OVERVIEW

3 KEY REASONS TO INVEST IN CONVENTIONAL ENERGY IN KSA

LARGE AND GROWING DEMAND FOR ENERGY

SOLID FOUNDATION FOR KSA ENERGY SECTOR

COMMITMENT TO LOCALIZATION AND INVOLVEMENT OF PRIVATE SECTOR
KEY REASONS TO INVEST IN CONVENTIONAL ENERGY IN KSA
3 KEY REASONS TO INVEST IN CONVENTIONAL ENERGY IN KSA

1. LARGE AND GROWING DEMAND FOR ENERGY

2. SOLID FOUNDATION FOR KSA ENERGY SECTOR

3. COMMITMENT TO LOCALIZATION AND INVOLVEMENT OF PRIVATE SECTOR
SAUDI ARABIA RANKS 11\textsuperscript{th} WORLDWIDE FOR ANNUAL ELECTRICITY PRODUCTION

ANNUAL ELECTRICITY PRODUCTION (TWh) AND PRODUCTION-PER-CAPITA RANKING (#) WITHIN TOP 20 LARGEST PRODUCERS

ELECTRICITY PRODUCTION GREW AT 5% ANNUALLY UP TO 331 TWh IN 2016 AND EXPECTED TO CONTINUE AT 4% GROWTH

HISTORICAL AND FORECASTED ELECTRICITY PRODUCTION (IN TWh)

Source: King Abdullah Petroleum Studies and Research Center, British Petroleum Statistical Review of World Energy June 2017, Energy Information Administration, Team research and analysis
SEC ENERGY SALES GREW AT 5% TO SERVE 8.6M CUSTOMERS IN 2016; WITH A 50% RESIDENTIAL CONSUMPTION RATE

SEC ENERGY SALES (IN TWh)
TO SUPPORT GROWING DEMAND, SEC RECENTLY ADDED GENERATION, TRANSMISSION AND DISTRIBUTION CAPACITIES

ADDITIONS SINCE 2016

MW 4,737  
ADDED GENERATION CAPACITY
9.4% increase to total capacities over the ones achieved at the end of 2015

KM- 7,689 CIRCULAR  
ADDED TRANSMISSION NETWORK
Including 76 transmission substations and 355 new transformers

60,733  
NEW DISTRIBUTION TRANSFORMERS
150 new residential communities and 964,000 new customers
GROWTH IN ELECTRICITY CONSUMPTION IS DRIVEN BY 3 SECTORS

**RESIDENTIAL**

1.5 million new units required by beneficiaries of Ministry of Housing by 2030

**INDUSTRIAL**

Industrial energy consumption expected to expand with Vision 2030 targets

**COMMERCIAL**

Establishment of new cities will drive greater energy consumption (e.g. lodging, entertainment, transport)
RESIDENTIAL

1.5 million new units required by beneficiaries of Ministry of Housing by 2030

CUMULATIVE HOUSING UNITS NEEDED

Thousands, 2017-2030

Additional estimated energy needed (TWh)

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2030</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>2.3</td>
<td>7.3</td>
<td>10.2</td>
<td>14.4</td>
<td>31.7</td>
</tr>
</tbody>
</table>

235K housing contracts already awarded as of Q2018

Source: Ministry of Housing, Team analysis
Industrial energy consumption expected to expand with Vision 2030 targets

MAJOR INDUSTRIAL CITIES IN KSA
Selected examples - not exhaustive

MODON INDUSTRIAL CITIES
- Work is in progress for the development of a number of new industrial cities. These cities are:
  - Al-Baha
  - Jeddah 3rd
  - Jeddah 4th
  - Al-Ahsa 2nd
  - Gurayaat

JUBAIL AND YANBU CITIES
- Built by the Royal Commission for Jubail and Yanbu
- Provide the basis for KSA’s program to develop hydrocarbon-based and energy intensive industries. Major objective is the reduction in KSA’s dependence on oil revenues by gaining access to the world’s petrochemical markets

JAZAN ECONOMIC CITY
- With an area of 103sqm, Jazan Economic City’s vision is to plan, promote, develop and manage petrochemicals and energy intensive industrial cities
- Major companies include Solb Steel, Stefco, Cristal, Al-Reef Sugar Refinery, Medical Jazan tharwat, Pan Asia PET Resin, Etzzan Al-Arabia for Industries

SAUDI ARAMCO’S ENERGY INDUSTRIAL CITY
- City’s first phase will be completed in 2021
- City will cover 50-square km of land allocated for energy-related industries, located between Dammam and Ahsa
- City will support Aramco’s operations and provide drilling, exploration and production services and pipe manufacturing
ESTABLISHMENT OF NEW CITIES WILL DRIVE GREATER ENERGY CONSUMPTION

MAJOR NEW PROJECTS IN KSA

NEOM

THE RED SEA

QIDIYA

KING ABDULLAH ECONOMIC CITY

KNOWLEDGE ECONOMIC CITY

KING ABDULLAH FINANCIAL DISTRICT

PRINCE ABDUL AZIZ BIN MUSAED ECONOMIC CITY

AL FAISALIYAH
BY 2030 THE POWER SECTOR WILL WITNESS A TRANSFORMATION TO MEET THE DEMAND EXPECTED TO GROW BY MORE THAN 40%

POWER GENERATION CAPACITY (GW)

- Renewables are more than 30% of total capacity by 2030
- Gas use doubles from today’s levels—significant increase in new thermal capacity
- Liquid fuel based generation will be phased out by natural gas

Forecasted Generation

- PV 40 GW
- Wind 16 GW
- CSP 3 GW
- Conventional 31 GW

Source: MEIM
TO SERVICE GROWING DEMAND, MASSIVE CAPACITY ADDITIONS ARE EXPECTED BETWEEN 2017 AND 2030

<table>
<thead>
<tr>
<th>Transmission</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Voltage Lines</strong> (CKT KM1)</td>
<td><strong>High Voltage Substations</strong> (MVA)</td>
</tr>
<tr>
<td><strong>69k</strong></td>
<td><strong>250k</strong></td>
</tr>
<tr>
<td><strong>516k</strong></td>
<td><strong>219k</strong></td>
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</table>
SOLID FOUNDATION FOR KSA ENERGY SECTOR
SOLID FOUNDATIONS OF ENERGY SECTOR

- Proven track record for Saudi government in developing the sector (establishment of entities, offering incentives)
- Local suppliers provide raw materials required in the production value chain
- High access to human capital through relevant programs offered by major universities and vocational institutes
- Prime position for KSA to establish energy network linkages with neighboring countries
PROVEN TRACK RECORD FOR
SAUDI GOVERNMENT IN
DEVELOPING THE SECTOR

- Establishment of entities to improve sector
- Incentives to attract private sector investors
KSA gradually established entities and reassigned responsibilities to advance the sector.

- **1961**: Establishment of Department of Electricity Affairs
- **1972**: Establishment of Ministry of Industry and Electricity
- **1975**: All electricity generation was gradually subsumed under the 4 SCECO’s
- **1976**: Establishment of Electricity Corporation; Creation of first Saudi Consolidated Electricity Company (SCECO-East)
- **1976 & 1981**: Merging all electricity companies into stock market company, named the Saudi Electric Company
- **1998**: Electricity was made the responsibility of the Ministry of Water and Electricity
- **2003**: Electricity responsibility moved to the Ministry of Energy, Industry, and Mineral Resources
- **2016**: Further developments and reforms in the sector
LOCAL GOVERNMENT
AND REGIONAL ENTITIES
LEADING THE ROLE IN
CONVENTIONAL ENERGY
MINISTRY OF ENERGY, INDUSTRY AND MINERAL RESOURCES (MEIM)

Own and manage the renewable energy program, and define the strategy and incentives for localization.

SAUDI ELECTRICITY COMPANY

Major player in electricity generation, transmission and distribution.

ELECTRICITY & COGENERATION REGULATORY AUTHORITY (ECRA)

Regulate the electricity industry in the Kingdom, focusing on: supply matters, consumer issues, technical issues, organizational and administrative tasks.

MINISTRY OF COMMERCE & INVESTMENT (MCI)

Issue commercial and industrial licenses, and monitor products localization.

SAUDI STANDARDS, METROLOGY AND QUALITY ORGANIZATION (SASO)

Standardization agency for products traded in Saudi Arabia.

THE GCC INTERCONNECTION AUTHORITY (GCCIA)

Owner and responsible body for the GCC Interconnection which links the power systems of all the 6 GCC states.

SAUDI ARABIAN GENERAL INVESTMENT AUTHORITY

Manage investor outreach, and supports foreign investors in business set-up and establishment.
SAUDI ARABIA 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

OWNERSHIP
100% foreign direct ownership allowed

REPATRIATION OF CAPITAL
No restrictions on repatriation of capital
KEY GOVERNMENTAL ENTITIES RELEVANT FOR INCENTIVES

**SAUDI INDUSTRIAL DEVELOPMENT FUND (SIDF)**
Provide financial and advisory services needed to support the growth and development of the localization

**SAUDI INDUSTRIAL PROPERTY AUTHORITY (MODON)**
Responsible for the development of industrial cities with integrated infrastructure and services, and with the highest global standards and specifications

**SAUDI EXPORT PROGRAM**
Provide funding and guarantee/insurance facilities for exporters, needed to increase competitiveness and mitigate risks associated with international trade transactions

**ROYAL COMMISSION FOR JUBAIL AND YANBU (RCJY)**
Execute infrastructure plan and manage multiple industrial cities mainly oriented toward energy intensive industries

**ECONOMIC CITIES AUTHORITY**
Sole regulator of King Abdullah Economic City (KAEC) and offering investor incentives to develop the city
LOCAL SUPPLIERS PROVIDING RAW MATERIALS REQUIRED IN THE PRODUCTION VALUE CHAIN
LOCAL SUPPLIERS PROVIDE RAW MATERIALS REQUIRED IN THE PRODUCTION VALUE CHAIN

<table>
<thead>
<tr>
<th>ALUMINUM</th>
<th>COPPER / CABLES</th>
<th>IRON ALLOYS /CAST IRON</th>
<th>POLYMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Safe Aluminum Saudi Co." /></td>
<td><img src="image2" alt="Aluminum Extrusion &amp;Forming Factory Co." /></td>
<td><img src="image3" alt="Albawardi Metal Alloys" /></td>
<td><img src="image4" alt="National Petrochemical Industrial Company" /></td>
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<tr>
<td><img src="image5" alt="Alaa Rubber and Gasket Company" /></td>
<td><img src="image6" alt="Nabha Rubber Factory (NRF)" /></td>
<td><img src="image7" alt="Alba (The Green Foxtrot)" /></td>
<td><img src="image8" alt="NATPET" /></td>
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<td><img src="image9" alt="PLASTIC /RESINS" /></td>
<td><img src="image10" alt="RUBBER" /></td>
<td><img src="image11" alt="STEEL /STEEL STRUCTURAL" /></td>
<td><img src="image12" alt="POLYMERS" /></td>
</tr>
</tbody>
</table>
HIGH ACCESS TO HUMAN CAPITAL THROUGH RELEVANT PROGRAMS OFFERED BY MAJOR UNIVERSITIES AND VOCATIONAL INSTITUTES

MAJOR UNIVERSITIES OFFERING RELEVANT ENGINEERING DEGREES

KING ABDULAZIZ UNIVERSITY

KING FAISAL UNIVERSITY

KING SAUD UNIVERSITY

- Electrical Engineering
  - Electronics & Communications
  - Electrical Power & Machines
  - Computer

- Mechanical engineering
  - Production and systems design

- Chemical engineering

- Industrial engineering
MAJOR VOCATIONAL INSTITUTES OFFERING RELEVANT DIPLOMAS

TECHNICAL & VOCATIONAL TRAINING CORPORATION

NATIONAL POWER ACADEMY

RIYADH POLYTECHNIC INSTITUTE

- Manufacturing
- Operations
- Electrical Technology
- Electromechanical
- Mechanical
- Plastic
- Information Technology
- Supply chain
- Sales
- Business administration
- Etc.
PRIME POSITION FOR KSA TO ESTABLISH ENERGY NETWORK LINKAGES WITH NEIGHBORING COUNTRIES...

**GEOGRAPHICAL ADVANTAGE**

KSA is located at a close proximity to GCC countries and thus has a logistical advantage (i.e. lower transportation cost, shorter delivery time) over European or Asian source countries.

**INFRASTRUCTURE ADVANTAGE**

SEC has already completed electrical linkage projects (among regions in KSA and the GCC) and is planning others (e.g. interconnection projects with Egypt and with Jordan).

**TRADE AGREEMENTS WITH OTHER ARAB COUNTRIES**

Following GAFTA1 — Goods produced in any of the GAFTA member countries shall be exempted from duty in any other member country.

**FAVORABLE TRADE REGULATIONS ON INDUSTRIAL GOODS**

KSA has set favourable trade regulations on the export of industrial products/equipment.
... GIVEN THE MASSIVE MEA TRANSMISSION & DISTRIBUTION NETWORK OUTLOOK

<table>
<thead>
<tr>
<th>HIGH VOLTAGE LINES (CKT KM1)</th>
<th>HIGH VOLTAGE SUBSTATIONS (MVA)</th>
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<tbody>
<tr>
<td>259k</td>
<td>775k</td>
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<tr>
<td>DISTRIBUTION 1,9M</td>
<td>DISTRIBUTION 819k</td>
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</table>
COMMITMENT TO LOCALIZATION AND INVOLVEMENT OF PRIVATE SECTOR
SEC HAS CLEAR PLANS UNTIL 2021 TO RAISE CAPACITY, ADD TRANSMISSION LINES AND DISTRIBUTE TO NEW CUSTOMERS ...

... BRINGING THE TOTAL NUMBER OF CUSTOMERS TO MORE THAN 10.8 MILLION BY THE END OF 2021

**GENERATION**
*Increasing the generation capacity total to*

91,000 mw

**TRANSMISSION**
*Enhance transmission network lengths and increase reliability by adding*

21,500 km

**DISTRIBUTION**
*Adding*

162,000 km

of distribution lines to serve 2.3 million new customers

SEC’S LOCALIZATION PROGRAM IS ALREADY SUPPORTING GROWTH IN NUMBER OF LOCAL FACTORIES

INITIATIVES OF SEC’S LOCALIZATION PROGRAM FOR ELECTRICITY INDUSTRIES

1st
Set policies and mechanisms to motivate contractors

2nd
Set policies and mechanisms to motivate local factories

3rd
Identify localization opportunities for materials industries

RECENTLY, SIGNIFICANT INCREASE IN LOCAL FACTORIES FOR ELECTRICAL EQUIPMENT
THREE KEY INITIATIVES SEC IS TAKING TO LOCALIZE KSA ELECTRICITY INDUSTRIES

SET POLICIES & MECHANISMS TO MOTIVATE CONTRACTORS

1st
- Evaluate proposals based on motivational formula centered on:
  - Bid price (85 points)
  - Percentage of labor localization (5 points)
  - Percentage of locally manufactured materials (10 points)

SET POLICIES & MECHANISMS TO MOTIVATE LOCAL FACTORIES

2nd
- Stage 1: National products have 10% priority over purchasing from foreign counterparts
- Stage 2: Preference given to local manufacturers based on
  - Tender price
  - Local content at plan
  - Importance of product to the company

IDENTIFY LOCALIZATION OPPORTUNITIES FOR MATERIALS INDUSTRIES

3rd
- Identify localization opportunities and attract investors and international companies to establish local factories
- Strengthen coordination and communication with governmental agencies, large companies in KSA, and shared committees between KSA and other relevant countries to localize industry
- Support investors who wish to open factories for spare parts and materials that are not available locally
EQUIPMENT WILL ALSO SERVE KSA’S MATURE AND GROWING RESOURCES INDUSTRIES

OIL AND GAS

#1
Oil company in the world

CHEMICALS

#3
Largest global diversified chemical company

MINING

#20
Largest global mining company

ENERGY

44
Existing power plants across KSA

DESALINATION

28
Existing desalination plants across KSA
19 EQUIPMENT IDENTIFIED FOR LOCALIZATION TO SERVE GENERATION, TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE

**DISTRIBUTION**

- LV Switchgear
- MV Switchgear
- Smart meters
- Ring Main Unit (RMU)
- LV Control gear and switches
- MV Breakers
- Circuit interrupters

**TRANSMISSION**

- Conductors
- Reclosers and sectionalizers
- Power capacitors & harmonic filters
- HV Switchgear
- Power cables
- Power transformers
- Surge & lightning arrestors
- Dry transformers

**GENERATION**

- Gas turbines
- Steam condensers & heat exchangers
- Fuel additives
- Busbars
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