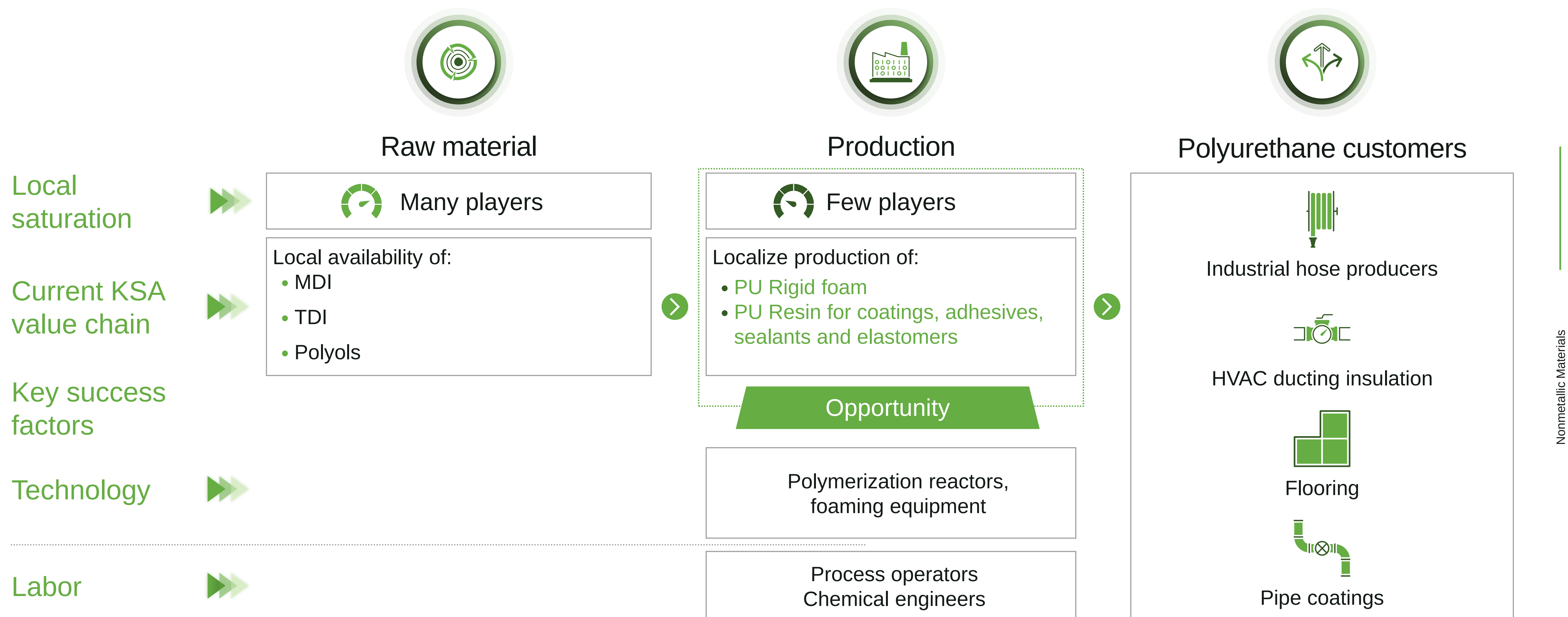
Automotive manufacturers

Key KSA demand drivers

- **Construction expansion:** Ongoing large-scale construction projects boost demand PU to create energy-efficient and durable structures
- **Automotive manufacturing:** Expansion of automotive sector will drive demand for PU based coatings and adhesives

Driving Prosperity

Value chain and key localization opportunities



Driving Prosperity

Note: Non-exhaustive
Source: Team analysis

Investment opportunity and enablers

Non-exhaustive

Example KSA enablers to drive success



Financial program: Access to CAPEX financing programs from SIDF to purchase equipment for polymerization and foaming



Quality certification funding: Funding by SIDF to obtain necessary certifications to meet industry standards



Research and consultation: Commercial and technical research support from agencies such as SEDA, and KACST

Where is the opportunity



Production

Opportunity to establish production of polyurethane foam and resins

Glass Fiber

Presenter: Faisal Al Shammari

Opportunity profile – Glass fiber

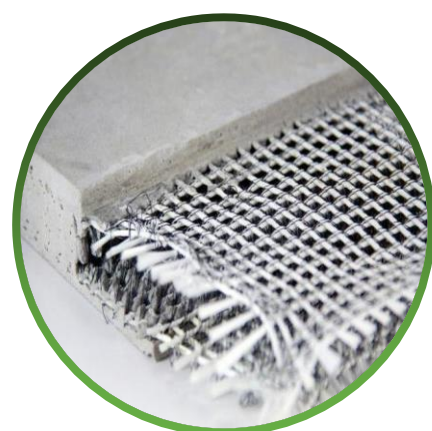
1

KSA in high need of Glass fiber to realize ongoing mega-projects

Types



E-glass



S-glass



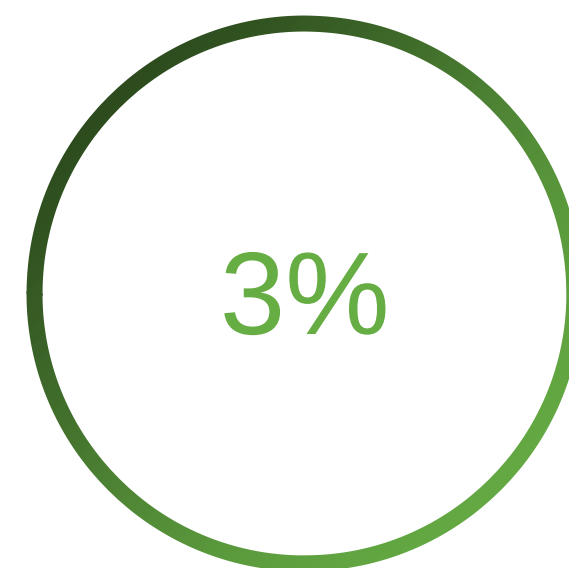
C-Glass

2

Glass fiber market is sizeable with significant forecasted growth



Estimated 2024 KSA market size

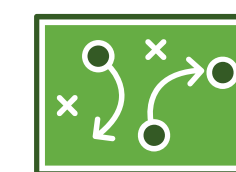


Forecasted 5-year CAGR

3

Attractive investment opportunities in for the Glass fiber value chain

KSA value chain opportunities



Intermediate processes



Manufacturing

KSA enablers

- Financial support and subsidies
- Geographical accessibility
- Investment support

Driving Prosperity

Potential Glass fiber localization categories

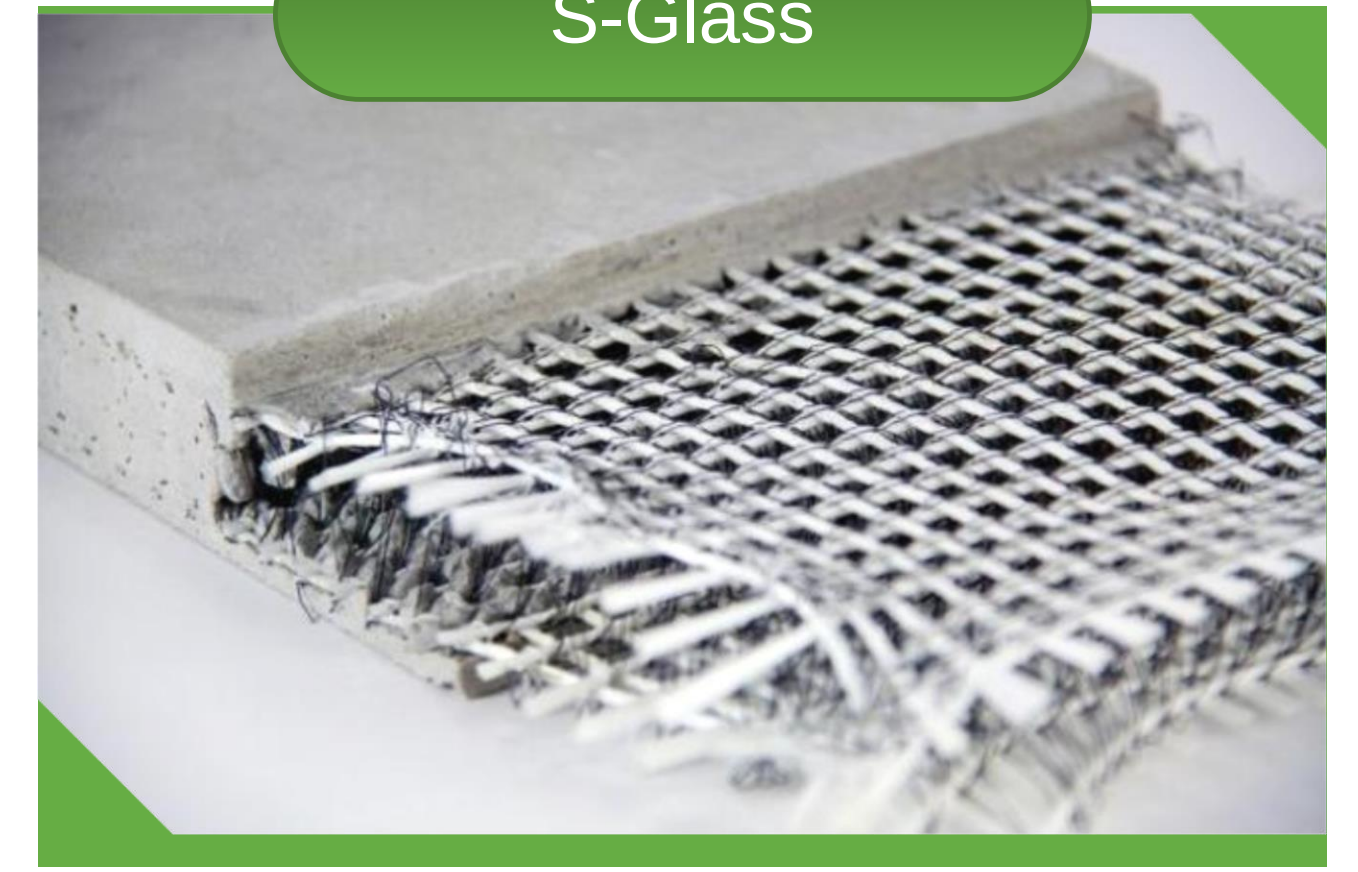
E-glass



C-Glass



S-Glass



Applications

GRP/RTR piping
Electrically insulated for e.g.,:

- Circuit boards
- Non-conductive composites
- Automotive interior

For structural applications e.g.,:

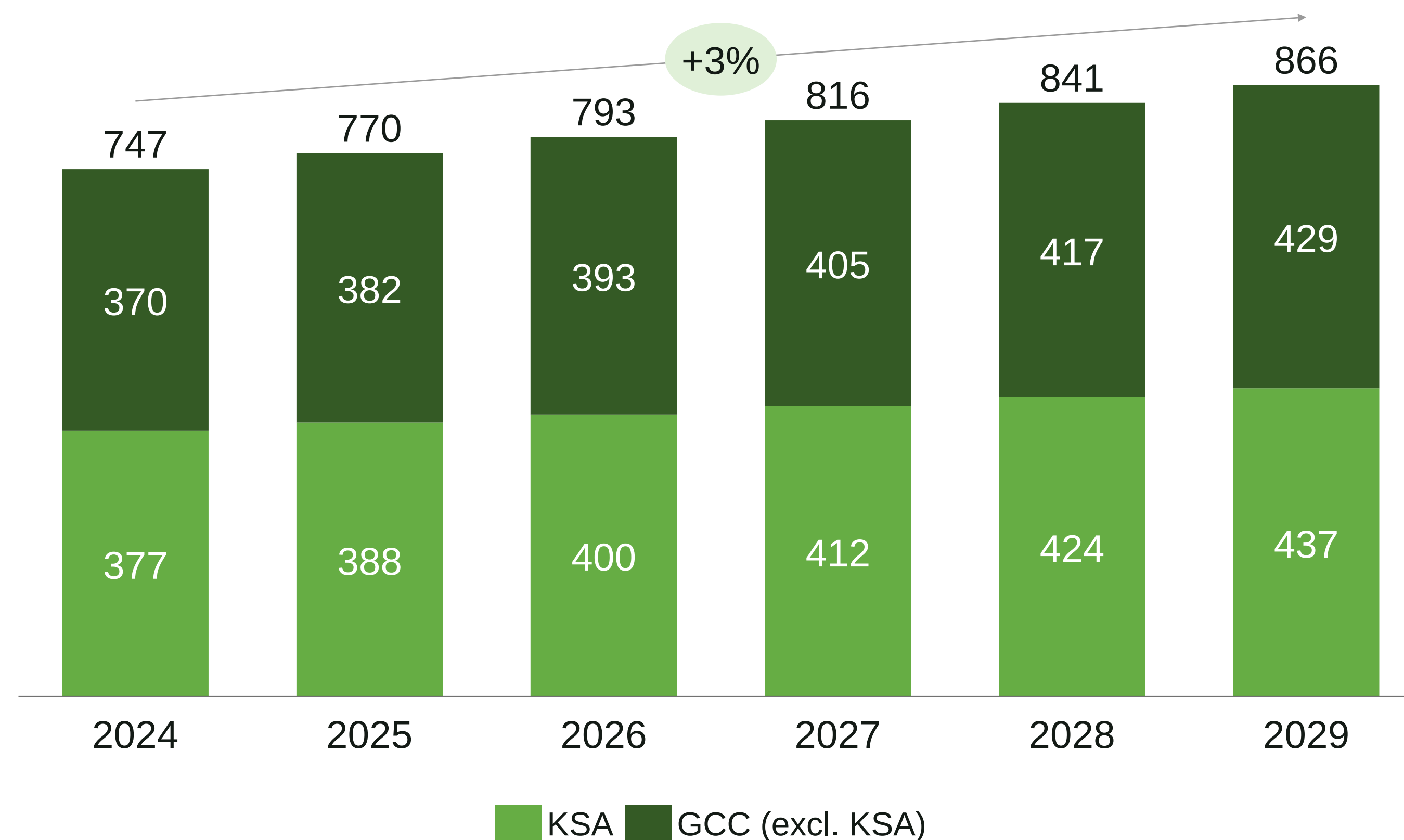
- Pressure vessels (C-GLASS)
- Sports equipment
- Ballistic Armors
- Wind turbine blades (C glass)

Chemical resistance for e.g.,:

- Chemical tanks
- Protective pipe layers
- Thermal insulation

Glass fiber demand, customers, and drivers

Forecasted KSA and other GCC Glass fiber market 2024-2029 (\$MM)



Typical Glass fiber customers in KSA



Residential developers



Oil and gas equipment companies

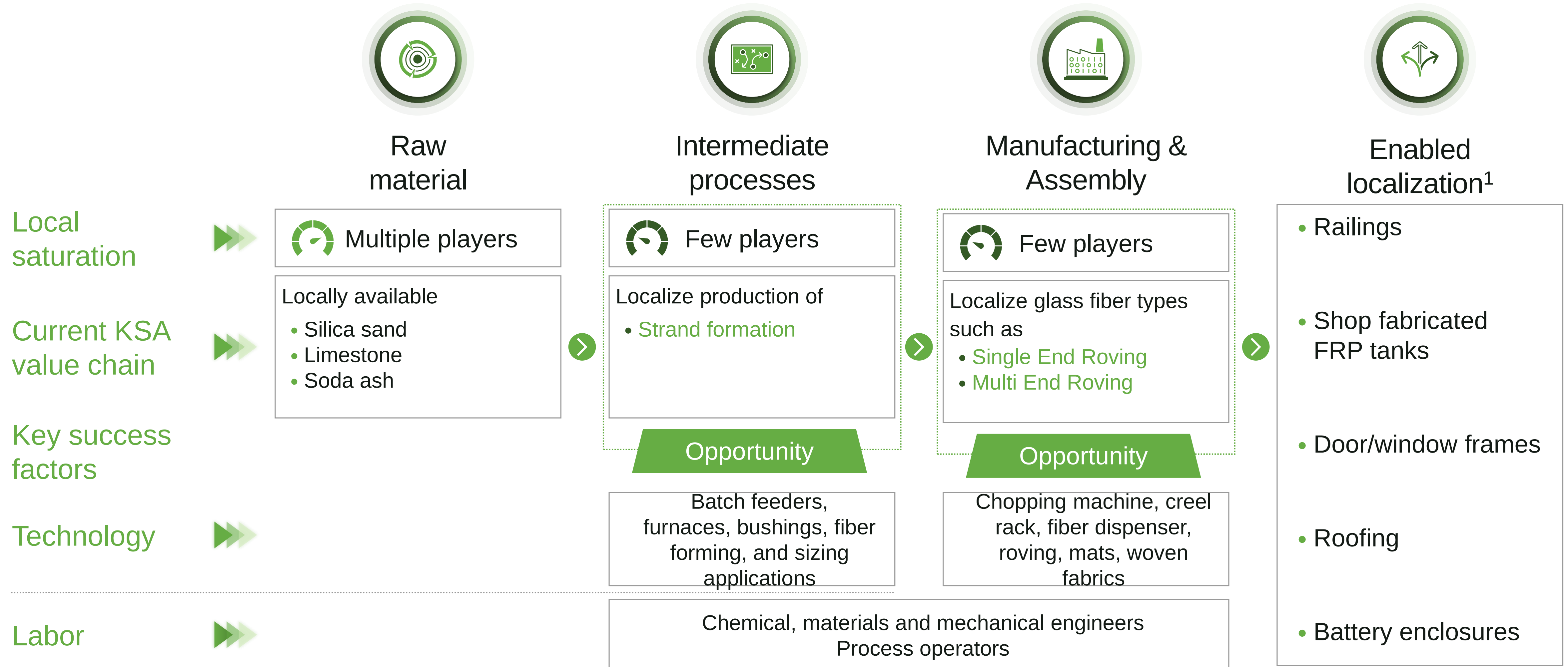


Automotive manufacturers

Key KSA demand drivers

- **Construction expansion:** Ongoing large-scale construction projects boost demand for glass fiber used in building materials
- **Automotive manufacturing:** Local production of automotive components, including glass fiber parts for lightweight, durable use

Value chain and key localization opportunities



Driving Prosperity

1. Non-exhaustive
Source: Team analysis

Investment opportunity and enablers

Non-exhaustive

Example KSA enablers to drive success



Financial Incentives: SIDF offers working capital loans in the initial phase and benefits for SMEs under Afaq program for plant setup



Geographical accessibility: Strategic location enables exports to neighboring markets, with available tax exemptions



Investment support: Accelerated extension of investor license through MOI and investor support center on a regional level



Research and consultation: Commercial and technical research support from agencies such as SEDA, and KACST

Where is the opportunity



Production

Opportunity to establish production of glass fiber in KSA

3D Printing Filament

Presenter: Faisal Al Shammari

Opportunity profile – 3D printing filament

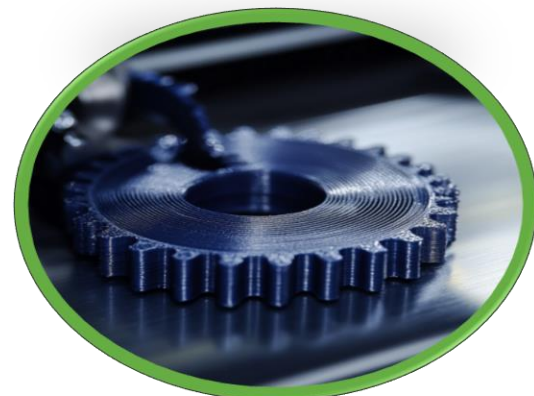
1

High demand for 3D printing filament for growing applications

Types



ABS



PETG



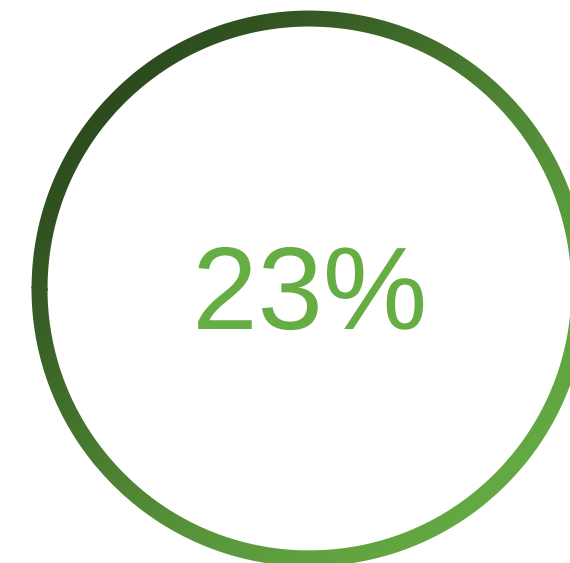
Nylon

2

3D print filament market is niche but expecting significant growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

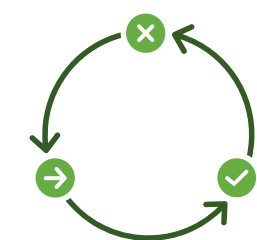
3

Attractive opportunities in the 3D printing filament value chain

KSA value chain opportunities



Manufacturing



Lifecycle management

KSA enablers

- Financial support and subsidies
- Qualified labor
- Commercial research support

Driving Prosperity

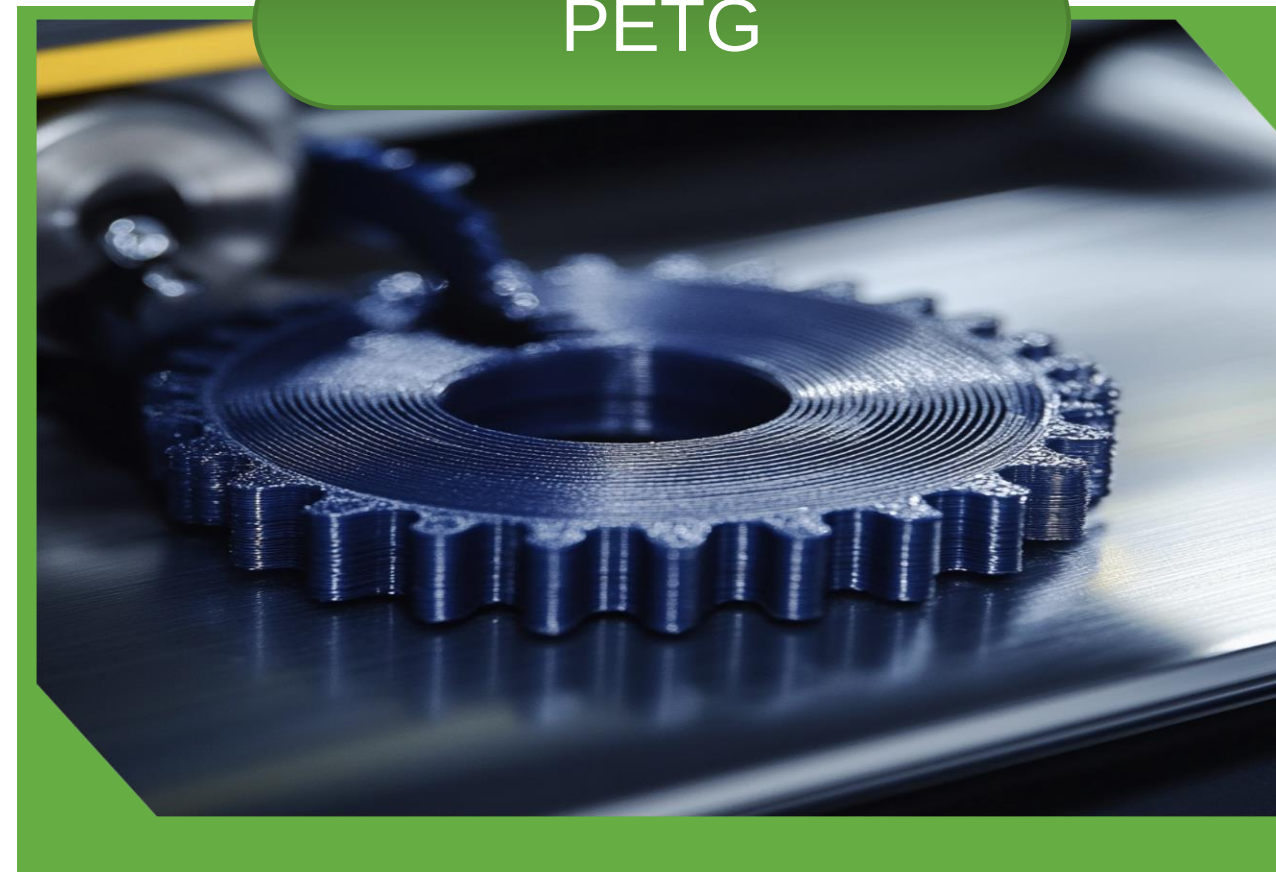
Note: Non-exhaustive; ABS = Acrylonitrile Butadiene Styrene; PETG = Polyethylene Terephthalate Glycol
Source: Grand view research; SPER market research; Saudi arabia construction; Expert interviews; Team analysis

Potential 3D printing filament categories for localization

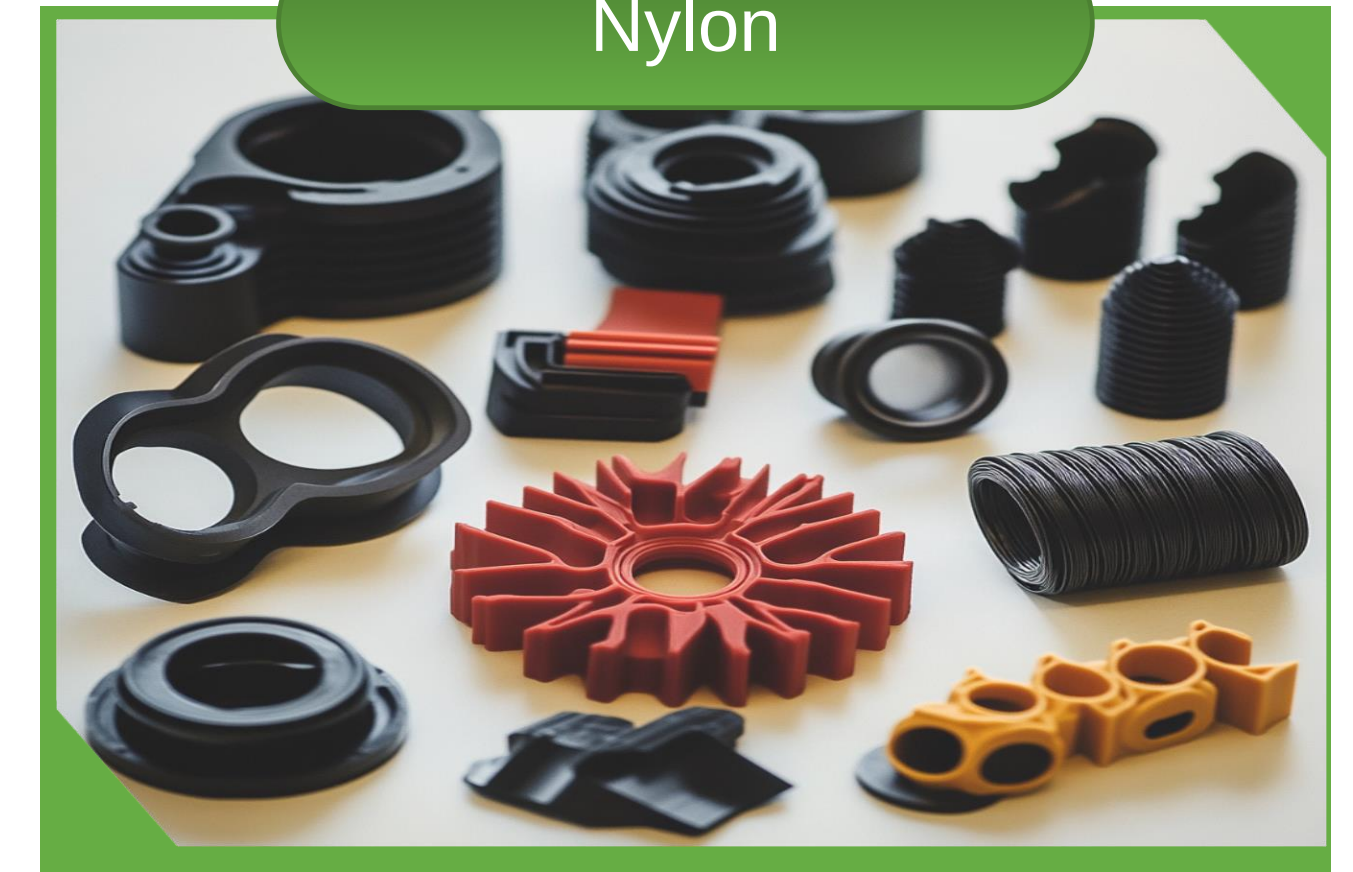
ABS



PETG



Nylon



Applications

- Automotive dashboards
- Industrial tools
- Electronics casings
- Food packaging

- Medical device casings
- Architectural models
- Dynamic mechanical parts
- Advertising Display and customer container

- Insulated electrical components
- High-strength components
- Low production rate molds and dies
- Electronic parts

Driving Prosperity

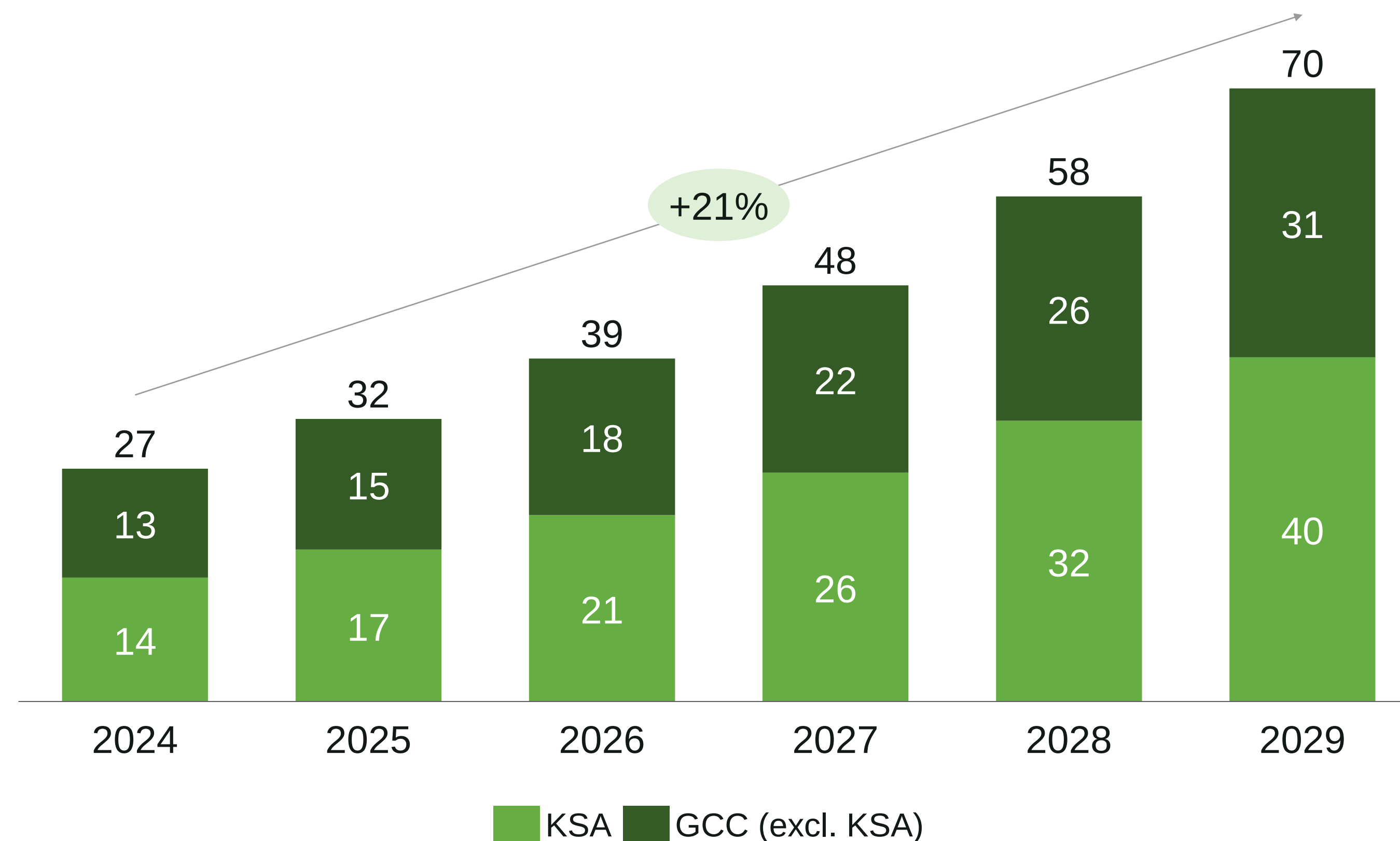
Standards required by Aramco: SAEP-411; API 20S; API 20T; ISO/ASTM 52903-1:2020; ISO/ASTM 52903-2:2020; ISO/ASTM 52901:2017

Note: Non-exhaustive; ABS = Acrylonitrile Butadiene Styrene; PETG = Polyethylene Terephthalate Glycol

Source: Team analysis

3D printing filament demand, customers, and drivers

Forecasted KSA and other GCC 3D printing filament market
2024-2029 (\$MM)



3D filament customers in KSA



3D printing service providers



Automotive parts producers

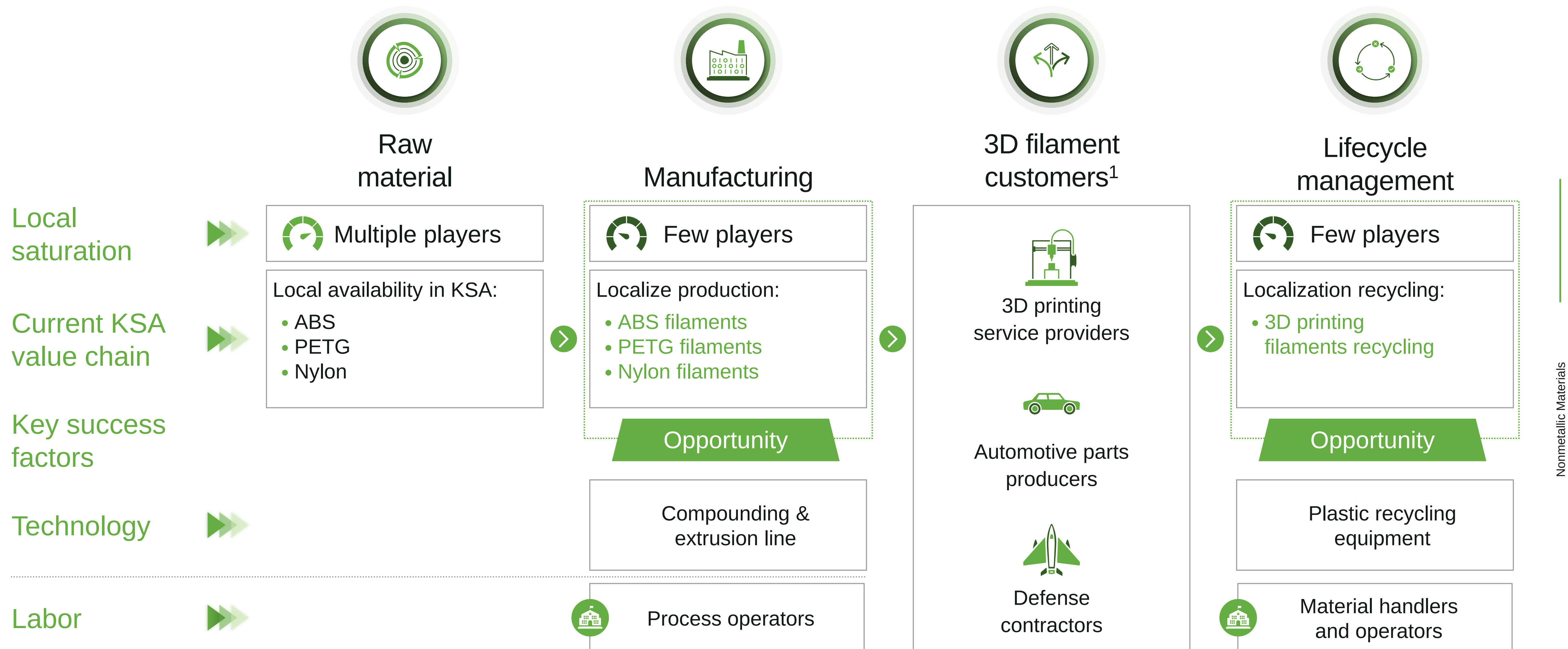


Defense contractors

Key KSA demand drivers

- **Localized manufacturing adoption:** New manufacturing facilities centered on 3D printing are being driven by sectors like automotive, defense, and education
- **Substitution:** Advantages from reduced operating time and manufacturing cost driving increasing adoption of 3D printing

Value chain and key localization opportunities



Note: ABS = Acrylonitrile Butadiene Styrene; PETG = Polyethylene Terephthalate Glycol
Source: Team analysis

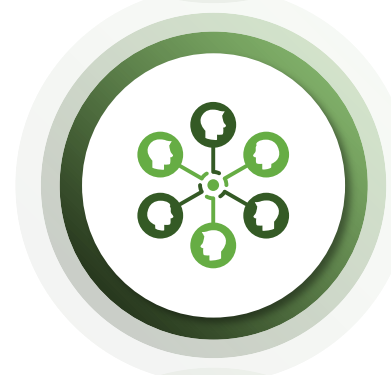
Investment opportunity and enablers

Non-exhaustive

Example KSA enablers to drive success



Financial Support: Access to subsidized loans from SABIC's NUSANED program for plant setup, equipment, and feedstock



Labor upskilling support: Qualified talent for plastic manufacturing from HIPF graduates, with HRDF subsidies for on-the-job training



Investment support: Accelerated extension of investor license through MoI and investor support center on a regional level



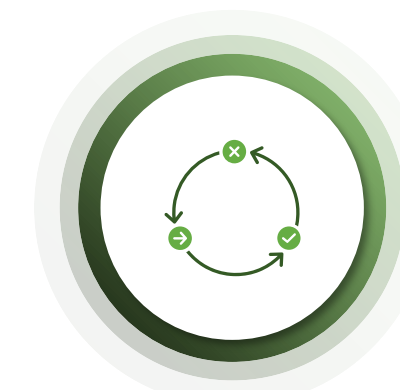
Research and consultation: Commercial and technical research support from agencies such as SEDA, and KACST

Where is the opportunity



Manufacturing

Localize manufacturing of 3D printing filaments



Lifecycle management

Establish recycling facilities for ABS, PETG, and Nylon

Nonmetallic

Oil & Gas

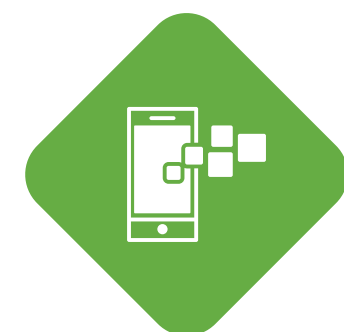
Business Opportunities Review

13th January 2025

Key demand drivers for the KSA nonmetallic oil and gas market



Ongoing oil and gas explorations require advanced equipment for fluid control and storage, leading to increased demand for nonmetallic applications that offer superior corrosion resistance and durability



Technological advancements such as smart monitoring systems and enhanced design standards for nonmetallic products increase reliability in extreme temperatures and pressures common in KSA oilfields



Stringent environmental regulations such as SASO energy efficiency standards promote the adoption of nonmetallic materials in oil and gas products due to their corrosion resistance and environmental benefits



Economic diversification and infrastructure expansion driven by Vision 2030 boost the demand for nonmetallic solutions in various applications

Driving Prosperity

Note: SASO = The Saudi Standards, Metrology, and Quality Organization
Source: 6WResearch; Aramco Expats; XDS Solutions; Energy Connects; Team analysis

Nonmetallic Oil & Gas Market Overview

KSA nonmetallic oil & gas market snapshot



2024 KSA market size for opportunities
in today's workshop

Six opportunities to be discussed today

1

Carbon Fiber Pressure Vessels

2

Shop Fabricated FRP Tanks

3

Industrial Hoses

4

Marine & Drilling Hoses

5

Lay-Flat Hoses

6

Composite Pressure Vessels & Towers

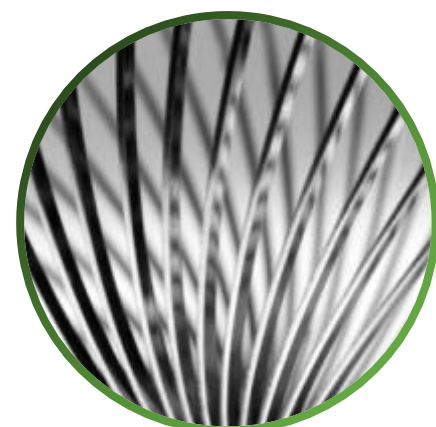
Carbon Fiber Pressure Vessels

Presenter: Sara Al Dolaijan

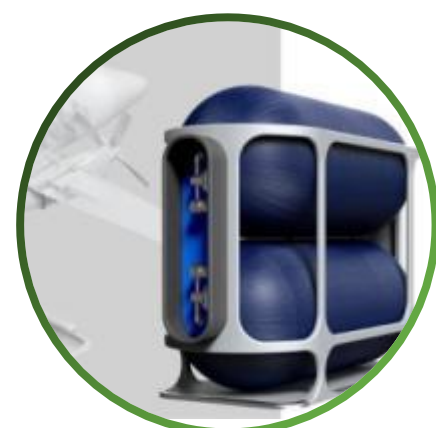
Opportunity profile – Carbon Fiber Pressure Vessels

1

KSA needing Carbon Fiber Pressure Vessels to meet gas and liquid storage demand in various sectors



Metal liner vessels



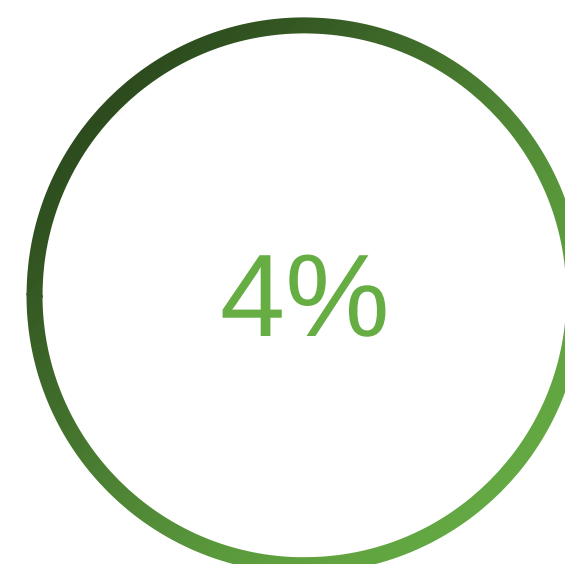
Metallic/polymer liner vessels

2

Carbon Fiber Pressure Vessel market is niche with high forecasted growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

3

Attractive investment opportunities in the Carbon Fiber Pressure Vessels value chain

KSA value chain opportunities



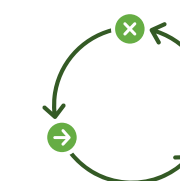
Raw material



Int.



Mfg.



Lifecycle Management

KSA enablers

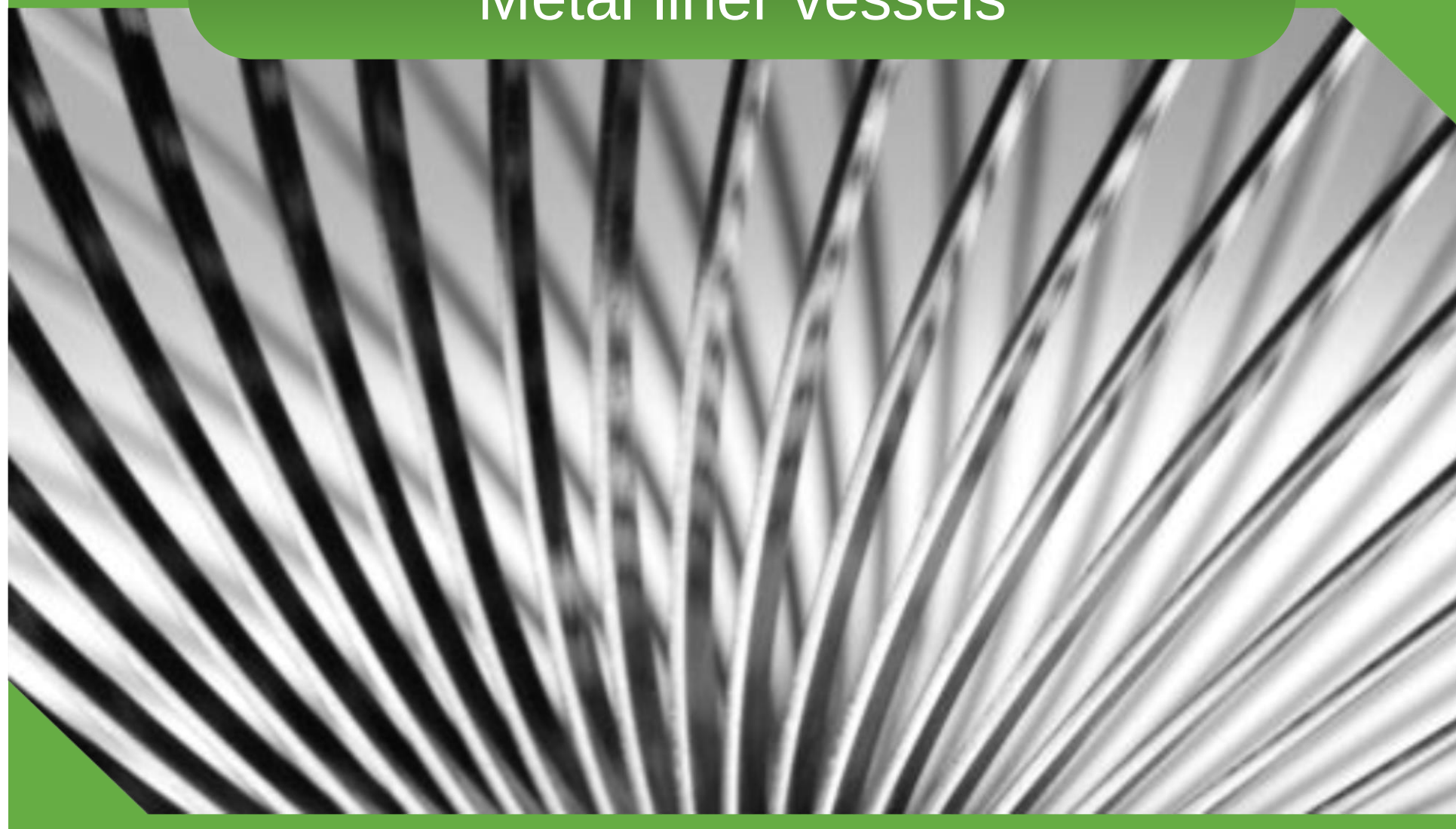
- Custom duty exemption on machinery
- Tax credits on R&D investments
- Inspection training programs

Driving Prosperity

Note: Int. = Intermediate; Mfg = Manufacturing
Source: Business Research Insights; Grandview; Team analysis

Potential Carbon Fiber Pressure Vessels localized categories

Metal liner vessels



Applications

- Hydrogen storage
- CNG storage
- Breathing apparatus

Metallic/polymer liner vessels



- Fuel storage
- Hydrogen storage
- Natural gas vehicles

Driving Prosperity

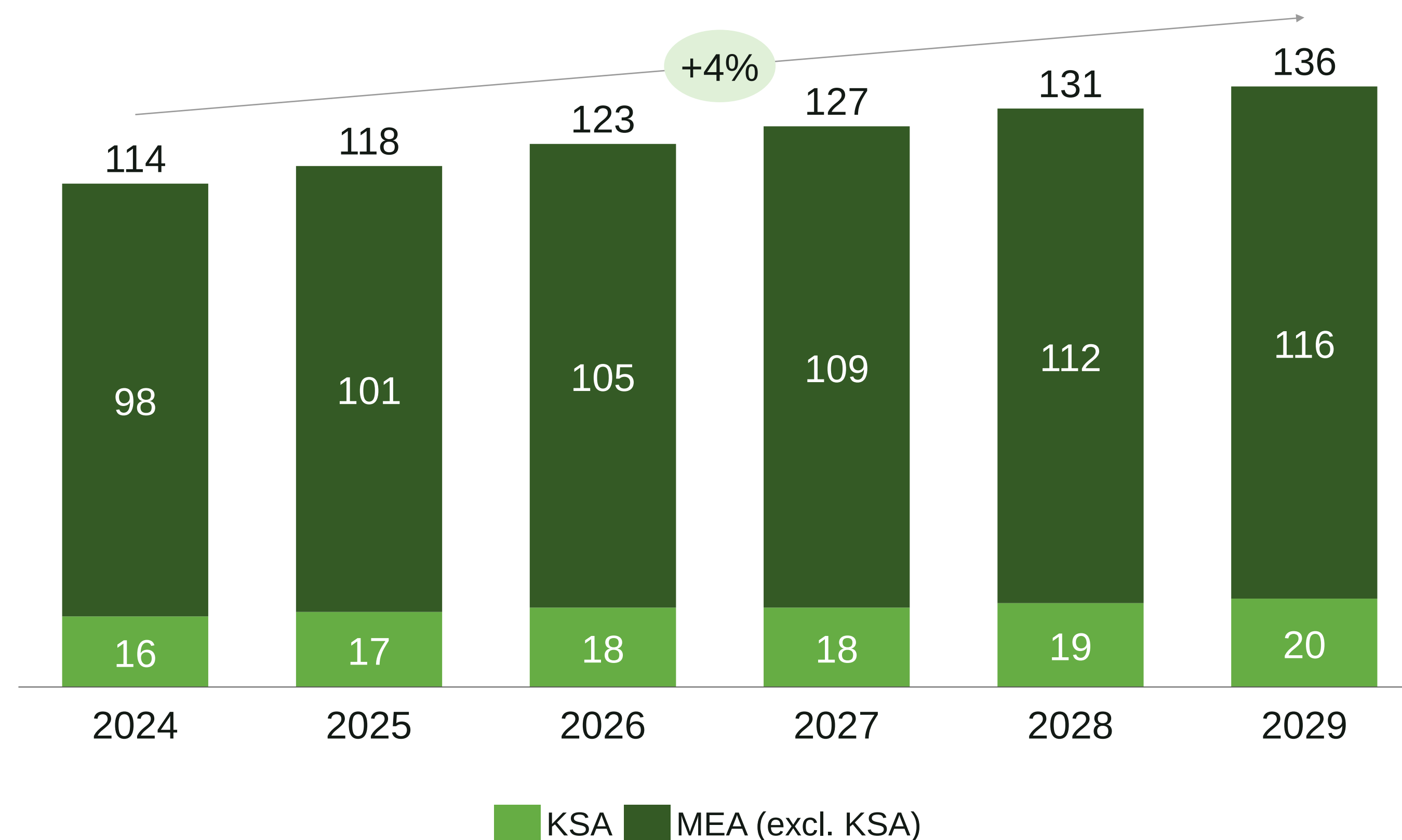
Note: Metal liner is aluminum or steel with partial carbon-fiber wrapping, Metallic liner is fully wrapped with carbon-fiber composite; CNG = Compressed Natural Gas

Select industry standards: ISO 11439; CSA/ANSI NGV2; DoT FRP-1 & FRP-2; ISO 11119; ASME BPVC-X; BS EN 17533

Source: Team analysis

Carbon Fiber Pressure Vessels demand, customers, and drivers

Forecasted KSA and rest of MEA Carbon Fiber Pressure Vessels market 2024-2029 (\$MM)



Typical customers in KSA



Hydrogen & Natural Gas Transport



Aerospace and Automotive



Industrial Applications

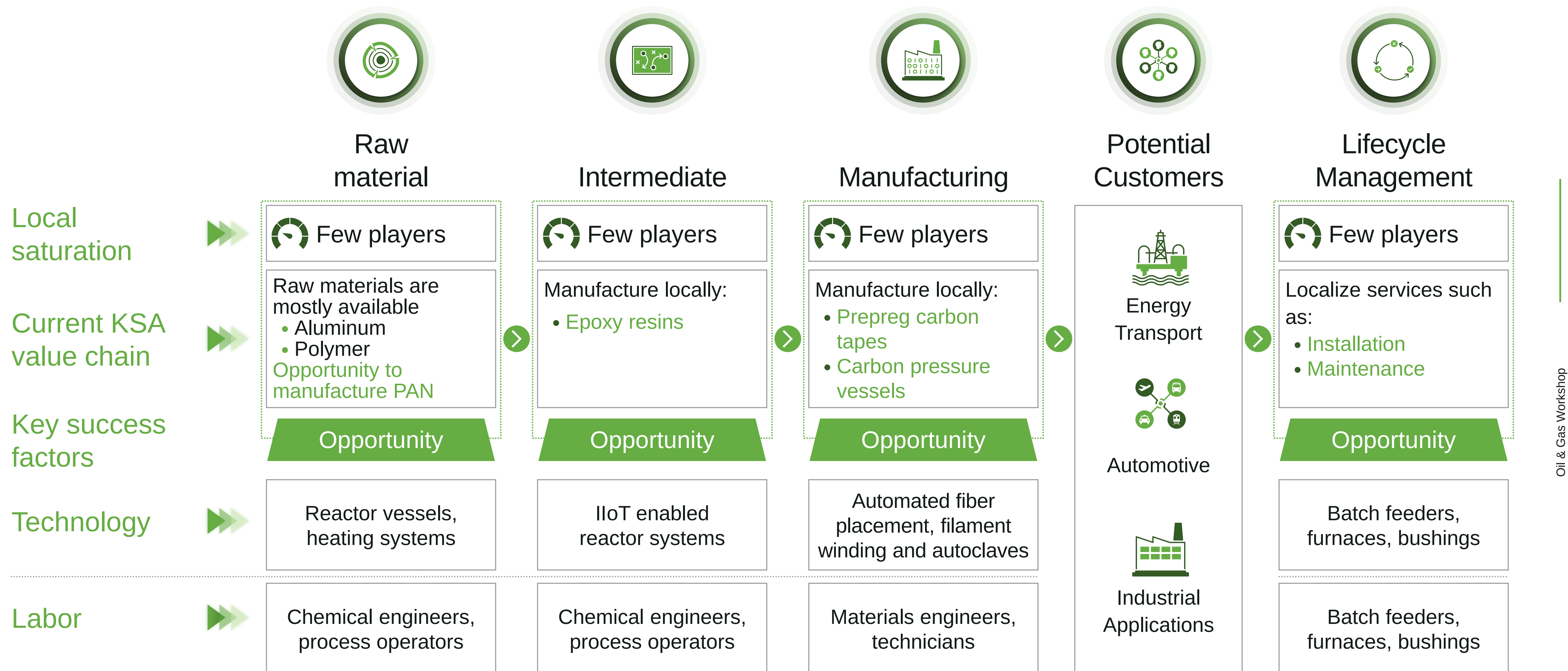
Key KSA demand drivers

- **Industry trends:** Oil and gas sector requires durable and corrosion-resistant pressure vessels for storing gases and chemicals, making carbon fiber an attractive option
- **Sustainable transportation:** Emerging KSA hydrogen projects boost the demand for lightweight and durable pressure vessels

Driving Prosperity

Source: Business Research Insights; Grandview; Team analysis

Value chain and key localization opportunities



Driving Prosperity

Note: PAN = Polyacrylonitrile
Source: Team analysis

Investment opportunity and enablers

Key enablers in KSA to drive success



Customs Enablers: Custom duty exemption from MoCI on machinery and equipment for establishment of pressure vessel production



Capital Enablers: Regional land and loan programs from SIDF and industrial land authorities such as KAEC for plant setup



Tax Incentives: Tax credits on R&D investments to encourage innovation in local carbon fiber production



Human Capital Enablers: ITQAN Institute offering specialized training for inspection and maintenance services

Where is the opportunity



Raw Materials

Establish facility to manufacture PAN



Intermediate

Localize production and molding of epoxy resins



Manufacturing

Build capabilities for the local manufacturing of carbon fiber pressure vessels (incl. prepregs)



Lifecycle management

Localize installation and maintenance services

Driving Prosperity

Note: MoCI = Ministry of Commerce and Industry; SIDF = Saudi Industrial Development Fund; KAEC = King Abdullah Economic City; ITQAN = Inspection Technology and Quality Assurance National Institute; PAN = Polyacrylonitrile
Source: Team analysis

Shop Fabricated FRP Tanks

Presenter: Jood Baabdullah

Opportunity profile – Shop Fabricated FRP Tanks

1

KSA needs Shop Fabricated FRP Tanks to meet industry demand



Vertical



Horizontal



Cone-bottom



Flat-bottom



Open-top

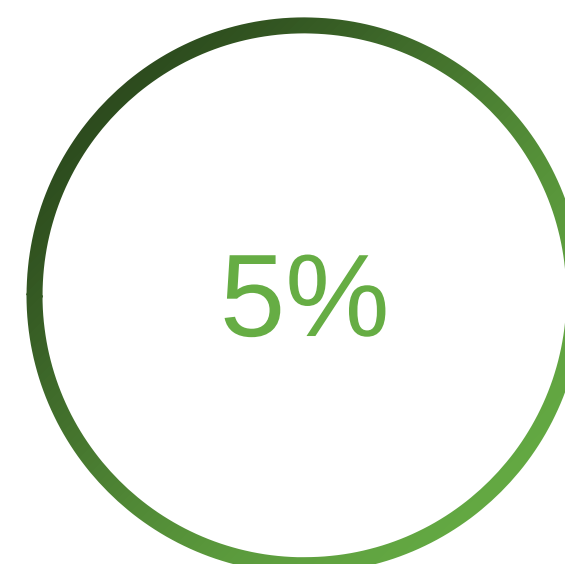
Driving Prosperity

2

FRP Tanks market is an attractive niche with continued growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

3

Attractive investment opportunities in the Shop Fabricated FRP Tanks value chain

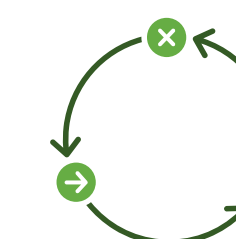
KSA value chain opportunities



Raw material



Mfg.



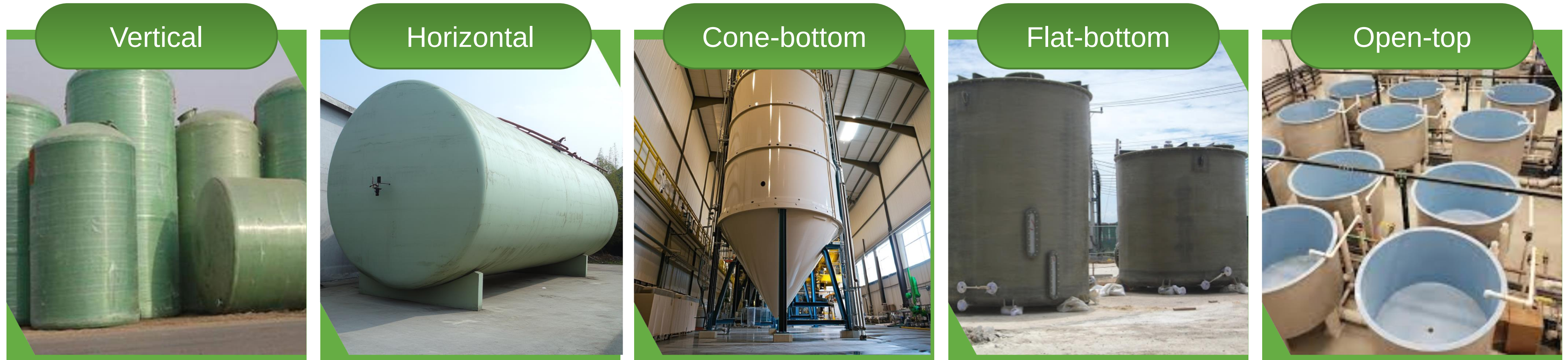
Lifecycle Management

KSA enablers

- Government support and policies
- Skilled workforce development
- Strategic geographic location

Potential Shop Fabricated FRP Tanks localized categories

Non-exhaustive



Applications

Used for storing liquids like water, chemicals, and oils for applications where floor space is at a premium

Used for liquids that tend to spill

- Chemicals
- Fuels

Feature conical bottom for easy draining and cleaning, used for mixing, blending, and processing liquids

Can store liquids that do not settle or sediment easily

Used to store liquids that require constant stirring

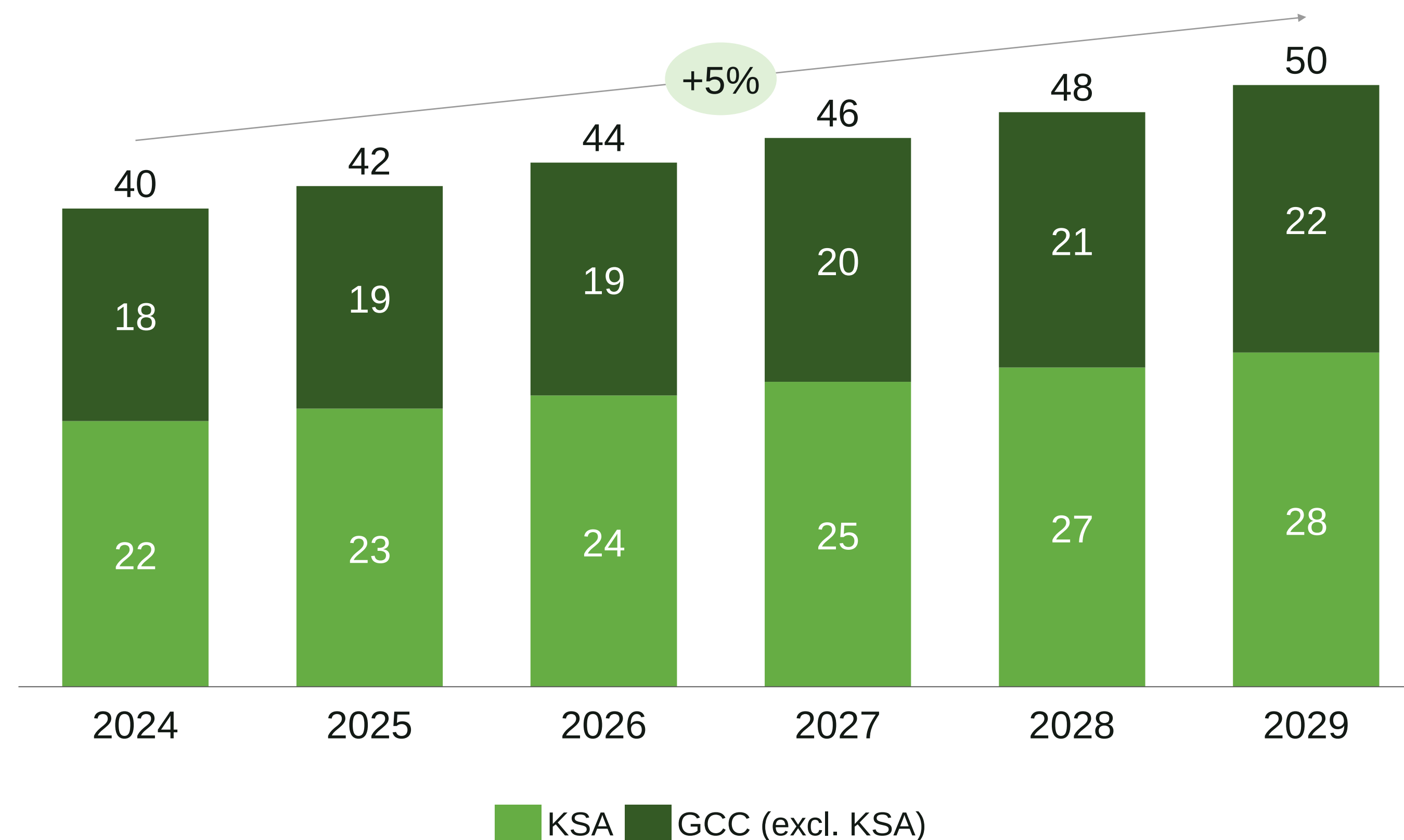
- Chemicals
- Food products

Driving Prosperity

Selected international standards: ASME RTP-1; 32-SAMSS-002
Source: Team analysis

Shop Fabricated FRP Tanks demand, customers, and drivers

Forecasted KSA and rest of GCC Shop Fabricated FRP Tanks market 2024-2029 (\$MM)



Typical customers in KSA



Oil/gas firms



Water/Wastewater treatment



Chemical processing

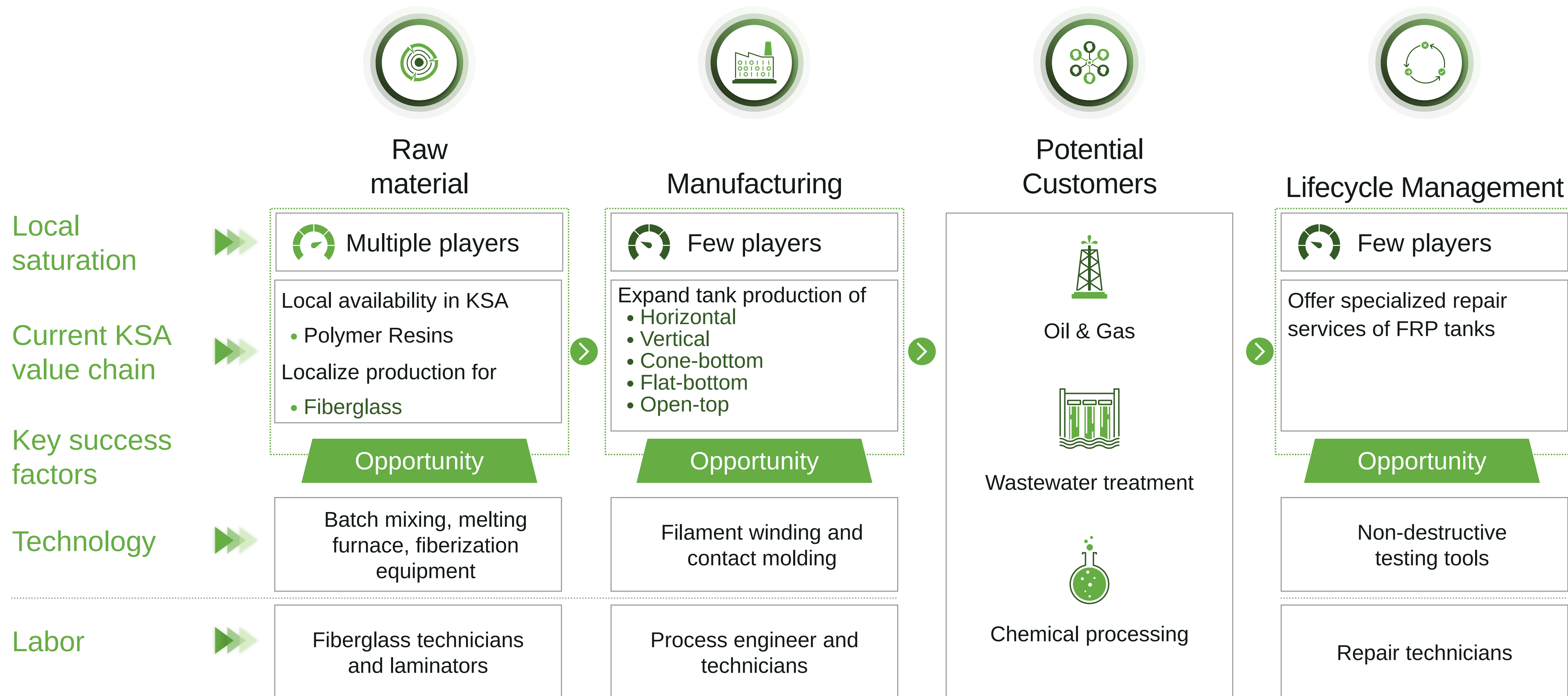
Key KSA demand drivers

- **Rising desalination needs:** Additional shop-fabricated FRP tanks required to serve growing desalination market
- **Sector expansion:** Growth in manufacturing and petrochemicals sectors

Driving Prosperity

Note: Data is for FRP Tanks market in general as shop fabricated are more common than field-fabricated
Source: Agbi; Precise Business Insights, Statista; Team analysis

Value chain and key localization opportunities



Driving Prosperity

Investment opportunity and enablers

Key enablers in KSA to drive success



Capital enablers: Regional land and loan programs from SIDF and industrial land authorities such as KAEC for plant setup



Fiscal incentives: Customs duty exemptions provided by SEDA and ZATCA on exports to wider GCC markets



Special economic zone benefits: Saudization, tax, and administrative benefits from producing goods in special economic zones (e.g., Ras al Khair)



Human capital enablers: ITQAN Institute offering specialized training for inspection and integrity management

Where is the opportunity



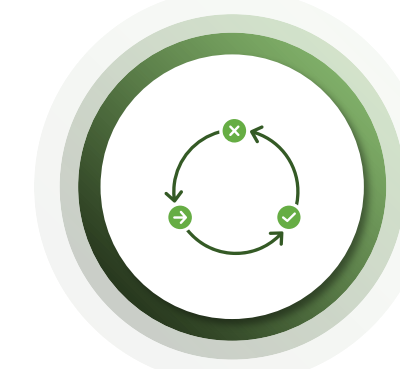
Raw Materials

Grow local production for fiberglass



Manufacturing

Localize production of various FRP tanks



Lifecycle management

Maintenance and repair of FRP tanks

Driving Prosperity

Note: SIDF = Saudi Industrial Development Fund; KAEC = King Abdullah Economic City; SEDA = Saudi Export Development Authority; ZATCA = Zakat, Tax, and Customs Authority; ITQAN = Inspection Technology and Quality Assurance National Institute
Source: Team analysis

Industrial Hoses

Presenter: Jood Baabdullah

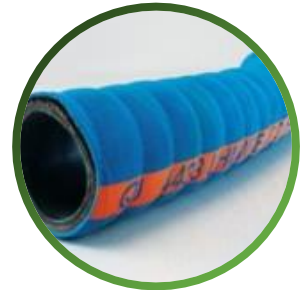
Opportunity profile – Industrial Hoses

1

KSA needing Industrial Hoses to meet current consumer goods expansion



Water hoses



Chemical hoses



Steam & hot wash hoses



Compressed air hoses



Hydraulic hoses

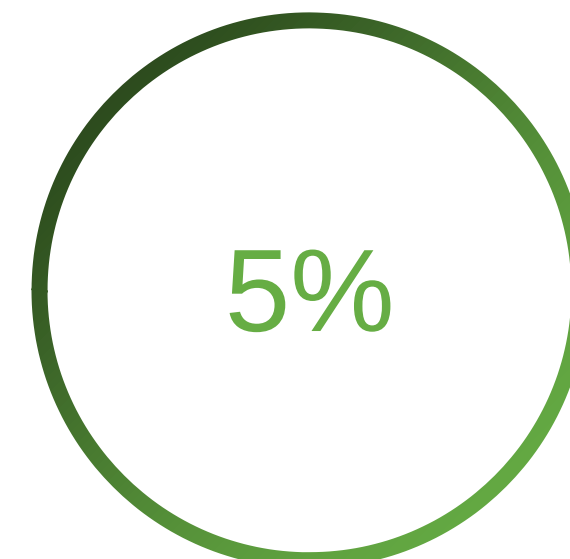
Driving Prosperity

2

Industrial Hoses market is sizeable with significant growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

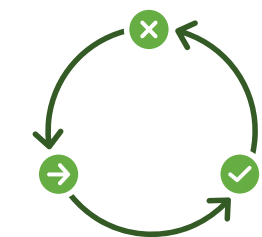
3

Attractive investment opportunities in the Industrial Hoses value chain

KSA value chain opportunities



Manufacturing



Lifecycle Management

KSA enablers

- CAPEX financing programs
- Subsidized land and setup costs
- Productions operations training

Potential Industrial Hoses localized categories

Non-exhaustive				
Water transfer	Chemical transfer	Steam & hot wash	Compressed air & multipurpose	Hydraulic
				
Applications Utilized for irrigation, drainage, and general water movement • Construction • Agriculture • Industrial	Convey a wide range of chemicals, acids, and solvents • Chemical plants • Manufacturing	Convey steam and hot water • Refineries • Industrial	Deliver compressed air to pneumatic tools • Construction • Manufacturing • Automotive	Transmit hydraulic fluid between components • Oil and gas • Construction • Manufacturing

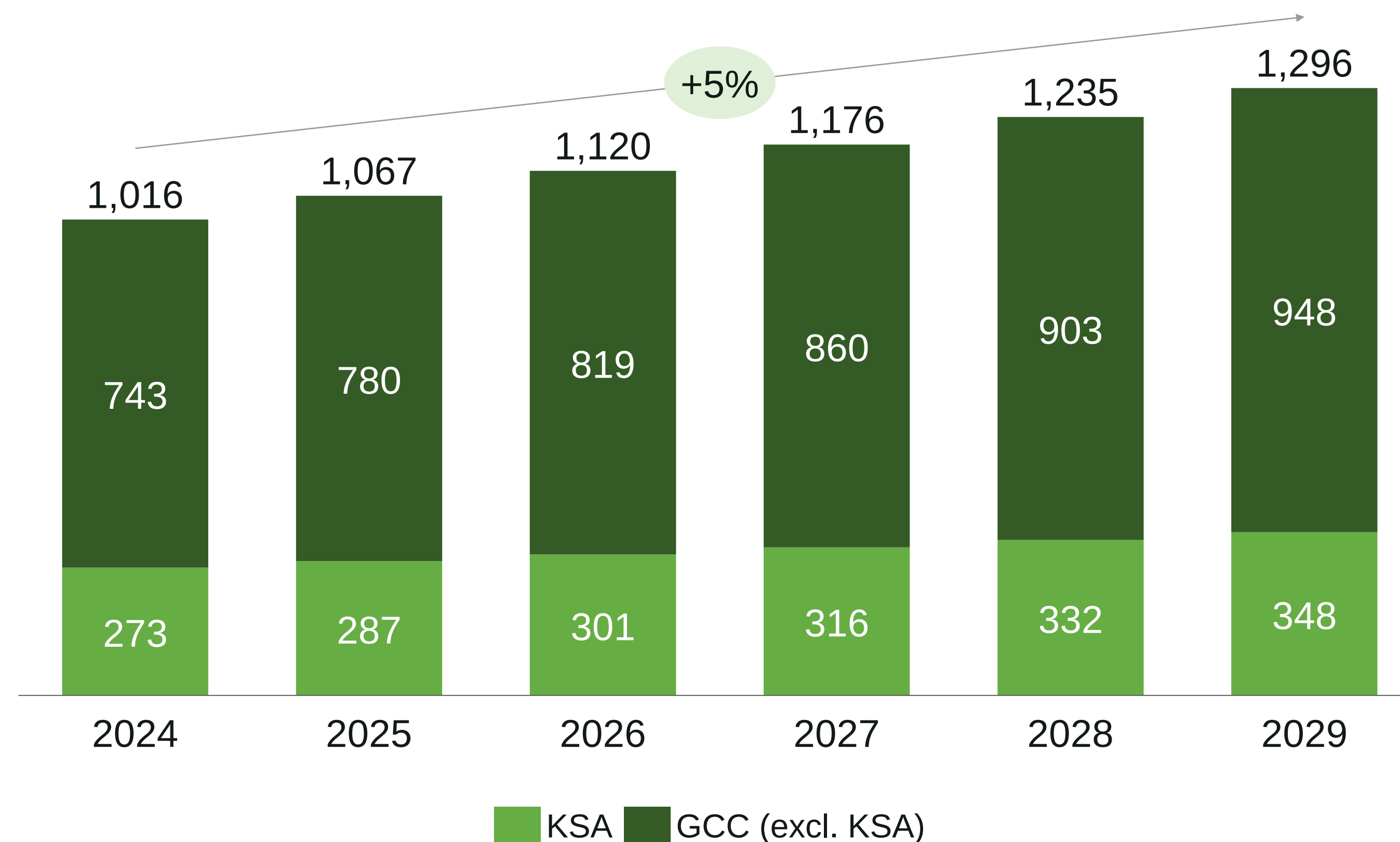
Driving Prosperity

Selected international standards: SAES-J517, ASTM D-380, IS 9573:2012, IS 446:1987

Source: Team analysis

Industrial Hoses demand, customers, and drivers

Forecasted KSA and rest of GCC Industrial Hoses market 2024-2029
(\$MM)



Typical customers in KSA



Oil & Gas



Construction



Chemical Plants and Refineries

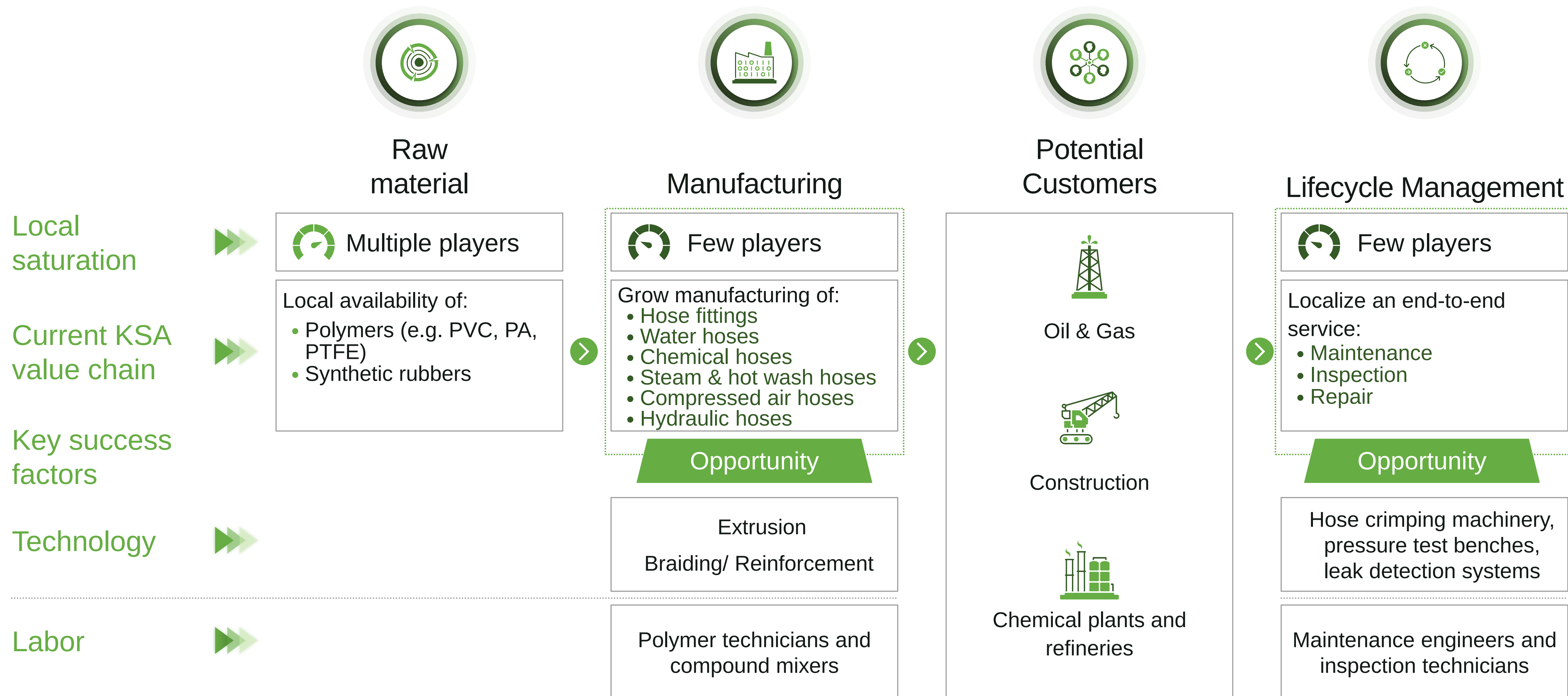
Key KSA demand drivers

- **Industry trends:** Increased manufacturing across sectors such as chemicals and industrial requires hoses for fluid transfer, steam handling, and material conveyance
- **Sector expansion:** Large-scale construction projects such as NEOM and Red Sea Project require extensive use of industrial hoses

Driving Prosperity

Source: Global Market Insights report; Data Bridge Market Research; Team analysis

Value chain and key localization opportunities



Driving Prosperity

Note: NDT = Non-Destructive Testing; PVC = Polyvinyl Chloride; PA = Polyamide; PTFE = Polytetrafluoroethylene

Source: Team analysis

Investment opportunity and enablers

Key enablers in KSA to drive success



Financial program: Access to CAPEX financing programs from SIDF to purchase equipment for production of industrial hoses



Export assistance: Saudi EXIM offers tailored export credits, guarantees, and insurance services for locally manufactured products



Workforce development: Fully covered or subsidized training programs by HRDF and SEDA for productions operations



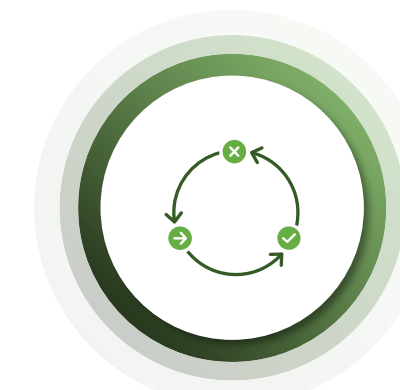
Land and infrastructure: Subsidized land and infrastructure in special economic zones such as Ras Al Khair reduces setup costs

Where is the opportunity



Manufacturing

Specialize in the manufacturing of hose fittings and hoses for water, chemical, steam & hot wash, compressed air and hydraulic use



Lifecycle management

Develop robust services for hose maintenance, repair, and recycling to extend product lifecycle

Driving Prosperity

Note: SIDF = Saudi Industrial Development Fund; HRDF= Human Resource Development Fund; SEDA = Saudi Export Development Authority
Source: Team analysis

Marine and Drilling Hoses

Presenter: Abdullah Bakhshwin

Opportunity profile – Marine and Drilling Hoses

1

KSA needs marine and drilling hoses to meet current industry demand



Submarine hoses



Drilling hoses



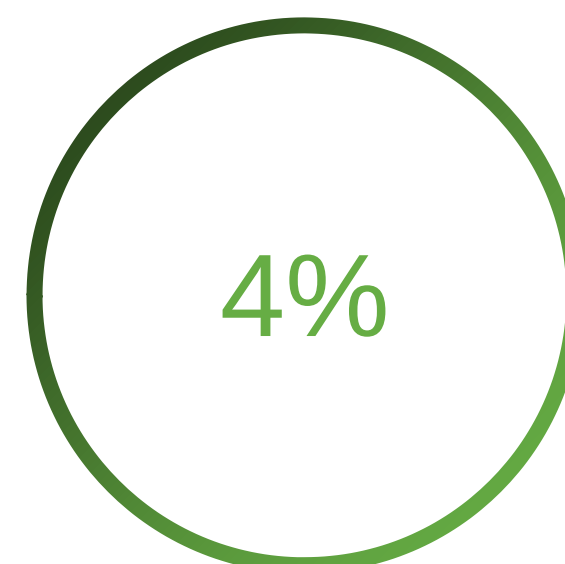
Offshore mooring hoses

2

Marine and drilling hoses market is sizeable with stable forecasted growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

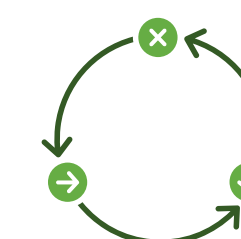
3

Attractive investment opportunities in marine and drilling hoses value chain

KSA value chain opportunities



Manufacturing



Lifecycle Management

KSA enablers

- Financial loans for plant setup
- Skilled visa processing
- Quality certification funding

Driving Prosperity

Note: Figures are predominantly for the marine segment of the market
Source: DataIntelto; Verified Market Research; Team analysis

Potential Marine and Drilling hoses localized categories

Non-exhaustive

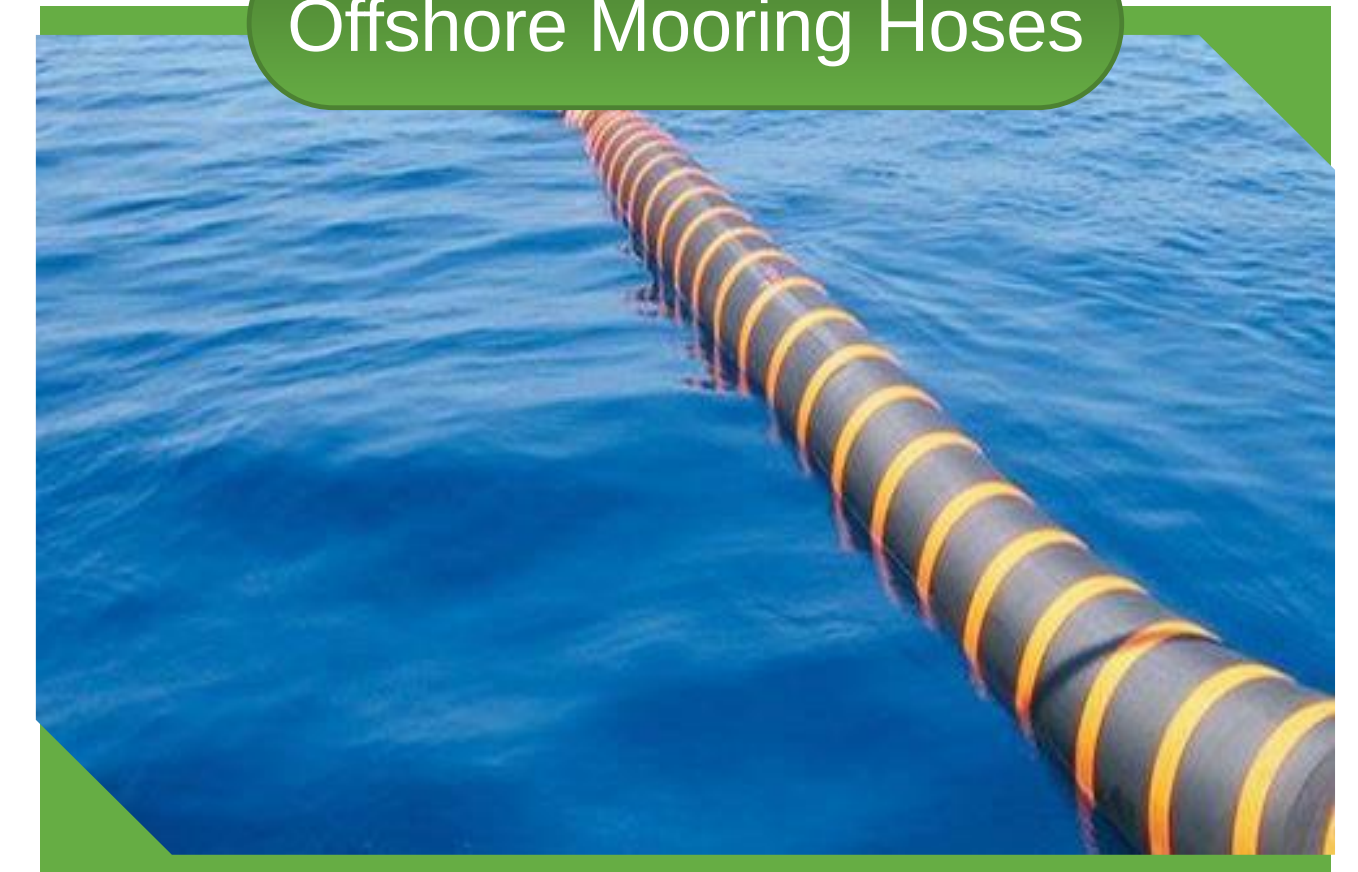
Submarine Hoses



Drilling Hoses



Offshore Mooring Hoses



Applications

- Offshore oilfield usage
- Loading and unloading of crude, refined chemicals, or gas

- Oilfield operations (especially for exploration)
- Convey fluids, cement, and other materials

- SPM integrated hoses
- Transfer hydrocarbons between storage facilities and marine tankers

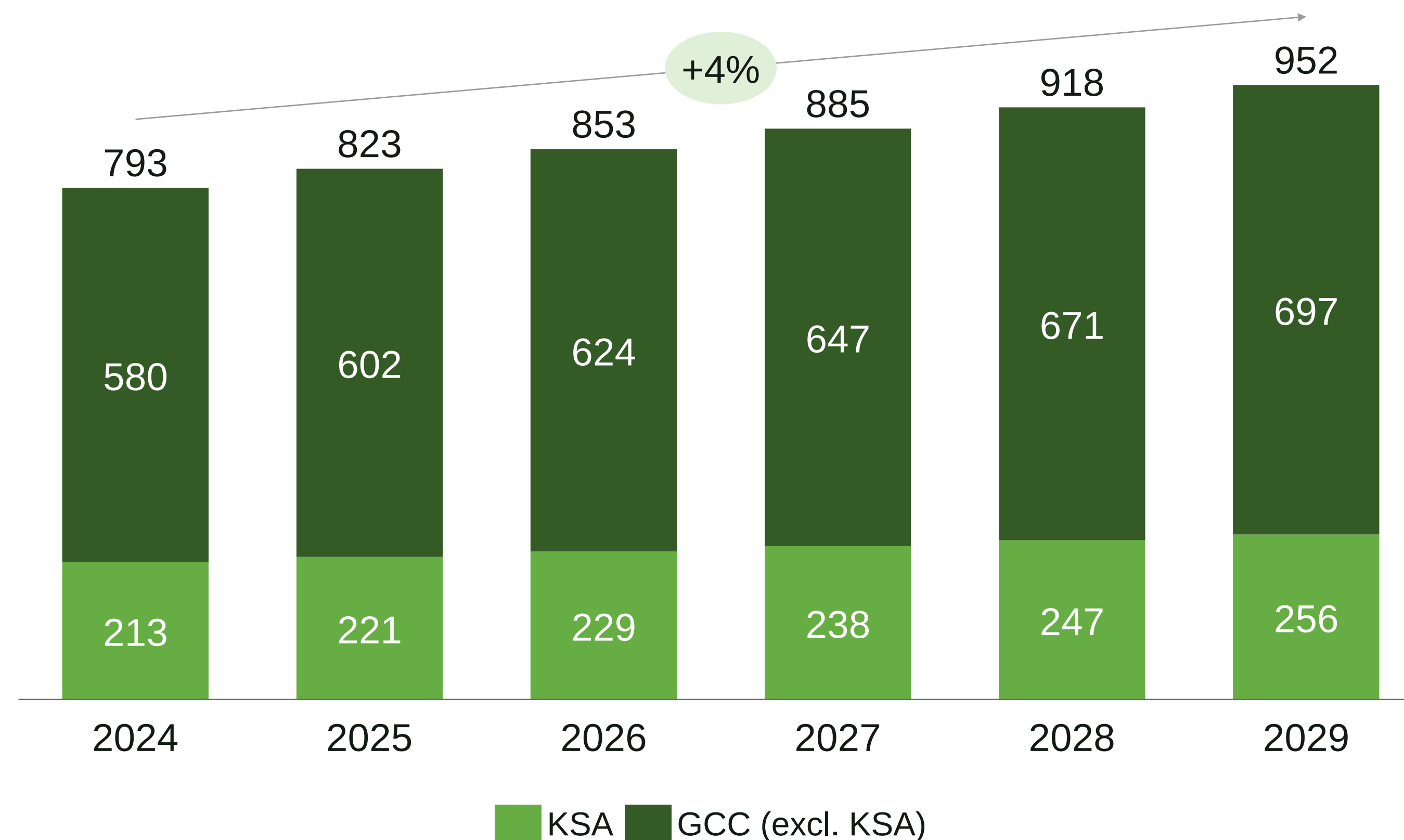
Driving Prosperity

Note: SPM = Single Point Mooring systems. Selected International standards: GMPHOM 2009, EN-1765, API Spec 17K, 22-SAMSS-004 (Aramco)

Source: Team analysis

Marine and Drilling hoses demand, customers, and drivers

Forecasted KSA and rest of GCC Marine and Drilling Hoses market 2024-2029 (\$MM)



Typical customers in KSA



Oil & Gas and Chemicals



Maritime



Offshore Construction

Key KSA demand drivers

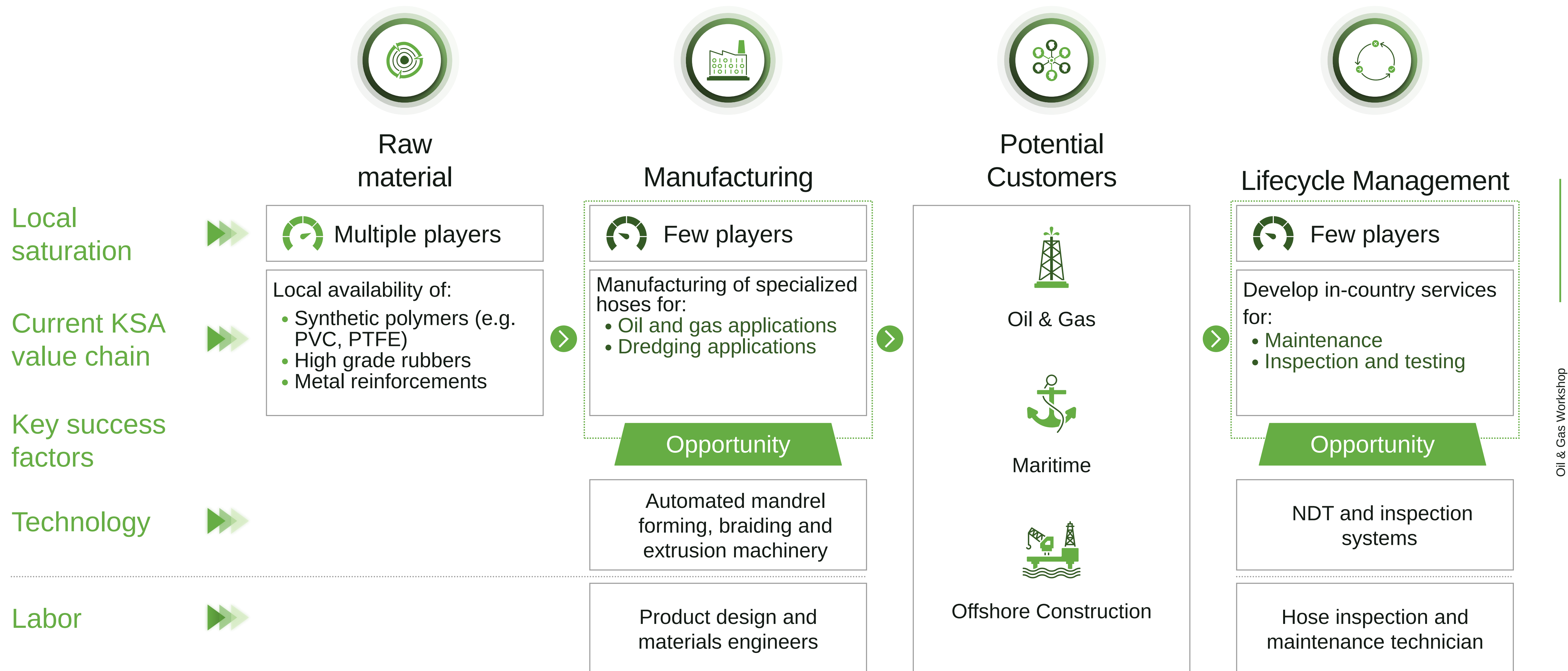
- **Industry trends:** Increased capital expenditure in oil and gas offshore projects to maintain 12 million bpd of production capacity drives demand for marine hoses
- **Rise in bunkering:** Marine and drilling hoses required to support growth in KSA bunkering operations (~19.5% LNG CAGR through 2029)

Driving Prosperity

Source: TechSci; DataIntelo; Verified Market Research; Team analysis

Saudi Aramco: Company General Use

Value chain and key localization opportunities



Note: NDT = Non-Destructive Testing; PVC = Polyvinyl Chloride; PA = Polyamide; PTFE = Polytetrafluoroethylene
Source: Team analysis

Investment opportunity and enablers

Key enablers in KSA to drive success



Financial incentives: Access to financial loans such as Kafalah by SIDF for establishing local manufacturing plants



Special economic zone benefits: Saudization, tax, and administrative benefits from producing goods in special economic zones (e.g., Ras al Khair)



Customs enablers: Custom duty exemption from MoCI on machinery and equipment for establishment of hoses producers



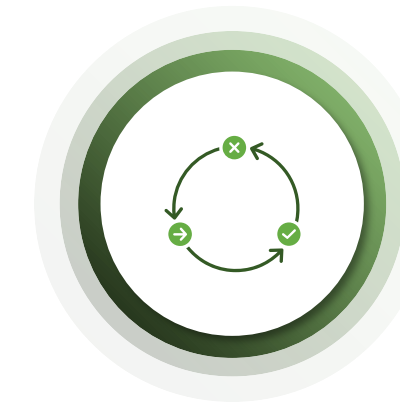
Product certification funding: Funding by SIDF to obtain necessary certifications to meet industry standards

Where is the opportunity



Manufacturing

Build and expand capabilities to manufacture hoses for oil, gas and dredging applications



Lifecycle management

Develop comprehensive services for inspection, maintenance, repair, and recycling

Driving Prosperity

Note: SIDF = Saudi Industrial Development Fund; MoCI = Ministry of Commerce and Industry
Source: Team analysis

Lay-Flat Hoses

Presenter: Abdullah Bakhshwin

Opportunity profile – Lay-Flat Hoses

1

KSA needs lay-flat hoses to meet current industry demand



General purpose hoses



Heavy duty hoses



High pressure and specialty hoses

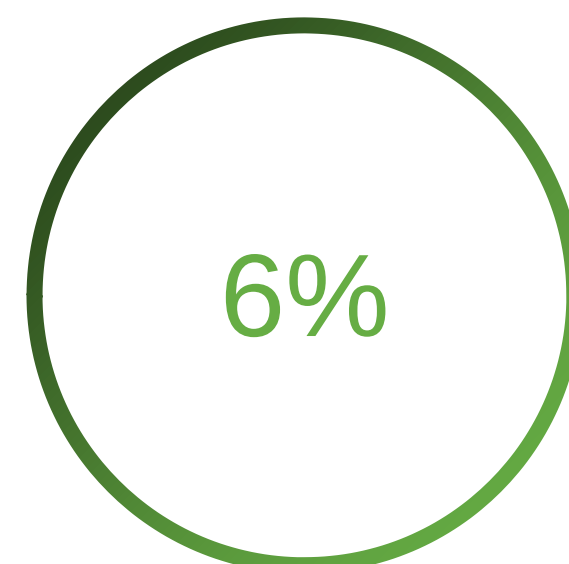
Driving Prosperity

2

Lay-flat hoses market is sizeable with forecasted continued growth



Estimated 2024 KSA market size



Forecasted 5-year CAGR

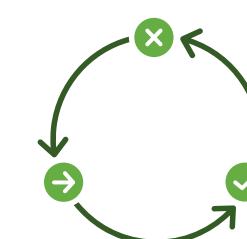
3

Attractive investment opportunities in the lay-flat hoses value chain

KSA value chain opportunities



Manufacturing



Lifecycle Management

KSA enablers

- Subsidized land for plant setup
- Procedural support for exports
- NITI training programs

Potential Lay-Flat Hoses localized categories

Non-exhaustive

General Purpose



Heavy Duty



High Pressure/Specialty



Applications

- Agriculture irrigation
- Construction - draining
- Temporary drinking water supply and flood control
- Municipal water systems

- Firefighting and flood relief
- Mining and industrial
- Produced water transfer

- Industrial construction
- Hazardous chemical/hot oil

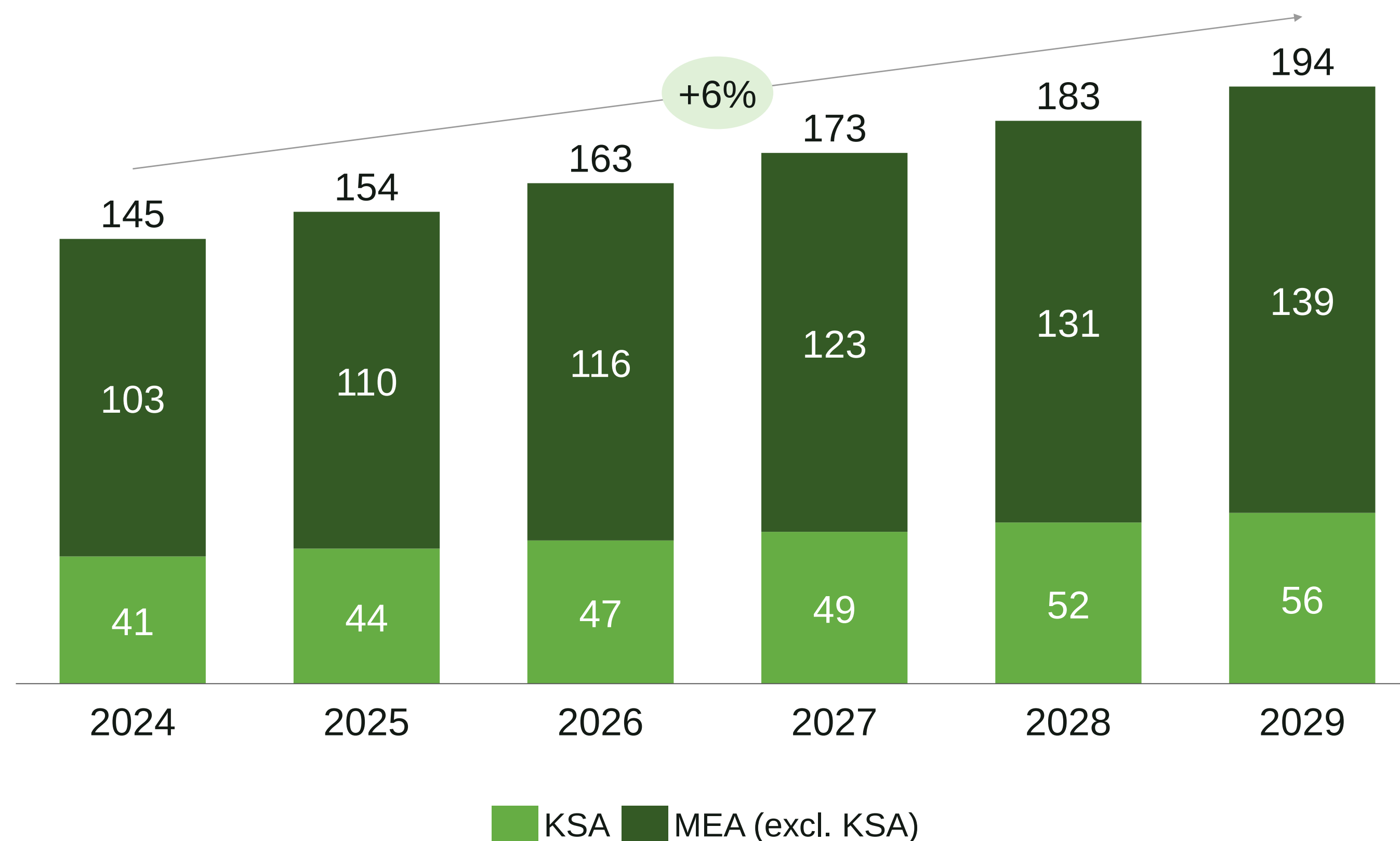
Driving Prosperity

Note: General purpose hoses are typically made of Polyvinyl Chloride hoses, and heavy-duty hoses are made of Thermoplastic Polyurethane and rubber. Selected international standards: API RP 15 WT

Source: Team analysis

Lay-Flat Hoses demand, customers, and drivers

Forecasted KSA and rest of MEA lay-flat hoses market 2024-2029
(\$MM)



Typical customers in KSA



Oil & Gas and Chemicals



Mining



Construction



Agriculture

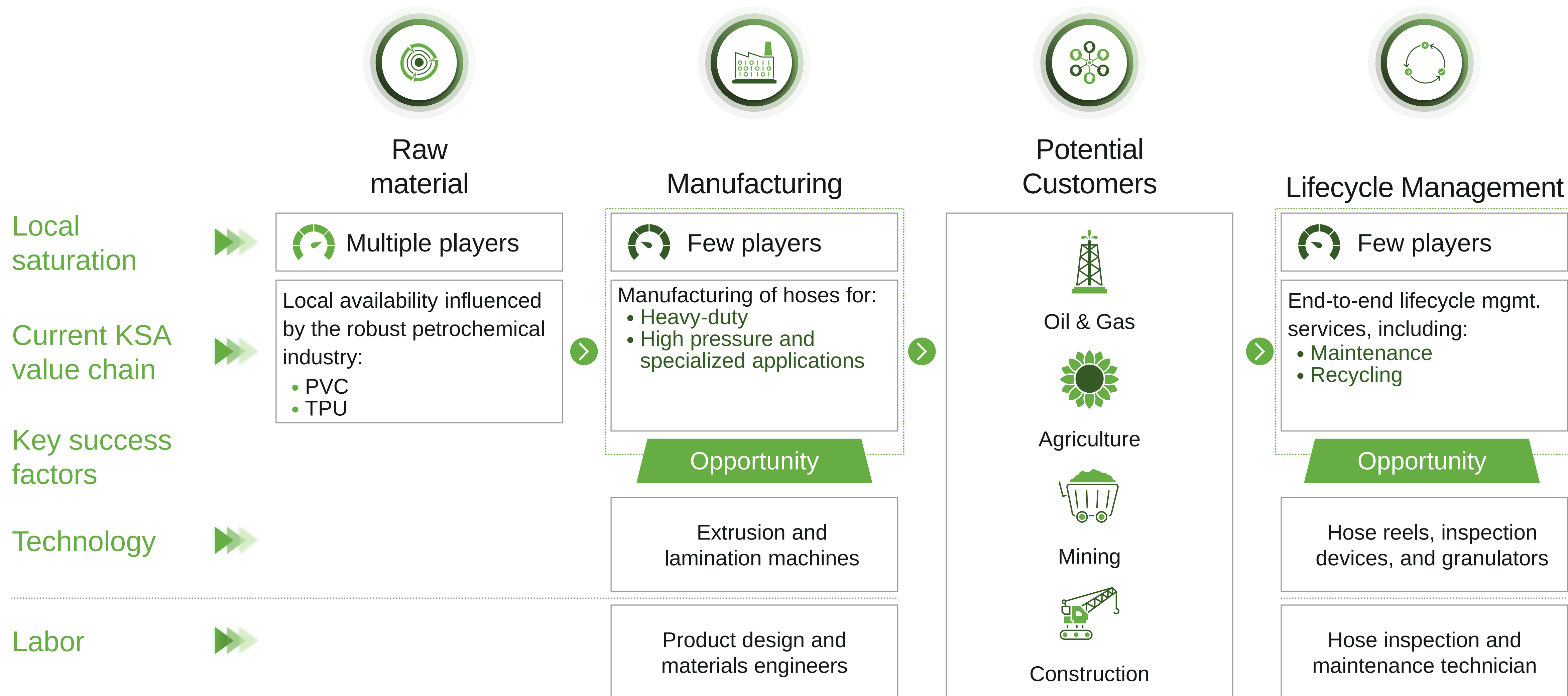
Key KSA demand drivers

- **Industry trends:** Extensive KSA O&G and infrastructure projects drive demand for lay-flat hoses for temporary fluid transfer, dewatering, and emergency response
- **Government initiatives:** Programs aimed at enhancing food security and promoting sustainable agriculture increase demand for reliable irrigation solutions that rely on lay-flat hoses

Driving Prosperity

Source: MarketResearch; Databridge; Team analysis

Value chain and key localization opportunities



Driving Prosperity

Note: PVC = Polyvinyl Chloride; TPU = Thermoplastic Polyurethane

Source: Team analysis

Investment opportunity and enablers

Key enablers in KSA to drive success



Export enabler: Financing, insurance, and trade facilitation support to ease procedural hurdles for exports



Investment facilitation: Market insights and detailed demand forecasts for key resources provided by MISA



Land access: Subsidized land for plant setup across industrial zones under MODON, Royal Commission for Jubail and Yanbu, etc.



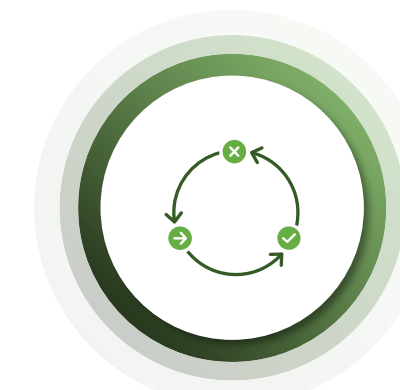
Human capital enablers: NITI training programs to skill technicians and machinists for the manufacturing of hoses

Where is the opportunity



Manufacturing

Grow manufacturing of hoses for heavy-duty, high pressure and specialized applications



Lifecycle management

Providing E2E solutions including regular maintenance, repair and recycling services

Driving Prosperity

Note: MISA = Ministry of Investment Saudi Arabia; MODON = Saudi Authority for Industrial Cities and Technology Zones; NITI = National Industrial Training Institute
Source: Team analysis

Composite Pressure Vessels and Towers

Presenter: Abdullah Bakhshwin

Opportunity profile – Composite Pressure Vessels and Towers

1

Composite Pressure Vessels required to meet gas and liquid storage demand in various sectors



Hoop-wrapped around metal liners



Fully wrapped around metal liners



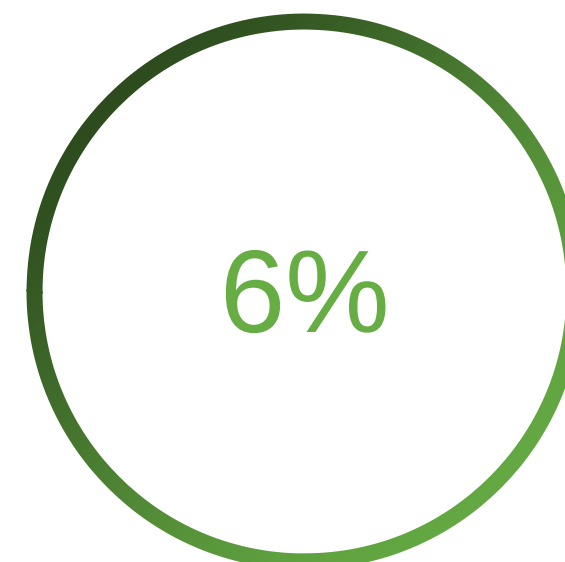
Fully wrapped around non-metallic liners

2

Substantial growth forecasted for the Composite Pressure Vessels and Towers market



Estimated 2029 KSA market size



Forecasted 5-year CAGR

3

Attractive investment opportunities in the Composite Pressure Vessels and Towers value chain

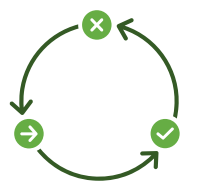
KSA value chain opportunities



Intermediate



Mfg.



Lifecycle Management

KSA enablers

- Regional land and loan programs
- Tax credits on R&D investments
- Inspection training programs

Driving Prosperity

Note: Not including carbon fiber pressure vessels
Source: Dataintelo; Team analysis

Potential Composite Pressure Vessels and Towers localization categories



Applications

Metal liner with composite wrapped around cylindrical section

- Moderate-pressure gas storage

Thin metal liner fully wrapped with composite fibers

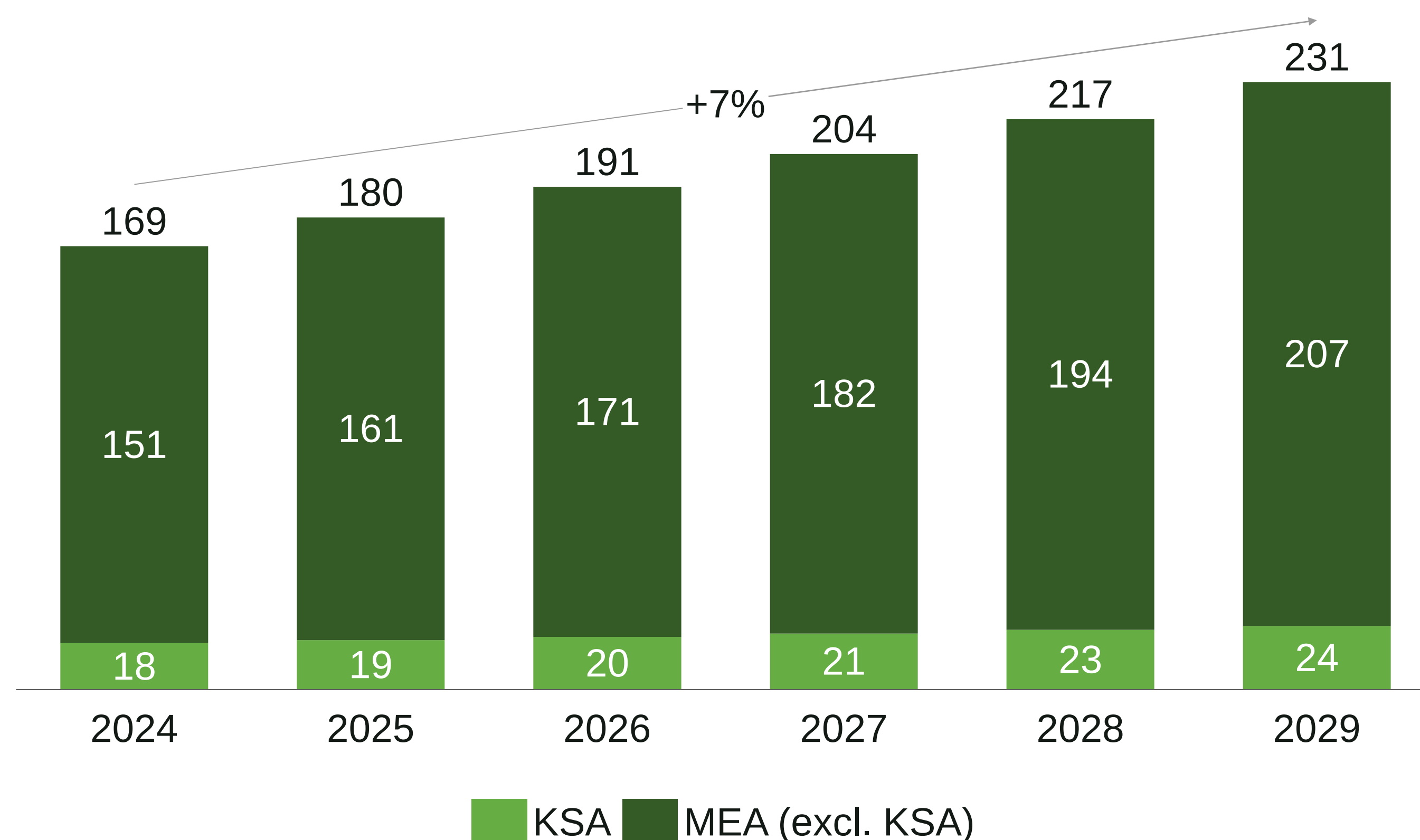
- High-pressure gas storage

Polymer liner (e.g., HDPE) fully wrapped with composite fibers

- High-pressure gas storage

Composite Pressure Vessels and Towers demand, customers, and drivers

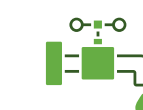
Forecasted KSA and rest of MEA Composite Pressure Vessels and Towers market 2024-2029 (\$MM)



Typical KSA customers



Oil & gas sector for storage and transportation of gases and liquids



Water treatment and desalination



Petrochemical production & processing

Key KSA demand drivers

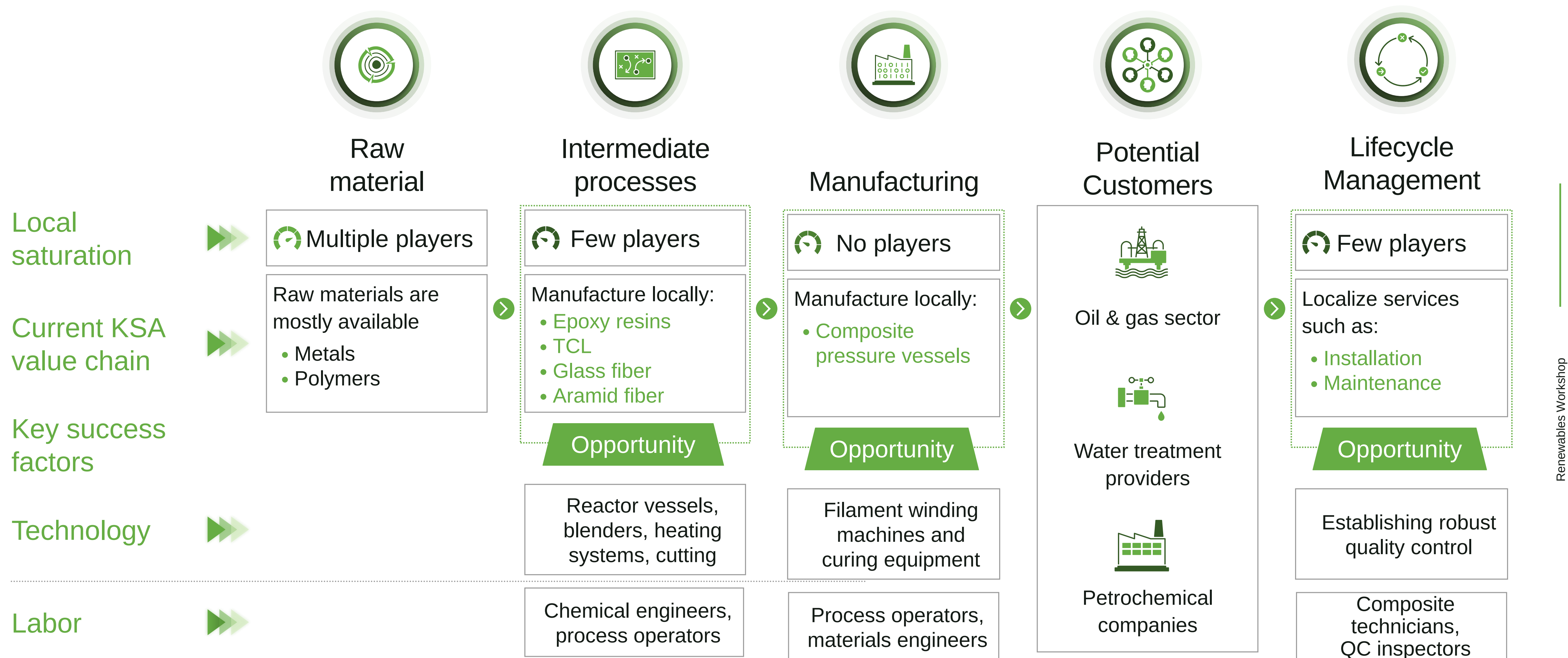
- **Industry trends:** Oil and gas sector requires durable and corrosion-resistant pressure vessels for storing gases and chemicals, making composites an attractive option
- **Sector growth:** Emerging KSA hydrogen projects boost the demand for lightweight and durable pressure vessels

Driving Prosperity

Source: Dataintelo; Team analysis

Saudi Aramco: Company General Use

Value chain and key localization opportunities



Driving Prosperity

Note: TCL = Terephthaloyl chloride
Source: Team analysis

Investment opportunity and enablers

Key enablers in KSA to drive success



Customs Enablers: Custom duty exemption from MoCI on machinery and equipment for establishment of pressure vessel production



Capital Enablers: Regional land and loan programs from SIDF and industrial land authorities such as KAEC for plant setup



Tax Incentives: Tax credits on R&D investments to encourage innovation in local composite pressure vessel production



Human Capital Enablers: ITQAN Institute offering specialized training for inspection and maintenance services

Where is the opportunity



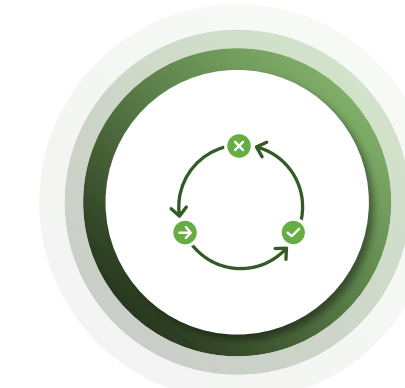
Intermediate

Localize production of epoxy resins, TCL, glass fiber, and aramid fiber



Manufacturing

Build capabilities for the local manufacturing of composite pressure vessels



Lifecycle management

Localize installation and maintenance services

Driving Prosperity

Note: MoCI = Ministry of Commerce and Industry; SIDF = Saudi Industrial Development Fund; KAEC = King Abdullah Economic City; ITQAN = Inspection Technology and Quality Assurance National Institute; TCL = Terephthaloyl chloride
Source: Team analysis

Please direct Business Opportunities inquiries below:



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Website: <https://iktva.sa/english/opportunities/opportunity-submission-form>

Email: local-content@Aramco.com

**Thank
You**