

The rapid expansion of power generation capacity in the Middle East shows no sign of slowing.



Harnessing the power of hydrogen

A partnership signed last month will bring onsite hydrogen generator expertise to the Middle East. *Utilities Middle East* spoke to both companies to discuss why the local market is such a hot prospect.

The belief that this is a crucial time for the power generation sector is one that is widely held by many across the industry. A recent report from the Economist Intelligence Unit stipulates that GCC countries are likely

to inject as much as US \$50 billion between 2009 and 2015 into power generation capacity.

While the cited sum may be considerable, in the ongoing battle to keep costs down while simultaneously expanding infrastructure at

a huge rate, the need for efficiency is obviously key.

The advent of proton exchange membrane (PEM) technology has, since its invention almost 50 years ago, offered a number of potential benefits to a highly varied number

of industries, and the local utilities market now seems set to gain with the signing of a new partnership.

Last month, a leading US supplier of onsite hydrogen generators teamed up with local outfit Supply-Core Middle East (SCME) to bring

The changing face of power consumption in the GCC (Source: Kuwait Financial Centre "Markaz")										
Consumption growth (%)					2007	2014 expected capacity (MW)			Weighted avg. capacity *	Expected investment**
Country	CAGR ('00-'07)	Low	Medium	High	Capacity (MW)	Low	Medium	High	-2014	(US\$ bn)
KSA	6%	4%	5%	6%	37,154	45,050	47,249	49,533	47,050	14.8
UAE	9%	6%	7%	8%	15,752	21,452	22,480	23,546	22,387	10
Bahrain	8%	4%	6%	7%	2,767	3,342	3,745	3,961	3,658	1.3
Kuwait	6%	4%	6%	7%	10,434	12,167	13,907	14,854	13,535	4.7
Qatar	11%	9%	10%	11%	3,500	4,904	5,134	5,372	5,113	2.4
Oman	7%	8%	9%	10%	3,732	6,121	6,352	6,589	6,330	3.9

advanced PEM technology and expertise to the Middle East.

"The GCC and Northern Africa has been adding power generation capacity at a steady rate over the past few years and it does not yet show signs of slowing," says John Speranza, vice president of hydrogen product sales at Connecticut-based Proton Energy Systems. "We can now provide the region's power producers with the latest technology available in hydrogen generation, which until recently has been primarily used in military and aerospace applications."

Speranza says that PEM technology is proven to be far superior to traditional older caustic (potassium hydroxide) electrolysis technologies. "This region is set to benefit greatly from a more reliable, lower cost, and easily maintained hydrogen generation system that will complement the investment made in modernising the region's power generation," the Proton executive explains.

Adding local expertise to Proton's product range is SCME, which has strong relationships with those major engineering firms in Saudi Arabia and the GCC that play an active role in approving new value-added technology. The firm is also a pre-qualified vendor for the likes of Saudi Aramco and Kuwait National Petroleum Company with regard to its power product line.

"As part of our basic marketing activities, SCME launches its principals' products to the firms that consult on a majority of the new and upgraded power projects in the GCC," says Showqi J Alsawad, SCME's Dammam-based vice pres-

ducers in the region to produce power at much higher efficiencies than ever before," he explains. "What we're trying to highlight is that these advanced technologies have become available at a time when the region's power produc-

Africa and the massive investments in Egyptian wind farms, the region is looking to diversify away from traditional sources of power.

"One of the important facets of Proton's offerings is they are also capable of coupling to today's advanced wind and solar renewable technologies, allowing energy captured by the wind turbine or photovoltaic array to be stored or transported as hydrogen fuel," Speranza remarks.

It therefore seems clear that this partnership, and the expanding use of hydrogen-powered generators in the Middle East, is an area on which to keep a close eye.

"Our assets are also capable of coupling to advanced wind and solar renewable technologies"

John Speranza, vice president of hydrogen product sales, Proton Energy Systems

ident of business development. "In so doing, we make it possible for engineers to incorporate these products in the design stage."

For local utilities, it seems that Proton's brands may well have strong relevance to their operations. By complementing the firm's HOGEN generators and its StableFlow control system, Proton says companies can expect to improve the efficiency and reliability of plant electric generators, with the added side-effect of reducing both fuel consumption and carbon dioxide emissions.

Speranza adds that usage of his firm's products can also reduce the risk of injury and property damage as a result of chemical exposure. "We think that our StableFlow technology will allow power pro-

ducers are looking critically at ways to reduce both fuel consumption and plant emissions."

The advent of renewable energy-sourced power capability is also one that is receiving a lot of interest in the GCC sector at the moment. From Masdar City in Abu Dhabi to the Desertec initiative in North

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Showqi Alsawad, SupplyCore Middle East's vice president of business development