

Saudi Arabia Electricity Market Report

An ambitious renewables programme and subsidy reform will transform Saudi Arabia's power system

Saudi Arabia's electricity sector is dominated by state-owned, vertically-integrated utility Saudi Electricity Company (SEC). SEC generates most of country's electricity from its fleet of gas and oil-fired power plants. SEC also purchases power from a small number of independent power producers.

As part of Vision 2030, the government launched the National Renewable Energy Programme (NREP), targeting 58.7GW of renewables by 2030. The 300MW Sakaka PV IPP, the country's first renewable IPP, achieved commercial operation at the end of 2019. The 400MW Dumat Al Jandal wind IPP is under construction. Several other renewable IPP tenders are in progress.

The continuing reduction in solar PV and wind costs mean that renewables are expected to play major role in Saudi Arabia's power system. The operating patterns of existing thermal plants are expected to change considerably as the deployment of renewables increases. Storage is also likely to have a significant influence on system operation in the long term.

In addition to ambitious renewable energy plans, Vision 2030 also sets out a phased reduction in electricity and fuel price subsidies. In 2018 the government partially removed end-user electricity price subsidies, leading to a reduction in residential and commercial demand. Further subsidy reductions are planned, creating some uncertainty regarding the outlook for power demand.

The government also intends to move to a competitive electricity market in Saudi Arabia. Regulations allowing 'wheeling' of power and corporate PPAs represent the first steps towards broader liberalisation. SEC has also begun to unbundle its transmission and principal buyer functions, but progress has been slow.

aim.afry.com



Our Offering

AFRY Independent Market Report

- Presents our annual projections for installed capacity, generation and the value of electricity for our three internally consistent scenarios (*High, Central and Low*).
- Considers the main drivers of capacity expansion in each scenario, including:
 - the evolution of electricity demand;
 - developments in technology costs; and
 - fuel prices.
- Delivers in-depth market intelligence, including insights into:
 - government policy and regulation;
 - impact of wind, solar PV and storage on system operation; and
 - value of existing and new power plants.
- Key data for AFRY projections is provided in a usable Excel format.

Updates

- Projections updated upon request, ensuring all the latest regulatory and market developments are reflected.

Workshop / Virtual Q&A session

- Provides the opportunity to discuss the market, our modelling and price developments.

Subscriber support

- Prompt access to our experts who have a wealth of experience and constantly follow market developments.

Our reports and projections are:

- **Independent.** Our reputation is built on providing an impartial view.
- **Trusted.** The 'AFRY curves' are the definitive benchmark for the power sector.
- **Bankable.** Relied on by the financing community for over 25 years.



Our Saudi Arabia market experts

Robert Williams

robert.williams@afry.com

+971 4 6069 549

Nassim Mohtar

nassim.mohtar@afry.com

+971 4 6069 527

Table of Contents



Executive Summary

Introduction

Market Physical Characteristics

Electricity demand

Electricity capacity

Electricity network

Retail tariff structure

Market Structure and Policy

Current sector structure

Potential for greater liberalisation

Renewable and nuclear policy

Profiles of key stakeholders

Modelling Approach and Assumptions

Model Outputs

Additional Services

Bespoke scenarios

Define specific sensitivities or scenarios

- Customisation for bespoke assumptions, e.g. fuel prices or decarbonisation goals.
- Sensitivities to examine impact on power price of changing gas or carbon prices.

Transaction support services

M&A advisory (including commercial, market and technical due diligence)

- Buy and sell-side support for the investment in, or disposal of, generation assets.
- Lenders' Market Advisor services to support debt financings.

BID3, Pegasus and BID3live

Models and datasets available for purchase

- For clients needing full flexibility to do own model runs.
- Live short-term forecasts available with BID3live.

Other AFRY Independent Market Reports available

Our expansion is client-led: if you're interested in any other market, please contact us for options

Capture prices

Available for all markets and technologies

- Pre- and post- economic curtailment.
- Market-wide, asset-specific or for portfolio of assets.

Imbalance projections

Projections of the costs of imbalance for wind and solar farms

- Accounts for future growth of renewables, different trading strategies and improvements in forecasting.

Ancillary service projections

Reserve product value projections for flexible generation and storage

- Fundamental projections using BID3 to account for changing capacity mix.
- Covers both holding and activation fees for FCR, aFRR, mFRR, RR, and equivalent.



- AFRY Independent Market Reports available
- AFRY Management Consulting offices