

The economic and financial impact of reforms to the electricity supply industry in Saudi Arabia

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Overview

Reforms to the Saudi electricity industry have been taking place progressively since the late 2000s. The stated objective of the reforms has been to enhance the efficiency and sustainability of the electricity sector, commensurate with the goals set out in Vision 2030. A key element of the reforms has been a bolstering of the functions of the independent regulatory agency, which is currently the Water and Electricity Regulatory Authority (WERA). WERA has been charged with the responsibility for introducing a new revenue model which will be used to determine the prices that are levied by the incumbent monopoly electricity business, the Saudi Electricity Company (SEC). WERA is obliged to ensure that the revenues earned by the SEC are just sufficient to cover the company's efficient costs of providing services to customers. The company must also be permitted to earn a fair return on invested capital (SPA, 16 November 2020).

A regulatory asset base methodology has been developed for the SEC to enable tariff setting for transmission services, distribution services, and electricity generation (Fitch, Rating Action Commentary). A pass-through mechanism is also in place to allow for cost over-runs caused by unanticipated changes to fuel prices, licence and interconnection fees, and taxes.

In future years, the Ministry of Energy will assess the difference between the required revenue for SEC, as determined by the regulator, and the company's actual earnings, from the tariffs that have been established. To the extent that there are unexplained shortfalls, then these will be financed from a balancing account held by the Saudi government (SEC, 29 March 2021). The SEC must nonetheless commit to raising the standard of service provided to customers.

Further reforms to the electricity supply industry in Saudi Arabia remain under consideration. Previous research (Hasan S., T. Al-Aqeel, and N. Peerbocus) has pointed to the types of structural reform and institutional change that have been made in overseas jurisdictions. Typically, the industry is disaggregated vertically and horizontally so that electricity retailing, distribution, transmission and generation become separate and discrete activities. There may also be an unbundling of generation assets, accompanied by the creation of separate, competing business units. Concurrently, a wholesale market needs to be developed, with some functions devolved to a system operator.

Partial withdrawal of government subsidies for primary energy (fuels) and electricity

The government of Saudi Arabia has taken steps to lower the subsidies that are provided for domestic hydrocarbon-based fuels. Thus, the prices for a range of fuels sold in the domestic market were increased in late 2015, and were then subject to further increases in 2018. Simultaneously, the government chose to bring down the subsidies that are available for electricity prices paid by different classes of customers.

For electricity sold to residential customers, average prices rose from SAR 0.0814 per kilowatt hour (kWh) in 2015, to SAR 0.0915 in 2016, and then to just under SAR 0.2 per kWh by 2018.

The analysis undertaken for this paper is focussed on market structures and regulatory arrangements, and thus does not give consideration to the likely impact of further changes to the prices of fuels used for electricity generation.

Instead, the emphasis is on how a greater degree of scrutiny by WERA might bring about a heightened level of transparency by the SEC. It is expected that WERA will review the capital and operating expenditure plans of the business, and remit them back to the SEC for further consideration. WERA will also evaluate a host of other metrics, including the rate of return on capital, and will be responsible for determining the average prices paid by customers, having regard to both the viability of the industry and the long-term interests of consumers.

Comparisons with overseas experience

International experience has shown that the corporatisation and restructuring of the electricity sector has the potential to deliver substantial benefits to consumers and to economic activity more generally. Consumers benefit from a wider range of service offerings, and, in some cases from reliability improvements. There is also scope for greater innovation in the energy sector.

Methods

The building block method for revenue determination is typically only applied to regulated monopoly businesses in distribution and transmission. The building block approach has been applied successfully to both electricity and gas. For the segments of the industry which operate in competitive markets, notably electricity generation and retailing, market-based mechanisms are relied upon to produce pricing outcomes.

The available information suggests that WERA is proposing to apply the building block approach to the entire span of operations of the vertically integrated business, the SEC. It is understood that a new regulatory period will commence in 2023. SEC will also be able to rely on a pass-through mechanism in the event that there are increases in fuel costs above a certain threshold.

This study has used empirical methods and forecasts to analyse selected components which will be used by WERA in the building block computation. We have considered how the assessment, by WERA, of the capital expenditure plans of the SEC could be influenced or informed by economic benchmarking techniques.

We have also analysed the range of possible factors that will affect the assessed cost of debt, and cost of equity. For the cost of debt, these factors will include the benchmark credit rating that is adopted, whether a rate on the day measurement or trailing average method is applied, and the likely developments in the spreads for debt, and for credit default swaps for comparator entities. For the cost of equity, important considerations will be the assessed equity beta, and whether forward or backward-looking methods are adopted for the market risk premium.

Results

The relevant counter-factual is how electricity prices might have evolved under legacy arrangements, in the absence of regulatory oversight, and any form of regulatory framework. Depending upon the degree of scrutiny by WERA, the electricity price outcomes for consumers in the next regulatory period could be higher or lower than those that would emerge in the absence of the imposition of a regulatory framework. Thus, the analysis draws attention to the importance of maintaining a rigorous but transparent regulatory regime.

Conclusions

We anticipate that under robust regulatory arrangements, there will be modest improvements in capital productivity and labour productivity in the electricity business. The productivity gains will be manifested in the following outcomes:

- Declines, in real terms, in controllable operating costs per unit of output.
- Increases in the available capacity for base-load generating units.
- Reductions in reserve plant margins.

Additional benefits are likely to accrue from the ongoing corporatisation and restructuring of the electricity industry. The most significant gains would result from privatisation.

References

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