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Saudi Power Sector - Challenges & Opportunities post Covid-19

*Witnessing a period of stabilizing growth, clean energy,
deregulation & market prices, and mega investments*



Research Highlights:

Examining and analyzing the status of Saudi Power Sector highlighting the structural analysis, and demand and supply, existing and expected in future. The report also presents growth drivers, emerging new business models, investments required, financing sources and challenges that need to be addressed.



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Executive Summary

The Saudi power consumption is around 282 Twh (terra watt hours), with residential consumers accounting for 48 % of the consumption. The Saudi power sector is facing stabilizing times as power consumption reduced in 2018 and is expected to show further decline or at the most remain flat in 2019, due to rationalization of power consumption mainly by residential and commercial consumers. The reduction in consumption is an effect of the government steps for increase in electricity prices steeply to bring them closer to prices commensurate with the real cost of power. Notwithstanding current stable conditions, the long-term outlook for Saudi power consumption is positive, though the growth rate for next 5 years may be lower than that of past two decades. At a macro level, Saudi Power consumption on per capita basis of about 9020 kwh was not very low compared to 12079 Kwh for a developed country like U.S. The higher power consumption of U.S. is due to its per capita income which is almost three times and since industrial progress of US is much higher than that of Saudi Arabia.

The power generation in the Kingdom is largely with Saudi Electricity Company (SEC) a state owned public listed company. Private sector participation in the power generation segment was allowed since 2002. Currently, over 99% of the transmission and distribution capacity is with SEC. The current power generating capacity in the Kingdom is about 76.9 GW, of which SEC accounts for 69.5%, IPPs and IWPPs¹ account for 17.7%, and Saline Water Conversion Company & Others for 12.8%. The country has 83,260 circuit kilometers (ckt.kms) of transmission network and 617,500 ckt.kms of distribution network. Public Private Partnerships (PPP) proved successful in the Saudi power sector over the last decade. The Government is likely to open the Transmission and Distribution also to private sector participation in the future, together with privatization of existing government assets in the sector.

Saudi Power sector has seen substantial reduction in crude oil for power generation by stepping up natural gas-based power generation capacity that is operationally efficient and is a cleaner fuel that aids Climate Control through much lower CO2 emissions. The Saudi government is also taking up steps to encourage and enhance solar and wind energy in a big way in the country's power generation sector. However, lower crude oil and gas prices after Covid-19 that are expected to continue atleast in the near term, the country's investments in renewables like solar and wind power might see a slowdown as the cost economics will be less favorable compared to what they were at higher crude prices. Saudi Arabia's plans also include setting up two nuclear power plants for which it is progressing with the required approval and agreements, though no substantial progress is reported.

¹ Independent Power Producers (IPP), Independent Water & Power Producers (IWPP)

The Kingdom has several bodies to regulate, develop and oversee the Power Sector. Electricity Services Regulatory Authority (ECRA) was formed to regulate the power sector and desalination industry. Water & Electricity Company was established by the SEC and SWCC to oversee the developments of IPPs and IWPPs in KSA. King Abdullah City for Atomic & Renewable Energy is mandated to contribute to the sustainable and alternative energy resources and their development in the Kingdom. King Abdulaziz City for Science & Technology is engaged in the areas of energy research.

The country's power consumption is estimated to grow in the coming years with an estimated 8.19 GW generating capacity to be added by 2024. This growth does not include impact of power demand that will grow if Electric Vehicles are introduced in the Kingdom, like in other parts of the world and as announced by UAE its GCC partner. Using long term historical growth rates, addition of 36,860 kvt.kms of transmission network and 307,650 kvt. Kms of distribution network will be required by 2024. These requirements will need investment of USD 48.6 billion during 2019-2024.

Not included in this investment estimate are the government's plan to create 43 GW of solar energy and 16 GW of wind power over next 10 years which will require mega investments to be made but cannot be accurately assessed at this point of time due to preparatory stage at which these plans lie at the moment as well as expected slowdown in progress until the comparative economics of renewables versus natural gas are reassessed in light of the post Covid 19 bearish outlook for crude oil and natural gas prices in the coming few years. Added to it, are the two nuclear plants that are proposed to be built, which are also not yet crystallized for implementation. If all these investments materialize, they are likely to make the Kingdom surplus in power generation in the coming years. Such capacity addition if implemented will enable the government to realize its plans for export of electricity within MENA countries at the initial juncture and to parts of Europe at a later stage, considering the country's comparative advantages in producing power at a lower cost compared to others. Saudi Arabia is part of the GCC Power Transmission grid that has been created. On the transmission side, the government is entering into agreements with Egypt and Jordan for establishing a transmission grid connecting Saudi Arabia to these countries. The government is also studying the opportunity of establishing grid connectivity with Europe. Such extension of the transmission network will be a prerequisite for the power exports plans of the Kingdom.

The funding for all the power sector investments that are on the anvil, poses a considerable challenge. The post Covid19 budgetary deficits being encountered by the Saudi government increases the need for financing the investments in power sector mainly through private sector projects. The government has taken and announced steps that will make the pricing commercially attractive in the power sector and suitable regulatory institutions to make the sector commercially attractive. Saudi government is also taking up several initiatives for attracting foreign investments. Also, the government's plans like increasing the investable resources of its Public Investment Fund (PIF) and investments expected from external sources like the Soft Bank (Saudi government invested USD 100 billion in the entity's fund) that are showing interest in large renewable energy investments, are potential sources of funding. It is thus crucial to attract private sector investments in the forthcoming period, local or foreign, and they will be forthcoming to invest in these projects, once the presence of a viable market potential in the local and export destinations is established.

Thus, Saudi Power Sector, having met the needs of the economy over the past few decades, is now poised to enter a new period that will require not only meeting its incremental consumption in the coming years, but to also address its shift to cleaner modes of power generations that are being prioritized all across the world, install capacities for renewable sources of energy like solar and wind power for which it is endowed with natural resources, leverage its comparative advantage in power generation to generate non-oil export revenues, and attract foreign investments to make all this successful by becoming a more open global economy.

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Would prefer talking to us? Call us at **+965 2224 8280**

Authors

M.R. Raghu CFA, FRM, FCMA

Head of Research

+965 2224 8280

rmandagolathur@markaz.com

Shishir Goenka

Senior Manager - Research

+965 2224 8000 Ext: 4633

SGoenka@e-marmore.com

Venkatram Kolluri

Senior Consultant

+965 2224 8000

VKolluri@e-Marmore.com

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For further information, please contact 'Markaz' at P.O. Box 23444, Safat 13095, Kuwait; **Email: enquiry@e-marmore.com**; Tel: 00965 22248280; Fax: 00965 22495741.