

Communication

The prerequisite for competition in the restructured wholesale Saudi electricity market

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Abstract

Protection of customers against monopoly is the first and main objective of the Saudi Electricity and Co-generation Regulatory Authority (ECRA). The second important objective, as recommended by the present study, is regulating natural monopoly businesses [Saudi electricity national grid (SENG) and Saudi electricity distribution (SED)] in addition to promoting real competition in competitive businesses [power supply providers (PSPs) and customer service providers (CSPs)]. Another four main objectives of ECRA are to promote the efficient use of energy and natural resources, to ensure a reasonable rate of return for PSPs and CSPs and at the same time to be fair to end-users, to ensure reasonable charges to SENG and SED services to be adequate for them to run the organization in a break-even manner and to maintain the system's security and reliability. The present paper discusses the way to improve and restructure the Saudi electricity market.

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1. Introduction

Electricity falls in the second level of needs after air, water, and food to support us in doing other life activities. It is guaranteed to the degree of being forgotten unless it is disconnected or a high consumption bill is found to be paid

at the end of the month. In Saudi Arabia, outages are rare events due to the highly existing reliable system. So, a high bill is the part that worries customers in Saudi Arabia. Despite this, the Saudi Riyal per kWh (SR²/kWh) is relatively low compared with other world prices; the bill becomes relatively high due to the fact that Saudis are high consumers, and also due to the current tariff structure.

Because of the above and the fact that demand of electricity in Saudi Arabia is rapidly expanded, the Saudi Electricity Supply Industry (SESI) is to be restructured in such a way so to meet the future demand without burdening the government budget, alongside reducing the electricity bill and maintaining a safe and reliable system.

2. Methodology

The most popular market models are reviewed and more attention is given to the participants as the critical links in any deregulated system. In addition, Saudi's culture and the real SESI constraints are reviewed. As a result, the SEC

Abbreviations: CSC, customer services companies; CSP, customer service provider; DISTCO, distribution company; ECRA, Saudi Electricity and Cogeneration Regulatory Authority; FERC, Federal Energy Regulatory Authority (USA); GENCO, generation company that owns and operates more than one power plant; IPP, independent power producer; ISO, independent system operator; IWPP, independent water and power producer; MO, market operator; NEMMCO, National Electricity Market Management Company (Australia); NGC, National Grid Company in England and Wales; OASIS, open access same time information system; PSP, power supply provider; RTO, Regional Transmission Organization; SED, Saudi electricity distribution; SENG, Saudi electricity national grid; SESI, Saudi Electricity Supply Industry; SESOM, Saudi Electricity System Operation & Marketing; TRANSCO, transmission company

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framework is proposed and a brief chronology of effort on reform and privatization through over the world for some countries is listed in Appendix A.

The Saudi Electricity Company (SEC) is the only utility in the Kingdom of Saudi Arabia. It is under a process of restructuring the industry. In this paper and before proposing the SESI structure, it is needed first to summarize what has been approved or written about the future vision of SESI structure inside and outside SEC. The aim of that is to start from where others ended and recognize others' effort. The three-stage plan in the SESI restructuring process was presented in Bahrain in 2005 by the executive vice president of transmission business line in SEC Engineer (Tariq Al-Betairi, 2005). Al-Betairi presented the plan as follows:

Stage 1: By 2002–2006

- Single buyer model
- SEC functions more as a holding company
- System of transfer payments creates a 'virtual' industry

Stage 2: By 2006–2010

- Transition to (wholesale competition) market model
- Market function is separated from technical function in transmission (TSM) (or)
- Either generation or TSM is divested from SEC

Stage 3: By 2010–2014

- Transition to a full competition model
- Private sector participation increases and competition intensifies (Tariq Al-Betairi, 2005)

The above vision as per reference (Al-Swaha, 2005) is also adopted by SEC management and presented by Dr. Amer Al-Swaha, the senior vice president of HR in SEC, to top SEC management, where the long-term vision was illustrated in the reference as shown in Fig. 1.

It is worth reporting in the present paper that the official reports by SEC Management always consider the transmission company (TRANSCO) as a network owner and operator as shown in Fig. 1. Furthermore, the official report never went through any detailed proposal for separating customer services from distribution companies (DISTCOs). This vision has been established and organized based on what the developing countries attracted after the first oil crisis hit in 1973 from the outside world (Dunkerley, 2006). At the same time, the developing countries accounted for only a small part (13%) of the total global commercial energy. The developing countries attracted more attention after 1973.

3. Deregulation experiences

TRANSCOs are responsible for transporting electricity from generation companies (GENCOs) to other participants (DISTCOs, bulk customers, or retailers). In some industries TRANSCO owns and operates the whole network, like in UK. In England and Wales, the system operator activities are carried out by the power pool represented by National Grid Company (NGC) in England and Wales along with other activities. Actually, the NGC plays the role of three major players, namely TRANSCOs, SO, and market operator (MO), in the market. In other

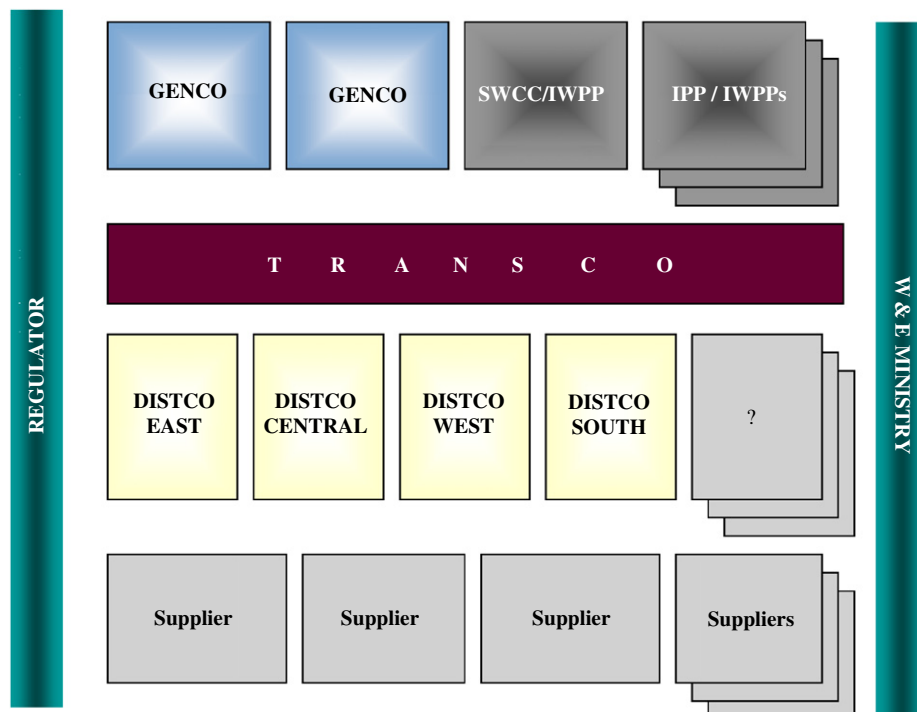


Fig. 1. Ultimate vision of SEC management for SESI structure.

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