

Saudi Arabia Renewable Energy Sector Analysis

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Abstracts

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Saudi Arabia along with all the major economies in Middle East region has started to take the renewable energy way, contrary to their most important possession, non renewable (Hydrocarbons). The growing economy with growing population has affected a growth in the urbanization in these nations which has resulted in an increase in consumption of oil and gas. The growing population demands more electricity, power plants based majorly on non renewable sources. The Middle East is one region in the world that requires energy even for drinking water which is produced by desalination of sea water. Growing population means more demand of water requiring more energy. The increasing in house consumption of energy sources has the Middle East worried over the increasing share it has to divert domestically, leaving comparatively lesser for export.

Electricity production is the most energy intensive industry in Saudi Arabia and is produced mostly from fossil fuels. The climatic conditions of the region make air conditioning a must resulting in more than average power consumption as compared to the rest of the world. About 99% of water in Saudi Arabia comes from desalination, another energy consuming process, working mainly on gas feeds. With depleting oil and gas reserves and export quotas and commitments to fulfil, it is vital for the Saudi Arabia to diversify and look at renewable sources of energy for power and water production.

“Saudi Arabia Renewable Energy Sector Analysis” research report is an intriguing text that gives facts and projected figures about the paradoxical situation arising in the world, with the world’s largest oil and gas providers looking at renewable sources to light their own bulbs. The report meticulously takes through Saudi Arabia electricity and water situation and then its renewable energy efforts along with policies and regulations. It is packed with information and adds a special feature on the GCC interconnection grid

that will be fed with power from the renewable sources of energy in the coming years and also gives the potential renewable sources of energy and the future scenario of the Middle East region with the latest developments.

“Saudi Arabia Renewable Energy Sector Analysis” research report discusses following aspects related to Renewable Energy Development in Saudi Arabia:

Renewable Energy Resource Mapping

Renewable Energy Initiatives

Renewable Energy Targets

Solar Energy Installed Capacity & Generation

Grid Connected Solar Targets

Policy & Regulatory Framework

Emerging Trends in Renewable Energy Development

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About

The Middle East countries, due to their arid climatic conditions, enjoy a great deal of sunlight throughout the year. The solar potential of the Middle East countries is supposed to be one of the highest in the world. Middle East is a rainless region which experiences clear skies for 80% of the year, thus, continuous solar radiation for a major part of the year.

The following figure gives the solar radiation throughout the world. It clearly shows that the Middle East region lies in the highest band of insolation like few other parts of the world experience. The total solar radiation is at xx TWe and Middle East forms a major part of this due to the expansive desert like topography. The solar radiation that the Middle East region receives is enough to encourage the photovoltaic and concentrating solar power industries in the region. This gives two options of generating electricity through the solar energy, ample amounts of which are available and can be exploited thoroughly. As the region is moving towards renewable energy, solar power is being deemed as the top renewable source which will be exploited for power production. The results of the solar radiation studies have encouraged more and more investment in the sector.

The average solar radiation of the Middle East countries is among the highest in the world. The region receives maximum solar energy from April to August before falling down. Even in the months preceding and succeeding these, the solar radiation is quite strong. In all, the Middle East region receives considerable solar energy for eight months of a year, March through October.

Kuwait's solar radiation is at the top peaking at above xxx W hr/m². Kuwait, thus, has the largest potential for solar power generation and considering the size and power consumption of the country it will be a boon for the nation. Kuwait's domestic consumption and reliance on oil and gas for power consumption can significantly decrease with the development of solar energy in the country, given its huge solar potential. Its direct normal solar radiation is also the highest, making it highly potential for solar power generation.

Kuwait is followed by UAE which has the second highest solar radiation among the six countries. UAE gets an average of xx W hr/ m² of solar radiation and peaks out at a little above 7500 W hr/ m² during the summer month of May. UAE is a pioneer in solar energy development and is all set to capture the immense solar radiation to generate

power from it. The Kingdom of Saudi Arabia ranks at third position in the list of solar radiation among the GCC countries. It peaks at near xx W hr/m² and for a larger part remains near xx to xxx W hr/ m². The potential of solar energy in Saudi Arabia is also quite encouraging and efforts are underway to realize this potential into electricity. Bahrain, Qatar and Oman receive comparatively less solar radiation than the other three countries but nonetheless enough to exploit it into solar power production. These three countries receive direct normal solar radiation equal to the others with the exception of Qatar.

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