



UNITED ARAB EMIRATES
MINISTRY OF INDUSTRY
& ADVANCED TECHNOLOGY

Industrial Investment Opportunities

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A large stack of aluminum extrusion products, showing various profiles and cross-sections. The products are arranged in neat rows, creating a strong sense of depth and repetition. The lighting highlights the metallic texture and the complex, multi-chambered cross-sections of the extrusions. The overall composition is clean and industrial.

Aluminum Extrusion Products

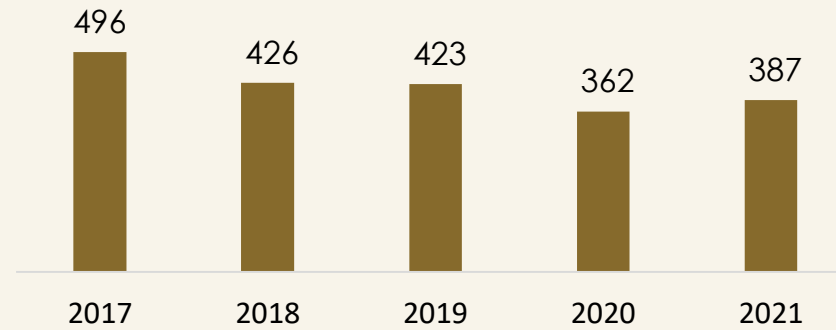
Aluminum Extrusion Products

Definitive cross-sectional profiles and shapes made from aluminium, such as channels, tubing, angles, and profiles

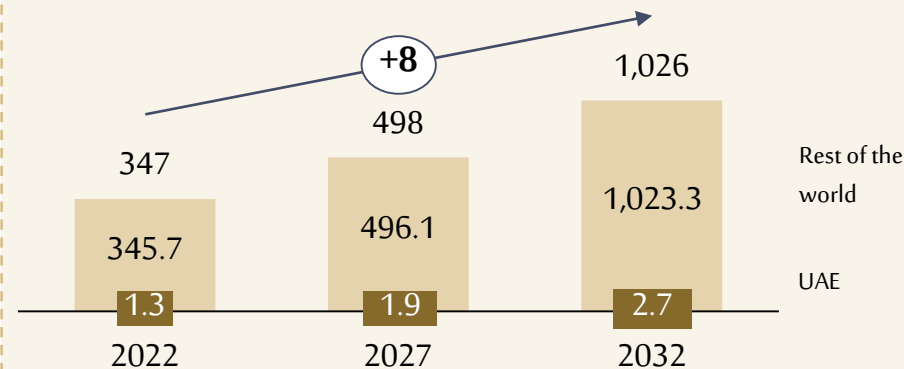
Investment case

- Setup a new production facility for the production of Aluminum extrusion products
- Investment size = AED 135 Mn
- Plant capacity = 12 KT per year
- Expected IRR = 19%
- NPV = AED 100 Mn

Imports to UAE 2017 – 2021 (Mn AED)



Global and UAE market size 2022 – 2032 (Bn AED)

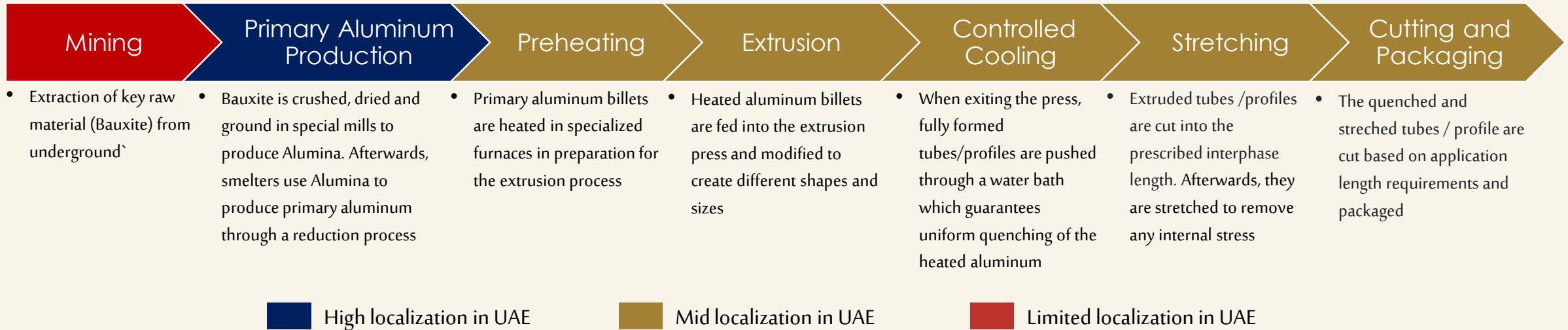


Global trends & demand drivers

- Demand for aluminium extrusion products is driven by the increased applications in the building and construction, transportation, and logistics sectors
- Increasing aluminum content in vehicles owing to the focus on improvement of fuel efficiency by original equipment manufacturers (OEMs)
- Growing demand in electrical, electronics, and medical sector applications, due to the high corrosion resistance of extruded aluminium
- UAE's property development and construction market is a major consumer of aluminium extrusion products, as they are ideal for large constructions and buildings

Aluminum Extrusion Products

Value chain analysis



Value proposition

- Aluminium is the largest UAE export after oil and gas, with 4% of global Aluminium production supplied by the UAE
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)
- Strong logistics infrastructure – UAE has busiest port in MENA

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



Plastic Products

Plastic Products*

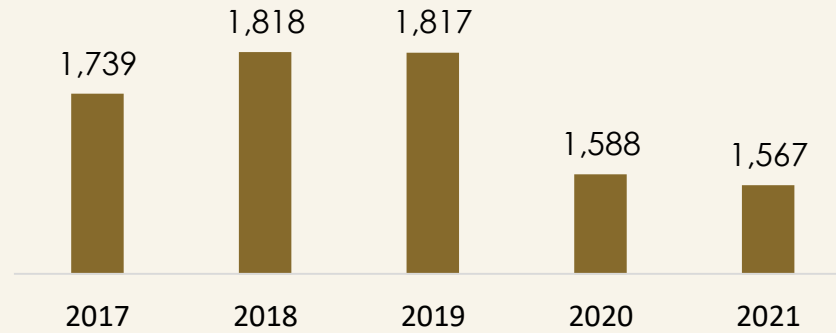
Products made out of different plastic polymers (e.g. propylene, styrene, acrylic) used in various applications such as insulation, waterproofing, construction and packaging

Investment case

- Setup a new production facility for end use plastic products, particularly those used in the packaging and construction sectors
- Investment size = AED 300 Mn
- Plant capacity = 120 KT per year
- Expected IRR = 18%
- NPV = AED 200 Mn

Imports to UAE

2017 – 2021 (Mn AED)

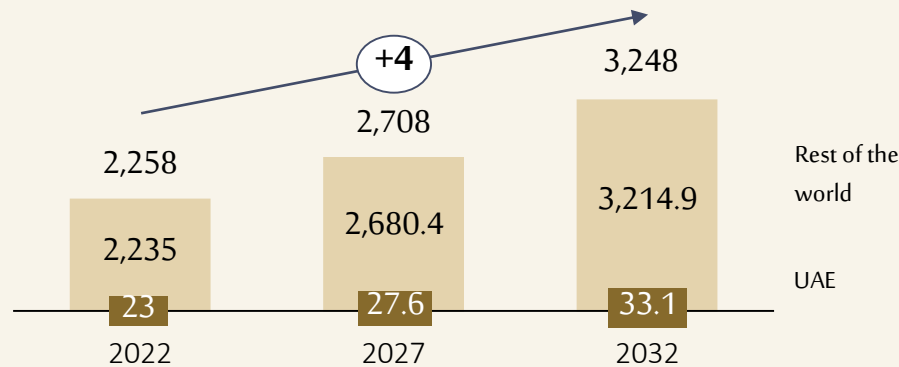


Global trends & demand drivers

- Demand for plastic products is highly driven by their increased application in the construction, automotive, and electrical and electronics industries
- New developments and advancements in the packaging industry are also driving the demand for various plastic products
- Plastic such as Polyethylene Terephthalate (PET) and Polycarbonates (PC) are increasingly being used in the consumer goods, appliances, toys and apparel
- Growing investments in the packaging industry in the UAE is expected to further increase local demand

Global and UAE market size

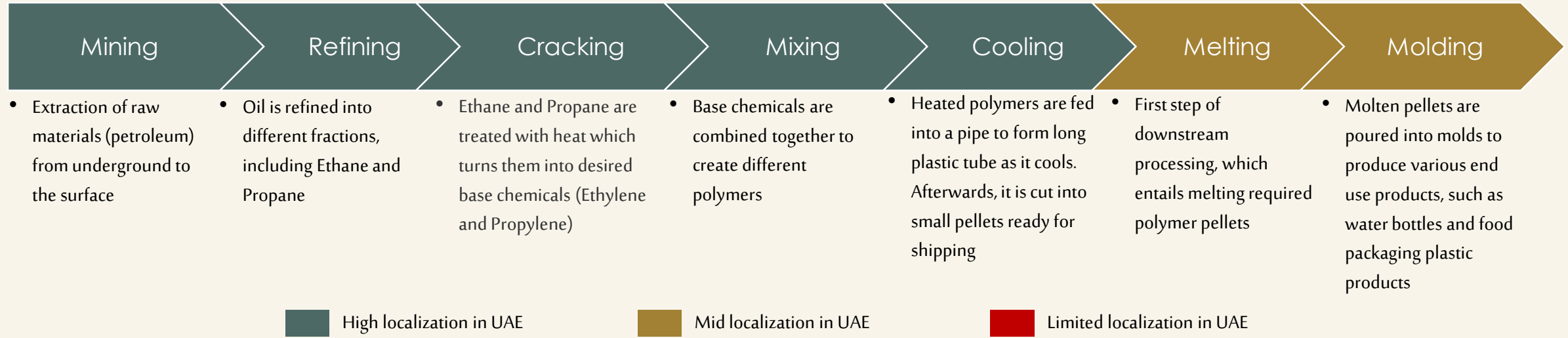
2022 – 2032 (Bn AED)



*HS codes: 39173210, 39201000, 39202000, 39204290, 39204990, 39206200, 39232900, 39233000, 39235000, 39241010, 39241090

Plastic Products*

Value chain analysis



Value proposition

- Wide availability of required feedstock / polymers in the UAE
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

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- Customs exemptions for raw materials

A welder is shown in silhouette, working on a large, curved steel pipe. The welder is wearing a dark jacket and a protective mask. Bright orange sparks are flying from the welding point, illuminating the scene. The background is dark, and the pipe is the central focus. The text "Steel Tubes and Pipes" is overlaid in the center of the image.

Steel Tubes and Pipes

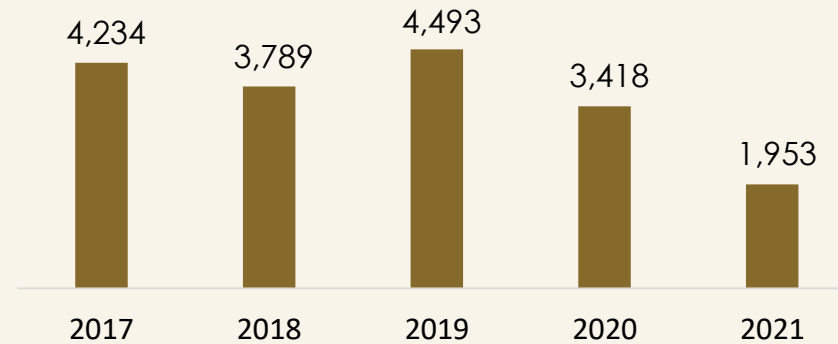
Steel Tubes and Pipes

Steel tubes and pipes (seamless or welded) used to transport fluids and gases in a variety of industrial, military, transportation, architecture and construction applications

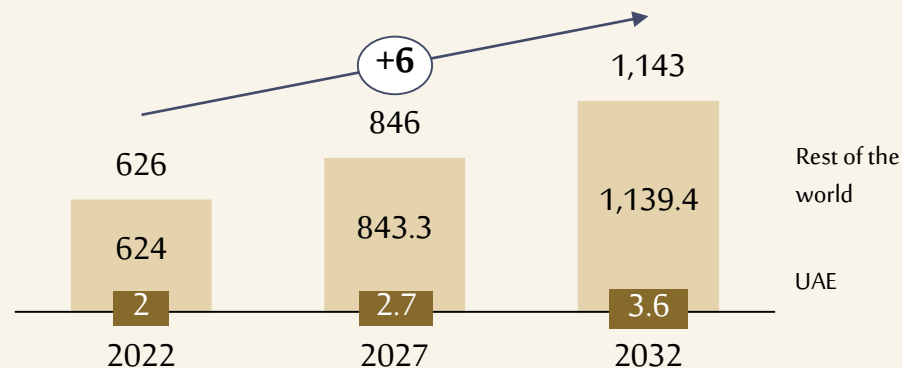
Investment case

- Setup a new mid-sized production facility for the production of steel tubes and pipes
- Investment size = AED 240 Mn
- Plant capacity = 30 KT per year
- Expected IRR = 13%
- NPV = AED 115 Mn

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

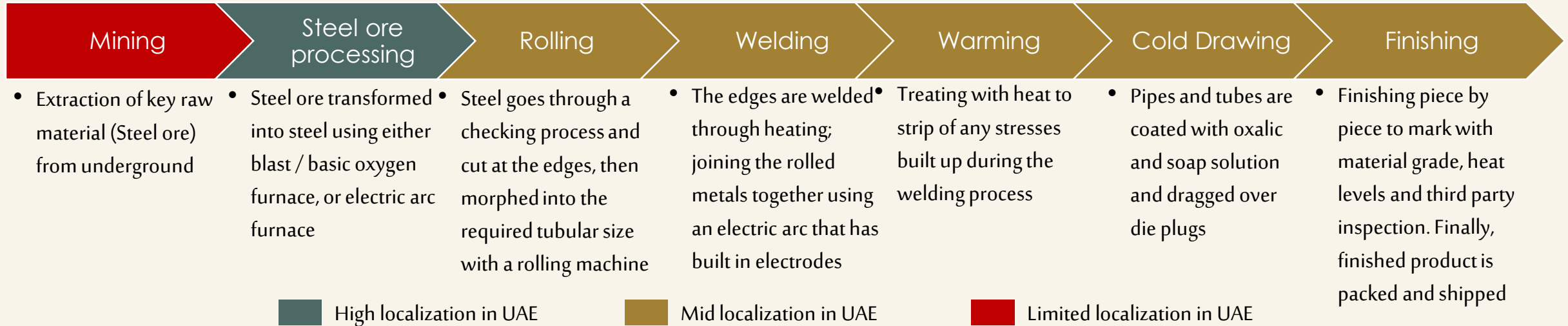


Global trends & demand drivers

- Increasing oil and gas production driven by supply shocks and continuous growth of the transportation sector
- Global investments in R&D and technology focused on improving product quality is one of the major growth drivers for steel tubes market
- Wide variety of applications across the value chains of high growth sectors, ranging from underground water and power lines to sewers and drains
- UAE infrastructure development and construction projects act as key demand driver for steel tubes and pipes locally

Steel Tubes and Pipes

Value chain analysis



Value proposition

- Availability of required raw material due to the presence of major steel manufacturers in the UAE
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



Clear Glass

Clear Glass

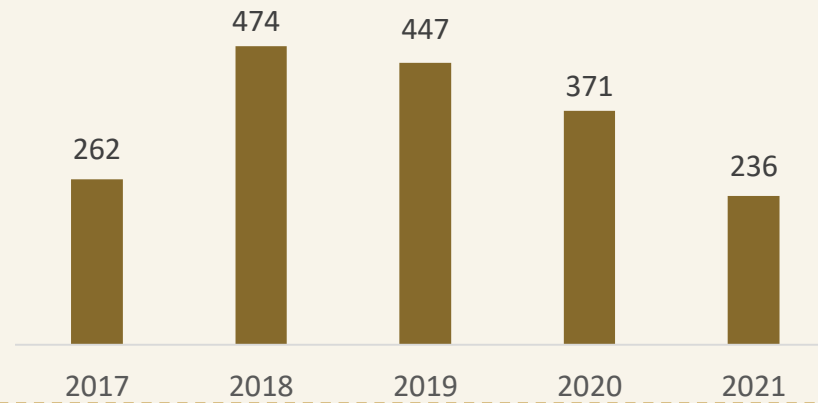
Clear glass is glass manufactured in the float line without any tint, allowing it to be transparent in nature

Investment case

- Setup a new production facility to produce clear and extra clear glass
- Investment size = AED 700 Mn
- Plant capacity = 220 KT per year
- Expected IRR = 14%

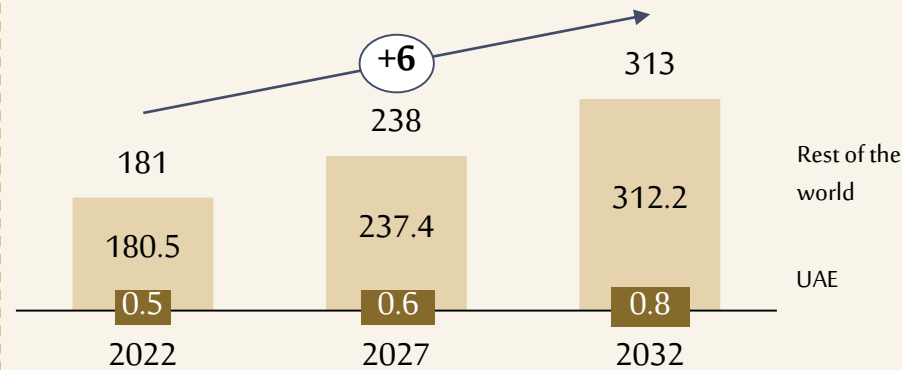
Imports to UAE

2017 – 2021 (Mn AED)



Global and UAE market size

2022 – 2032 (Bn AED)

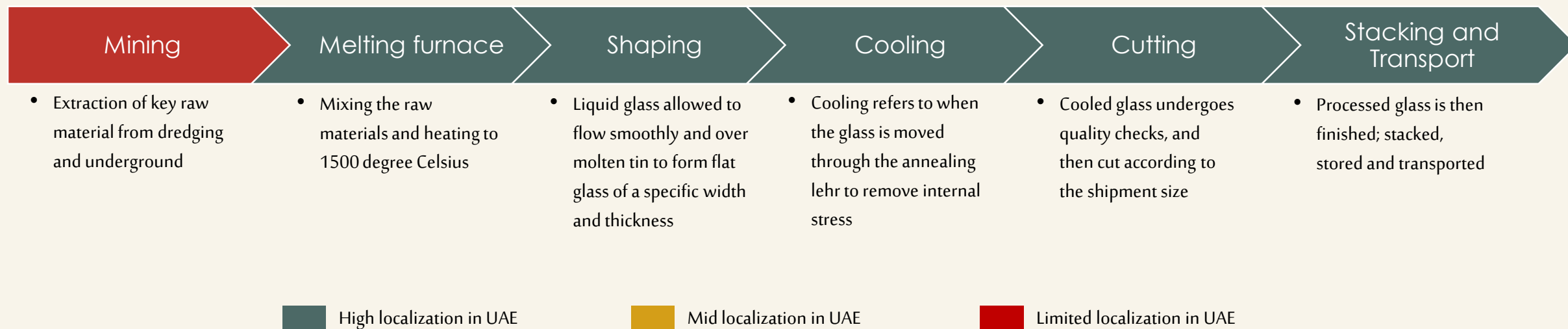


Global trends & demand drivers

- Increase in the demand in various key sectors such as building and automotive will grow demand for clear glass in general
- Demand for extra clear glass is particularly driven by its increased applications in the construction, electronics, defence and automotive sectors
- Introduction of local and global policies related to limiting/prohibiting plastic usage act as major demand driver
- Increased focus on sustainability and adoption of smart eco-friendly homes and office spaces

Clear Glass

Value chain analysis



Value proposition

- UAE exports glass products to 65 different countries in South America, Europe, Australia, Asia and Africa
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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Dry Ingredient Blends

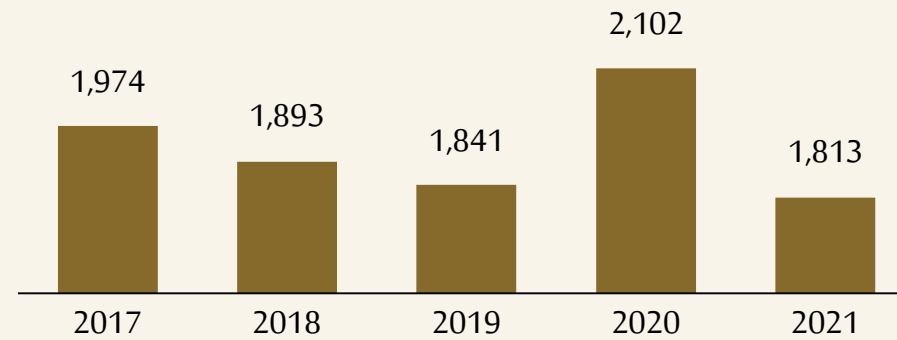
Dry Ingredient Blends

Dried and dehydrated ingredients mixed to produce a variety of products including dessert and beverage mixes, flavoring powders, dried soup powders, etc.

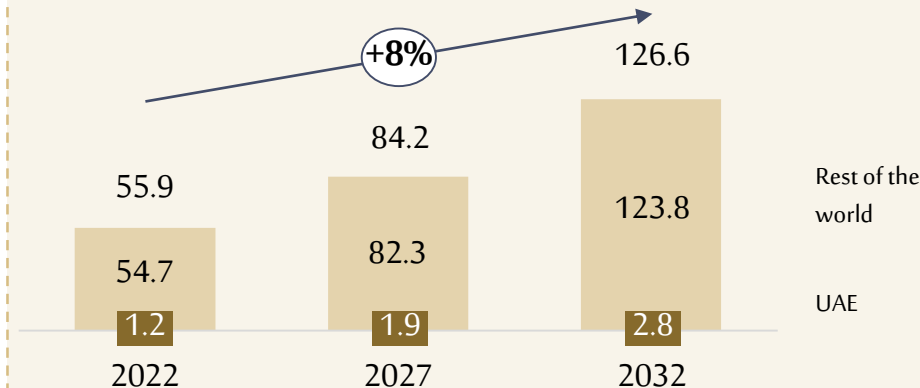
Investment case

- Setup manufacturing plant to produce custom dry ingredient blends
- Investment size = AED 75 Mn
- Plant capacity = 7,500 tons per year
- IRR = 19%
- NPV = AED 65 Mn

Imports to UAE 2017 – 2021 (Mn AED) ¹



Global and UAE market size 2022 – 2032 (Bn AED) ²



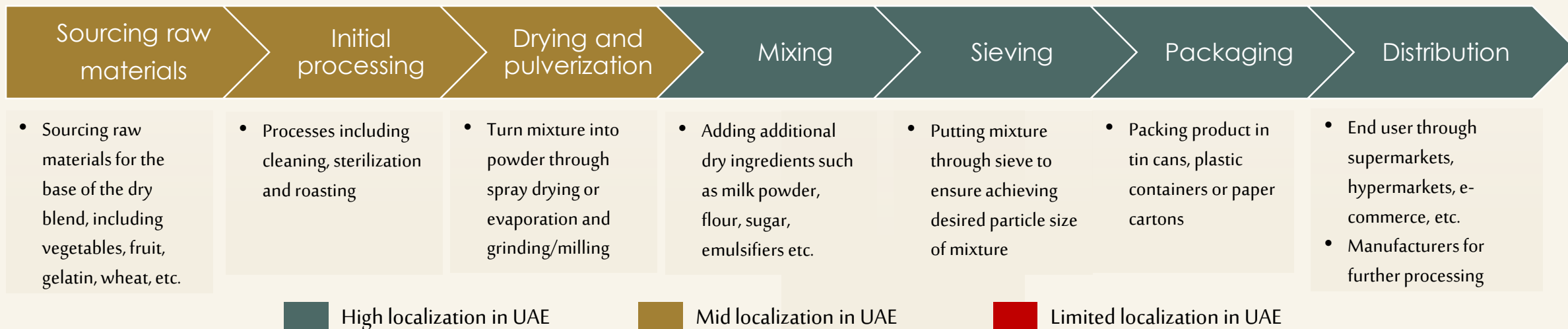
Global trends & demand drivers ³

- Innovation and development of a wide variety of flavor and ingredient profiles acting as a key trend for dry blends' gaining popularity
- Usage surge of ready-to-use food products by hotels, restaurants and cafes
- Growing awareness on nutrition, health and wellness shifting demand toward more expensive organic and non-processed dry food blends
- Increased popularity of e-commerce driving up demand due to high availability of wide variety of products
- Growing percentage of working women in the UAE will increase demand for quick, easy-to-prepare food

1. Source: UN Comtrade
2. Source: UN Comtrade, Future Market Insights (FMI), Team Analysis
3. Source: Future Market Insights, MarketWatch

Dry Ingredient Blends

Value chain analysis ⁴



Value proposition

- UAE is a global food logistics hub, with food trade exceeding \$27 billion annually
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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Aluminum Flat Products

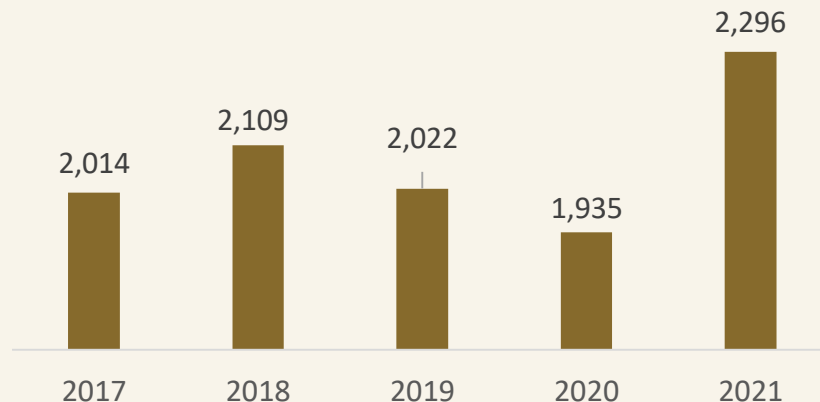
Aluminum Flat Products

Aluminum flat products are aluminium ingots that have been processed through rolling processes. They are used in industries including packaging, transportation and construction

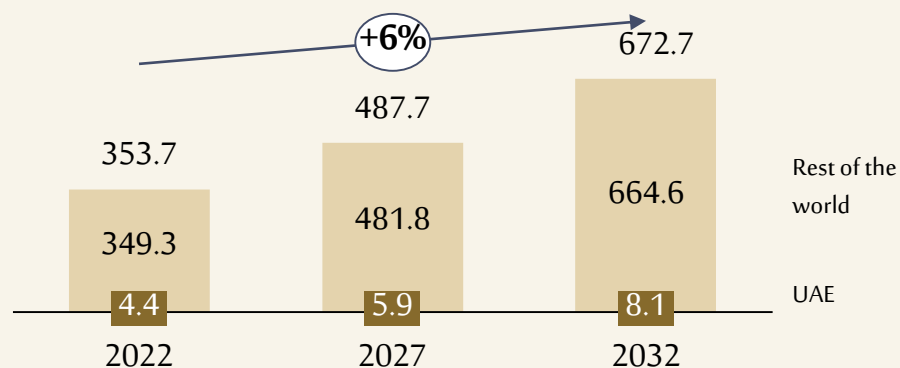
Investment case

- Setup manufacturing plant to manufacture aluminium flat products
- Investment size = AED 1 Bn
- Plant capacity = 30 KT per year
- Expected IRR = 8%

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

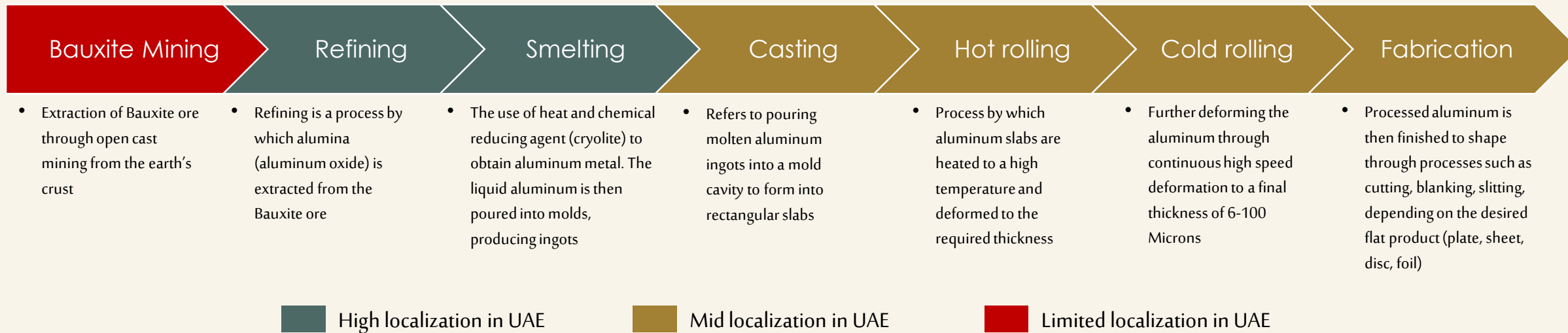


Global trends & demand drivers

- Global shift towards using recycled materials in manufacturing will further increase demand for aluminum flat products
- EAD single-use plastic ban increasing use of aluminum flat product in packaging to replace plastic
- Usage surge in construction projects due to aluminum's advantageous properties, which include corrosion resistance, lightness of weight and low maintenance needs
- UAE Net Zero 2050 strategy causing shift toward producing light weight vehicles in the automotive and aerospace industries in order to reduce fuel consumption

Aluminum Flat Products

Value chain analysis



Value proposition

- Local supply of aluminum ingots available through Emirates Global Aluminum (EGA) allows for sourcing at a competitive price
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- 100% foreign business ownership and low VAT (5%)

Enablers

- Planned imposition of anti-dumping duties against the GCC imports of flat aluminum products
- Up to 80% financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

A top-down photograph of infant food preparation. In the foreground, a white bowl is filled with a fine, off-white powder. A blue plastic spoon is scooped into the powder. To the left of the bowl, a clear plastic baby bottle cap lies on a light-colored wooden surface. In the background, two baby bottles are visible: one with a pink cap and another with a white cap. The text "Infant Food" is overlaid in the center of the image.

Infant Food

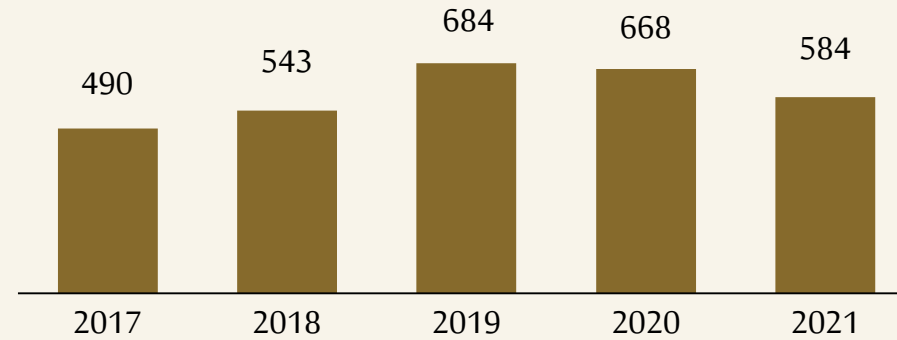
Infant Food

Infant food is targeted for babies under the age of 12 months, aimed to provide essential nutrition necessary to support their growth

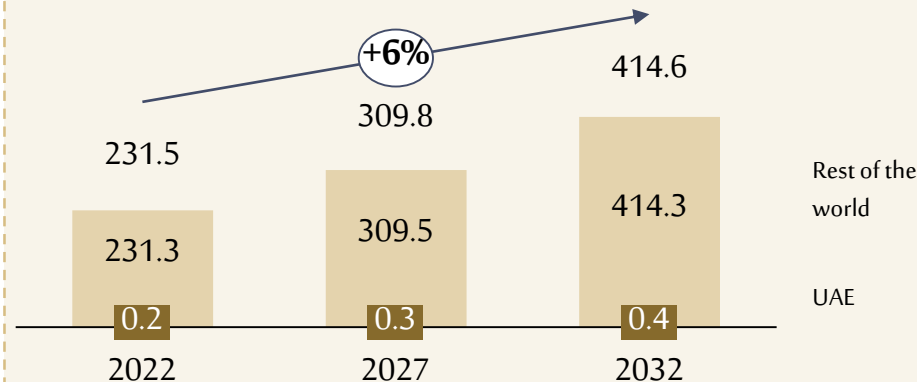
Investment case

- Setup manufacturing plant to produce infant food
- Investment size = AED 35 Mn
- Plant capacity = 1,500 tons per year
- IRR = 18%
- NPV = AED 25 Mn

Imports to UAE
2017 – 2021 (Mn AED) ¹



Global and UAE market size
2022 – 2032 (Bn AED) ²



Global trends & demand drivers ³

- Growing demand for specialized infant food and formula products that address infants' immune system and digestive issues
- Increased popularity of e-commerce driving up demand due to high availability of wide variety of products
- Shift of consumer focus towards infant nutritional needs and health requirements
- Innovation of new infant food products, including camel milk based formula and halal baby food, driving up demand in UAE
- Growing percentage of working women in the UAE will increase demand for breastmilk substitutes

1. Source: UN Comtrade

2. Source: UN Comtrade, Expert Market Research, Team Analysis

3. Source: Expert Market Research, Allied Market Research, Ken Research

Infant Food

Value chain analysis⁴



Value proposition

- High availability of raw material in the form of milk (UAE second largest producer in GCC)
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
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⁴ Source: Science Direct, ResearchGate

Palm Oil



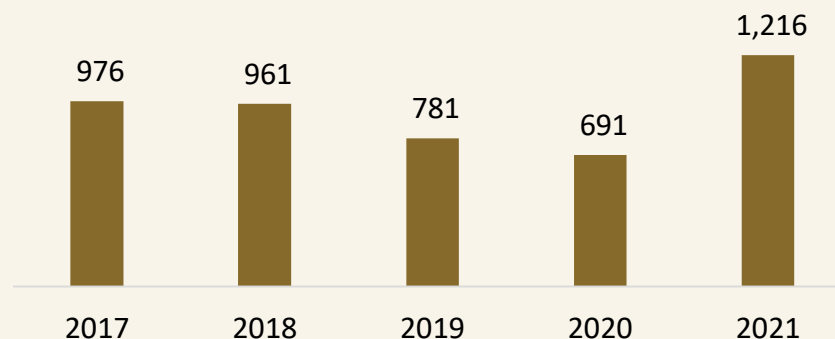
Palm Oil

Edible vegetable oil derived from the oil palms fruit pulp and is used in food manufacturing, beauty products, detergents and biofuel

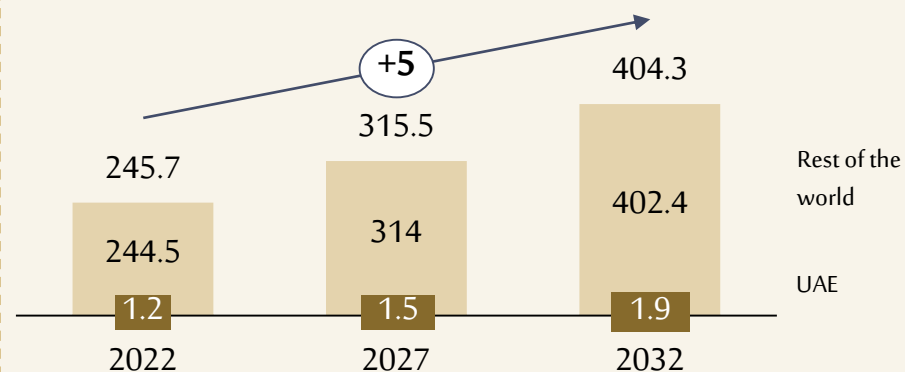
Investment case

- Setup a new large scale palm oil refining and manufacturing facility
- Investment size = AED 350 Mn
- Plant capacity = 60 KT per year
- Expected IRR = 12%
- Expected NPV= AED 142 Mn

Imports to UAE 2017 – 2021 (Mn AED)¹



Global and UAE market size² 2022 – 2032 (Bn AED)



Global trends & demand drivers

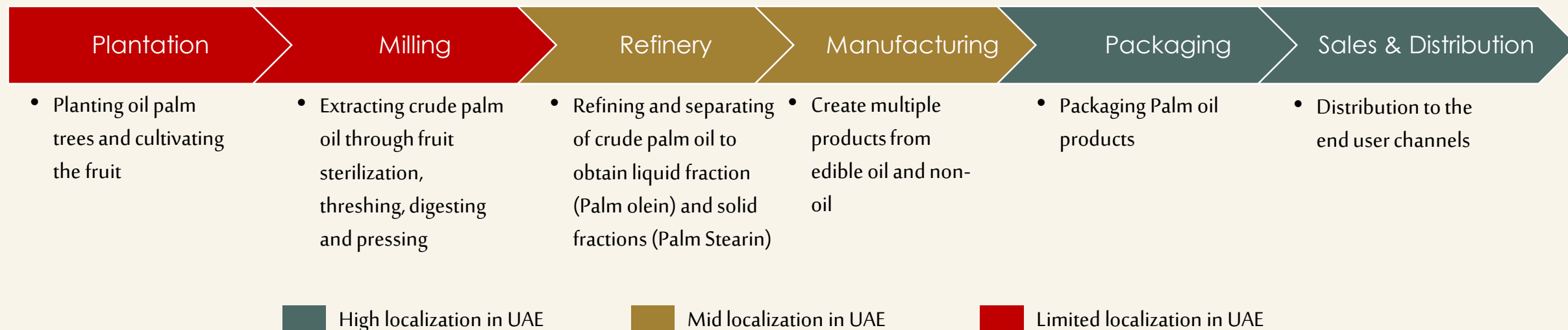
- Palm oil market is driven by the high growth in the food & beverage, biofuel, personal care and cosmetics industries
- Increased consumer awareness regarding the health benefits of palm oil compared to its alternatives
- Expanded application to new industries due to wide availability, low production cost and long shelf-life
- Palm oil is one of the fastest growing segments in UAE and GCC vegetable oils market, and is widely used in the bakery and food processing industries

1. Source: UN Comtrade

2. Source: Grandview, Research And Markets, MoIAT Local Production Database

Palm Oil

Value chain analysis



Value proposition

- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
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Enablers

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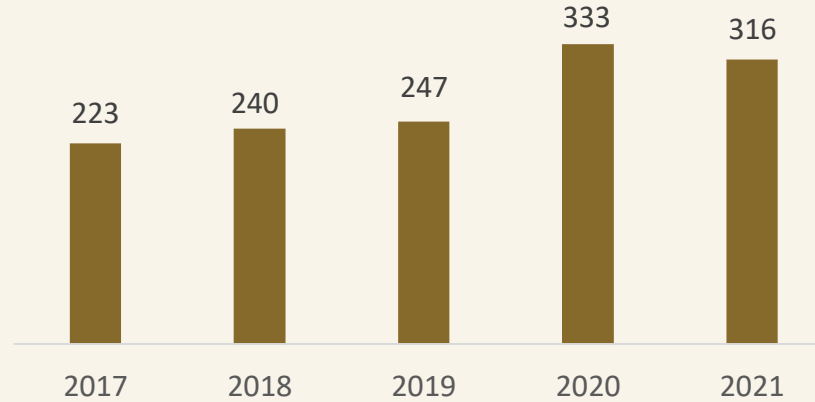
Pasta Items

Pasta Items

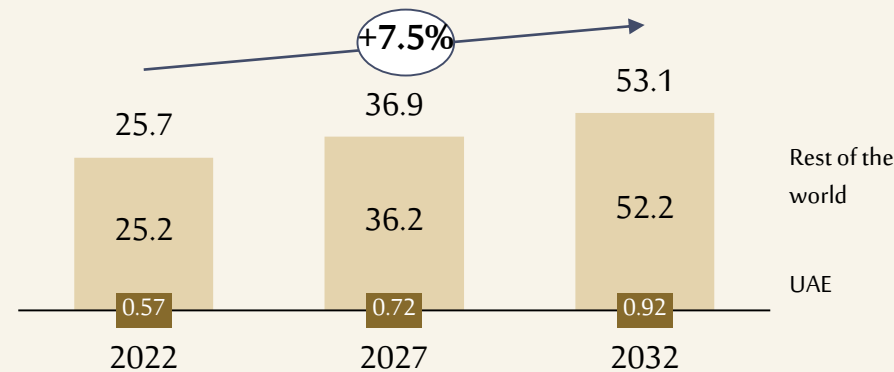
Investment case

- Develop a Medium scale facility in Durum Wheat Milling and Pasta Making
- Investment size = AED 46 Mn
- Plant capacity = 12 KT per year
- Expected IRR = 18%
- Expected NPV = AED 32 Mn

Imports to UAE 2017 – 2021 (Mn AED)



Global and UAE market size 2022 – 2032 (Bn AED)



Global trends & demand drivers

- Rising trend of on-the-go consumption is driving demand for easy to cook, hassle free cooking items such as pasta
- The cholesterol free, low sodium nature of pasta makes it popular among the rising health conscious population
- The wide variety of pasta allows it to be malleable to the changing tastes and preferences of consumers in different regions
- The MENA region is relatively untapped and offers large room for growth, unlike developed economies such as Europe, where the market is already saturated

Value chain analysis

Durum Wheat Cultivation



Milling



Pasta Making



Packaging



Distribution



High localization in UAE

Mid localization in UAE

Limited localization in UAE

Value proposition

- Availability of required raw materials from local flour mills
- A high-income per capita population with different tastes demanding a variety of Pasta related products
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
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Enablers

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Cold Roll Coil Steel

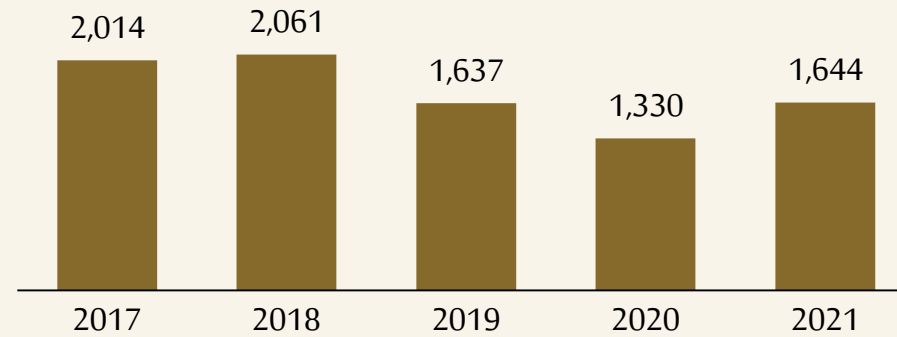
Cold Roll Coil Steel

Cold-rolled steel is low-carbon hot-rolled steel that has been rolled at room temperature, below its recrystallization temperature

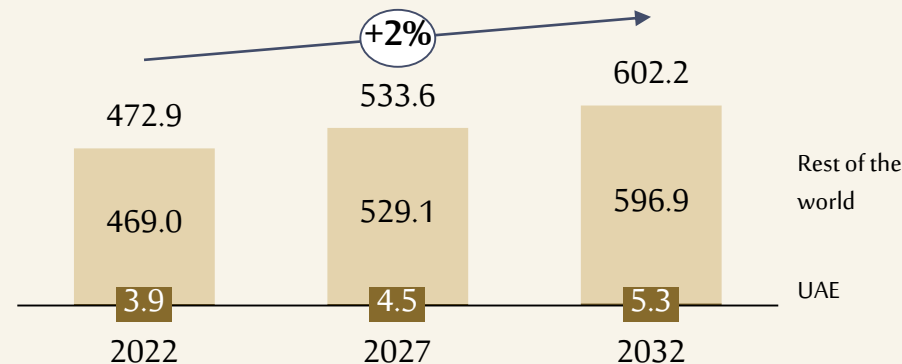
Investment case

- Setup large scale manufacturing plant to manufacture CRCA, PPGI, GI
- Investment size = AED 327 Mn
- Plant capacity = 250 KT per year
- Expected IRR = 17%
- Expected NPV = AED 210 Mn

Imports to UAE 2017 – 2021 (Mn AED)



Global and UAE market size 2022 – 2032 (Bn AED)

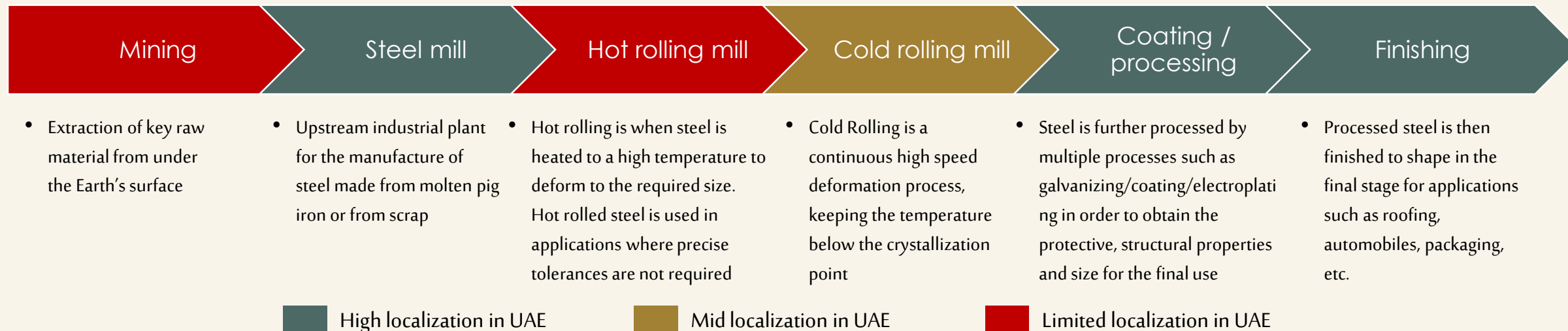


Global trends & demand drivers

- Technological innovation and advancement will further optimize the performance of the product, making it more widely used in downstream applications
- Global shift towards consumption of green steel will further enable growth in demand for CRC. UAE has a competitive advantage in green products manufacturing given low-cost solar energy
- Increase in infrastructure and developmental projects due to urbanization
- Increase in manufacturing of machinery and equipment with UAE's industrial strategy will grow demand for CRC

Cold Roll Coil Steel

Value chain analysis



Value proposition

- Emirates Steel will introduce HRC by 2025 which will make locally manufactured CRC products more cost competitive and ease supply chain issues
- Opportunity to manufacture green CRC with clean nuclear or solar energy supply
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- 100% foreign business ownership and low VAT (5%)

Enablers

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Power Cables

Power Cables

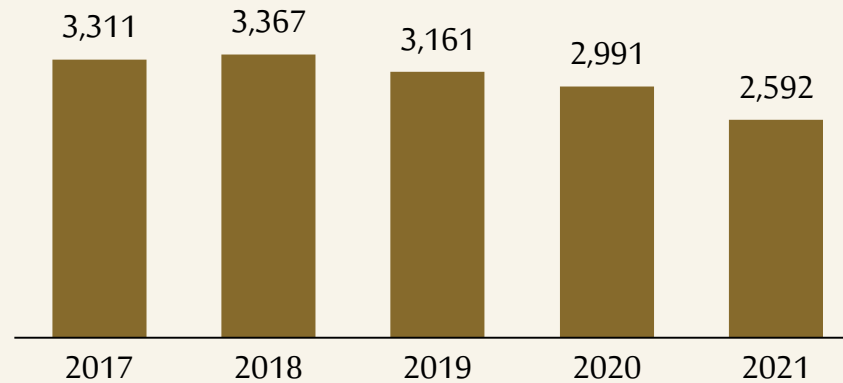
Power cables are electrical equipment used for bulk transmission of alternating and direct current power

Investment case

- Build medium size LV/ MV cable manufacturing plant
- Investment size = AED 90 Mn
- Plant capacity = 50 K tons per year
- Expected IRR = 9%
- Expected NPV = AED 70 Mn

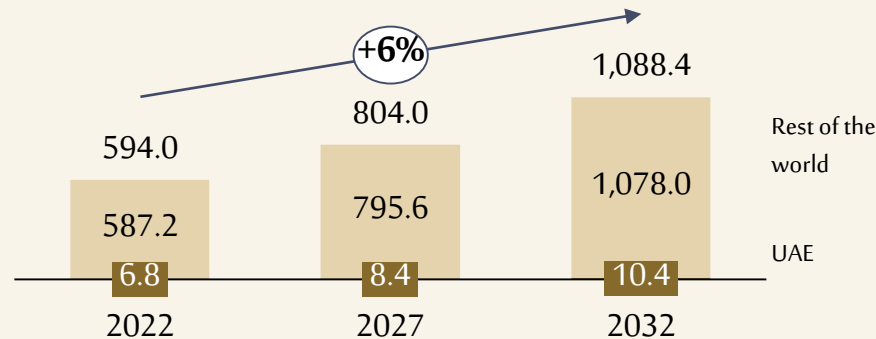
Imports to UAE

2017 – 2021 (Mn AED)



Global and UAE market size

2022 – 2032 (Bn AED)

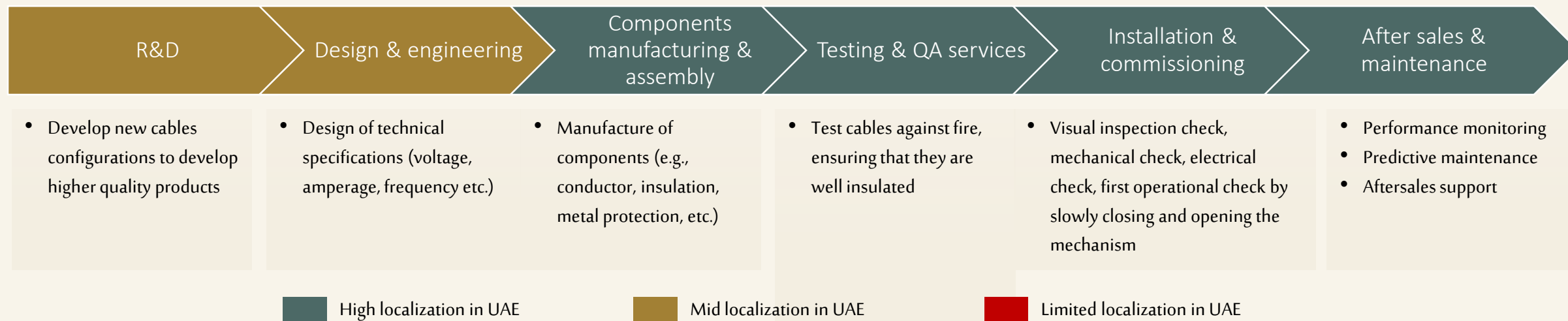


Global trends & demand drivers

- Government policies to enable growth in global renewable energy capacity will increase demand for power cables
- Increased deployment of smart grids globally will increase demand for power cables
- Growing local demand due to UAE 2050 Net-Zero goal supported by AED 600 billion investments in clean and renewable energy by 2050
- Growing local demand due to Masdar ambition of 100 GW global renewable energy capacity by 2031
- The launch of new UAE renewable energy projects will require cables for generation, distribution, and transmission

Power cables

Value chain analysis



Value proposition

- Available competitive raw materials in the UAE from metals to polymers
- Concentrated demand and potential offtake from ICV participating entities (e.g., ADNOC, TAQA, etc.)
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



Fiber-optic Cables

Fiber-optic cables

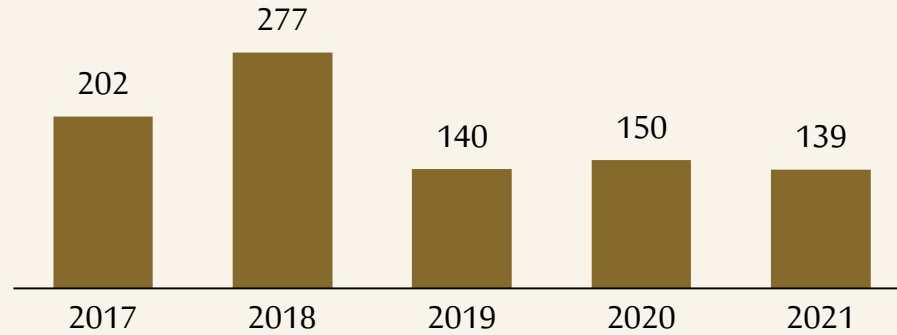
Fiber-optic cables consist of very thin flexible fibers through which light signals can be sent such as internet

Investment case

- Build 1 Fiber-optic cables manufacturing plant
- Investment size = AED 350 Mn
- Plant capacity = 100 kT per year
- Expected IRR = 13%

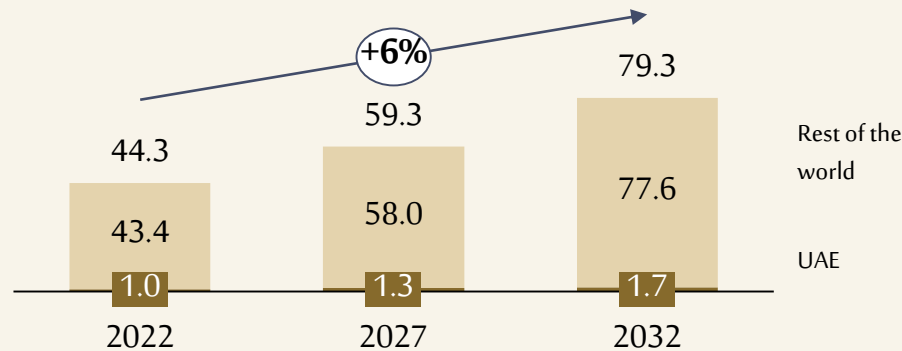
Imports to UAE

2017 – 2021 (Mn AED)



Global and UAE market size

2022 – 2032 (Bn AED)

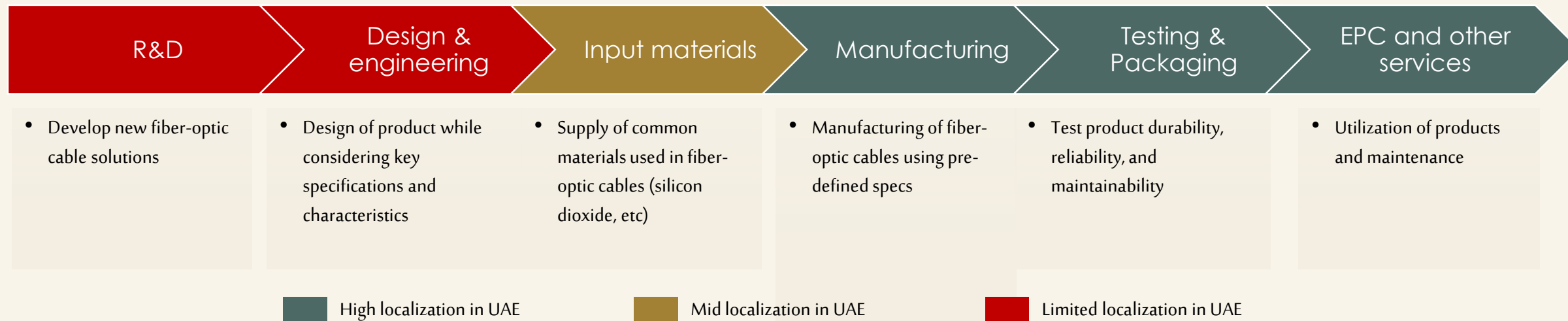


Global trends & demand drivers

- Increasing demand in FTTX and telecommunications industry and technological advancements are primarily responsible for the increased growth of the market
- Use of data traffic from various sources, such as the internet, e-commerce, computer networks, and multimedia
- Growing demand of bandwidth and FTTH, 5G and data center networks in the UAE
- Development and modernization of the infrastructure is a main growth driver for fiber-optic cables, with UAE being most advanced in the region
- UAE to become a digital hub, with the country already a leader in fiber deployment

Fiber-optic cables

Value chain analysis



Value proposition

- Concentrated demand and potential offtake from ICV participating entities (e.g., Etisalat)
- Availability of raw material in steel, mechanical, and electrical equipment
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

Switchgears



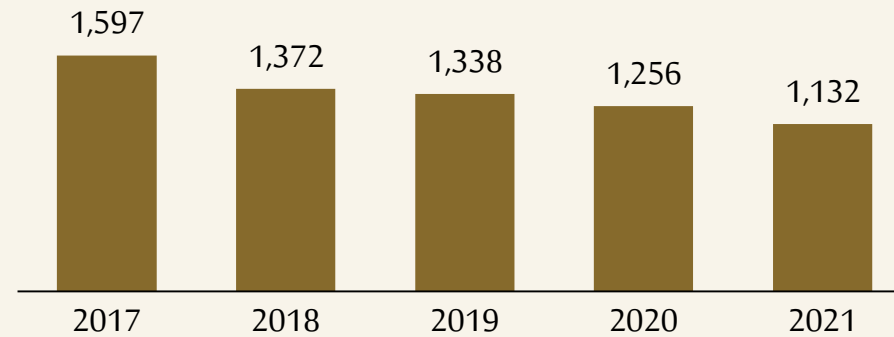
Switchgears

Switchgears are an integrated assembly of circuit breaker, fuses and switches that protect, control and isolate electrical equipment

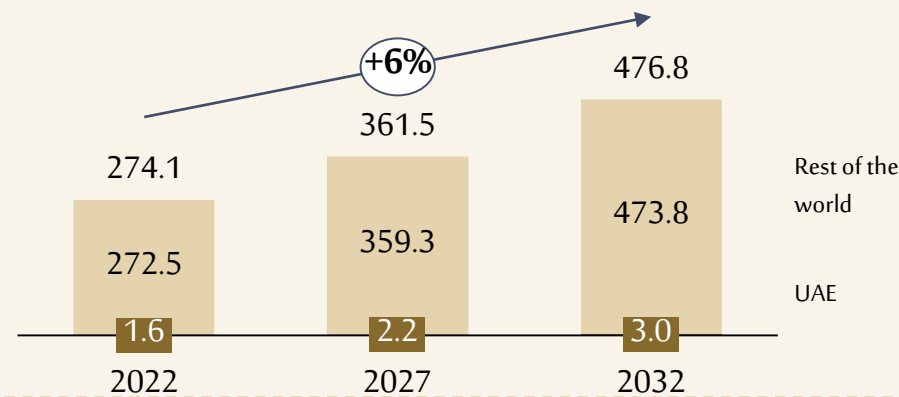
Investment case

- Develop 3 medium size facilities to manufacture LV/ MV switchgears
- Investment size = AED 24 Mn
- Plant capacity = 2,450 units per year
- Expected IRR = 16%
- Expected NPV = AED 16 Mn

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

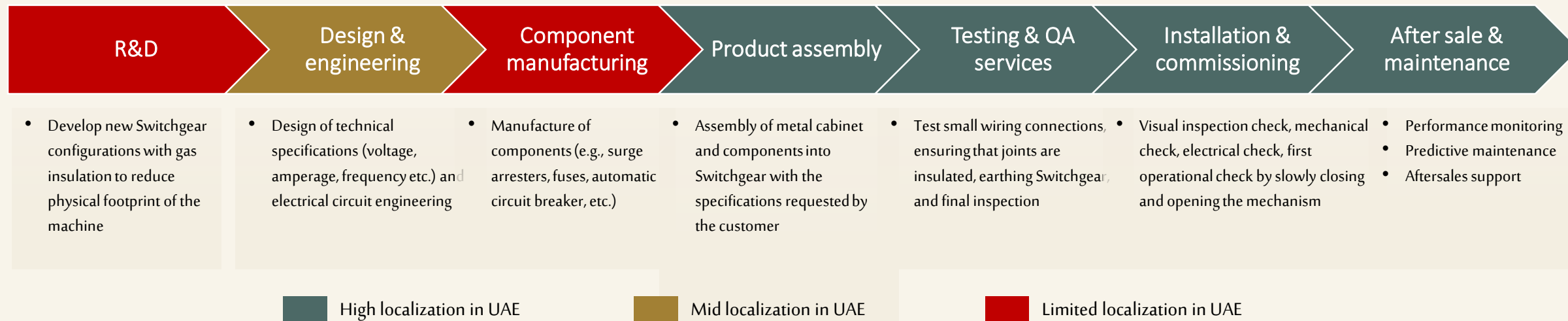


Global trends & demand drivers

- Rapidly growing electrification need in remote areas coupled with increasing power generation will positively affect growth of switchgears market globally
- Increased deployment of smart grids globally will increase demand for switchgears
- Upgrading aging power infrastructure will drive growth globally
- Positive outlook for generating renewable power will fuel growth for switchgears
- The launch of new UAE renewable energy projects will require switchgears to go from generation, distribution, to transmission

Switchgears

Value chain analysis



Value proposition

- Concentrated demand and potential offtake from ICV participating entities (e.g., TAQA, ADNOC, EGA, etc.)
- Backward integration into busbars and enclosures is possible given available raw material
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and Abu Dhabi Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



Transformers

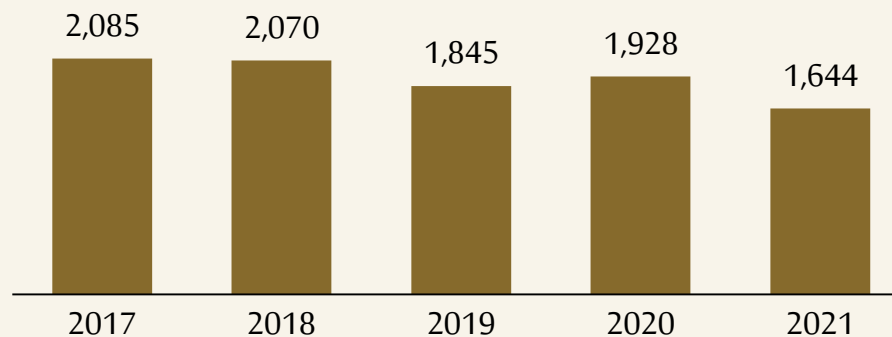
Transformers

Transformers are an apparatus for reducing or increasing the voltage of an alternating current

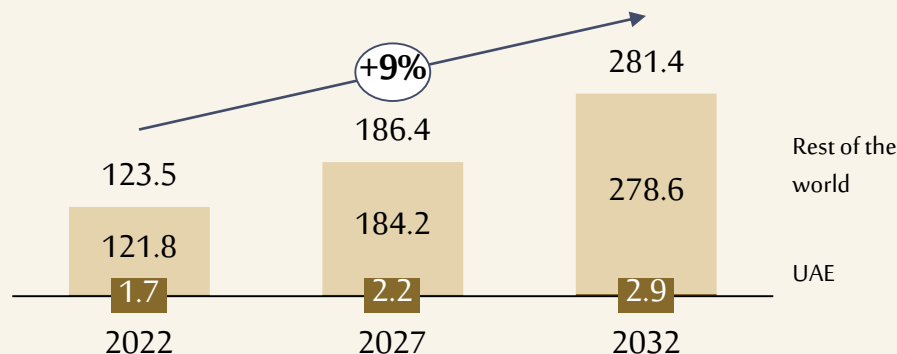
Investment case

- Setup medium scale facility to manufacture LV / MV transformers
- Investment size = AED 43 Mn
- Plant capacity = 11,850 units per year
- Expected IRR = 15%
- NPV = AED 24 Mn

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

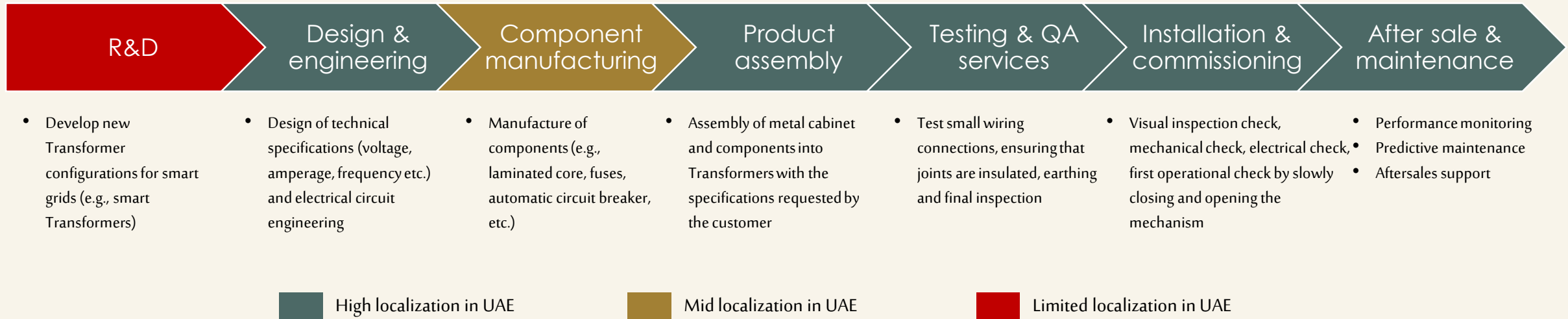


Global trends & demand drivers

- Stringent government regulations related to carbon emissions are expected to remain strict which increases need of transformers
- Increased deployment of smart grids globally will increase demand for transformers
- Adoption of smart grids that can respond to changes in user demand for electricity while reducing greenhouse emissions will fuel demand for transformers globally
- The launch of new UAE renewable energy projects will require transformers to go from generation, distribution, to transmission

Transformers

Value chain analysis



Value proposition

- Concentrated demand and potential offtake from ICV participating entities (e.g., TAQA, ADNOC, EGA, ALDAR, etc.)
- Backward integration into control panels and enclosures is possible given available raw material
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and Abu Dhabi Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

A top-down view of a wooden cutting board filled with various dairy products. At the top left, there's a wedge of yellow cheese, a round of cheese with a black rind and a basil leaf, and a small bowl of brown crumbles. In the center, a block of yellow butter sits on a white plate. To the right, a wooden cutting board holds several slices of orange cheddar, a wedge of blue cheese, and a round of cheese with a white rind. Below these are four brown eggs, a bowl of white cream, a bowl of white cottage cheese, a bowl of white mozzarella balls, and a bowl of orange cheddar cubes. Two glass pitchers of white milk are also present. A large knife with a silver handle lies on the right side of the board. The background is a dark, textured surface.

Dairy Products

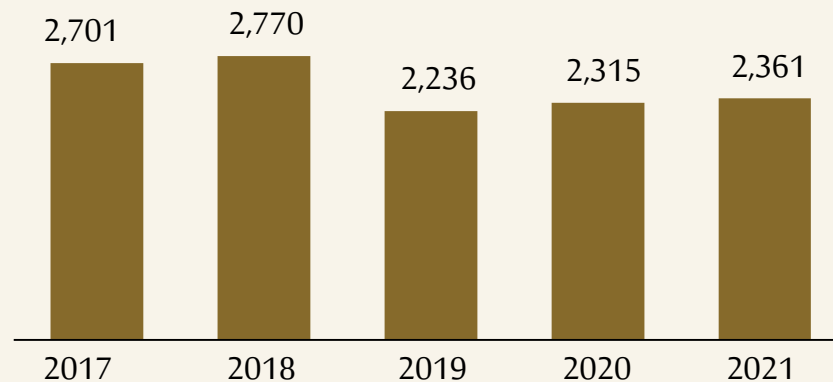
Dairy Products

Investment case

- Develop a large-scale facility in cattle rearing and milk harvesting
- Investment size = AED 239 Mn
- Plant capacity = 100 Mn Liters per year
- Expected IRR = 7%
- Expected NPV = AED 66 Mn

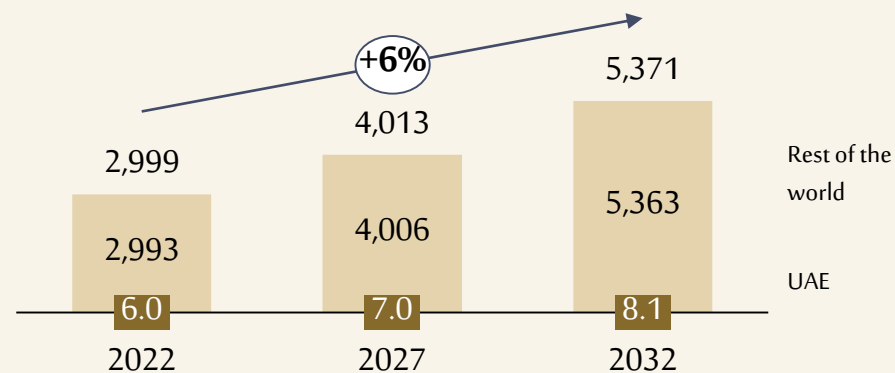
Imports to UAE

2017 – 2021 (Mn AED)



Global and UAE market size

2022 – 2032 (Bn AED)

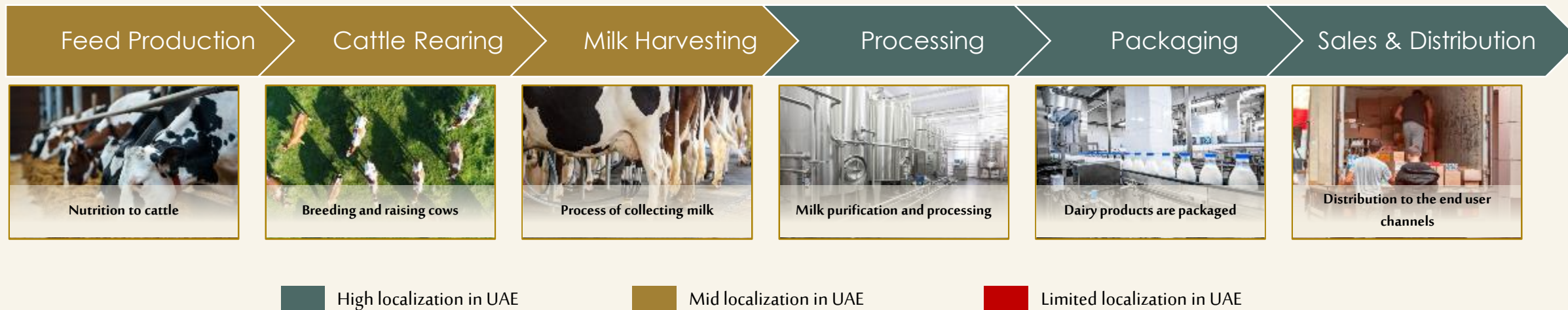


Global trends & demand drivers

- Local demand of “fresh” Dairy products expected to grow over the next decade driven by changing consumer attitude towards health & wellness
- Locally manufactured fresh products are competitive due to the low shelf life of Dairy products and high logistics costs for imports
- Potential export growth driven by new FTAs as well as the supply curtailment from Russia and Ukraine
- Rise of plant based dairy alternatives (e.g., oat milk)
- Covid-19 has accelerated the use of technology tools to increase efficiency (i.e, milking and feeding robots)

Dairy Products

Value chain analysis

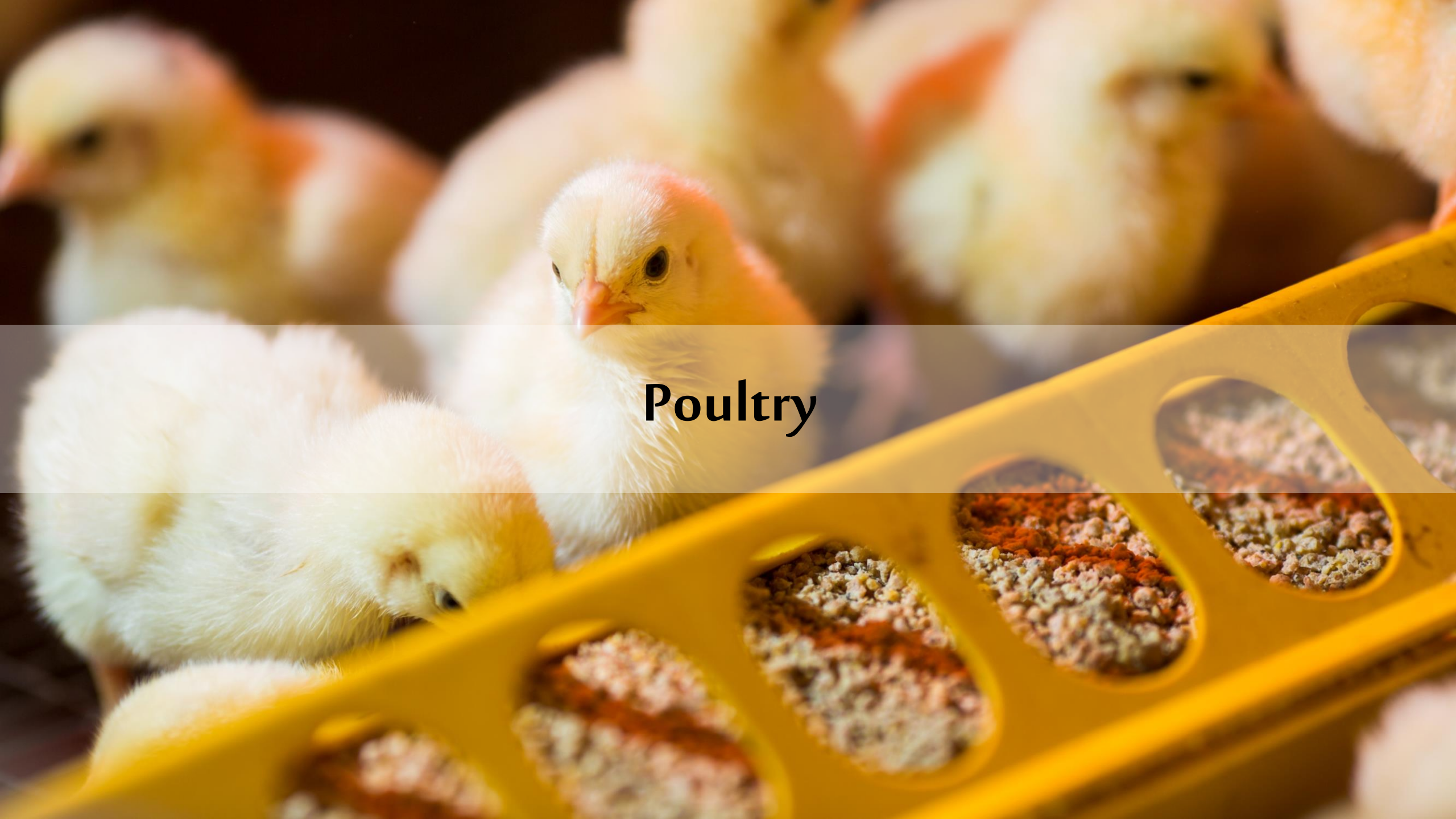


Value proposition

- Multicultural population with different tastes demanding all kinds of dairy products
- Lower than market utility & water cost for dairy farms
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit/insurance via Etihad Credit Insurance and Abu Dhabi Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



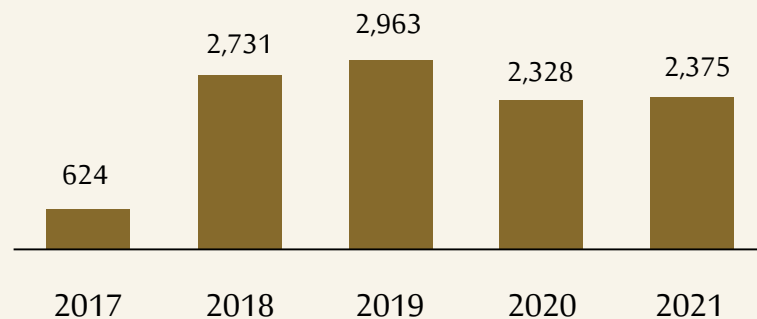
Poultry

Poultry

Investment case

- Poultry processing plant
- Investment size = AED 9 Mn
- Plant capacity = 2,800 tons of chicken per year
- Expected IRR = 9%

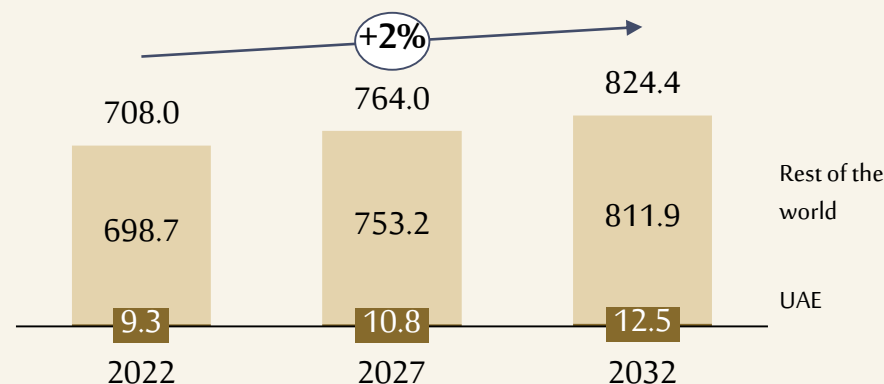
Imports to UAE
2017 – 2021 (Mn AED)



Global trends & demand drivers

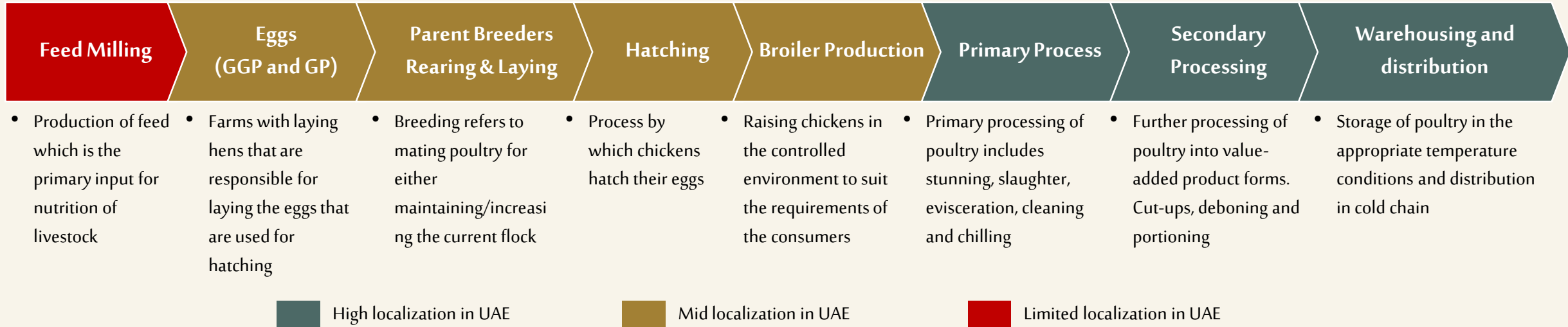
- Market for poultry meat is projected to increase regardless of region or income level, with per capita growth slightly higher in developing than in developed regions
- Amidst rising global food prices, poultry remains a comparatively cheap source of animal protein in the UAE
- UAE's recovery in tourism, travel, and business from the impact of the Covid-19 pandemic will lead to a forecasted growth consumption of poultry products
- Changes in market attitude towards convenient (on the go) food products to accommodate fast-paced UAE lifestyles and convenience preferences

Global and UAE market size
2022 – 2032 (Bn AED)



Poultry

Value chain analysis



Value proposition

- Lower than market utility & water rates for poultry farms
- 70% of poultry imports come from Brazil and with high transportation costs, Brazil poultry is becoming less competitive compared to local poultry
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

A close-up photograph of a variety of baked goods. In the foreground, there are several golden-brown croissants with a flaky texture. To their right are large, spiral-shaped cinnamon rolls with a dark filling. In the center and left, there are smaller, round pastries, some of which are dusted with white powdered sugar. The background shows more of these items, creating a dense and appetizing display of bread, biscuits, and pastries.

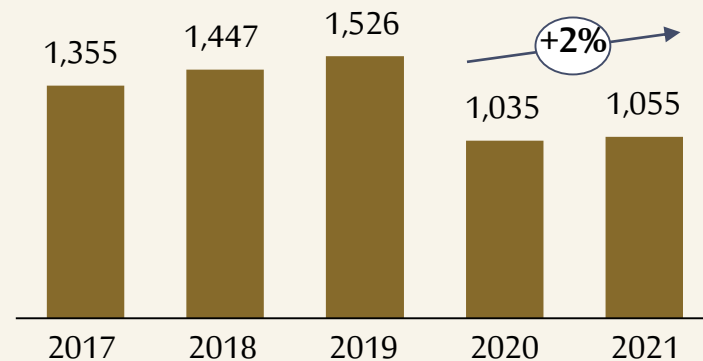
Bread, Biscuits and Pastry

Bread, biscuits and pastry

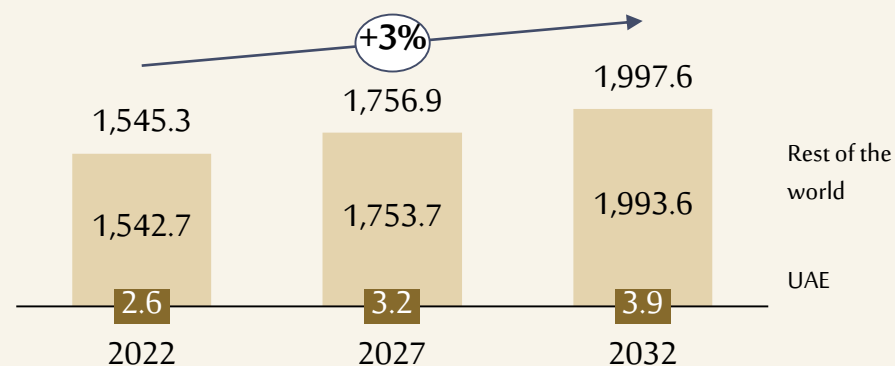
Investment case

- Pastry processing plant and bakery
- Investment size = AED 3.5 Mn
- Plant capacity = 800 tons per year
- Expected IRR = 11%

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)



Global trends & demand drivers

- Growth of longer shelf life and frozen bakery products
- Use of flavors in pastry (ginger, citrus, etc) to enhance nutrition in baked goods
- Accommodation of evolving dietary habits such as Gluten-Free & Multi-Grain
- Changes in market attitude towards convenient (on the go) food products to accommodate fast-paced UAE lifestyles and convenience preferences

Bread, biscuits and pastry

Value chain analysis




Value proposition

- Presence of UAE flour mills avails competitive local raw material
- A high-income per capita population with different tastes demanding a variety of pastry related products
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

A long row of industrial hydrogen electrolyzers in a factory setting. The units are housed in metal frames with glass doors, revealing complex piping, valves, and electrical components. A large vertical cylindrical tank is visible on the right side of the row. The background shows a clean industrial environment with overhead pipes and structural elements.

Hydrogen Electrolyzers

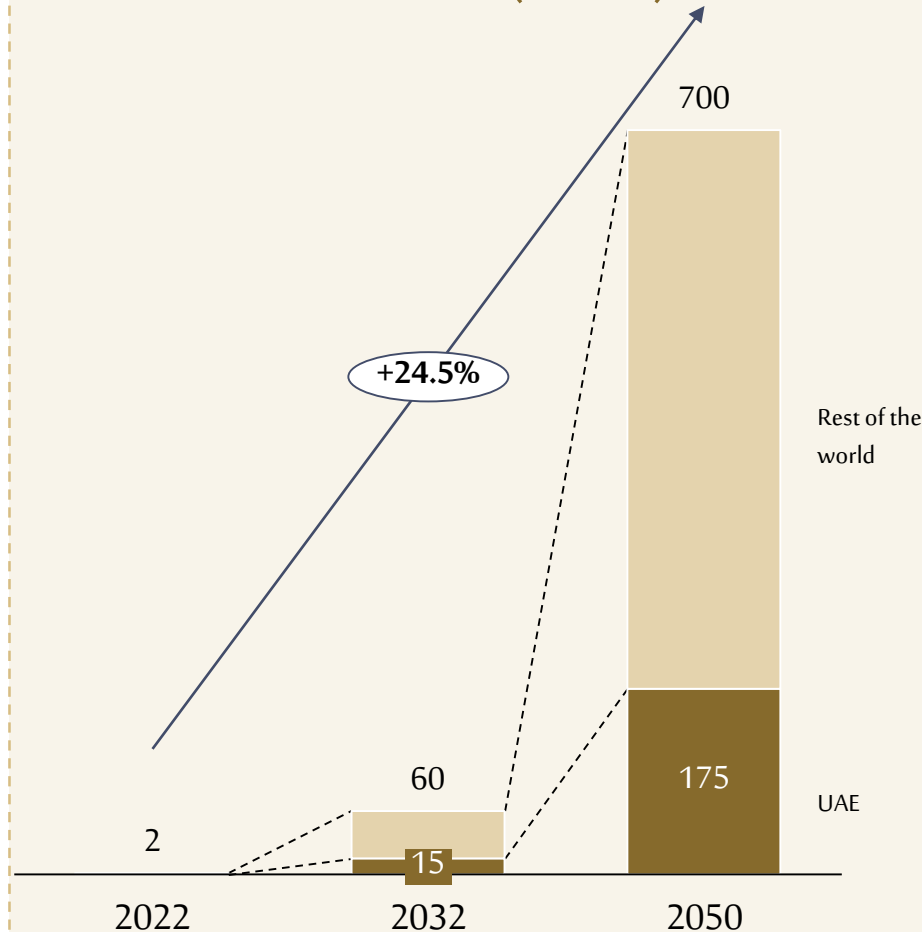
Hydrogen Electrolyzers

Hydrogen electrolyzers produce H₂ by separating water into H₂ and O₂ through an electrical current

Investment case

- Build UAE-based Hydrogen electrolyzer manufacturing plant
- Investment size = AED 2.5 – 3.0 Bn
- Plant capacity = 2 GW per year
- IRR = 15 – 25%
- NPV = AED 500 – 700 Mn

Global and UAE Electrolyzer market size 2022 – 2050 (Bn AED)

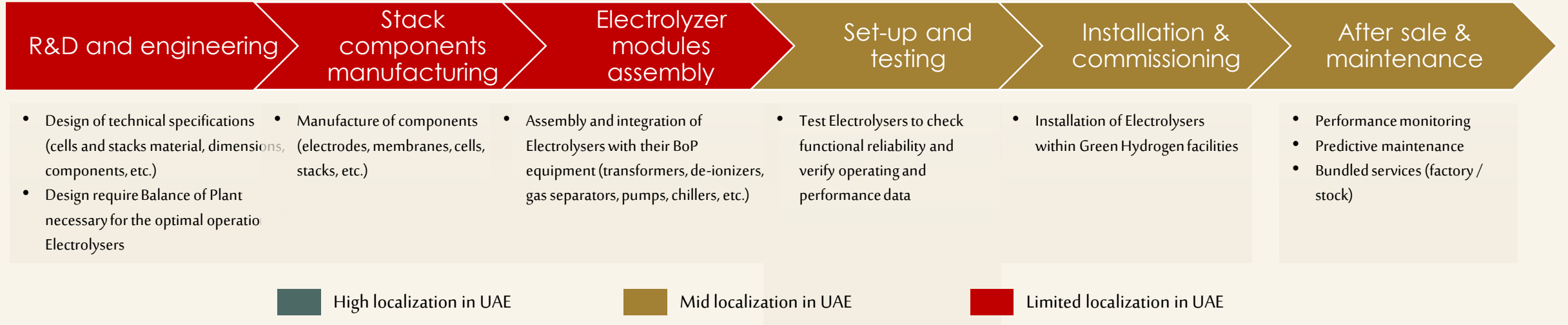


Global trends & demand drivers

- Global demand for hydrogen electrolyzers expected to multiply 15x times in the next 10 years
- Carbon Neutrality targets have been recently announced by multiple countries for 2050-2060 strengthening the need for decarbonized solutions
- Hydrogen will play an important role in reducing GHG emissions as a fuel substitute in sectors responsible for >65% of global emissions
- UAE Ambition of becoming global hydrogen hub and capturing 25% global market share will drive demand for electrolyzers
- Countries keen to localize electrolyzer manufacturing to be in control of future cost reductions and own IP

Hydrogen Electrolyzers

Value chain analysis



High localization in UAE



Mid localization in UAE



Limited localization in UAE

Value proposition

- Potential electrolyzer offtakers from Masdar, ADNOC, and ADQ
- Highly competitive costs of Renewable energy (Solar: USD 13.5 per MWh2 LCOE3 55% below global average of USD 30 per MWh)
- Availability of raw material in steel, mechanical, and electrical equipment
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
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- Customs exemptions for raw materials



Pumps

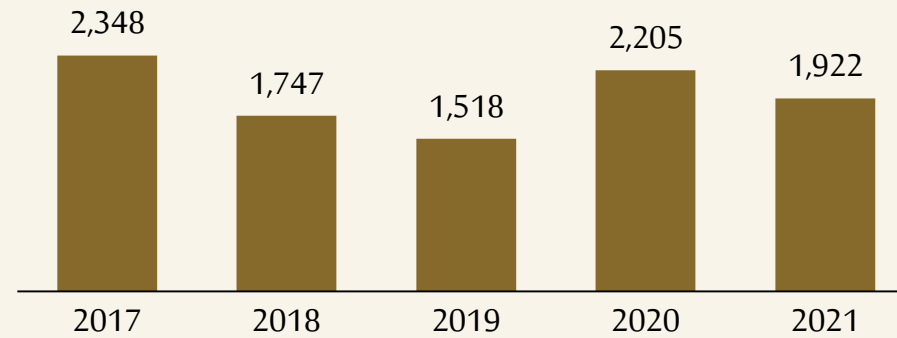
Pumps

Pumps are used for raising, driving, exhausting or compressing fluids or gases using a piston, plunger, or set of rotating vanes

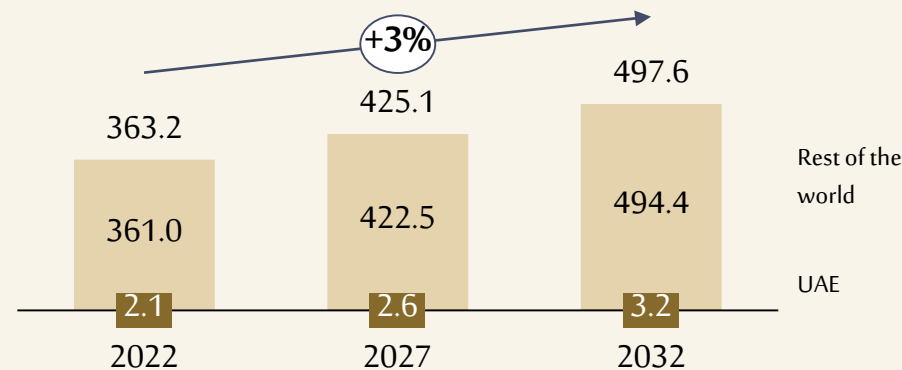
Investment case

- Build medium size pumps manufacturing plant
- Investment size = AED 45 Mn
- Plant capacity = 6,000 units per year
- Expected IRR = 18 %
- Expected NPV = AED 24 Mn

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

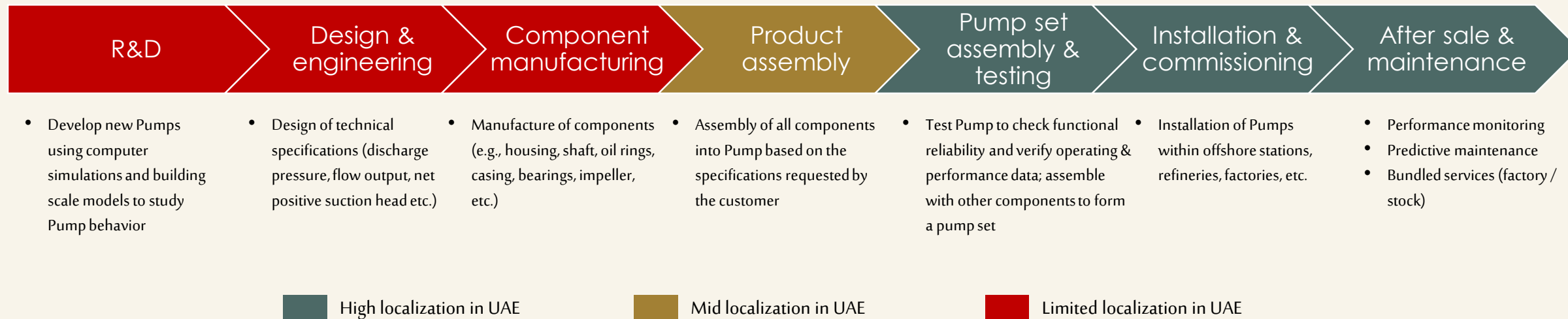


Global trends & demand drivers

- Rising number of infrastructure upgrades, in terms of changing or the installation of new pipelines, will have a positive impact on the global pumps market
- Investments by oil & gas companies across the globe will boost demand for pumps
- Large number of projects by ADNOC's upstream and downstream expansion will increase demand for pumps
- Growing UAE demand for desalination and water treatment plants in the UAE will fuel pumps demand

Pumps

Value chain analysis

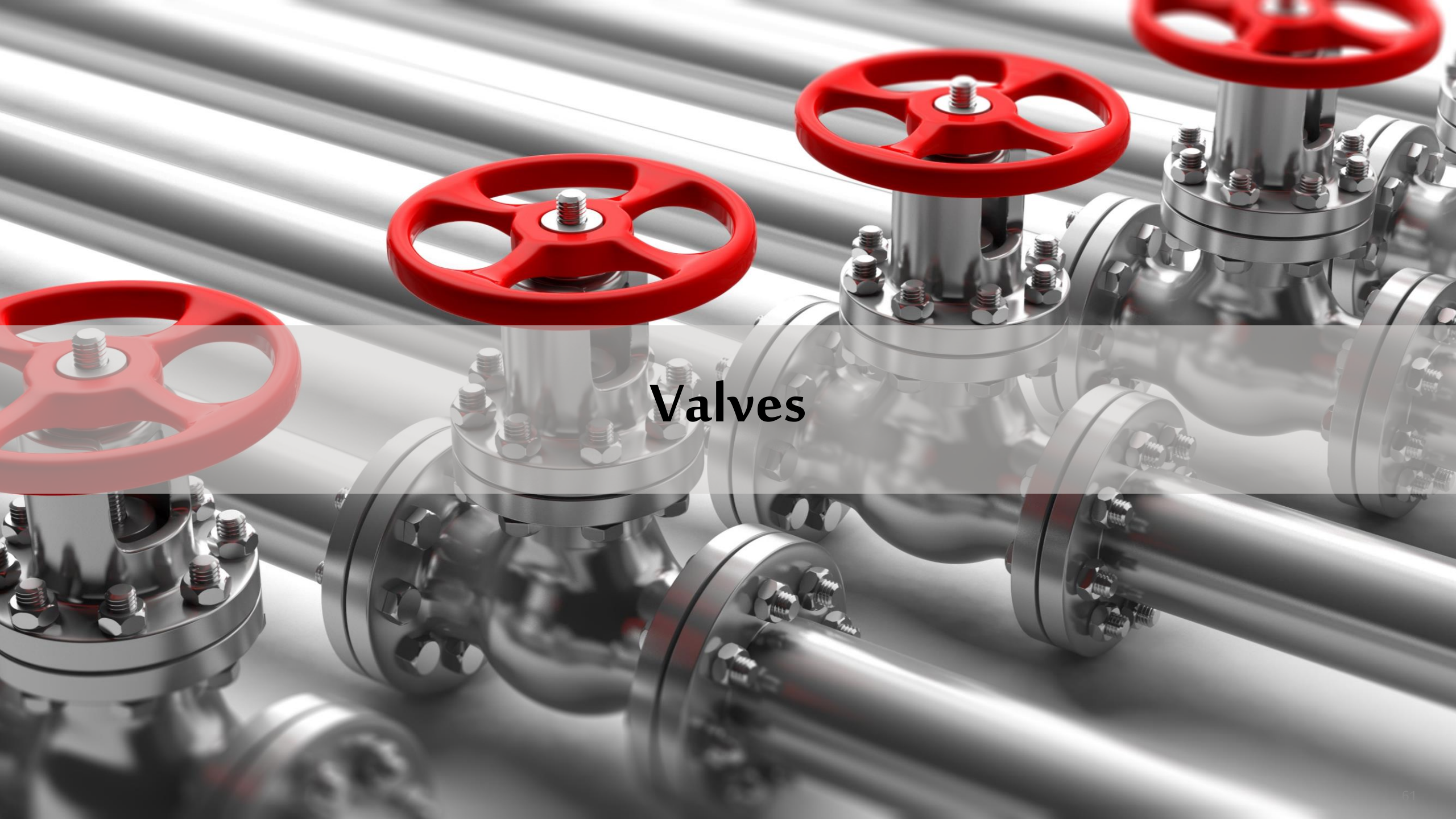


Value proposition

- Concentrated demand and potential offtake from ICV participating entities (e.g., ADNOC, EGA, TAQA, etc.)
- Backward integration into spare part manufacturing to serve the after sales market
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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Valves

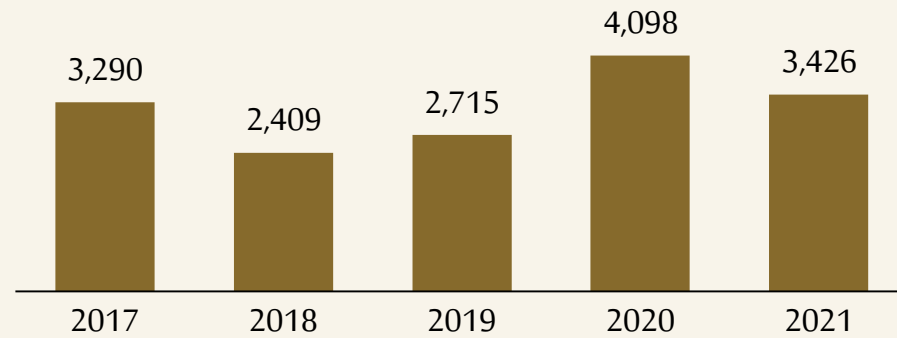
Valves

Valves are mechanical devices that open, close, or partially obstruct passageways to regulate the flow of liquid or gas within a system

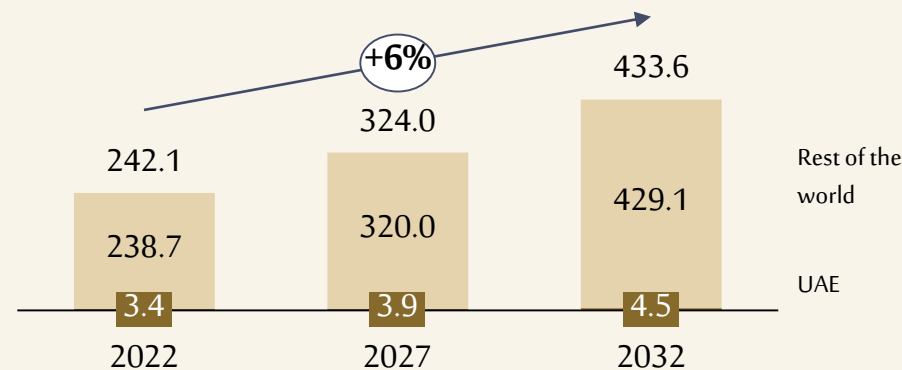
Investment case

- Build industrial valves manufacturing plant
- Investment size = AED 39 Mn
- Plant capacity = 500 – 1,000 units per year (depending on size of valves needed)
- Expected IRR = 13%

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

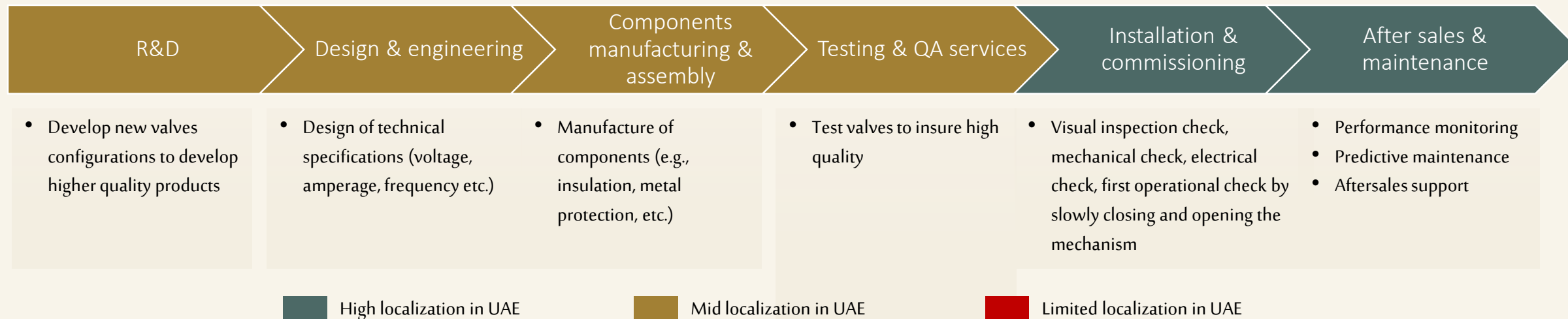


Global trends & demand drivers

- Growing demand for and expansion of clean water, energy, food, and power sectors including installation of scrubber systems and catalytic systems in power plants will continue to boost demand for valves
- Large number of projects by ADNOC's upstream and downstream expansion will increase demand for valves
- Growing demand for high quality valves given increasing Sour gas production and operations
- Growing UAE demand for desalination and water treatment plants in the UAE will fuel pumps demand
- Increase in UAE infrastructure and developmental projects

Valves

Value chain analysis



Value proposition

- Concentrated demand and potential offtake from ICV participating entities (e.g., ADNOC, EGA, TAQA, etc.)
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

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Active Pharmaceutical Ingredients

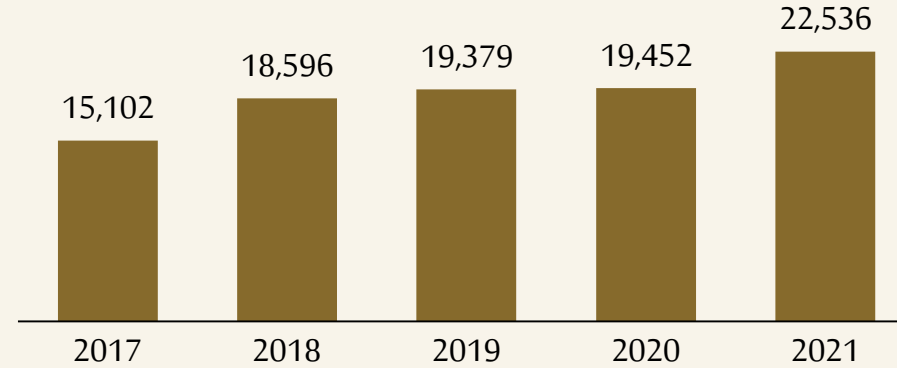
Active Pharmaceutical Ingredients

API is the biologically active component of a drug product (tablet, capsule, cream, etc.) that produces the intended effects

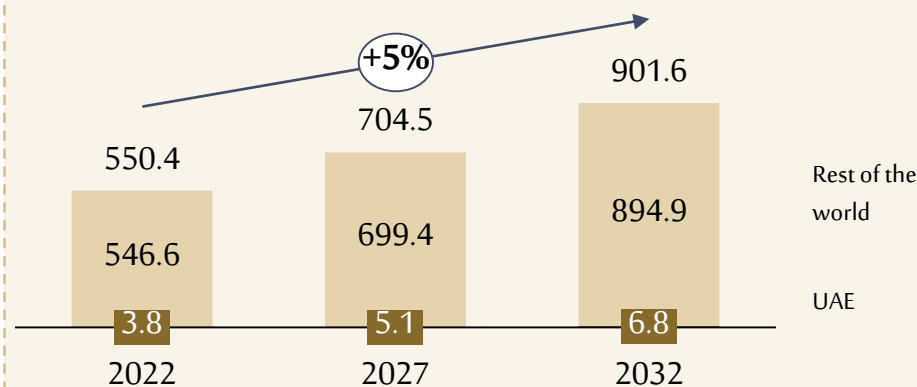
Investment case

- Build 1 API manufacturing plant
- Investment size = AED 42 Mn
- Plant capacity = 1,000 tons per year
- IRR = 7%
- NPV = AED 6 Mn

Medicines Imports to UAE 2017 – 2021 (Mn AED)



Global and UAE API market size 2022 – 2032 (Bn AED)

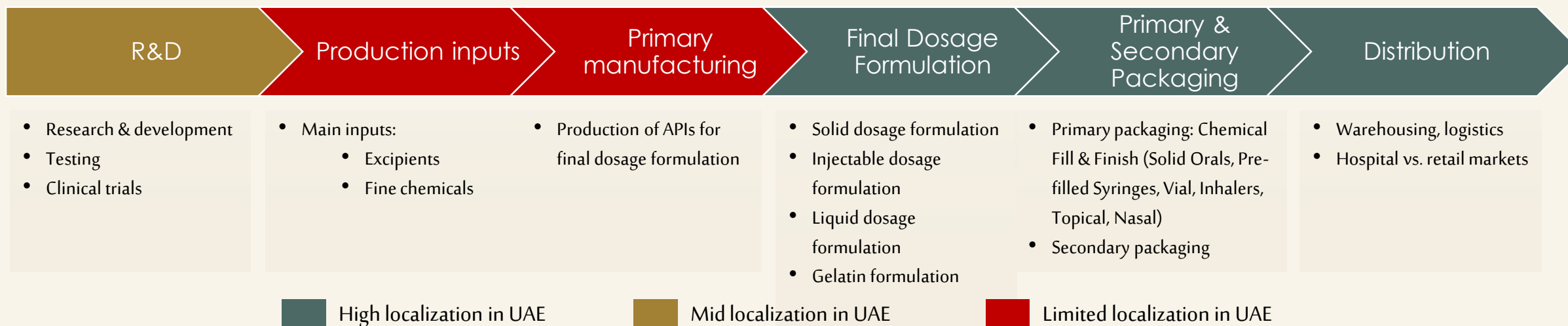


Global trends & demand drivers

- Rising drug research and development activities for drug manufacturing
- UAE's ambitions for healthcare sector and becoming the region's leading medical tourism destination
- Advanced healthcare practices (e.g., digitalization, new treatments and technologies) providing wider access to pharmaceuticals
- Ageing population, sedentary lifestyle, global pandemics leading to rise in chronic diseases and consumption of medicines

Active Pharmaceutical Ingredients

Value chain analysis



Value proposition

- Highly competitive energy costs
- Concentrated demand and potential offtake from ICV participating entities
- API essential for UAE supply chain resilience in pharma
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
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- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

A close-up photograph of a stack of blue polyurethane pipes. The pipes are arranged in a grid-like pattern, with the circular openings clearly visible. The lighting is bright, creating a strong blue color palette. A semi-transparent dark blue horizontal band is overlaid across the middle of the image, containing the word "Polyurethane" in white, bold, sans-serif font.

Polyurethane

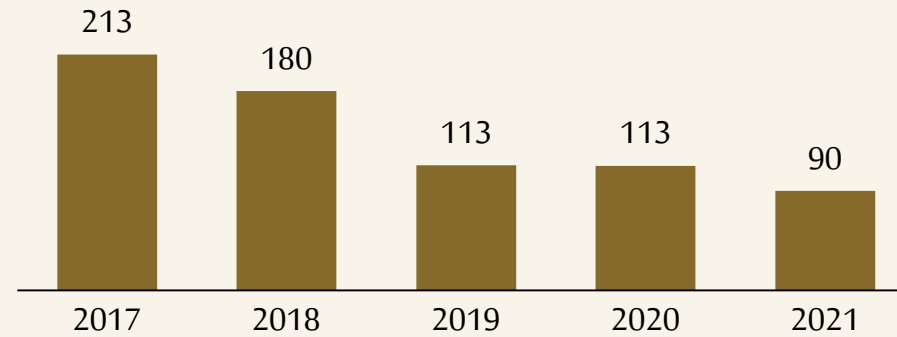
Polyurethane

Polyurethanes are synthetic resins in which the polymer units are linked by urethane groups and are used as constituents of paints, varnishes, adhesives, and foams

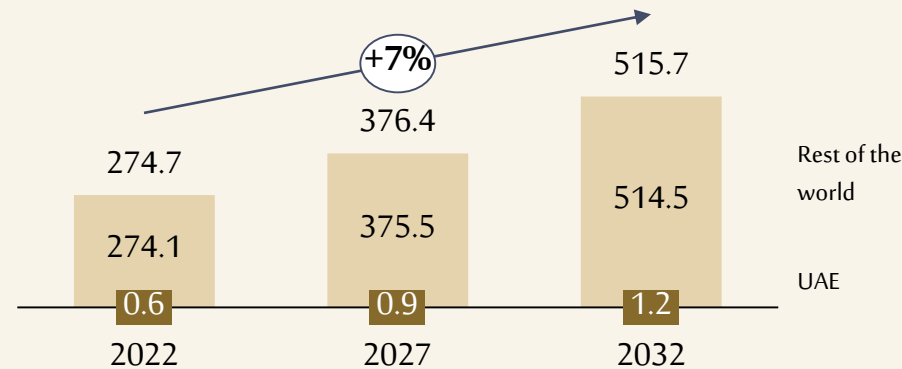
Investment case

- Setup a small-scale polyurethane systems manufacturing plant
- Investment size = AED 5.5 Mn
- Plant capacity = 100 KT per year
- Expected IRR = 16%
- Expected NPV = AED 4 Mn

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)

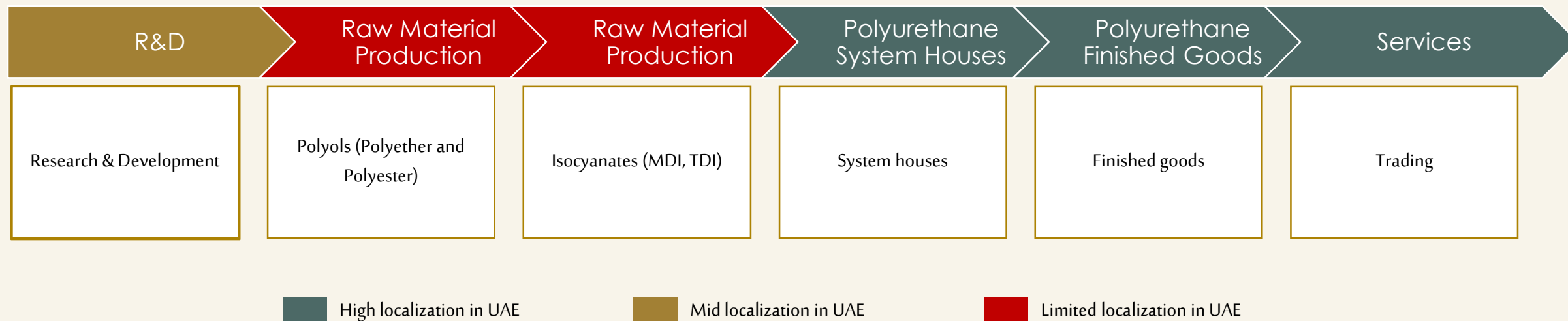


Global trends & demand drivers

- Sustainability in building developments becoming key to environment sustainability will drive growth of polyurethane
- The rising demand from the automotive and packaging sectors will also lead to more use of polyurethane
- Increase in infrastructure projects and residential expansions
- Growing emphasis on energy efficient applications (e.g., buildings, vehicles, appliances) is raising demand for Polyurethane uses due to its strength-to-weight ratio
- Polyurethane is suitable for several industries due to its ability to get molded in different forms and have various characteristics

Polyurethane

Value chain analysis



Value proposition

- PU is a natural avenue for ADNOC's planned expansion into Polyols and supports Ta'aziz expansion
- Strong export potential to growing Asia and Africa markets
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit and insurance via Etihad Credit Insurance and AD Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials



Shrimps

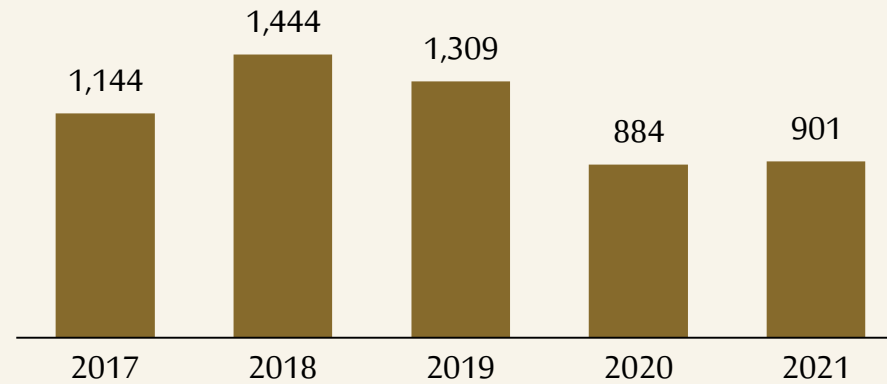
Shrimps

Investment case

- Build a shrimp aquaculture farm
- Investment size = AED 20 - 30 Mn
- Plant capacity = 1,000 tons per year
- IRR = 16 – 19%

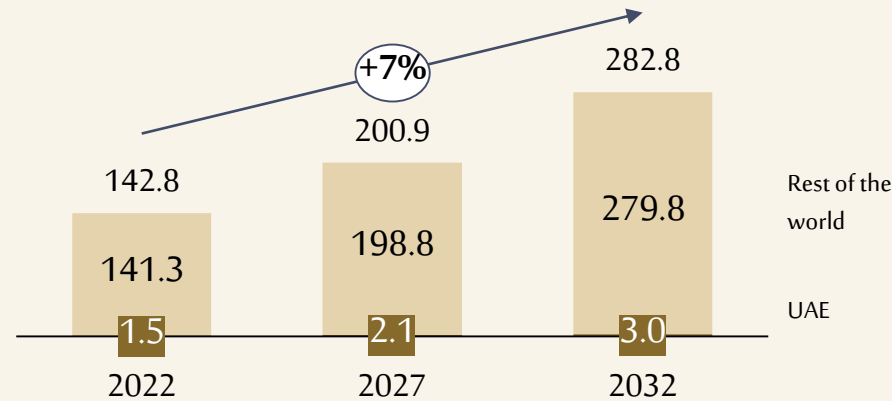
Imports to UAE

2017 – 2021 (Mn AED)



Global and UAE market size

2022 – 2032 (Bn AED)

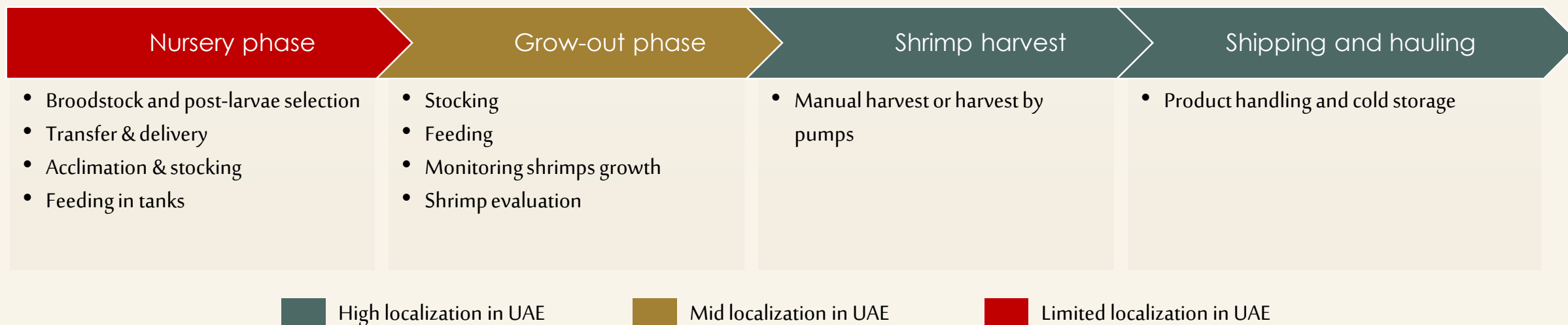


Global trends & demand drivers

- Rise in global aquaculture production from 1990 to 2018 by +527%
- World moving towards sustainable seafood farming rather than damaging aquatic life by wild fishing
- More investments in R&D centers related to aquaculture
- Increase in consumption of seafood in UAE due to consumer preference of healthy nutrients (eg: omega 3)
- Enhanced technologies in aquaculture farms enable competitive shrimps production
- UAE consumers prefer 'ready-to-cook' and 'ready-to-eat' products like Shrimps due to high working age population

Shrimps

Value chain analysis



Value proposition

- Multicultural population with different tastes demanding all kinds of seafood products
- Lower than market utility & water rates for shrimp aquaculture farms
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
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Enablers

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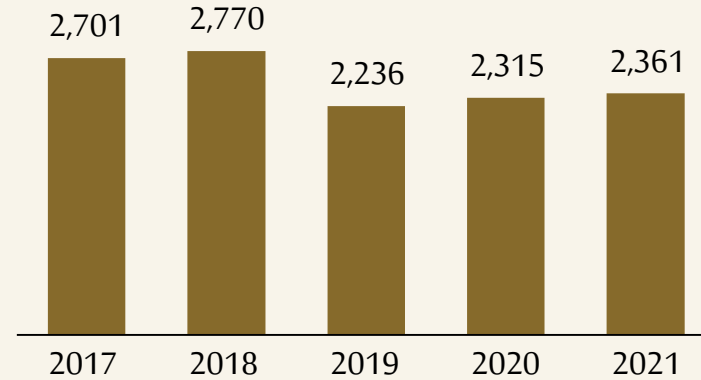
Beef

Beef

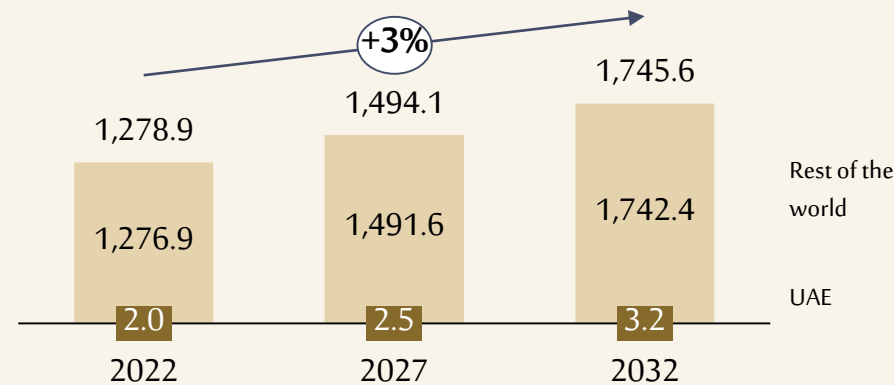
Investment case

- Build a beef processing facility
- Investment size = AED 8 – 12 Mn
- Plant capacity = 4000 cattle per year
- IRR = 9 -12%

Imports to UAE
2017 – 2021 (Mn AED)



Global and UAE market size
2022 – 2032 (Bn AED)



Global trends & demand drivers

- Increasing global demand for Halal special cuts of meat will fuel market growth
- Growing Muslim population and increasing demand for Halal beef
- Income growth in developing countries will lead to increase in per capita consumption of beef
- A growing UAE tourist hub and the introduction of new restaurants, fast-food chains and hotels will lead to increase in beef demand
- Changing consumer habits and rising awareness towards high protein food; beef has higher protein content than alternatives like chicken and lamb

Beef

Value chain analysis



Value proposition

- Advanced transportation and storage infrastructure coupled with “cold storage” capabilities that enable transport of beef
- UAE ranked 16th globally in Ease of Doing Business (WB)
- UAE ranked #10 globally for world class infrastructure in (LPI)
- Strong logistics infrastructure – UAE has busiest port in MENA
- High quality of life attractive for skilled talent
- 100% foreign business ownership and low VAT (5%)

Enablers

- Up to 80% project financing by Emirates Development Bank
- 2-year grace periods and low interest-rate loans for CAPEX, working capital, and supply chain financing
- Export credit/insurance via Etihad Credit Insurance and Abu Dhabi Exports
- Access to Free Trade Agreements with high-growth markets such as GCC, Arab countries, India, Israel, Indonesia, and others
- Customs exemptions for raw materials

Acetic Acid Production



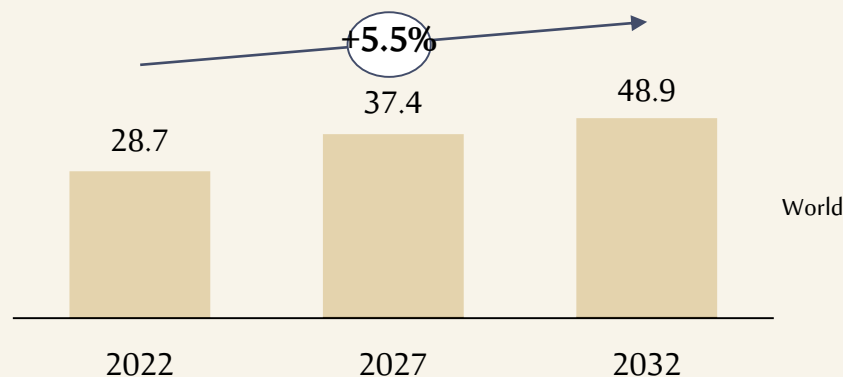
Acetic Acid Production

Acetic acid production plant involves the utilization of carbon monoxide and methanol as raw material via Cativa Process using iridium-complex catalysts to produce acetic acid with high purity and cost advantages

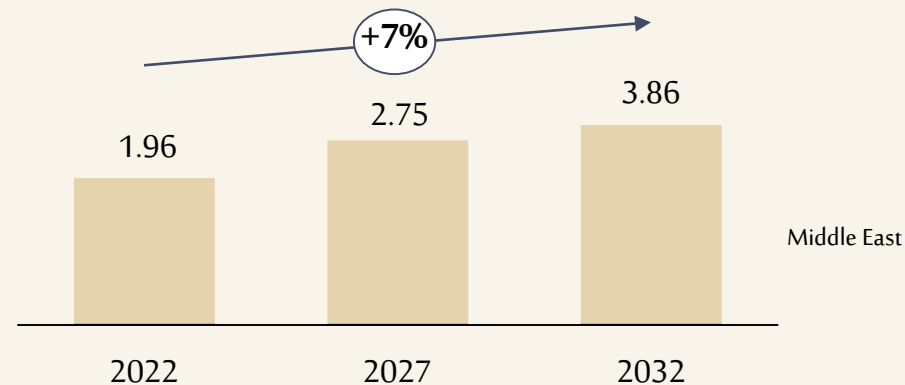
Investment case

- Setup large scale an Acetic Acid Production facility in the UAE
- Investment size = AED 1.5 Bn
- Plant capacity = 375,000T per year
- Expected IRR = 12%
- Expected NPV = AED 885 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)

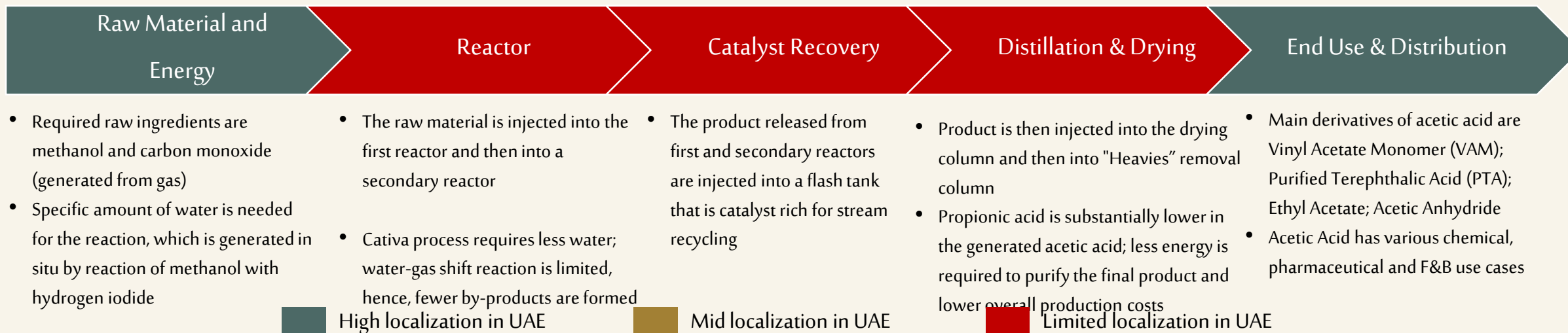


Global trends & demand drivers

- Growing range of acetic acid derivative applications such as packaging, pharmaceuticals, and textiles
- Increased and consistent development of the polyester industry in Asia is expected to drive the already-fast growing production of Purified Terephthalic acid (PTA), one of the acetic acid's downstream products
- China's economic development and urbanization and its growing middle-class have increased demand for a wide range of polymers and chemicals including acetic acid derivatives; which account for 53% of expected demand
- Continuous improvements in acetic acid production technologies have increased the popularity of methanol carbonylation, which accounts for 85% of global acetic acid capacity
- Growing range of uses of acetic acid in the pharmaceutical sector in the region is expected to drive demand for its derivatives such as acetic anhydride which is used in manufacturing vitamins, antibiotics, hormones, and other products

Acetic Acid Production

Value Chain Analysis



Value proposition

- Wide availability of needed raw material (Methanol) locally within the UAE
- Growing global demand for Acetic Acid is driven by it's wide range of uses, and demonstrated decarbonization potential
- Unlocks new local manufacturing and value-add export opportunities downstream of ADNOC

Enabling Entities

- TAZIZ:** The facility can be established near or in TAZIZ to exploit efficiencies in logistics and tap into existing production of methanol. In return reducing operational costs
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- ADNOC:** ADNOC's recent partnership with Proman will be key in the supply of raw materials. A similar model can be implemented for Acetic Acid production

A photograph of a large-scale aeroponic farming system inside a greenhouse. The system consists of long, parallel rows of white vertical towers. Each tower is filled with green leafy plants, likely lettuce, growing in a nutrient mist. The towers are supported by a network of metal pipes and are situated above a series of green circular reservoirs. The greenhouse has a high, arched glass roof with a metal frame, and the floor is a light-colored concrete. The overall scene is bright and organized, showcasing a modern agricultural technology.

Aeroponic Farming Systems

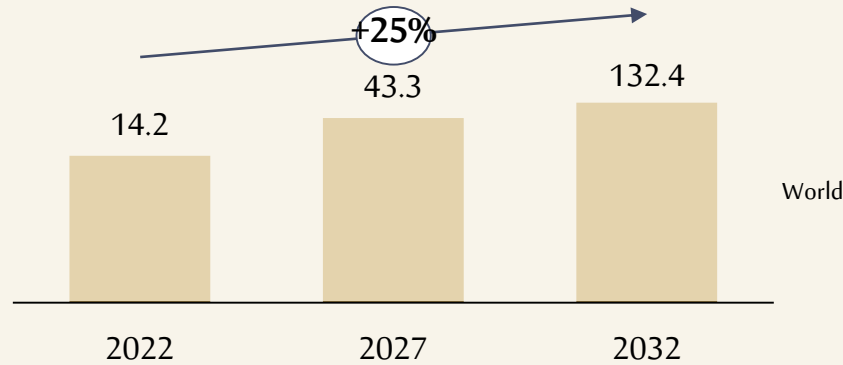
Aeroponic Farming Systems

Aeroponic farming systems assembly include multiple components that can be either imported or locally produced

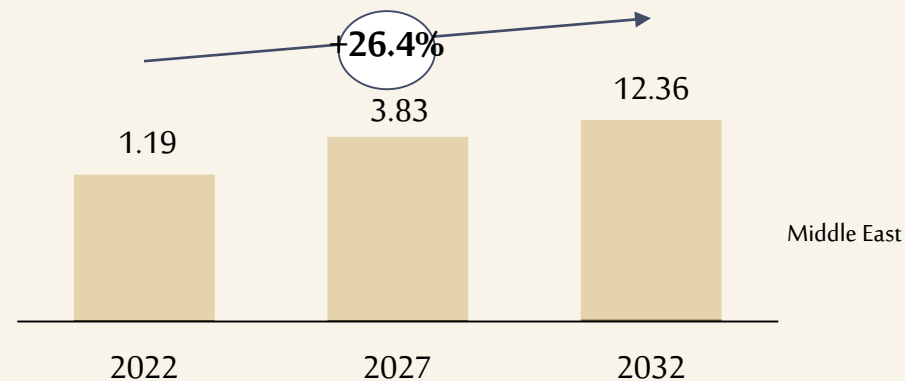
Investment case

- Setup large scale aeroponic farming systems assembly line in the UAE
- Investment size = AED 64.2 Mn
- Plant capacity = 40,000T per year
- Expected IRR = 19.5%
- Expected NPV = AED 77 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)

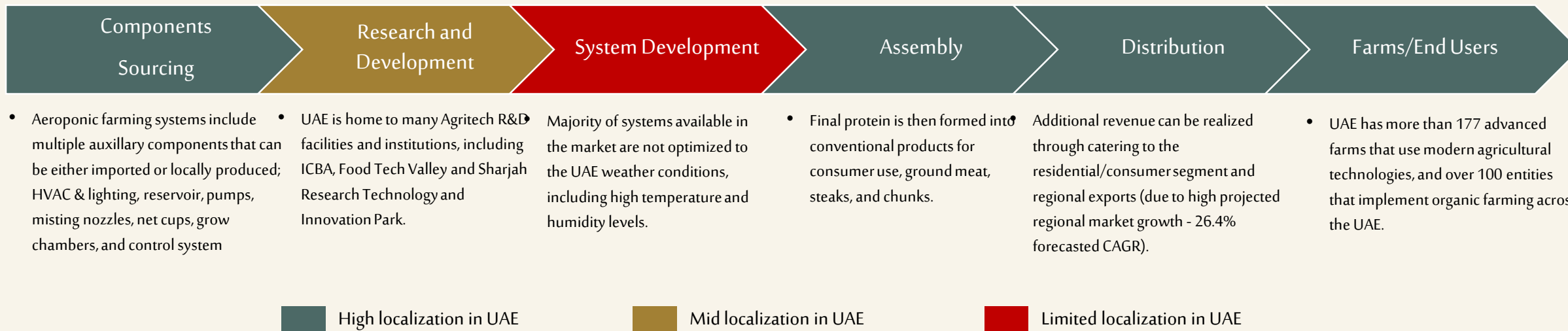


Global trends & demand drivers

- Main drivers include urbanization, declining size of arable land, and growing organic food popularity
- Increase in investments and partnerships between farms and technology providers, which also boosts growth in the global vertical farming market.
- Advancements in key enabling technologies, including light-emitting diode (LED) and HVAC technologies.
- Strong growth rate (26% CAGR) for Aeroponic systems adoption, due to the lower water usage, higher crop yield, absence of pesticides, and zero harmful waste production in the environment.
- Regional focus on food security, supply chain resilience, and import dependency
- Projected increase in water scarcity; around half of the expected top 30 most water-stressed countries in 2040 are in the Middle East
- Very limited and declining arable land, particularly across the GCC region (e.g., Kuwait 0.45%, UAE 0.6%, Qatar 1.2%, and Saudi Arabia 1.5%).

Aeroponic Farming Systems

Value Chain Analysis



Value proposition

- UAE is the second highest consumer of fresh produce in the GCC, with 90% of its food requirements being currently imported
- UAE is targeting to become the world's most food secure nation by 2051; there is an exponential increase in capital investments in the agriculture sector in the UAE
- Aeroponic systems consume around 90% less water compared to other modern farming technologies (e.g. Hydroponic), making them ideal for the UAE and the broader GCC region
- Aeroponic systems specifically designed for the UAE harsh environment using locally-sourced sustainable material would improve overall yield, quality and food safety
- UAE is a global food logistics hub, with food trade exceeding \$27 billion annually

Enabling Entities

- Food Tech Valley:** Home to four key clusters: agricultural technology and engineering, a food innovation centre, R&D facilities, and an advanced smart food logistics hub
- Abu Dhabi Investment Office:** Offers financial support (rebates on investments, key cost centres, innovation cost, utility costs) and non-financial support (land location, regulatory and strategic advice)
- F&B Business Group:** Facilitates engagement on potential partnerships and distribution contracts with different players
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- MolAT:** Collaborating with the relevant federal and local entities to further enable this investment opportunity



Plant-based Alternative Proteins

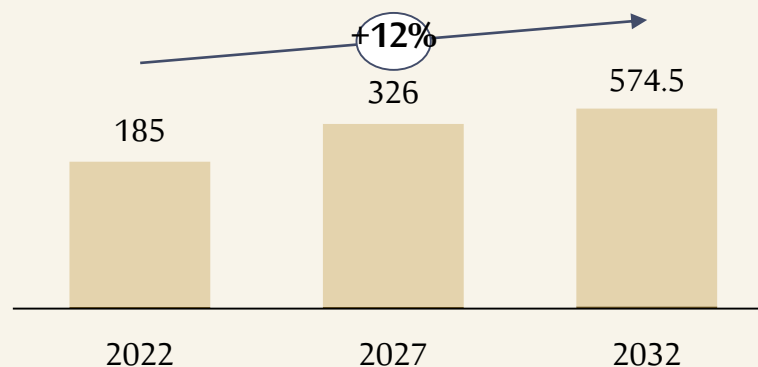
Plant-based Protein Production

Plant-based protein production involves the growing and processing of high protein crops (Soybeans and Legumes) feedstock through extraction, formulation and texturization, with meat alternatives and oils as by-products

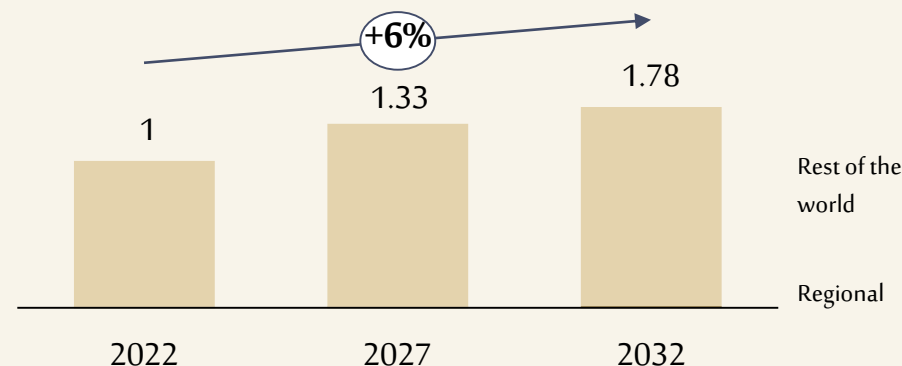
Investment case

- Setup large scale plant-based protein production plant in the UAE
- Investment size = AED 156 Mn
- Plant capacity = 40,000T per year
- Expected IRR = 19%
- Expected NPV = AED 286.8 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)

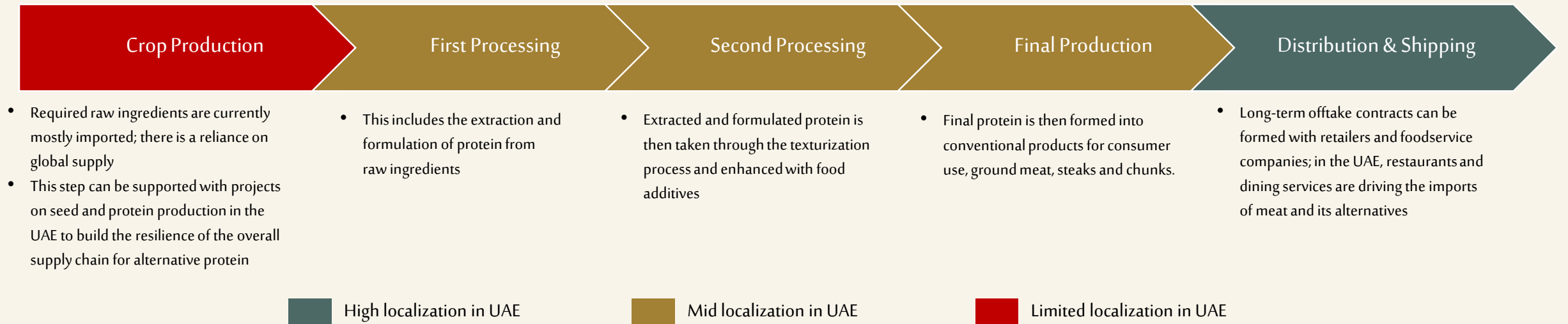


Global trends & demand drivers

- High prevalence of non-communicable diseases coupled with high income levels makes the UAE and broader GCC region prime markets for plant-based protein products
- New consumer trials in plant-based products in the past few years showcase increasing consumption of plant-based products.
- Increased adoption of preferential diets (vegetarians, vegans, pescatarians...etc.) is expected to drive growth of plant-based protein markets over the coming few years.
- Environmental awareness is shifting consumer behavior and consequently increasing demand for products that can be associated with lower carbon emissions such as plant-based meat.
- High prevalence of obesity, cardiovascular diseases and diabetes within the GCC region are considered key demand drivers for alternative protein solutions, as they offer a healthier, cholesterol-free alternative.
- Relative high-income rates and purchasing power positions the GCC as a prime market for alternative protein solutions.

Plant-based Protein Production

Value Chain Analysis



Value proposition

- High prevalence of non-communicable diseases coupled with high income levels makes the UAE and broader GCC region prime markets for plant-based protein products
- The production of plant-based meat has a 75% conversion rate compared to 20-25% in traditional meat processing; reducing waste within the food industry
- Plant-based protein production requires 10 times less water than that of traditional protein sources, making it suitable for UAE's conditions
- The production plant can strengthen UAE's meat supply chain resilience in the case of any market disruption and improving the overall food national security
- Plant-based protein is significantly more cost-effective compared to other alternative proteins (cultured meat) and complies with the regional religious and cultural norms
- The UAE has the potential to be the regional leader in sustainable alternative food production by being a first mover in entering this market

Enabling Entities

- Food Tech Valley:** Home to four key clusters: agricultural technology and engineering, a food innovation centre, R&D facilities, and an advanced smart food logistics hub
- Abu Dhabi Investment Office:** Offers financial support (rebates on investments, key cost centres, innovation cost, utility costs) and non-financial support (land location, regulatory and strategic advice)
- F&B Business Group:** Facilitates engagement on potential partnerships and distribution contracts with different players
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- MoiAT:** Collaborating with the relevant federal and local entities to further enable this investment opportunity

A photograph of four large, vertical, cylindrical stainless steel tanks in an industrial setting. Each tank is connected to a network of pipes and walkways above it. The tanks are arranged in a row, and the scene is set against a clear blue sky. A semi-transparent white banner is overlaid across the middle of the image, containing the text 'Caustic Soda Production'.

Caustic Soda Production

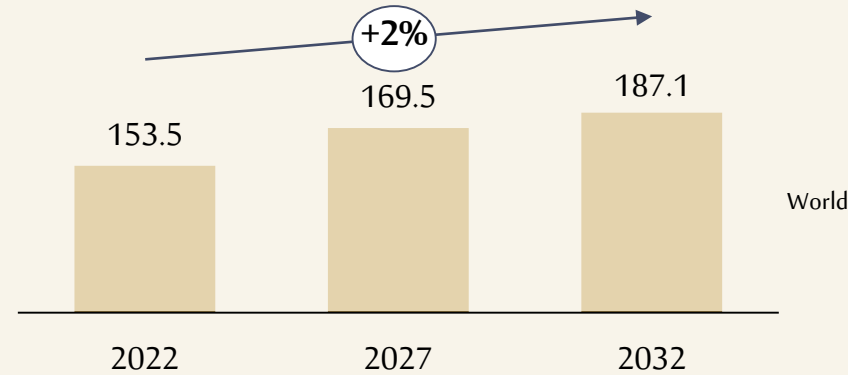
Caustic Soda Production

Caustic soda production plant involves the processing of salt (brine) feedstock through electrolysis, with both Hydrogen and Chlorine gases produced as by-products

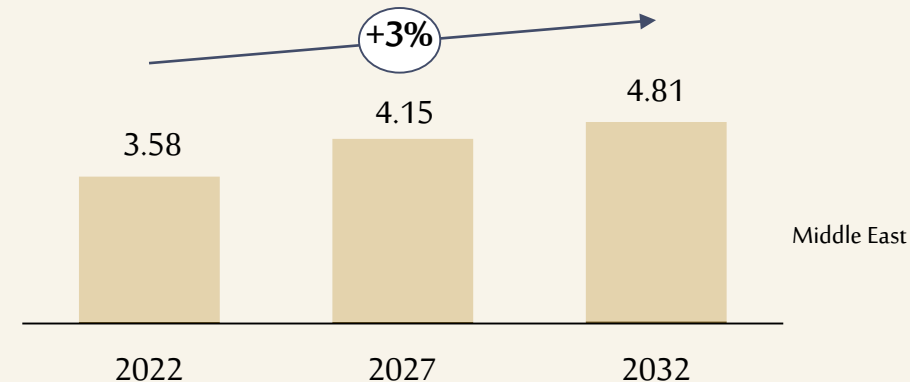
Investment case

- Setup a large-scale Caustic Soda Production facility in the UAE
- Investment size = AED 654 Mn
- Plant capacity = 135,000T per year
- Expected IRR = 10.6%
- Expected NPV = AED 62.4 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)

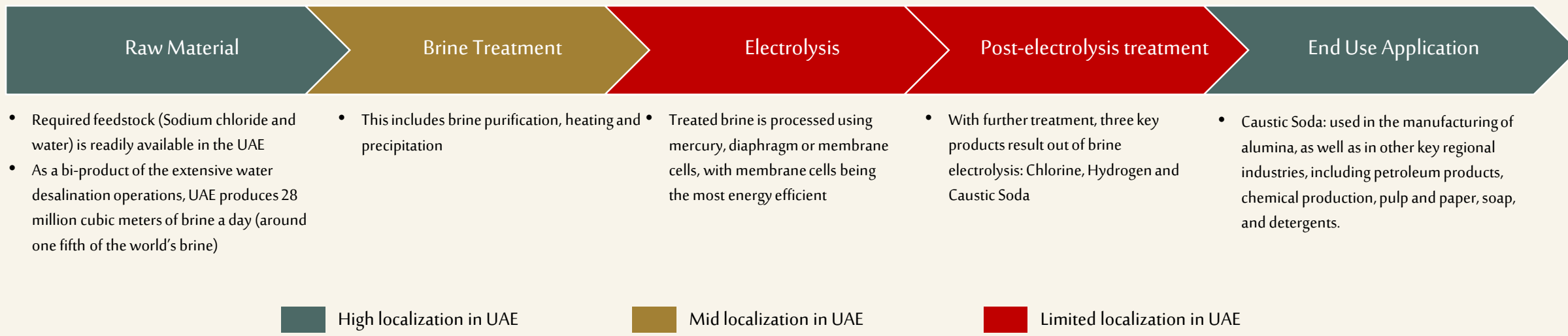


Global trends & demand drivers

- The demand for caustic soda has increased for soap and detergent production as a result of COVID-19
- Southeast Asia, South America and North America are the leading import destinations and are expected to increase their imports by 1.3% during 2022-2025
- Increased demand for packaged foods and rise in substitution of stainless steel with aluminum by automotive manufacturers are further growing demand for caustic soda (to be used for alumina production)
- The move towards circular economy will drive the demand for caustic soda as it is also used in the de-inking of recycled paper waste
- The expansion of alumina refineries and chemical production facilities in the region is driving the increase in demand for Caustic Soda as well as the raw materials needed to produce it.

Caustic Soda Production

Value Chain Analysis



Value proposition

- Access to major local offtake agreement with EGA; a key pre-investment milestone
- Wide availability of needed raw material (Salt/Brine) locally within the UAE
- UAE is the fastest growing market and second largest for Caustic Soda in the region
- Potential exports to major net importing regional markets (e.g. Europe), through utilizing UAE's capabilities as a global logistics hub
- Contributing to improving overall sustainability of local water desalination operations via brine purification and processing

Enabling Entities

- **KIZAD:** The facility can be established near the Al Taweelah Alumina (ATA) Refinery, lowering the transportation and distribution costs of caustic soda (through pipelines) and reducing operating cost while providing broad market accessibility (linked to Khalifa Port)
- **Khalifa Port:** Facilitates companies exporting revenue stream and helps position it as a regional and international player
- **EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- **MolAT:** Encourages and promotes projects and initiatives related to local production

A large, horizontal, cylindrical industrial reactor, likely for pyrolysis, is the central focus of the image. It is constructed from metal with a perforated or mesh-like texture on its side. The reactor is mounted on a concrete base and has various pipes, valves, and a large circular access door at the front. To the left, there is a complex assembly of pipes and a large blue valve. In the background, a yellow container or structure is visible, and a person is working in the distance. The facility has a high ceiling with a corrugated metal roof and steel trusses. The text "Pyrolysis Reactor Facility" is overlaid in white on a semi-transparent dark band across the center of the image.

Pyrolysis Reactor Facility

Pyrolysis Reactor Facility

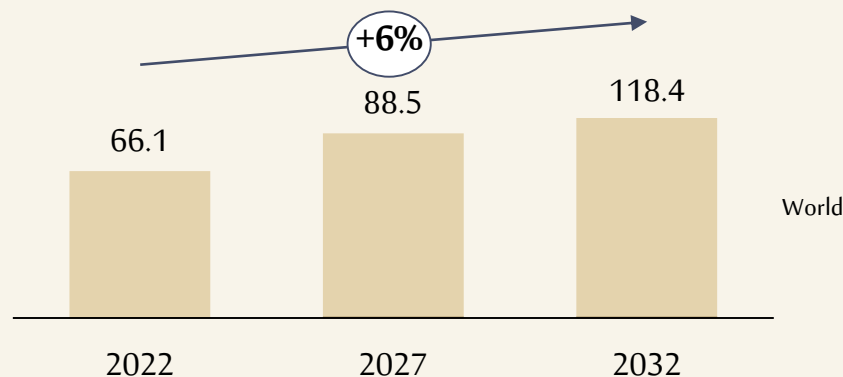
Facility to streamline the “waste to energy” recycling process by including both “pre-treatment” and “pyrolysis” activities producing Recycled Polymer Feed (RPF) to be fed to either the existing “Naphtha” or “Fluid Catalytic” Cracker in the UAE

Investment case

- Setup a Pyrolysis Reactor Facility in the UAE
- Investment size = AED 126.6 Mn
- Plant capacity = 40,000T per year
- Expected IRR = 11%
- Expected NPV = AED 15.43 Mn

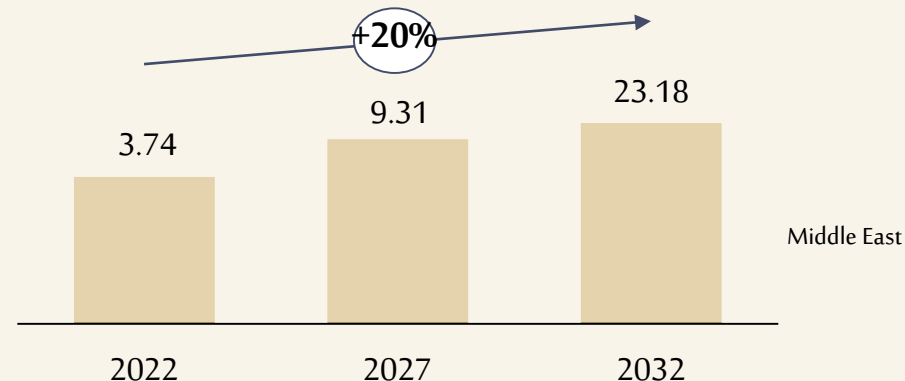
Global Market Size

2022 – 2032 (Bn AED)



Regional Market Size

2022 – 2032 (Bn AED)



Global trends & demand drivers

- Lower greenhouse emissions: Make use of UAE plastic disposal in landfills which drives value through recycling and creates new jobs as recycled content of packaging materials increases.
- Climate Change: Plans of imposing taxes on carbon emissions due to the impact of climate change. Using RPF can reduce the carbon footprint in the production of petrochemicals.
- Demand for petrochemicals: RPF can be used to create energy. Energy is needed in the production of Petrochemicals. Petrochemicals are set to account for more than a third of the growth in world oil demand by 2030.
- Introduction of regulatory frameworks for use of RPF will create the necessary environment for its adoption in oil refineries.

Pyrolysis Reactor Facility

Value Chain Analysis



- ~1.5 MT/yr of post-consumer plastic waste generated in the UAE
- Local stakeholders play an integral part in the collection of waste in the UAE.
- Every 1 ton of waste generated in the UAE is made up of 25% plastic.

- Waste management companies are working to build the necessary infrastructure.
- Educating + increasing awareness are currently underway to help provide necessary feedstock.

- Mixed Plastic Waste (MPW) of specific quality into direct contact with molten zinc.
- At 450 C, MPW pyrolyzes into hydrocarbon vapors, gases, and solids where Vapors are then condensed to P-oil.

- The product from a plastic pyrolysis process, has high economic value.
- Could be sold to an oil refinery, a fuel blender, upgraded to diesel, wax or other petroleum products.

- *FCC -Ruweis*: Can be processed by ADNOC refinery. RFP is used to make propylene, green gasoline, and green propylene.
- *Borouge Naphtha Cracker*: an additional layer of investment needed by Borouge to process RFP.

Value proposition

Phase 1

- Capture 40kt/yr of plastic grade feedstock
- 40 kt/yr needed at a pre-treatment level
- Extract ~30kt/year for reactor inlet @ 75% conversion
- Reactor feedstock will be converted to RPF at approximately 85% conversion, yielding 25 kt/yr

Phase 2

- ~45% of unutilized Feedstock unlocked
- Laws & regulations limiting exports and legalizing recycling
- Additional capacity available for recycling

Long-Term: (+5years)

- ~65% of unutilized Feedstock unlocked
- Sourcing and sorting infrastructure of local waste will increase feedstock availability

Enabling Entities

- **TAZIZ**: Upstream and Downstream anchors are situated in Taziz which creates a suitable ecosystem for a Pyrolysis facility
- **Khalifa Port**: Facilitates companies exporting revenue stream and helps position it as a regional and international player
- **EDB**: Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- **MoIAT**: Help source the required feedstock of quality grade plastics to be used as input for facility



Food Waste into Animal Feed

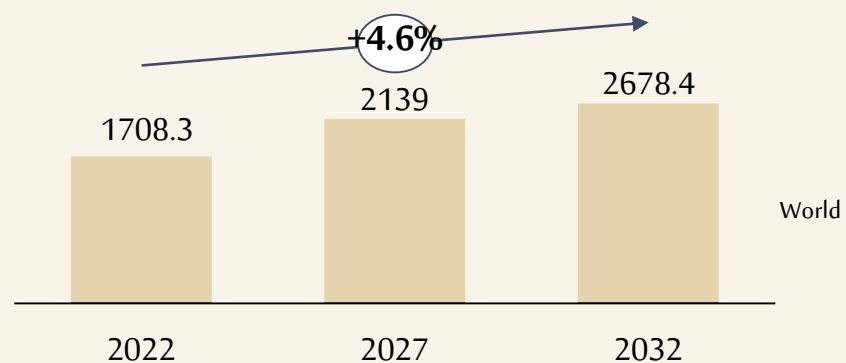
Food Waste into Animal Feed (BSF Feed Ingredient)

Waste-to-Feed facility involves collecting, processing and treatment of food waste using BSF Technology to produce high protein animal feed, with oil feed and soil as by-products

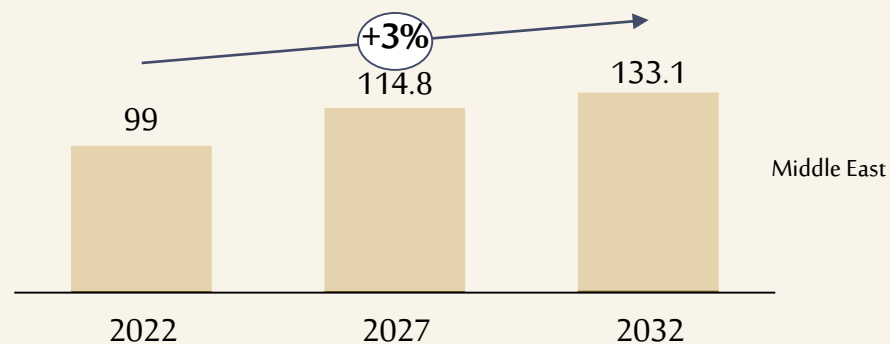
Investment case

- Setup large scale treatment plant to produce animal feed from food waste in the UAE
- Investment size = AED 147 Mn
- Plant capacity = 90,000T per year
- Expected IRR = 17%
- Expected NPV = AED 43.9Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)

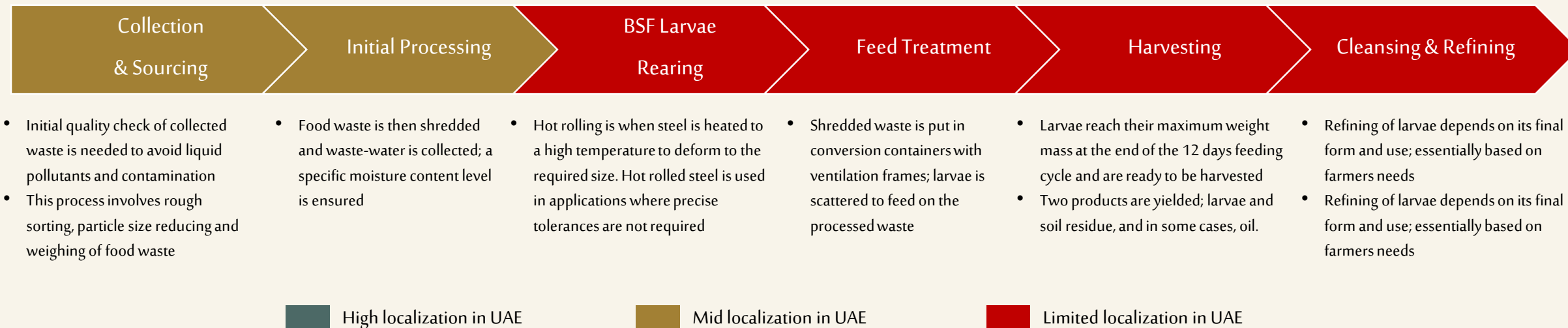


Global trends & demand drivers

- High per capita food waste generation in the UAE (around 197kg) generates a loss of around \$3.5 billion per year
- Environmental awareness of food waste risks is shifting consumer behavior and consequently increasing demand for products that can be associated with lower carbon emissions such as larvae animal feed
- Price inflation of animal feed stocks prompt farmers to search for cheaper, sustainable feed alternatives
- Increasing global meat and poultry demand coupled with the growing global population are key factors driving the demand in the animal feed market
- Regional campaigns and awareness programs on food waste management such as UAE food pledge; this prompts the adoption of sustainable larvae to cut its food waste by half by 2030

Food Waste into Animal Feed (BSF Feed Ingredient)

Value chain analysis



Value proposition

- High per capita food waste generation in the UAE (around 197kg) generates a loss of around \$3.5 billion per year
- The facility can reduce import dependency on animal feed and possible supply bottlenecks; UAE currently imports ~1 billion of soyabeans every year of which 85% used as poultry feed
- The facility supports in closing the loop of food production; food waste is upcycled using Black Solider Fly (BSF) larvae technology into sustainable products that are sold back into the industry
- The processing plant reduces the damage of methane emissions from landfills which represent the largest source of GHG emissions from the entire waste sector, ~700mt of CO2 per year
- The facility reduces public health threats (i.e. Salmonella) and environmental risks caused by harmful disposal of food waste

Enabling Entities

- Food Tech Valley:** Home to four key clusters; waste generated from F&B factories can be collected and sent to the treatment facility, reducing its transportation cost
- Abu Dhabi Investment Office:** Offers financial support (rebates on investments, key cost centres, innovation cost, utility costs) and non-financial support (land location, regulatory and strategic advice)
- F&B Business Group:** Facilitates engagement on potential partnerships and distribution contracts with different players
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- MolAT:** Collaborating with the relevant federal and local entities to further enable this investment opportunity



Extruded Aluminum Components of EVs

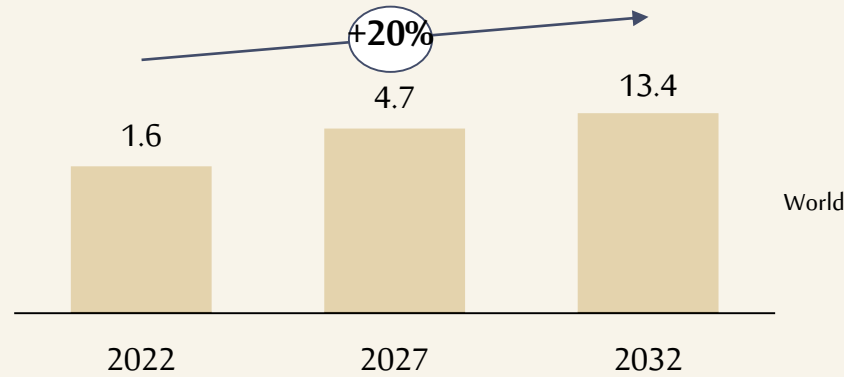
Extruded Aluminum Components of EVs

The Aluminum Extrusion plant is to produce specific aluminum-based Electric Vehicle components: EV Battery Cell, Sunroof Frame, Vehicle Body, Chassis & Sub assemblies, Sill & Rockers, Front, and Rear bumpers

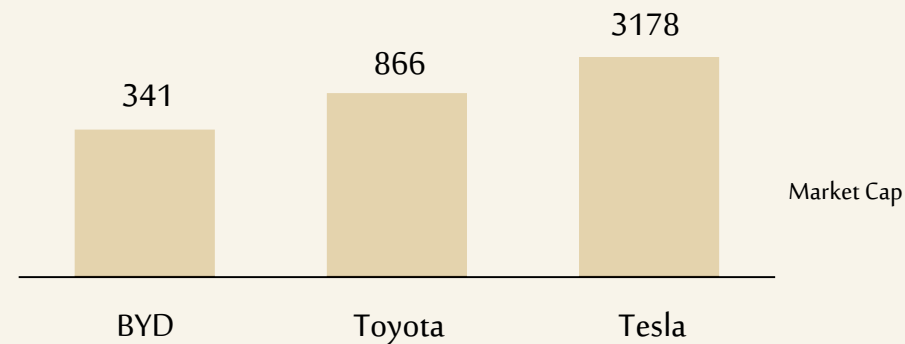
Investment case

- Setup a large-scale an Aluminum Extrusion plant for specific Electric Vehicle components in UAE
- Investment size = AED 149 Mn
- Plant capacity = 15,000T per year
- Expected IRR = 15%
- Expected NPV = AED 67.6 Mn

Global Market Size 2022 – 2032 (Tn AED)



Top 3 Automobile Companies 2022 (Bn AED)

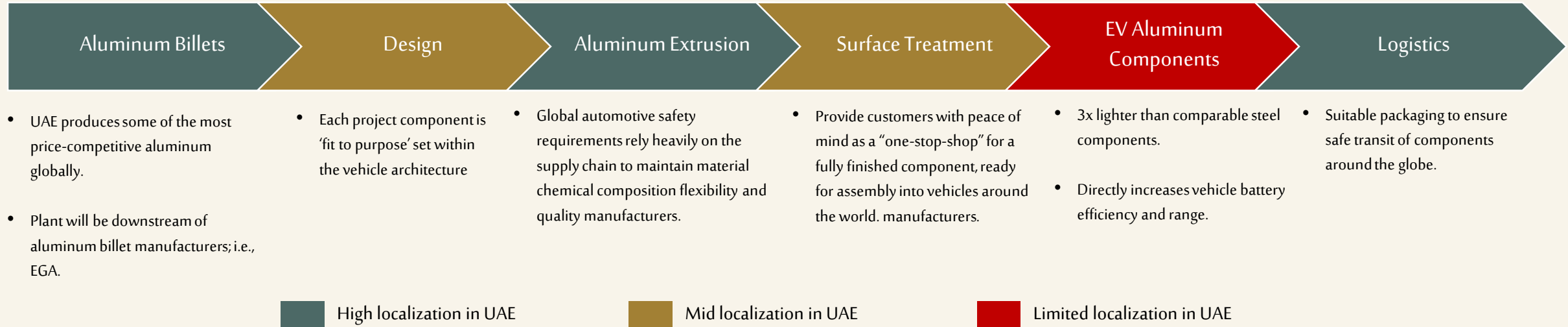


Global trends & demand drivers

- Supportive regulatory frameworks: countries are strengthening key policies such as CO2 emissions standards and zero-emission vehicle (ZEV) mandates
- Electric Vehicle uses directly contributes to the reduction of environmental pollution and lessening dependency on oil
- Despite being more expensive than steel, the automobile industry is prepared to accept price due to the sheer scale of potential sales driven by its significant weight benefits
- Technological advancement in battery efficiency will drive adoption and the use of aluminum in manufacturing electric vehicles is a key to increasing efficiency.
- Estimated use of aluminum used in electric vehicles is 30% higher than in internal combustion engine cars

Extruded Aluminum Components of EVs

Value Chain Analysis



Value proposition

- EV's are the future of the automobile industry companies Battery range is at the forefront of EV innovation
- Automobile weight is inversely correlated to vehicle efficiency and range
- Aluminium weighs about one third of steel per cubic foot.
- Source locally cost competitive aluminium billets
- Up to 40% of vehicle can be manufactured using aluminium
- Produce custom-made extruded components for an ultra high growth market
- Leverage a thriving local aluminium ecosystem and create downstream synergy
- Expected increase in demand for EV aluminium components due to establishment of multiple EV production facilities across the region

Enabling Entities

- **KIZAD:** Leverage upstream and downstream synergies within the ecosystem
- **Khalifa Port:** Plant to serve global customers mainly, strategic and efficient supply chain is critical as well as global accessibility
- **EDB:** Competitive price of debt capital will help make the investment opportunity more attractive
- **EGA:** Partnering up with a major aluminum manufacturer will create major competitive advantages
- **MolAT:** Downstream of existing aluminum billet manufacturers



Mechanical Recycling (rPET)



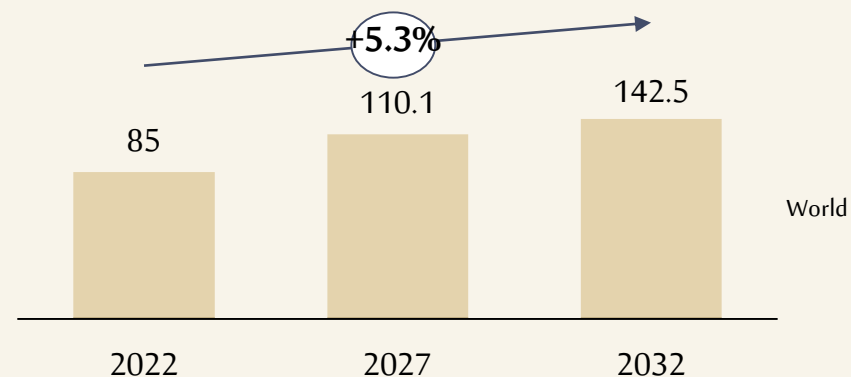
Mechanical Recycling (rPET)

Mechanical Plastic Recycling Facility for PET involves the collection and sorting of waste, which is later shredded, dried, and extruded into recycled pellets

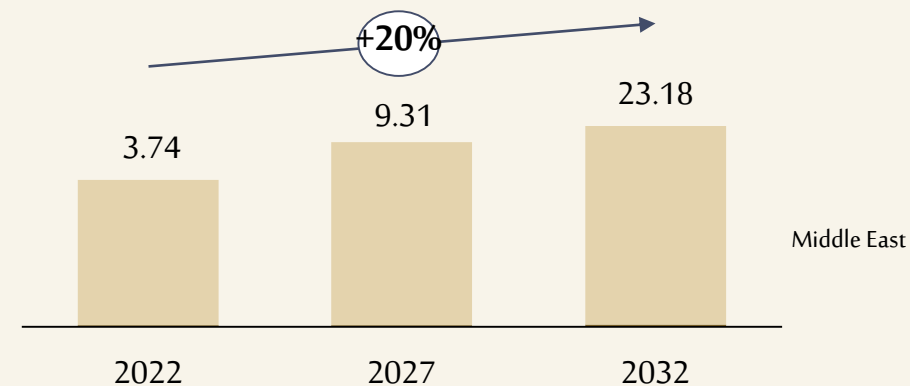
Investment case

- Setup a large-scale PET mechanical recycling of facility in the UAE
- Investment size = AED 101 Mn
- Plant capacity = 22,000T per year
- Expected IRR = 12%
- Expected NPV = AED 58.4 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)



Global trends & demand drivers

- Manufacturing bottles from rPET requires only half of the energy compared to new PET.
- Plans of imposing taxes on carbon emissions. Using rPET can reduce the green gas house emissions by 2 to 3 kg eq. (CO₂/kg).
- Product mandates for minimum-recycled content will support higher recycled PET prices heading into 2022.
- The growing beverage industry and increased demand for (rPET) in non-food sectors.
- Introduction of regulatory frameworks for use of rPET will create the necessary environment for its adoption.
- Local players in the F&B space are looking to reduce their Carbon Footprint and National mandates are aiming to divert waste from landfills.

Mechanical Recycling (rPET)

Value Chain Analysis



Value proposition

- | | |
|-----------------------------------|---|
| Short Term | <ul style="list-style-type: none"> Capture 22kt/yr of feedstock Facility has capacity to produce 14kt/yr of rPET, assuming an efficiency of 65% 2 Potential revenue of ~\$26M p/A @ 100% capacity Be the first producer of recycled PET locally |
| Medium-Term:
(~3years) | <ul style="list-style-type: none"> ~45% of unutilized Feedstock unlocked Laws limiting exportation of plastic waste introduced Regulation introduced which drives demand Additional capacity available for recycling |
| Long-Term:
(+5years) | <ul style="list-style-type: none"> ~65% of unutilized Feedstock unlocked Sourcing and sorting infrastructure of local waste will increase feedstock availability |

Enabling Entities

- KIZAD:** Establishing a facility inside an industrial zone will lower barriers of entry into new market by reducing new company set up costs, lowering operating cost and provide seamless market accessibility (linked to Khalifa Port)
- Khalifa Port:** Facilitates companies exporting revenue stream and helps position it as a regional and international player
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- Ministry of Climate Change & Environment:** Put in place the right regulations and standards for the use of rPET in food packaging
- MolAT:** Working on amended regulations to allows the use of rPET in food packaging



Secondary Aluminum

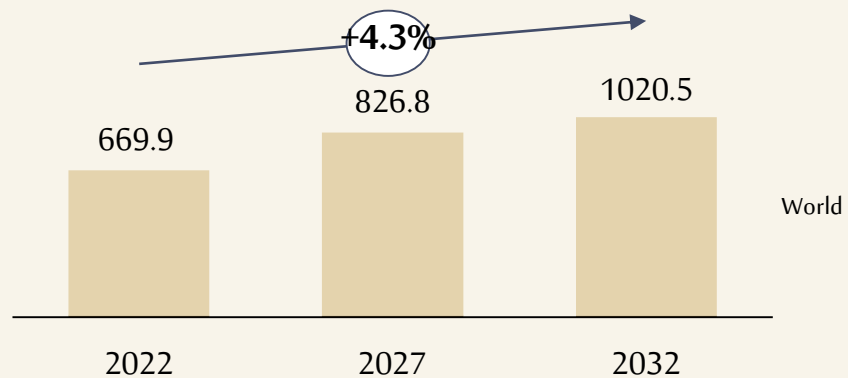
Secondary Aluminum

Secondary aluminum is produced in the form of green billets through the collection, sorting, melting, and casting of aluminum scrap

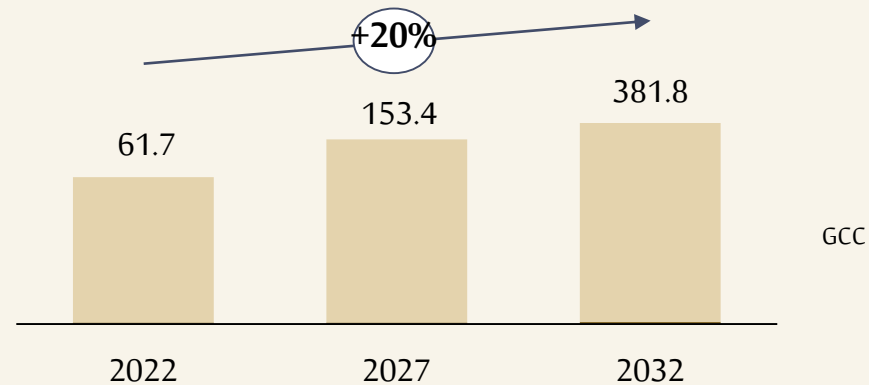
Investment case

- Setup a large-scale aluminum scrap recycling facility in the UAE
- Investment size = AED 431.2Mn
- Plant capacity = 140,000T per year
- Expected IRR = 21%
- Expected NPV = AED 326.15 Mn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)



Global trends & demand drivers

- Globally, aluminum is one of the most profitable materials to recycle and has achieved higher recycling rates due to government's focus on energy savings and reducing wastage.
- Plans of imposing taxes on carbon emissions due to the impact of climate change led to increased demand for aluminum Scrap. Recycling scrap to produce aluminum is much less energy intensive (-95%).
- Global Supply chain disruptions have made access to Aluminum raw materials (Bauxite) difficult, inconsistent and costly. Aluminum producers look to reduce dependency on importing raw materials and instead tap into locally generated scrap as a source of feedstock.

Secondary Aluminum

Value Chain Analysis

Scrap Collection and Sorting

- Metal scrap waste generated in UAE is estimated at 350 kilotons per year, of which 52% is exported.
- UAE currently exports most scrap feedstock due to lack of local market and processing abilities.

Melting

- The process involves simply remelting the right quality grade aluminum and then shaping them into billets.

Casting

- Available scrap generated in the UAE can be used as input. Initially, tap into 100kt of scrap and recycle at a 75% efficiency (global average).

Green Aluminum Billets

- Recycling aluminum requires 95% less energy than production from ore.
- On average, recycling one ton of aluminum saves over 16 tons of greenhouse gas emissions.

High localization in UAE

Mid localization in UAE

Limited localization in UAE

Value proposition

- UAE produces approximately 2.2 million metric tons of aluminium per year, amounting to almost 4% of global aluminium production
- UAE currently exports a minimum of 180kt/yr worth of aluminium scrap and waste. A source of feedstock that can be unlocked for local recycling plants
- **Phase 1:**
 - 100kt/yr of aluminium scrap capacity
 - Laws & regulations limiting exports and supporting local use of scrap
- **Phase 2: (After 5 years)**
 - Increase plant capacity to 140kt/yr

Enabling Entities

- **KIZAD:** Upstream and Downstream anchors are situated in KIZAD which creates a suitable ecosystem for an aluminum recycling facility
- **Khalifa Port:** Facilitates companies exporting revenue stream and helps position it as a regional and international player
- **EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- **EGA:** Potential offtake by EGA
- **MolAT:** Stop the export of aluminum scrap and the leakage of aluminum waste outside the UAE

A close-up photograph of a large coil of copper tubing. The coils are tightly packed and curve through the frame, creating a sense of depth and movement. The lighting is dramatic, highlighting the metallic sheen and the warm, reddish-orange tones of the copper. A semi-transparent horizontal band is overlaid across the middle of the image, serving as a background for the title text.

Copper Smelter

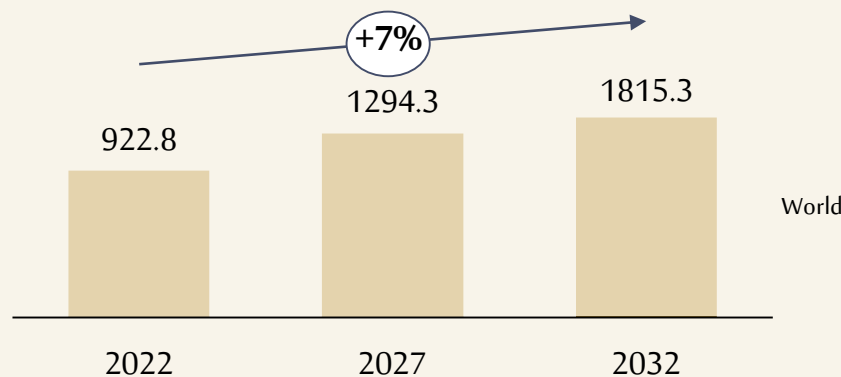
Copper Smelter

Secondary Copper is recycled to form Copper Cathodes; recycling requires only 15% of energy than extraction from Ore and saves around 2.5 tones of greenhouse has emissions per ton produced

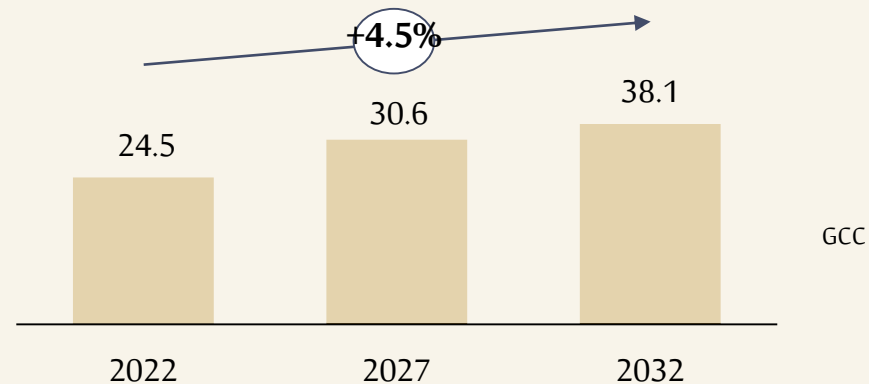
Investment case

- Setup a large-scale copper scrap recycling facility in the UAE
- Investment size = AED 798.2Mn
- Plant capacity = 200,000T per year
- Expected IRR = 31%
- Expected NPV = AED 1.1Bn

Global Market Size 2022 – 2032 (Bn AED)



Regional Market Size 2022 – 2032 (Bn AED)



Global trends & demand drivers

- Demand for the copper cathode in emerging countries is increasing rapidly due to the growth in developing efficient and economical smart cities and industrial sectors as well as due to the fast and constant industrialization.
- Copper is the third-most-consumed metal in the world and is also known as a highly electrically conductive material. The electronics segment has a strong relationship with copper and copper is being used for many applications because of its properties.
- Electronic applications of copper are wires and cables, dynamos, transformers, motors, electromagnets, switches, communication cables, residential electrical circuits, etc.
- Recently, the growth of electrical vehicles has increased the demand for copper. Foils, stators, rotors, shaft heads, hollow wires, and motors are being used in electric vehicles that consist of heavy copper.

Copper Smelter

Value Chain Analysis



Value proposition

- Currently no Copper smelter exists in UAE
- UAE consumes around 350ktpa of Copper Cathodes per year. (imported)
- UAE generates around 82ktpa of Copper Scrap annually. (exported)
- Majority of copper will be sourced locally.
- Phase 1:**
 - 100ktpa of Copper Cathodes
- MolAT Enablement:**
 - Laws & regulations limiting exports and supporting local use & sourcing of scrap.
- Phase 2: (After 5 years)**
 - Double plant capacity to 200ktpa

Enabling Entities

- KIZAD:** Upstream and Downstream anchors are situated in Kizad which creates a suitable ecosystem for a copper smelter
- Khalifa Port:** Facilitates companies exporting revenue stream and helps position it as a regional and international player
- EDB:** Competitive debt pricing will help lower WACC and in return improve Internal Rate of Return and pay back period
- DUCAB:** Potential supplier of copper scrap and offtaker of recycled copper
- MolAT:** Exports – Regulate Copper Scrap exports as well as ban E-Waste exports. Imports – Allow E-Waste imports while adhering to Basel Conventions of Zero Waste generation



Thank you