WATER - DESALINATION
DETAILED VALUE PROPOSITION
LARGE AND GROWING DESALINATION INDUSTRY

INCREASING PRIVATIZATION AND LOCALIZATION OPPORTUNITIES

ACCESS TO LARGE REGIONAL MARKETS

WELL DEVELOPED ECOSYSTEM IN PLACE

REASONS TO INVEST IN WATER SECTOR IN KSA
LARGE AND GROWING DESALINATION INDUSTRY
ACCESS TO LARGE REGIONAL MARKETS

KSA IS THE LARGEST COUNTRY IN TERMS OF DESALINATION CAPACITY

KSA SHARE OF THE DESALINATION CAPACITY

Million m³ per day, 2017

18% OF WORLDWIDE CAPACITY

43% OF GCC CAPACITY

DESALINATION CAPACITY IN GCC

Million m³ per day, 2017

- Bahrain: 3.5%
- Oman: 4.5%
- Qatar: 7%
- Kuwait: 11%
- UAE: 31%
- Saudi Arabia: 43%
DESALINATION CAPACITY IN THE WORLD

Million m³ per day, 2017

Spain: 7.3%
UAE: 11.4%
USA: 13.2%
Saudi Arabia: 18%
48 desalination plants account for 93% of installed capacity.

Desalination capacity of large desalination plants in KSA:

- **Western coast**
  - Number of plants: 33
  - Total capacity: 3.782 mln m³/d
- **Eastern coast**
  - Number of plants: 15
  - Total capacity: 3.938 mln m³/d
- **Other plants (capacity <10k m³/d)**
  - Number of plants: 191
  - Total capacity: 0.6 mln m³/d

*Source: IC Water Desalination Industry Mapping Study*
DESALINATION PLANTS BREAKDOWN BY OWNER

2016

<table>
<thead>
<tr>
<th></th>
<th>Capacity of owned plants (m3/d)</th>
<th>Number of plants owned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>8.3</td>
<td>48</td>
</tr>
<tr>
<td>SWCC</td>
<td>4.9</td>
<td>20</td>
</tr>
<tr>
<td>IWPP/IWP</td>
<td>2.4</td>
<td>6</td>
</tr>
<tr>
<td>Marafiq</td>
<td>0.6</td>
<td>7</td>
</tr>
<tr>
<td>Others</td>
<td>0.4</td>
<td>15</td>
</tr>
</tbody>
</table>
Desalination Capacity

By 2030, KSA is expected to increase desalination capacity by 3.1M m3/day

Forecasted Desalination Plants Capacity in KSA

Million m3 per day, 2016 to 2030

Drivers of Growth

Growing Agriculture Industry
Large and Growing KSA Population
Growing Industrial Sectors (e.g., Construction, F&B, Mining)

Source: SWCC
RO TECHNOLOGY

THE ADDED CAPACITY WILL MAINLY RELY ON RO TECHNOLOGY

CURRENTLY, DESALINATION PLANTS IN KSA RELY MAINLY ON MSF TECHNOLOGY

Installed capacity breakdown by technology 2016

<table>
<thead>
<tr>
<th>Technology</th>
<th>Capacity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>48</td>
<td>100%</td>
</tr>
<tr>
<td>MSF</td>
<td>16</td>
<td>59%</td>
</tr>
<tr>
<td>RO</td>
<td>26</td>
<td>28%</td>
</tr>
<tr>
<td>MED</td>
<td>6</td>
<td>13%</td>
</tr>
</tbody>
</table>

Source: GWI Database, SWCC 2015 annual Report, IC Water Desalination Industry Mapping Study
IN THE FUTURE, ADDED PLANTS WILL RELY MAINLY ON RO TECHNOLOGY

<table>
<thead>
<tr>
<th>Technology</th>
<th>Number of Projects</th>
<th>2016-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSF</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RO</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>MED</td>
<td>TBD</td>
<td></td>
</tr>
</tbody>
</table>
INCREASING PRIVATIZATION AND LOCALIZATION OPPORTUNITIES
DEVELOPERS, MANUFACTURERS AND OTHER INVESTORS CAN TAP INTO THE KSA DESALINATION MARKET

GROWING AGRICULTURE INDUSTRY

MANUFACTURERS CAN PRODUCE CHEMICALS AND EQUIPMENT USED IN DESALINATION PLANTS

OTHER INVESTORS CAN PROVIDE SERVICES INCLUDING BRINE EXTRACTION, TRAINING SERVICES, WORKSHOPS & OTHER INNOVATIVE SOLUTIONS
KSA GOVERNMENT IS COMMITTED TO PRIVATIZE OR COMMERCIALIZE COMPONENTS OF THE VALUE CHAIN

**PRODUCTION**
- Privatization

**TRANSMISSION**
- Commercialization

**STORAGE**
- Commercialization

**DISTRIBUTION**
- Privatization

**Privatization opportunities**
- 5 new IWP desalination projects with a total capacity of ~3Mn m3 per day are to be commissioned by 2020
- Commercialization of transmission services through commercial agreements with private sector players
- 12 new strategic water reserves with a capacity of ~20Mn m3 to be developed by 2030
- Commercialization of distribution services through commercial agreements with private sector players
5 NEW IWP DESALINATION PROJECTS ARE TO BE COMMISSIONED BY 2022

Source: Driving Private Sector Participation in the Saudi Water Sector—WEC
<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity</th>
<th>Current Stage</th>
<th>Next Stage</th>
<th>Expected commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>RABIGH-3 IWP</td>
<td>600,000 m³/day</td>
<td>Shortlisted bidders</td>
<td>Letter of award</td>
<td>2021</td>
</tr>
<tr>
<td>JUBAIL-3 IWPP</td>
<td>1,170,000 m³/day, 3,000 MW</td>
<td>EOI released</td>
<td>Issuing RFQ</td>
<td>2022</td>
</tr>
<tr>
<td>SHUAQAIQ-3 IWP</td>
<td>450,000 m³/day</td>
<td>RFP received</td>
<td>Announcement of Shortlisted bidders</td>
<td>2022</td>
</tr>
<tr>
<td>SHUAIBAH 3 EXPANSION II IWP</td>
<td>250,000 m³/d</td>
<td>Water Transmission Facilities available</td>
<td>Performance Test</td>
<td>2019</td>
</tr>
<tr>
<td>YANBU-4 IWP</td>
<td>450,000 m³/day</td>
<td>EOI Received</td>
<td>Issuing RFQ</td>
<td>2022</td>
</tr>
</tbody>
</table>
WATER RESERVES

12 NEW STRATEGIC WATER RESERVES PROJECTS WITH A CAPACITY OF ~20MN M³ TO BE DEVELOPED BY 2030

UPCOMING TENDERS

12 PROJECTS

20MN M³ STORAGE CAPACITIES
CHEMICALS & EQUIPMENT, KEY COMPONENTS OF DESALINATION PLANTS, ARE MAINLY IMPORTED IN KSA

<table>
<thead>
<tr>
<th></th>
<th>EQUIPMENT</th>
<th></th>
<th>CHEMICALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ORIGINAL EQUIPMENT</td>
<td>SPARE PARTS</td>
<td></td>
</tr>
<tr>
<td>LOCALIZATION BASELINE1 (2016)</td>
<td>23%</td>
<td>1%</td>
<td>65%</td>
</tr>
<tr>
<td>LOCALIZATION OPPORTUNITY (MILLION SAR, 2016 TO 2035)</td>
<td>2,278</td>
<td>166</td>
<td>175</td>
</tr>
</tbody>
</table>

Source: Driving Private Sector Participation in the Saudi Water Sector — WEC
# Hubs

Several manufacturers have already established a hub in KSA

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>EXAMPLE OF PRODUCTS</th>
<th>YEAR OF ENTRY¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerson</td>
<td>Integrated control and safety system components</td>
<td>2011</td>
</tr>
<tr>
<td>GE</td>
<td>Gas Turbines &amp; Maintenance workshop</td>
<td>2013</td>
</tr>
<tr>
<td>National Oilwell Varco</td>
<td>High-pressure composite pipes</td>
<td>2016</td>
</tr>
</tbody>
</table>

¹ Year of opening first manufacturing facility in KSA

Source: Team analysis
TO CAPITALIZE ON LOCALIZATION OPPORTUNITIES, INDUSTRIAL STAKEHOLDERS HAVE KICKED OFF VARIOUS LOCALIZATION EFFORTS

LOCAL CONTENT AND PRIVATE SECTOR DEVELOPMENT UNIT

IKTVA PROGRAM

- Doubling the percentage of locally-produced energy-related goods and services to 70% by 2021
- Exporting 30% of the output of the local energy goods and services industry

SABIC’S NUSANED PROGRAM

- Achieving SABIC’s localization agenda and local industry development
- Supporting investors in related areas

LOCALIZATION ELECTRICITY INDUSTRY

- Raising local content levels in purchases and projects
- Attracting more foreign investment in the electricity industries
- Transferring knowledge and technology

BUILD LOCAL CONTENT

- Increasing the percentage of local purchases to 52%
- Contributing to localize spare parts, services and chemicals
- Including the percentage of localization & local content in studies

In line with the establishment of LCPSD, government entities have made initiatives to increase the support of local manufacturers, create jobs, transfer technology and knowledge.
OTHER INVESTMENT OPPORTUNITIES

OTHER INVESTORS CAN ALSO PROVIDE BRINE EXTRACTION, WORKSHOPS & TRAININGS AND OTHER INNOVATIVE SOLUTIONS

Details in Appendix

BRINE EXTRACTION AND USAGE IN OTHER PRACTICES

MANUFACTURERS CAN PRODUCE CHEMICALS AND EQUIPMENT USED IN DESALINATION PLANTS

OTHER INVESTORS CAN PROVIDE SERVICES INCLUDING BRINE EXTRACTION, TRAINING SERVICES, WORKSHOPS & OTHER INNOVATIVE SOLUTIONS

Source: Team analysis
ACCESS TO LARGE REGIONAL MARKETS
THREE KEY FACTORS MAKE EXPORTS TO NEIGHBORING COUNTRIES FAVORABLE

1. Greater Arab Free Trade Area

Source: Team analysis

KSA IS LOCATED AT A CLOSE PROXIMITY TO GCC, AFRICAN, ASIAN AND EUROPEAN COUNTRIES AND THUS HAS A LOGISTICAL ADVANTAGE (I.E., LOWER TRANSPORTATION COST, SHORTER DELIVERY TIME) OVER SEVERAL OTHER COUNTRIES

FOLLOWING GAFTA1 – GOODS PRODUCED IN ANY OF THE GAFTA MEMBER COUNTRIES SHALL BE EXEMPTED FROM DUTY IN ANY OTHER MEMBER COUNTRY

KSA HAS SET FAVOURABLE TRADE REGULATIONS ON THE EXPORT OF INDUSTRIAL PRODUCTS/EQUIPMENT

1. Greater Arab Free Trade Area
Source: Team analysis
ACCESS TO A VAST NUMBER OF CONSUMERS WITHIN 7 HOURS OF AIR TRANSPORT

Most European markets within 7 hours

All of Asia’s key markets within 4 hours

5 Hours from half the world’s population
REACHING NEW MARKETS IS SUPPORTED BY A MATURE LOGISTICAL INFRASTRUCTURE

10 MAIN HARBORS
- Largest marine network in the Middle East region
  - 6 leading container ports
  - Over 240 million tons of cargo handled in 2017
- King Abdullah Port at KAEC with 4 million TEU2 annual capacity
  - Fastest growing port in the world
  - Port throughput increased by 14% in first half of 2017

27 AIRPORTS
- Connecting KSA with 81 airports in 45 countries
- 1.2M tons of cargo crossing the airport facilities in 2015
- King Abdulaziz International Airport in Jeddah the third largest airport in the Middle East by passenger traffic
- The number of airports is expected to boom as new airports are being built (e.g. Taif and Jeddah new airport) and existing ones are being expanded (e.g. Riyadh airport)

>1,700 KM OF WRAILS
- Cargo line: 556 km starting at King Abdul Aziz Port in Dammam and ending in Riyadh
- Branch lines: 486 km connecting industrial sites and facilities
- Approx. 700 thousand containers handled every year
- Additional 1,500 km are to be added in the upcoming years

>200,000 KM OF ROADS
- 66,000 km of roadways connecting major cities and providing access to railways, ports and airports
- >140,000 km of dirt roads
- 12,000 km of roads connecting Saudi Arabia’s regions to international borders

1. Ministry of Transport  2. TEU stands for twenty-foot equivalent unit
Source: Saudi Arabia’s Vision 2030; SAGIA; Industrial Clusters; Saudi Railways Organization; Ministry of Transport; Saudi Ports Authority; Saudi Arabia’s Vision 2030
WELL DEVELOPED ECOSYSTEM IN PLACE
INVESTOR-CENTRIC ECOSYSTEM IS ESTABLISHED BY THE GOVERNMENT FOR PRIVATE SECTOR INVESTORS

CLEAR GOVERNANCE AND REGULATORY FRAMEWORK

INCENTIVES AND COMPETITIVE PRICES TO ATTRACT PRIVATE SECTOR INVESTORS
## CLEAR ALLOCATION OF ROLES ALONG THE VALUE CHAIN

### SECTOR ROLE ALLOCATION

**DEVELOPERS/OEMS**

<table>
<thead>
<tr>
<th>SECTOR OWNER</th>
<th>SECTOR PLANNER/PROMOTER</th>
<th>SECTOR REGULATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIONAL WATER COMPANY (NWC)</td>
<td>SAUDI STANDARDS, METROLOGY AND QUALITY ORGANIZATION (SASO)*</td>
<td>*And other standardization agencies based on export locations</td>
</tr>
</tbody>
</table>

* Source: Team analysis
## ECOSYSTEM

<table>
<thead>
<tr>
<th>SECTOR OWNER</th>
<th>SECTOR PLANNER/ PROMOTER</th>
<th>SECTOR REGULATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Logo" /></td>
<td><img src="image2" alt="Logo" /></td>
<td><img src="image3" alt="Logo" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GENERAL INVESTMENT AUTHORITY</th>
<th>OTHER KEY GOVERNMENT SUPPORTING ENTITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4" alt="Logo" /></td>
<td><img src="image5" alt="Logo" /></td>
</tr>
</tbody>
</table>

SAGIA acts as the one stop shop to facilitate investors’ interactions with government entities.
SAUDI OFFERS LOW AND COMPETITIVE PRICES IN THE INDUSTRIAL CITIES

- **Land cost**: Average industrial land for lease starting from 0.26 USD per sqm per month
- **Construction cost**: Standard cost of construction of 650 USD/sqm
- **Wages**: Operator wage: 3 USD per hour
  Technical wage: 7 USD per hour
  Supervisor wage: 10 USD per hour
- **Power**: 0.048 USD per kWh for the industrial sector
- **Natural gas**: 1.75 USD per MMBTU
- **Ethane**: 1.75 USD per MMBTU
- **Diesel**: 14 USD per barrel
IN ADDITION, WATER R&D CAPABILITIES CURRENTLY EXIST IN THE KINGDOM

**SWCC DESALINATION TECHNOLOGIES RESEARCH INSTITUTE**
- Desalination technologies
- Intake and pre-treatment technologies
- Water chemistry
- Materials selection and applications

**KACST WATER AND ENERGY RESEARCH INSTITUTE**
- Desalination seawater
- Water treatment
- Treatment of sewage water
- Chemical solvents

**KAUST WATER DESALINATION AND REUSE CENTER**
- Seawater reverse osmosis pilot facility
- Absorption desalination pilot facility

*Source: Responsible entities*
SAUDI OFFERS A WIDE RANGE OF INVESTOR-CENTRIC INCENTIVES

- **Custom duty exemption**: Customs duty exemptions for primary raw materials, manufacturing equipment, and spare parts (not available in KSA)
- **Custom duty drawback**: Refund to importers/ exporters of raw material imports that are processed in Saudi Arabia and re-exported as more finished products
- **Loans**: Up to 75% of project financing through soft loan by SIDF
- **Land incentives**: Land for lease starting from $ 0.26 per sqm
- **Nationalization incentives**: Up to 15% (for male) and 20% (for female) of the monthly salaries of KSA nationals employees to be covered by HRDF
- **Ownership**: 100% foreign direct ownership allowed
- **Repatriation of capital**: No restrictions on repatriation of capital
THANK YOU
## 25 Pre & Post-Investment Services Offered to Investor

<table>
<thead>
<tr>
<th>Market and Economic Intelligence</th>
<th>Matchmaking and Linkage</th>
<th>Site Visits</th>
<th>Location Search</th>
</tr>
</thead>
</table>
| • Provide standard information packages  
  • Provide periodic reports and case studies  
  • Develop Ad-hoc info packages/reports  
  • Share contacts and databases | • Industry/trade associations, commissions  
  • Large local companies for potential partnership  
  • Professional services  
  • Other FDI companies for reference  
  • SMEs for supply-chain  
  • Universities & research centers | • Plan trip, set-up logistics and bookings  
  • Set up meetings with ministries and other stakeholders | • Provide High-touch guide on site/property search  
  • Connect with real estate agencies for deep assistance and evaluation |

<table>
<thead>
<tr>
<th>Set-Up Assistance</th>
<th>Incentives Assistance</th>
<th>Improving Business Climate</th>
</tr>
</thead>
</table>
| • Provide advice on corporate structure  
  • Liaise with governmental entities and provide advice on applying for visas, permits, licenses and utilities  
  • Connect with executive onboarding assistance agencies  
  • Connect with recruiting employees agencies  
  • Generate publicity, joint press release, launch events  
  • Connect with financial partners for co-financing and support | • Advise and develop specific incentive packages, and mediate negotiations with local authorities  
  • Build business case and feasibility studies | • Develop policy recommendations based on feedback  
  • Submit investors’ proposals for amendment of legislation  
  • Troubleshoot investor operational issues |

Source: International benchmarks, Team Analysis
6 SERVICE CATEGORIES TO GOVERNMENT STAKEHOLDERS

**IMPROVING BUSINESS CLIMATE**
- Solve sector regulatory and climate hurdles
- Communicate improvements

**STRUCTURING & DETAILING INVESTMENT OPPORTUNITIES**
- Develop sector-level investment opportunities
- Test investment opportunities with potential investors
- Build business cases

**MARKET “INVEST SAUDI” AND INVESTMENT OPPORTUNITIES**
- Develop marketing materials for “Invest Saudi” and sectors
- Develop sector value proposition (incl. messages, channels, etc)
- Organize marketing campaigns

**INTERNATIONAL AND DOMESTIC OUTREACH**
- Build event calendar
- Develop investor profiling based on intelligence data
- Reach out to investors
- Follow-up with investors

**SET-UP “DEAL TEAM”**
- Provide in-depth market intelligence on investor and sector
- Connect investor to stakeholders
- Manage site visits to KSA
- Support in location search
- Conduct cost-benefit analysis
- Facilitate negotiation and design incentive packages

**FACILITATION OF INVESTOR SET-UP**
- Conduct a primary validation on investor’s application
- Assist investors in setting-up business
Saudi General Investment Authority is the Kingdom’s investment promotion agency, and the gateway for foreign investment. Our priorities are to attract and develop foreign investment, enhance the nation’s investment climate, increase the ease of doing business, and eliminate obstacles from investors’ journey.

To discover the countless opportunities, across major economic sectors, that Saudi Arabia has to offer:

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