

Drilling

Casing & Tubing Workshop

Business Opportunities

13th January 2025

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.

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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.

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
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Business Opportunities

12 Sectors	210 Business Opportunities	\$28 bn Annual Market Size
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Anchor Projects

 IMI	 SPARK	 Tuwaiq
6 Anchor projects		

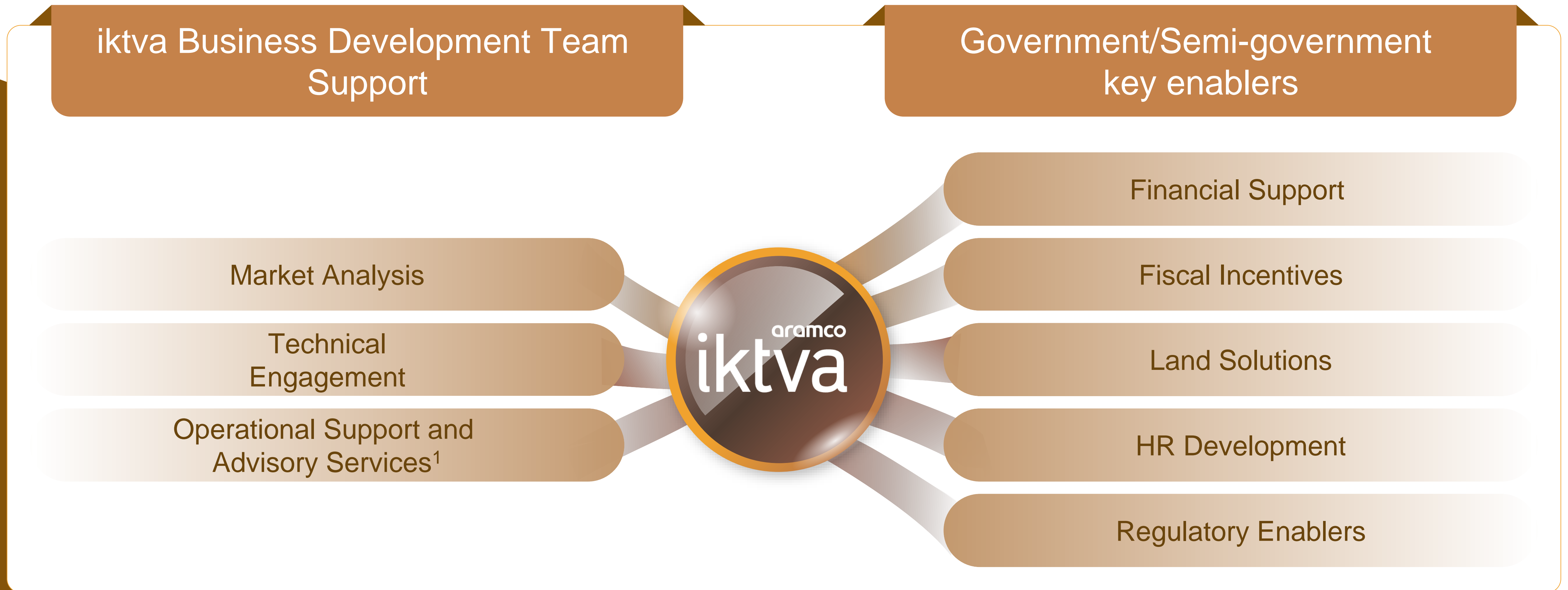


Local Workforce Development

16 National Training Centers	90+ Programs
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Catalyzing Supply Chains

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



Catalyzing Supply Chains

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.

Tubular Market Overview

KSA tubular market snapshot



2024 KSA market size for opportunities
in today's workshop

Seven opportunities to be discussed today

- 1 Downhole Nonmetallic Casing
- 2 Downhole Nonmetallic Tubing
- 3 OCTG Tubing
- 4 CRA OCTG
- 5 CRA OCTG Accessories

Downhole Nonmetallic Casing (RTR)

Mohammad Dawood

Opportunity profile – Downhole Nonmetallic Casing (RTR)

1

KSA in high need of NM Casing to realize ongoing O&G expansion

2

NM Casing is a high growth market, KSA has the largest regional share

3

Attractive investment opportunities for the NM Casing value chain

Key specifications

Sizes

7", 9-5/8", 13-3/8", 18-5/8"+

Pressure range

500 – 5,000 PSI

Temp. range

150 – 250 F

6

2024 KSA market size (\$MM)

145%

Forecasted 5-year CAGR

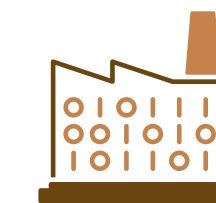
KSA value chain opportunities



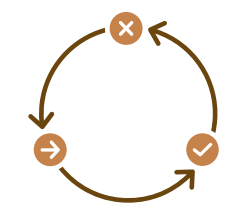
R&D



Raw Materials



OEM Mfg.



Lifecycle Mgmt.

KSA enablers

- Preference for local manufacturing supporting local content goals
- Saudization and tax benefits in special economic zones
- Favorable labor and utilities rates
- Competitive taxes

Catalyzing Supply Chains

Note: \$MM = USD Millions
 Source: Aramco; Press releases; Team analysis

Downhole Nonmetallic Casing Technical Overview

Sizes

Pressure Range

Temperature Range



7", 9-5/8", 13-3/8", 18-5/8"+

500 – 5,000 PSI

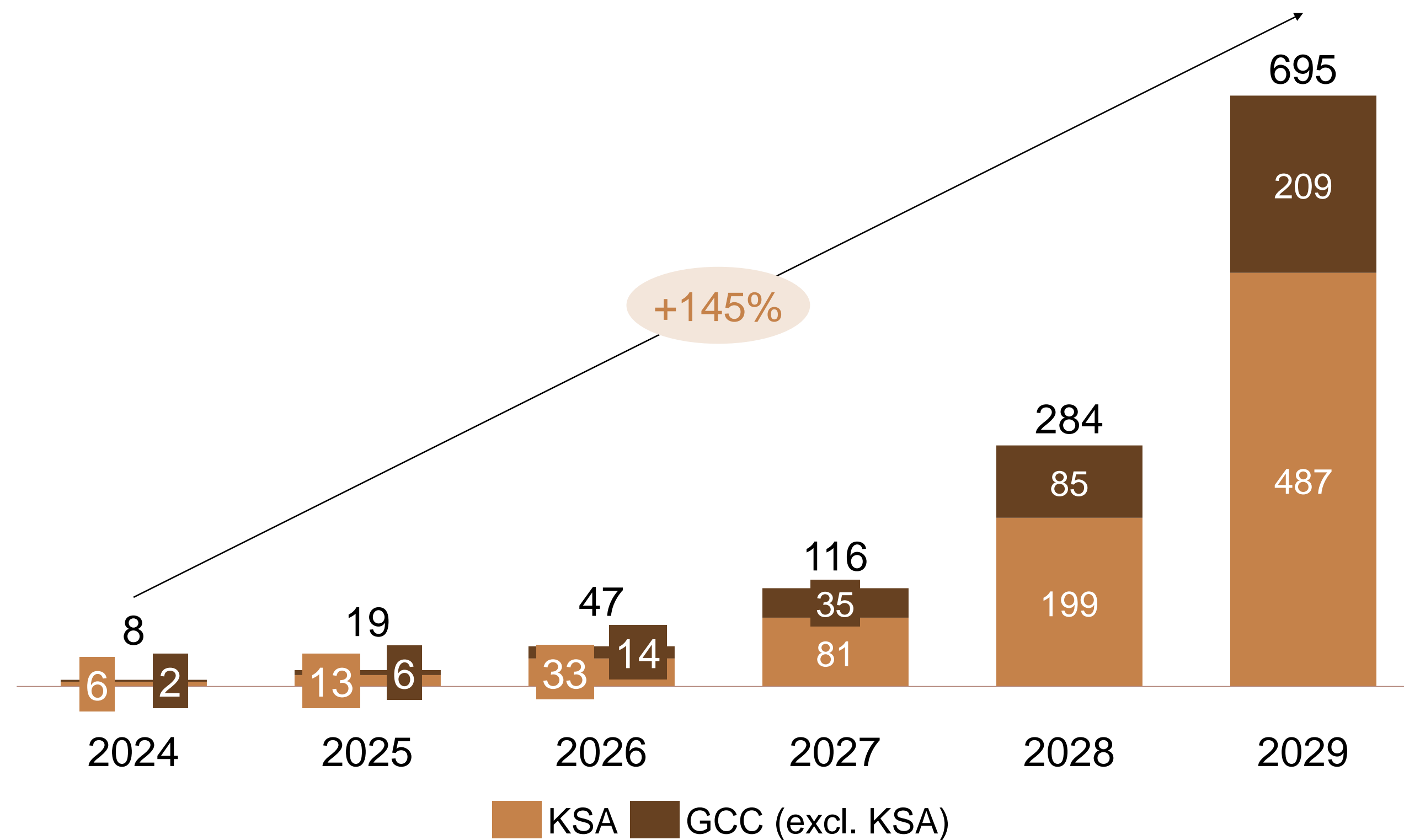
150 – 250 F

Catalyzing Supply Chains

Aramco material number: 1. 6000015141
Source: Aramco; Press releases; Team analysis

Downhole Nonmetallic Casing demand, customers, and drivers

Forecasted KSA and rest of GCC NM Casing market 2024-2029 (\$MM)



Typical NM Casing customers in KSA



Oil producers



Water providers

Key KSA demand drivers

- **Rise in upstream activity and growth in water activities:** Bolstered upstream and water well activities require additional downhole NM tubing
- **Demand for metallic corrosion-free systems:** Shift towards corrosion-free systems leads to rapid adoption of RTR and RTP products

Catalyzing Supply Chains

Note: \$MM = USD Millions; RTR = Reinforced Thermosetting Resin; RTP = Reinforced Thermoplastic Pipe
Source: Aramco; Press releases; Team analysis

Value chain and key localization opportunities



R&D > Raw Material > OEM Manufacturing > Lifecycle Mgmt.

Local saturation	Few players	Few players	Few players	Few players
Current KSA value chain	<ul style="list-style-type: none"> Conduct downhole nonmetallic casing R&D for local needs 	<ul style="list-style-type: none"> Manufacture PTFE and composite fibers 	<ul style="list-style-type: none"> Manufacture downhole nonmetallic casings 	<ul style="list-style-type: none"> Establish service hub for nonmetallic casing maintenance
Key success factors	Opportunity	Opportunity	Opportunity	Opportunity
Technology	Prototyping tools and testing equipment available	Molding & fiber spinning equipment available	Specialized molding, lay-up and bonding equipment available for import	UDT equipment available
Labor	Mechanical engineers, materials scientists available	Materials scientists and composite technicians available	Molding technicians & extrusion operators available	Field engineers, technicians available

Catalyzing Supply Chains

Note: PTFE = Polytetrafluoroethylene; UDT = Ultrasonic and Radiographic Testing
Source: Aramco; Press releases; Team analysis

Downhole Nonmetallic Tubing (RTP)

Mohammad Dawood

Opportunity profile – Downhole Nonmetallic Tubing (RTP)

1

KSA in high need of NM Tubing to realize ongoing O&G expansion

2

NM Tubing is a rapid growth market, KSA has the largest regional share

3

Attractive investment opportunities for the NM Tubing value chain

Key specifications

Sizes

2-3/8", 2-7/8", 3-1/2", 4-1/2", 5" & 5-1/2"

Pressure range

1,500 – 5,000 PSI

Temp. range

150 – 250 F

12

2024 KSA market size (\$MM)

36%

Forecasted 5-year CAGR

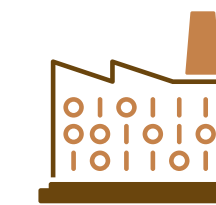
KSA value chain opportunities



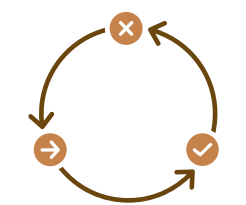
R&D



Raw Materials



OEM Mfg.



Lifecycle Mgmt.

KSA enablers

- Preference for local manufacturing supporting local content goals
- Saudization and tax benefits in special economic zones
- Favorable labor and utilities rates
- Competitive taxes

Catalyzing Supply Chains

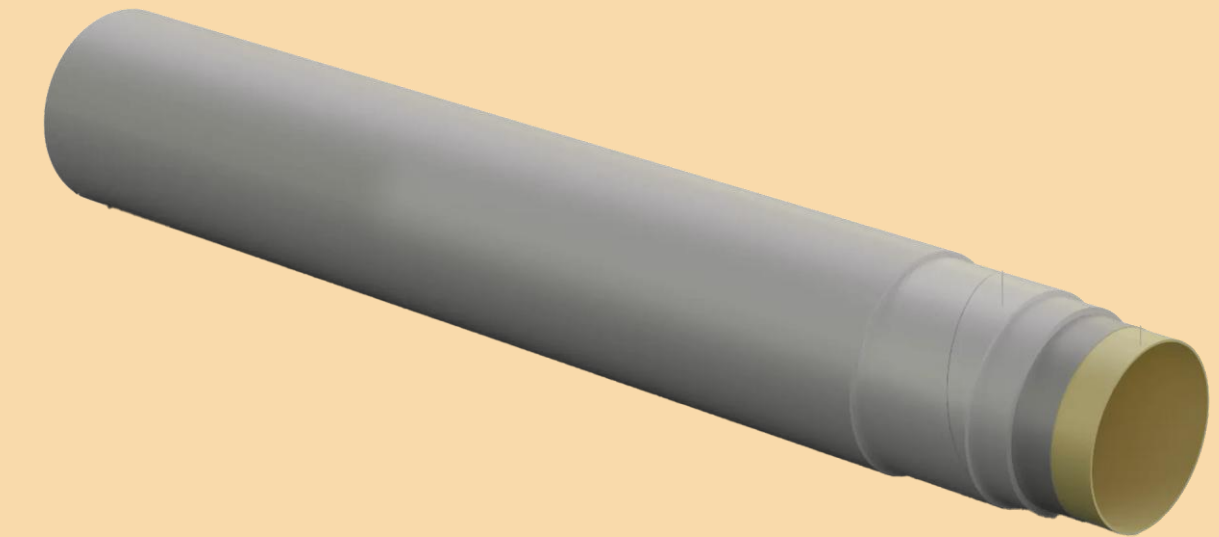
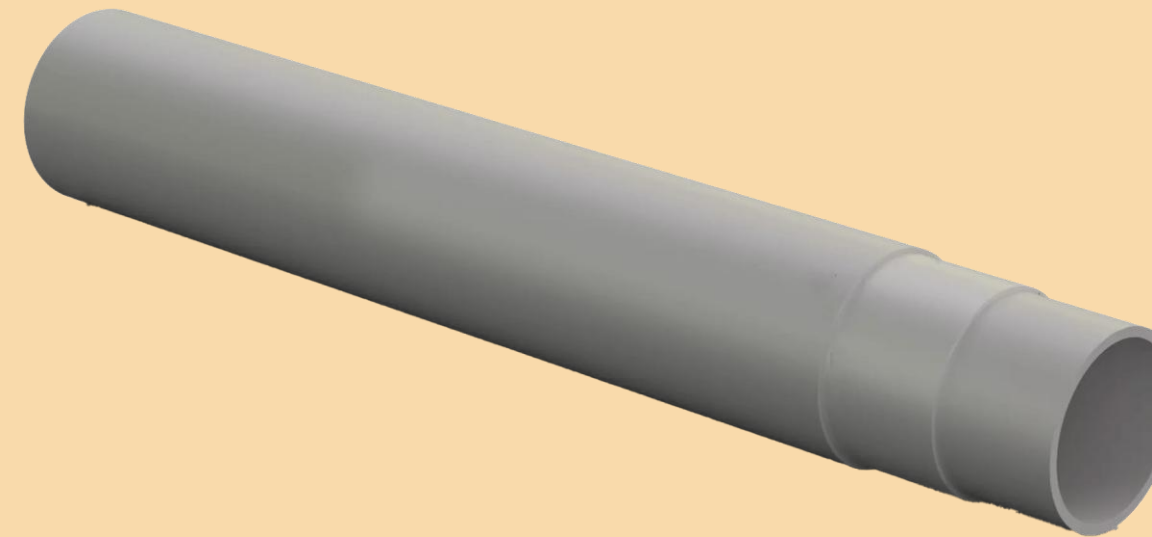
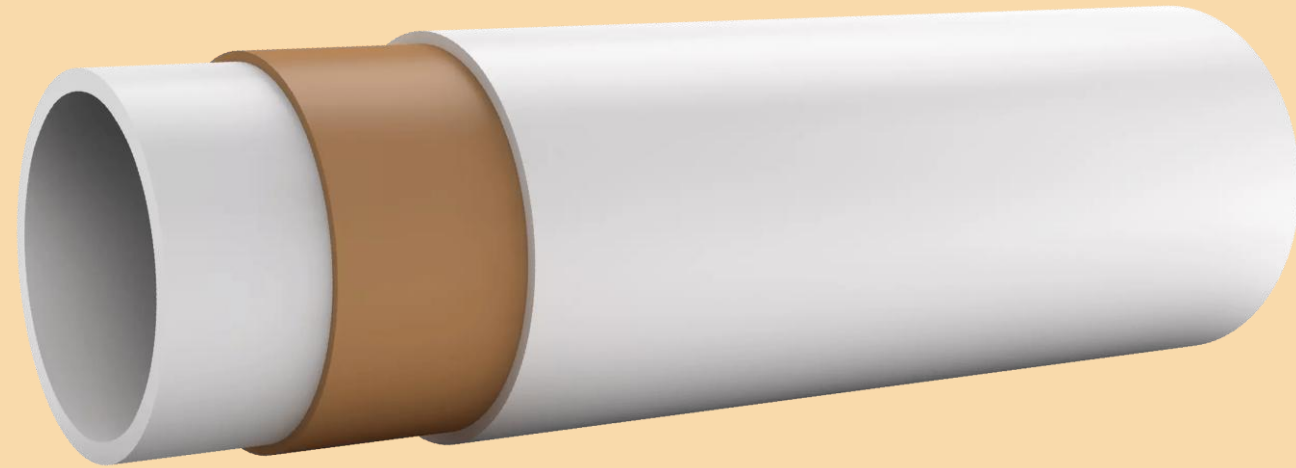
Note: \$MM = USD Millions
 Source: Aramco; Press releases; Team analysis

Downhole Nonmetallic Tubing Technical Overview

Sizes

Pressure Range

Temperature Range



2-3/8", 2-7/8", 3-1/2", & 4-1/2", 5", 5 1/2"

1,500 – 5,000 PSI

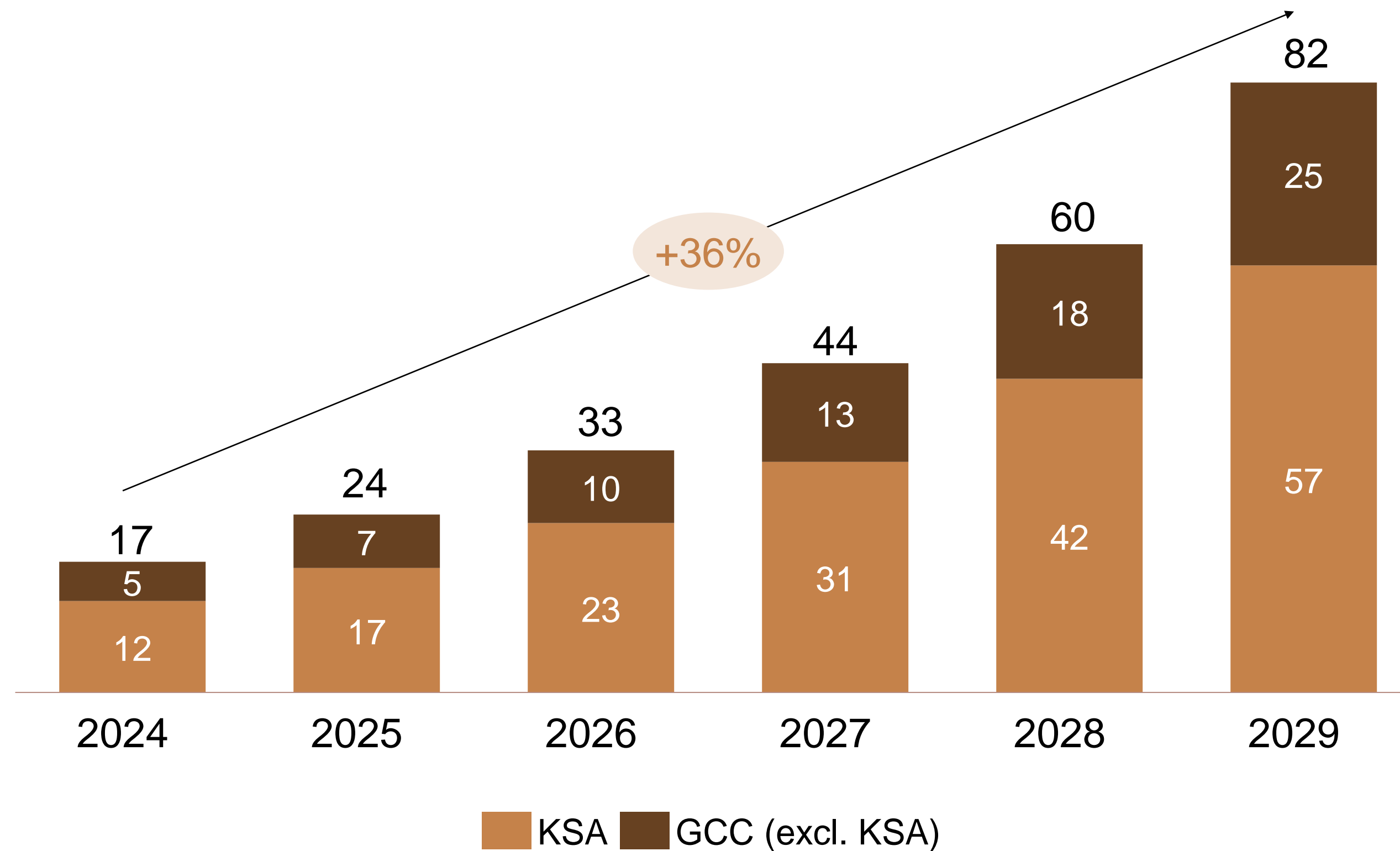
150 – 250 F

Catalyzing Supply Chains

Aramco material number: 1. 6000015141
Source: Aramco; Press releases; Team analysis

Downhole Nonmetallic Tubing demand, customers, and drivers

Forecasted KSA and rest of GCC NM Tubing market 2024-2029 (\$MM)



Typical NM Tubing customers in KSA



Oil producers



Water providers

Key KSA demand drivers

- **Rise in upstream activity and growth in water activities:** Bolstered upstream and water well activities require additional downhole NM tubing
- **Demand for metallic corrosion-free systems:** Shift towards corrosion-free systems leads to rapid adoption of RTR and RTP products

Catalyzing Supply Chains

Note: \$MM = USD Millions; RTR = Reinforced Thermosetting Resin; RTP = Reinforced Thermoplastic Pipe
Source: Aramco; Press releases; Team analysis

Value chain and key localization opportunities



R&D

Raw Material

OEM Manufacturing

Lifecycle Mgmt.

Local saturation	Few players	Few players	Few players	Few players
Current KSA value chain	<ul style="list-style-type: none"> Conduct downhole nonmetallic tubing R&D for local needs 	<ul style="list-style-type: none"> Manufacture PTFE and composite fibers 	<ul style="list-style-type: none"> Manufacture downhole nonmetallic tubing 	<ul style="list-style-type: none"> Establish service hub for nonmetallic tubing maintenance
Key success factors	Opportunity	Opportunity	Opportunity	Opportunity
Technology	Prototyping tools and polymer processing equipment available	Molding & fiber spinning equipment available	Molding and composite fabrication equipment available for import	UDT equipment available
Labor	Mechanical and polymer engineers, technicians available	Materials scientists and composite technicians available	Polymer technicians & extrusion operators available	Field engineers, technicians available

Catalyzing Supply Chains

Note: PTFE = Polytetrafluoroethylene; UDT = Ultrasonic and Radiographic Testing
Source: Aramco; Press releases; Team analysis

OCTG Tubing

Jasem Al Moayaibed

Opportunity profile – OCTG Tubing

1

KSA in high need of OCTG Tubing to realize ongoing O&G expansion

2

OCTG Tubing is a growing market, KSA has the largest regional share

3

Attractive investment opportunities for the OCTG Tubing value chain

Key specifications

Sizes



2-3/8" to 5-1/2"

605

Estimated 2024 KSA market size (\$MM)

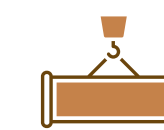
7%

Forecasted 5-year CAGR

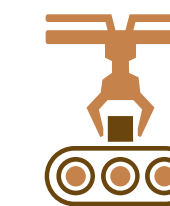
KSA value chain opportunities



R&D



Billet production



Rolling mill



Heat & finishing

KSA enablers

- Preference for local manufacturing supporting local content goals
- Saudization and tax benefits in special economic zones
- Favorable labor and utilities rates
- Competitive taxes

Catalyzing Supply Chains

OCTG Tubing Technical Overview

Materials

Sizes

Length



J-55, K-55, N-80, L-80, C-90, R95, T-95, Q125



2-3/8", 2-7/8", 3-1/2", 4-1/2", 5-1/2"



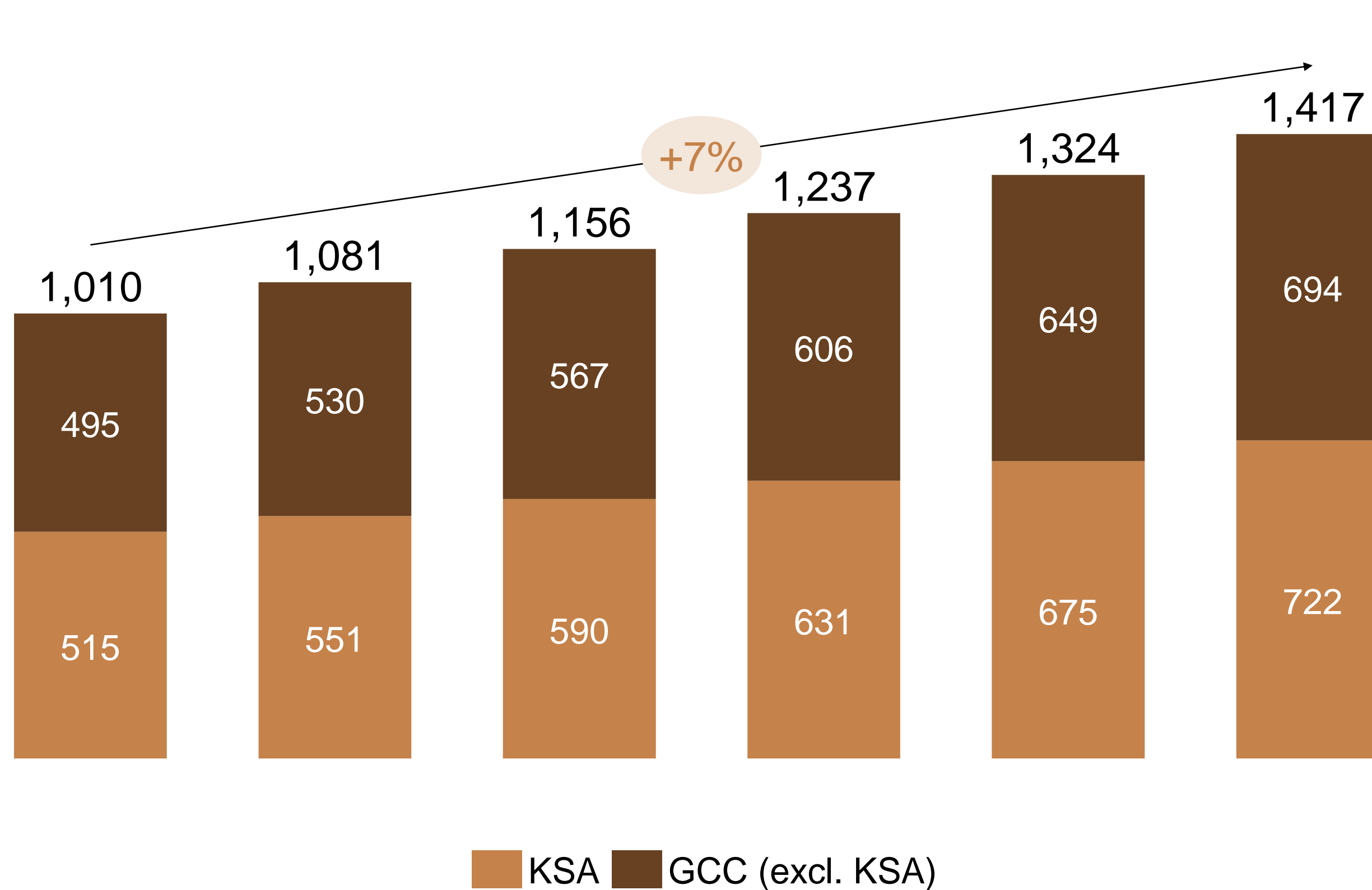
Range 2 (~30 feet)
Range 3 (~40 feet)

Catalyzing Supply Chains

Aramco material number: 1. 6000003877 API OCTG Tubing, 2. 6000003879 Premium OCTG Tubing
Source: Aramco; Fortune Business Insights; Press releases; Team analysis

OCTG Tubing demand, customers, and drivers

Forecasted KSA and rest of GCC OCTG Tubing market 2024-2029 (\$MM)



OCTG Tubing customers in KSA



Oil producers



Gas producers

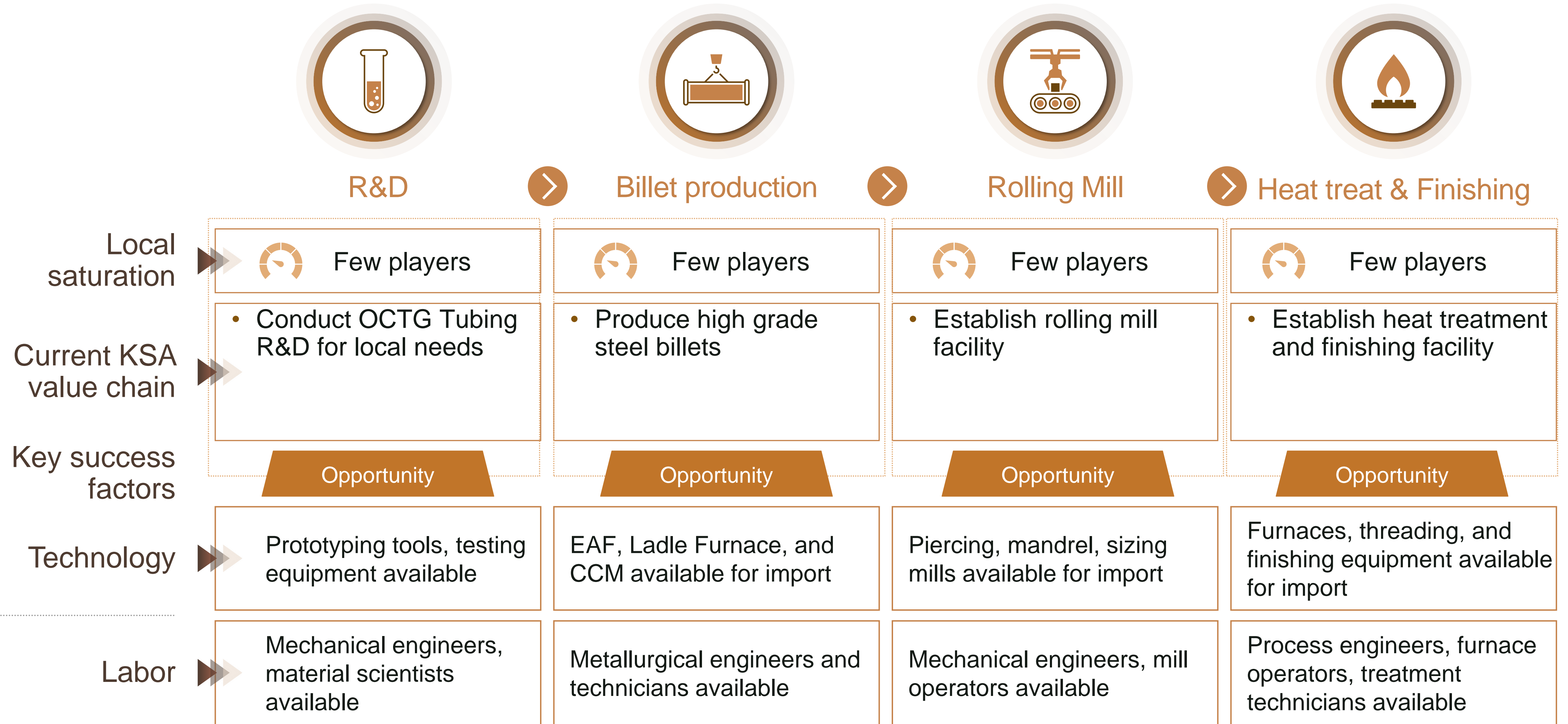
Key KSA demand drivers

- **Increase in well depth:** Deeper wells requires additional OCTG tubing
- **Rise in upstream activity and growth in gas production:** Bolstered upstream and gas production activities require additional OCTG tubing

Catalyzing Supply Chains

Note: \$MM = USD Millions
Source: Aramco; Fortune Business Insights; Press releases; Team analysis

Value chain and key localization opportunities



Catalyzing Supply Chains

Note: EAF = Electric Arc Furnace; CCM = Continuous Casting Machine
Source: Aramco; Fortune Business Insights; Press releases; Team analysis

CRA OCTG

Jasem Al Moayaibed

Opportunity profile – CRA OCTG

1

KSA in high need of CRA OCTG to realize ongoing O&G expansion

2

CRA OCTG is a rapid growth market, KSA has the largest regional share

3

Attractive investment opportunities for the CRA OCTG value chain

Key specifications



Size

4-1/2", 7", 9-5/8"

50

Estimated 2024 KSA market size (\$MM)

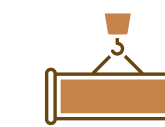
5%

Forecasted 5-year CAGR

KSA value chain opportunities



R&D



Processing



Finishing

KSA enablers

- Preference for local manufacturing supporting local content goals
- Saudization and tax benefits in special economic zones
- Favorable labor and utilities rates
- Competitive taxes

Catalyzing Supply Chains

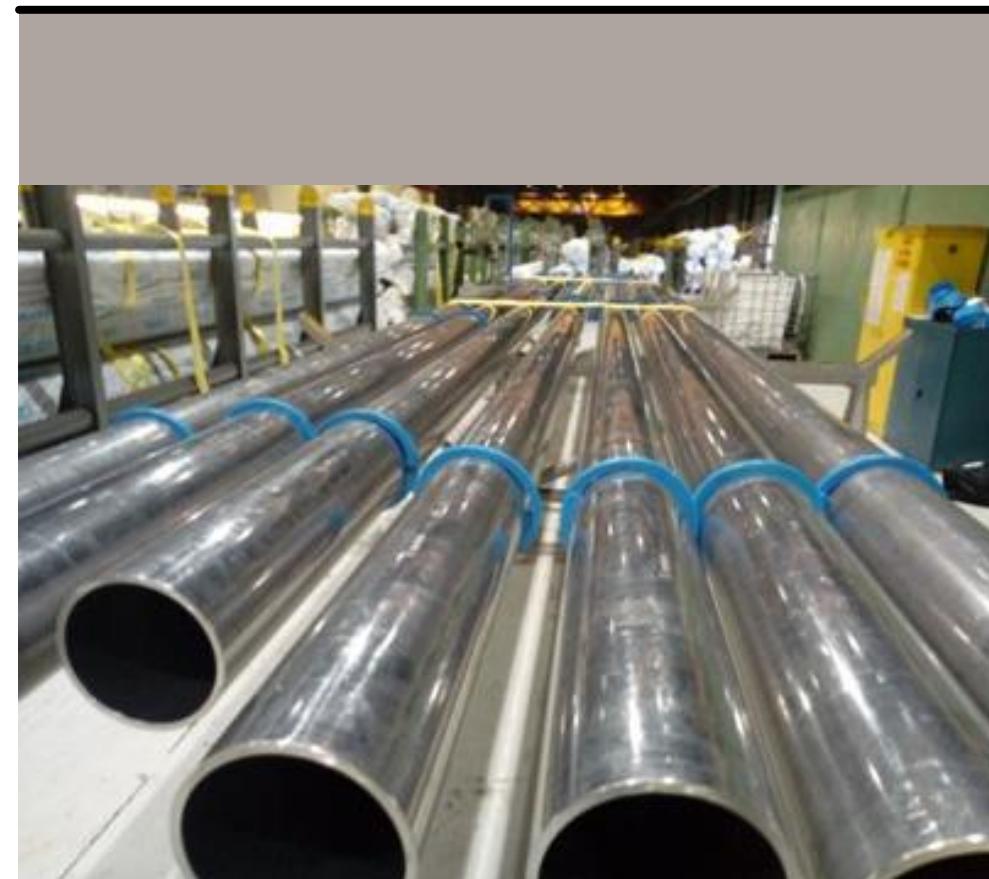
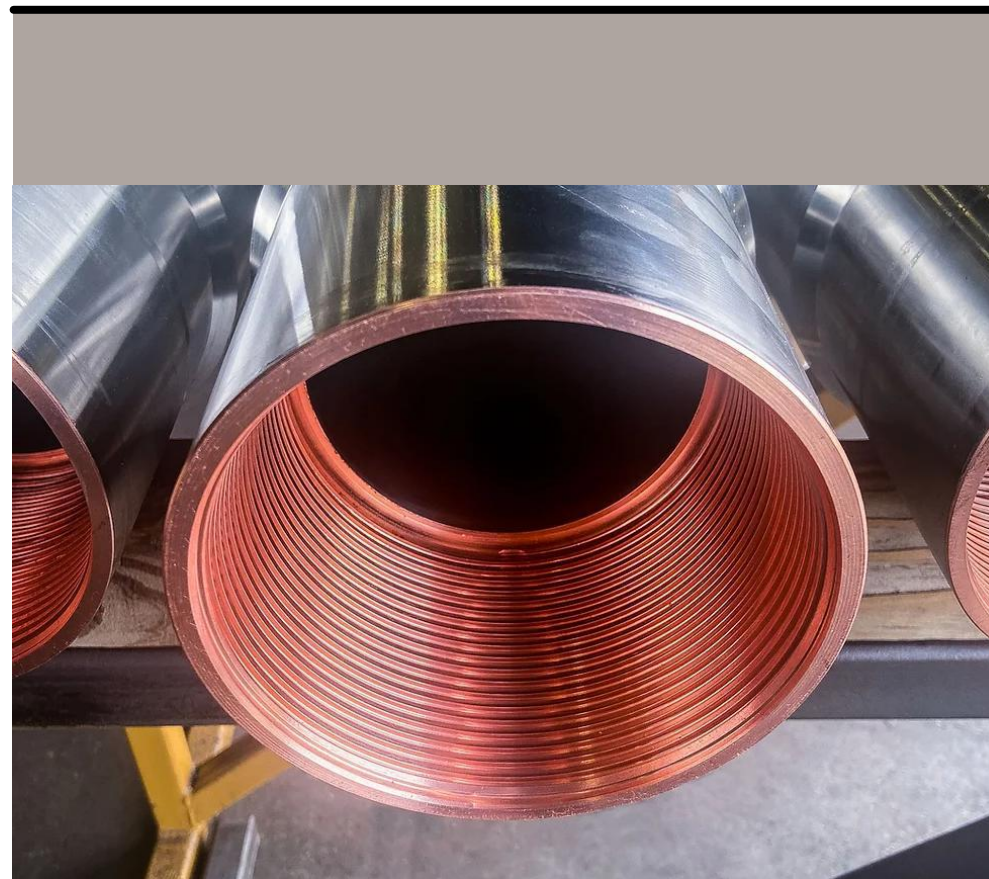
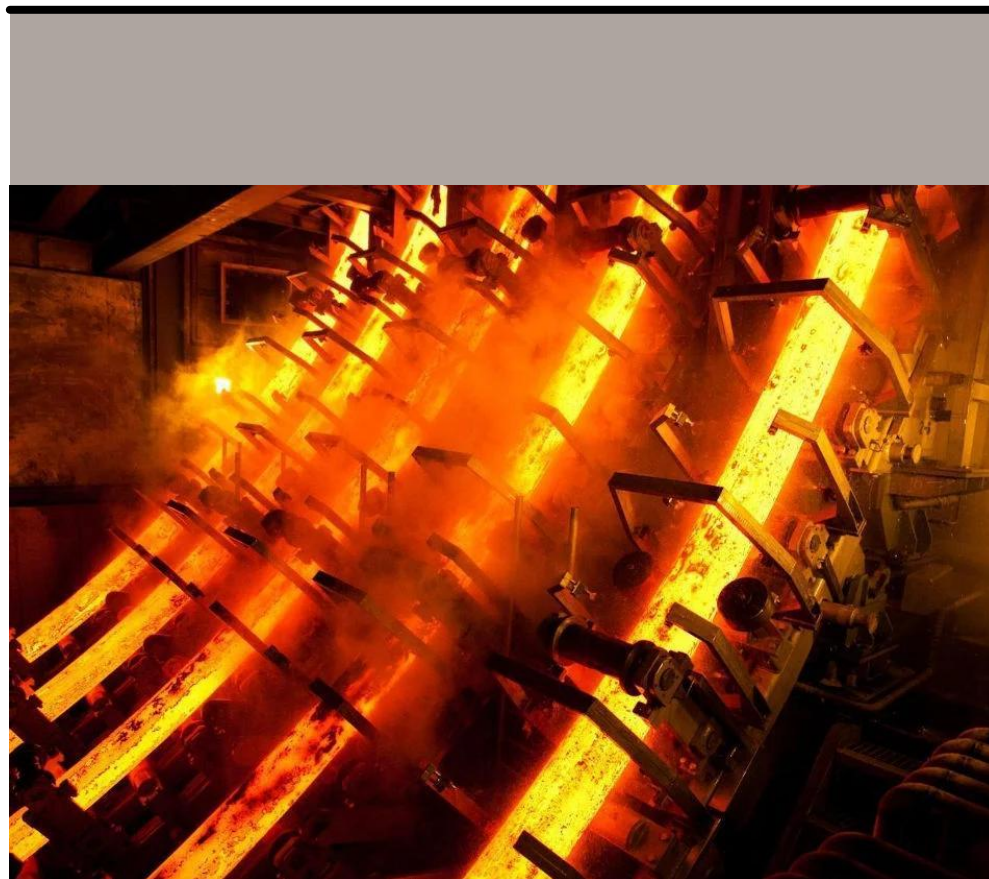
CRA OCTG Technical Overview

Material

Size

Length

Accessories



- 1 Pup joints
- 2 Couplings
- 3 Crossovers

13CR, S13CR, UNS
N08028, N08535, and
N08825

4-1/2", 7", 9-5/8"

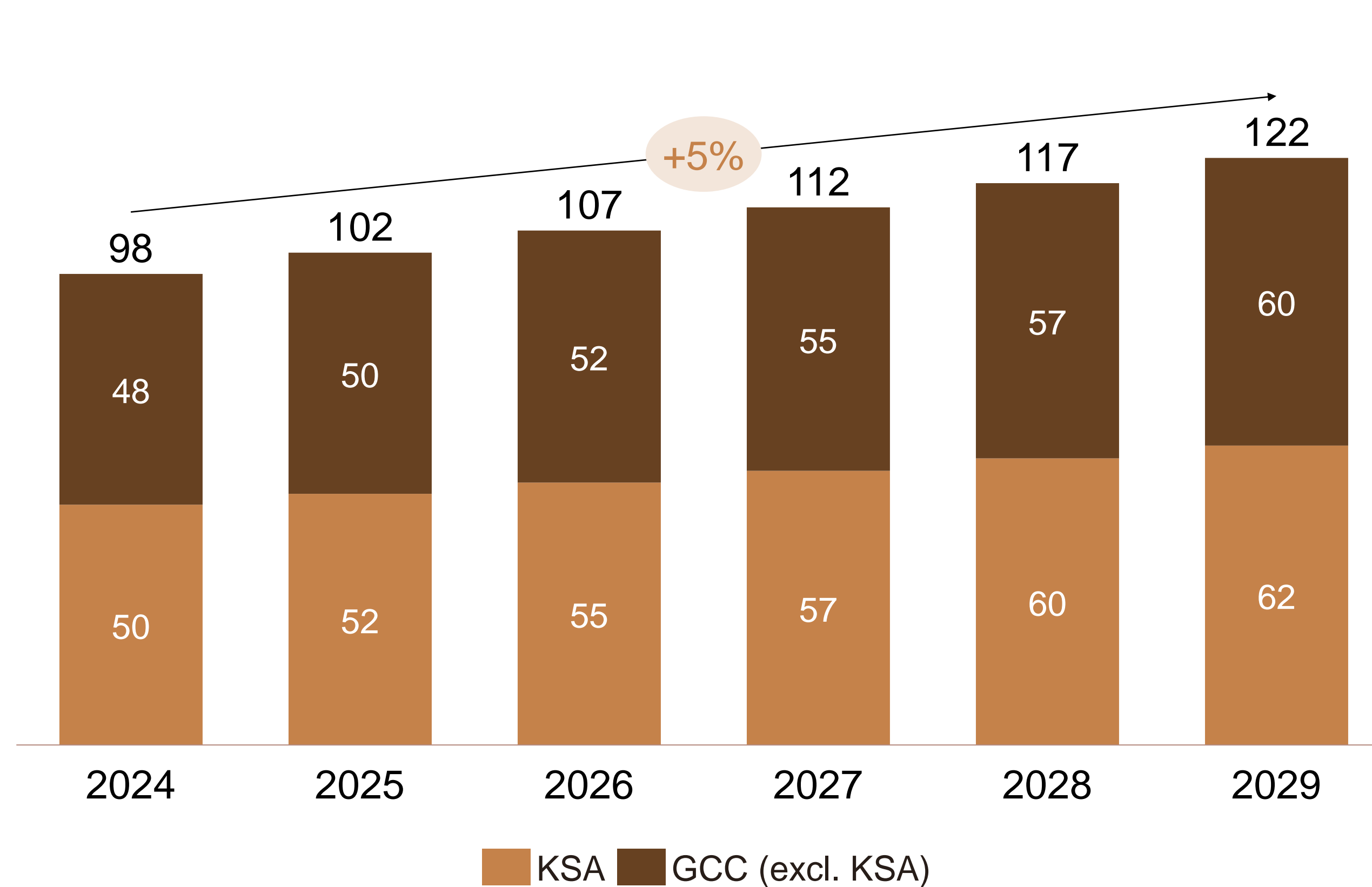
Range 2 (~30 feet)
Range 3 (~40 feet)

Catalyzing Supply Chains




Note: Aramco material numbers: 1. 6000007303; 2. 6000007293; 3. 6000007305; 4. 6000007352; 5. 6000007350
Source: Aramco; Mordor Intelligence; Press releases; Team analysis

CRA OCTG demand, customers, and drivers

Forecasted KSA and rest of GCC CRA OCTG market 2024-2029 (\$MM)



CRA OCTG customers in KSA

-  Gas producers
-  Oil producers
-  Water providers

Key KSA demand drivers

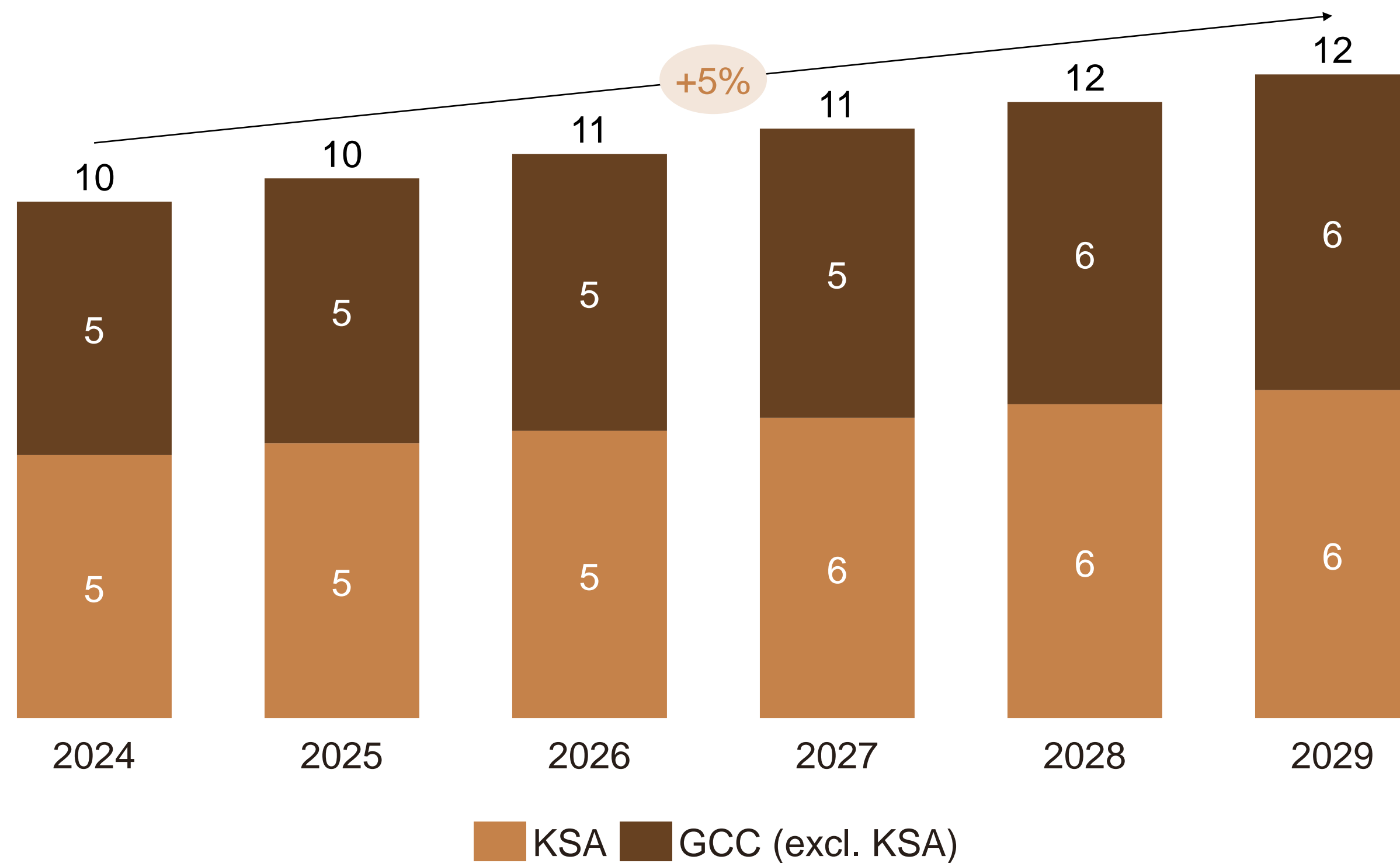
- **Rise in gas & upstream activities:** Rise in gas & upstream activities require further use of coiled tubing
- **Abrasive local conditions:** High proportion of H₂S and CO₂ in KSA O&G fields require robust anti-corrosive systems, particularly for HPHT and deepwater applications

Catalyzing Supply Chains

Note: \$MM = USD Millions
Source: Aramco; Mordor Intelligence; Press releases; Team analysis

CRA OCTG Accessories demand, customers, and drivers

Forecasted KSA and rest of GCC CRA OCTG Accessories market 2024-2029 (\$MM)



CRA OCTG accessories customers in KSA



Gas producers

Oil producers

Water providers

Key KSA demand drivers

- **Rise in gas & upstream activities:** Rise in gas & upstream activities require further use of coiled tubing
- **Abrasive local conditions:** High proportion of H₂S and CO₂ in KSA O&G fields require robust anti-corrosive systems, particularly for HPHT and deepwater applications

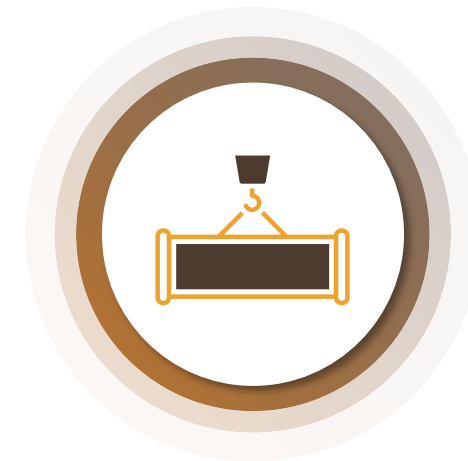
Catalyzing Supply Chains

Note: \$MM = USD Millions
Source: Aramco; Mordor Intelligence; Press releases; Team analysis

Value chain and key localization opportunities



R&D



Rolling & Processing



Finishing

Local saturation	Few players	Few players	Few players
Current KSA value chain	<ul style="list-style-type: none"> Conduct CRA OCTG R&D for local needs 	<ul style="list-style-type: none"> Form seamless pipe through rotary piercing and extrusion 	<ul style="list-style-type: none"> Conduct finishing services – incl. threading and coupling manufacturing, surface treatments, and NDT
Key success factors	Opportunity	Opportunity	Opportunity
Technology	Material development tools, fatigue testing rigs available	Piercing, mandrel, sizing mills available for import	CNC, coupling machines, & NDT equipment available for import
Labor	Mechanical engineers and materials scientists available	Mechanical engineers and materials scientists available	Mechanical engineers & CNC operators available

Catalyzing Supply Chains

Note: EAF = Electric Arc Furnace; CNC = Computer Numerical Control; CRA = Corrosion Resistant Alloy; NDT = Non-Destructive Testing
Source: Aramco; Mordor Intelligence; Press releases; Team analysis

Workshop Agenda

No.	Title of the Investment Opportunity	Presenter
-	Introduction	Hassan Al Khonizi
1	Downhole Nonmetallic Casing	Mohammad Dawood
2	Downhole Nonmetallic Tubing	Mohammad Dawood
3	OCTG Tubing	Jasem Al Moyaibed
4	CRA OCTG	Jasem Al Moyaibed
5	CRA OCTG Accessories	Jasem Al Moyaibed
6	Closing remarks	Hassan Al Khonizi