

Dubai, UAE, December 9, 2013

## Smart Grid key to boosting power efficiency in GCC as peak demand grows: Frost & Sullivan

- **Global Smart Grid market estimated to grow to USD1 trillion by 2017**
- **Smart Grid has yet to be implemented on a wider scale**
- **Siemens works on installing Qatar's first smart metering solution**

The global market for Smart Grid is growing rapidly with total spend expected to reach USD1 trillion by 2017, however, the implementation of the technology in Gulf Co-Operation Council (GCC) countries is yet to take off with regional utilities targeting greater efficiencies to meet escalating peak demand, according to a Frost & Sullivan report, commissioned by Siemens.

The Smart Grid market worldwide is forecast to witness a compound annual growth rate of 26.6 percent, reaching USD125 billion by 2017, with 75 percent of Europe anticipated to be smart grid-enabled by 2018, the report said. While adoption in the GCC has been sluggish, regional countries face the challenge of addressing their growing power needs due to massive economic diversification and industrialization activities. In the next five years, the GCC is expected to invest close to USD73 billion to boost generation capacity by 36GW and improve power transmission and distribution infrastructure, with a portion of this sum anticipated to be funneled into Smart Grid solutions, according to the report.

“As peak electricity demand in the region grows, it is important for nations to invest in Smart Grid solutions to enhance energy efficiency, manage demand, and integrate renewable energy sources into the grid while improving their reliability and stability,” said Sitaram Chodimella, Head of Smart Grid Division, Middle East at Siemens LLC. “We see enormous potential for implementing Smart Grid solutions from Siemens in the GCC, especially as the region moves towards economic diversification and increased reliance on renewable energy.”

Siemens provides a comprehensive suite of Smart Grid solutions and services for the protection, automation, planning, monitoring and diagnosis of grid infrastructure, including for rail electrification and smart metering. The company is implementing Qatar’s first Smart Metering solution under a EUR10 million turnkey contract with Qatar General Electricity and Water Corporation (Kahramaa). The project will measure energy demand and help manage it during peak load periods, while seeking to identify ways to improve the billing process with customers.

“Peak electricity demand in the GCC has grown by more than 65 per cent from 2002 to 2010. Based on today’s growth rate, demand for energy by 2030 is forecast to expand at a compound annual growth rate of about 8 per cent. The project by Siemens for implementing Qatar’s first smart metering solution under a EUR10 million turnkey contract with Qatar General Electricity and Water Corporation (Kahramaa) will measure energy demand and help manage it during peak load periods. The Project will also seek to identify ways to improve the billing process with customers,” said Abhay Bhargava, Head, Energy and Power Systems Practice, Middle East and North Africa, Frost & Sullivan.

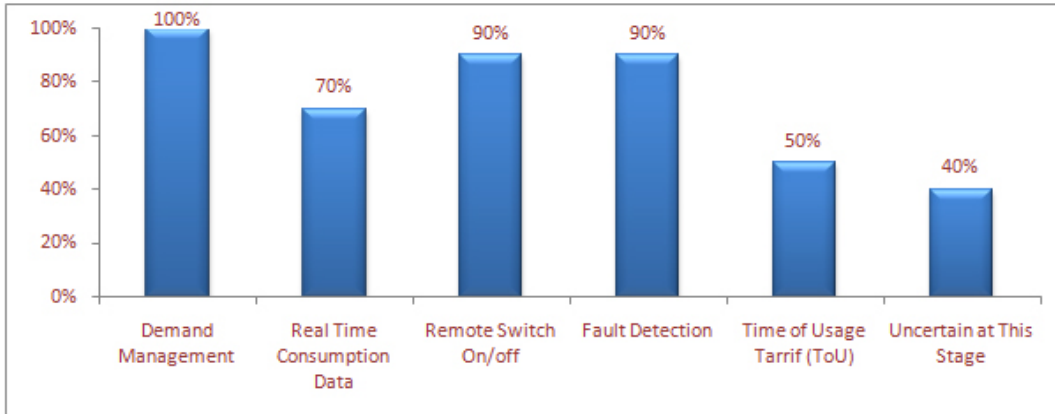
While there have been announcements about projects that include Smart Grid components, there are no finalized plans to implement the technology in its totality as a complete solution. However, business dynamics for GCC utilities are changing, as illustrated in the following chart.

FACTOR	THEN	NOW
<b>Electricity Demand</b>	Increasing	Increasing with huge demand-supply disparity
<b>Capacity Cost</b>	Stable	Increasing
<b>Carbon Cost</b>		Increasing
<b>Business Model</b>	Unilateral, Abundance in fossil fuel , Centralized power generation, One way power flow, Passive grid, Almost no communication or automation	Avoid local overloading and new investment, Two-way power flow Balance of variable generation, Reduce need for building large power plants, Balance for energy suppliers ,Intelligent grid
<b>Utility Objectives</b>	Reliability, Customer Service, Returns to Shareholders	Reliability, Environmental Quality, Returns to Shareholders, Affordability, Quality
<b>Consumers' role</b>	Passive	Active with increased involvement in energy management

Source: Frost & Sullivan

The Frost & Sullivan report also outlines the benefits of smart grid to GCC utilities, such as improved network reliability and stability, increased network control, ena-

bling the measurement of results of energy efficiency programs for enhanced effectiveness, managing demand and reducing lifecycle costs. The benefits are shown in the chart below.



Source: Frost & Sullivan analysis

Challenges in adopting Smart Grid solutions in the GCC persist, but the benefits are far greater. However, to maximize those benefits, utilities will have to make major changes to their infrastructure and the way they conduct business, while customizing Smart Grid solutions to their needs, the report said. Vendors will also be required to dedicate significant efforts into research and development activities, alliances, thought leadership, and support to utilities, to ensure successful implementation of the Smart Grid strategy, the report concluded.

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