



وزارة الاستثمار
Ministry of Investment

Water Investment Opportunities

Investor promotion pack –
Brine valorization: Chemical recovery

Riyadh, March 2022

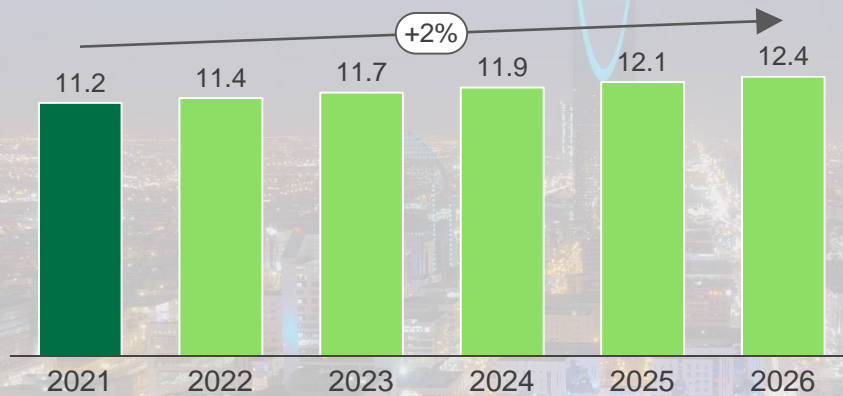
Brine valorization: Chemical recovery – Overview & value proposition

Opportunity overview

Establish a **20,000 m³/day brine valorization facility** to recover valuable additives such as sodium chloride, magnesium hydroxide, bromine

Brine production in KSA, [bn m³ p.a.]

KSA accounts for ~22% of global brine production



KSA value proposition

1

Global desalination leader

- Global leader in desalination, accounting for around 22% of the global daily brine production

2

Government commitment to upgrade the sector

- Ambitious targets to increase desalination to 90% of potable water supply by 2030, with an estimated additional capacity of 5.5 million m³/ day by 2025

3

Growing water market

- Largest water market in the GCC driven by a large and growing population

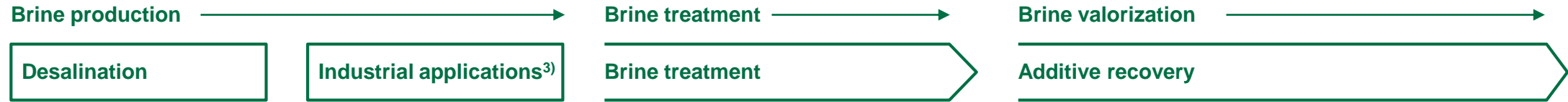
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Ambitious sustainability targets

- Efforts to enhance circularity and resource recovery across the sector value chain

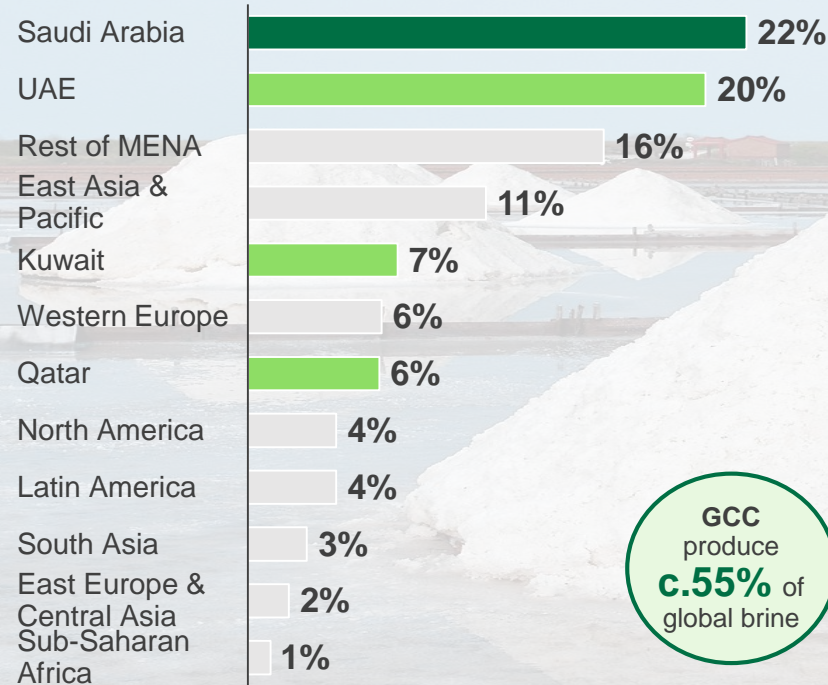
Brine valorization: Chemical recovery – Market outlook

Value chain



Share of brine production by region

[% of global brine production] – Non-exhaustive list



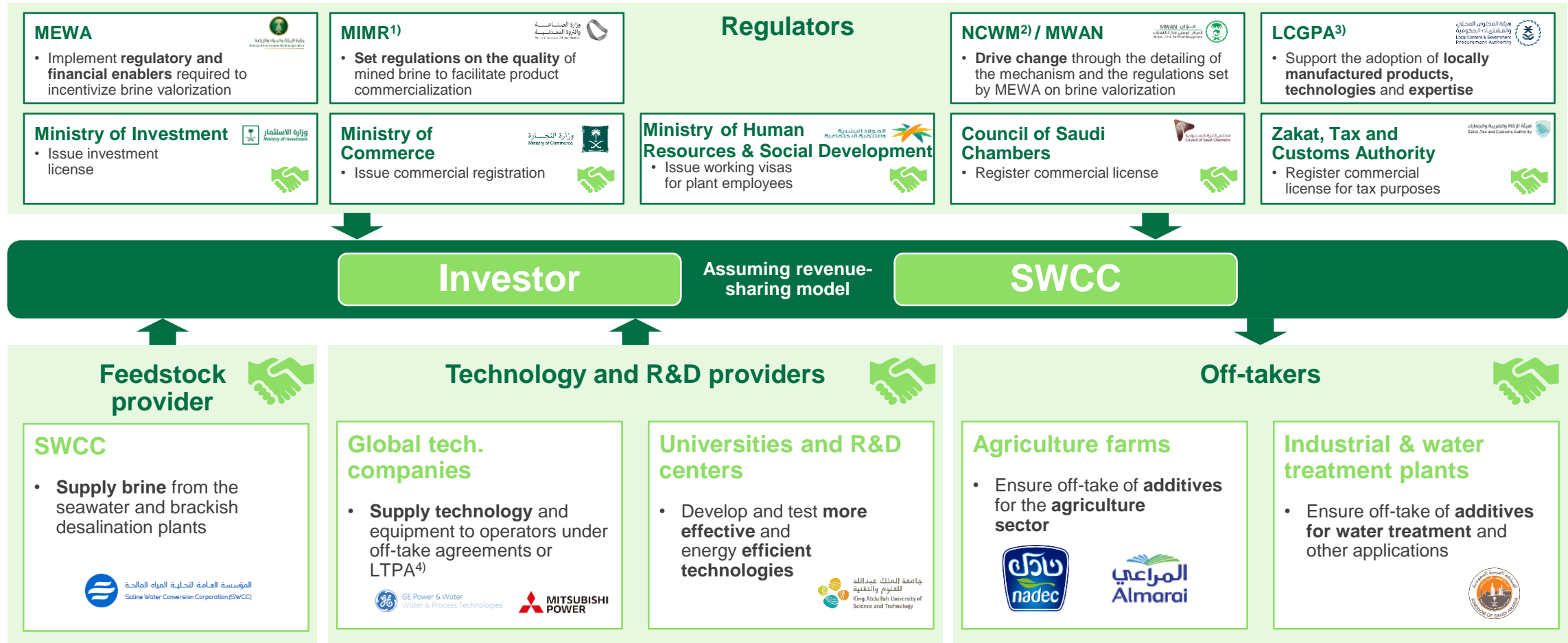
Local market drivers

- 1 Population growth to increase water demand, resulting in higher brine volumes
- 2 Target to have desalination supply **90% of the KSA market**, by 2030
- 3 Infrastructure expansion with **additional 5.5 million m³** per day of desalination capacity
- 4 Growing efforts to **enhance resource recovery** across the sector (incl. brine)
- 5 Growing awareness on the **real value of brine**

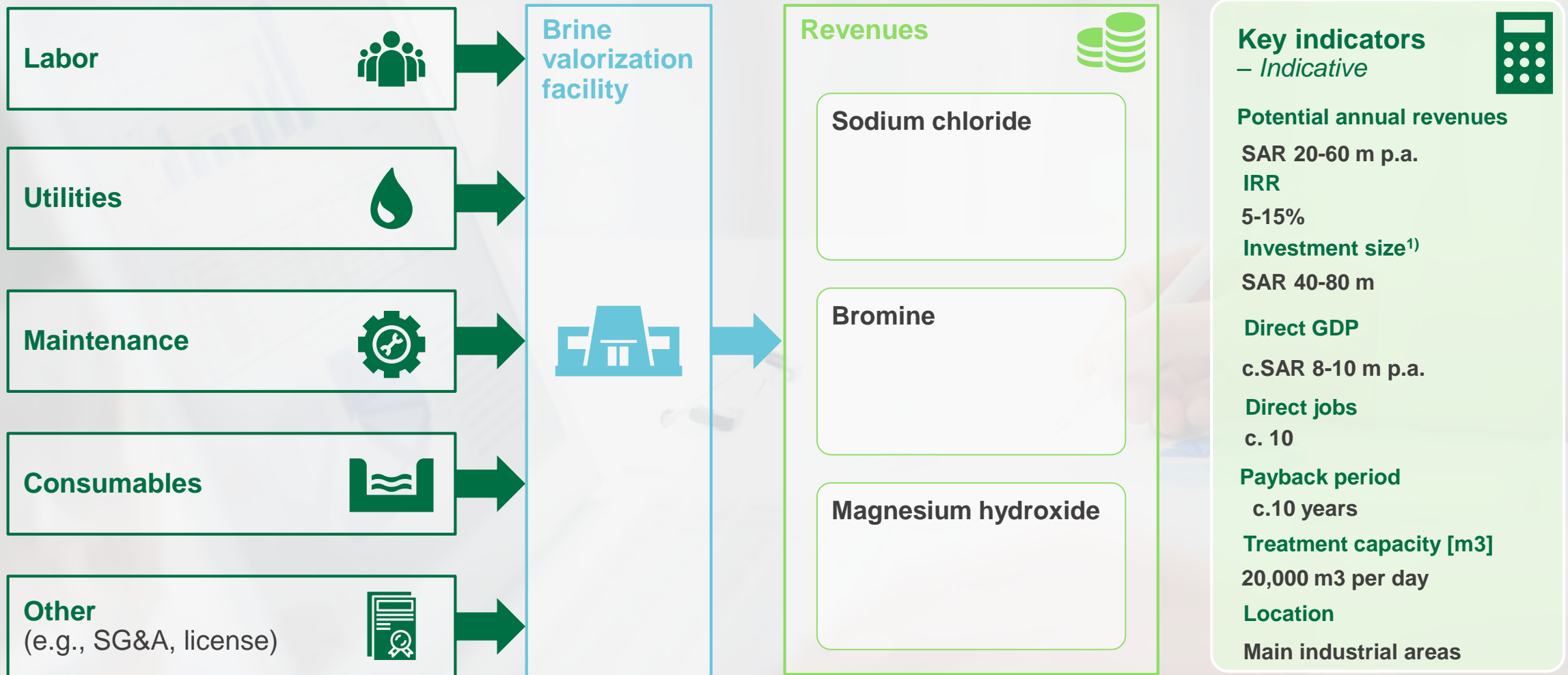
Global market trends

- 1 Global trend towards **circular economy** and **resource recovery** across the water sector
- 2 Global shift towards limiting the **environmental impact of brine disposal**
- 3 Global efforts to **develop and optimize valorization technologies** to enhance efficiency rates

Brine valorization: Chemical recovery – Stakeholder ecosystem










Brine valorization: Chemical recovery – Business model & financials



Brine valorization: Chemical recovery – Enablers & incentives

Existing enablers & incentives

Financial	CAPEX¹⁾ 	<ul style="list-style-type: none"> Land lease cost subsidies 	
	Utilities²⁾ 	<ul style="list-style-type: none"> Low power and water costs set for industrial cities 	
	Salaries 	<ul style="list-style-type: none"> Partial coverage of salaries of local talent by HRDF 	
	Loans 	<ul style="list-style-type: none"> Provision of soft loans by SIDF – up to 75% of project financing (only available for renewable energy projects today) Provision of SAR 2 bn worth of loans for the mining sector, by SIDF 	
Non-financial	Local capabilities 	<ul style="list-style-type: none"> Minimal training programs in relation to brine and its valorization potential 	

Additional MISA support

- 
Facilitate the registration process of companies in KSA
- 
Establish connection with local suppliers / importers of raw material & equipment
- 
Introduce investor to relevant public stakeholders

Additional enablers and incentives can be discussed with MISA on case-by-case basis



Brine valorization: Chemical recovery – Cost of Doing Business



- 1 Electricity tariffs for industrial players
 - USD 48/MWh
- 2 Productivity adjusted wages
 - USD 3.3/hour
- 3 Logistics Performance Index (1-5)
 - 3.2
- 4 Construction Costs (Indexed to US, % 0 is cheapest)
 - 74
- 5 Ease of getting credit (0-100)
 - 50

Brine valorization: Chemical recovery – Next steps

Phase 1: Initiation

- Submit expression of interest concerning the opportunity to MISA.
- Discuss with MISA the opportunity and organize site visit
- Communicate with involved entities (off-takers, feedstock providers, partners, etc.)
- Conduct pre-feasibility study and due-diligence before final investment decision
- Secure enablers and incentives
- Secure MISA investment license



Phase 2: Set up license requirements

- Secure commercial registration from Ministry of Commerce
- Secure working visas and labor working files from Ministry of Human Resources & Social Development & Ministry of Internal Affairs
- Register at the Council of Saudi Chambers
- Register at Saudi Banks
- Register at Zakat, Tax and Customs Authority

Phase 4: Launch production

- Secure feedstock of brine from desalination plants
- Initiate operations of facility, optimize performance and extract by-products

Expected in 2025-28



Execution steps




Recommended project type


Private investment

JV w/ local company

PPP

Start your journey with MISA

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