

# Save energy before it goes into recession

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With the economies in a state of meltdown, the dominant sentiment across the world is decrease in spending.

The global economic crisis has forced organisations across the world to look at their expenses and many are trying to cut down on their substantial energy bills among other things.

The UAE is no different in this regard and recognising the increase in the number of commercial and residential properties built in the past three to four years and the significant demands that these developments place on power sources in the region, all out efforts are being made to save energy and encourage efficient energy management across the board. Corporations, hotels and facility management firms are also aware of their responsibility and are looking for alternative sources to save energy.

Connor McCaffery, Chief Executive Officer, GreenWave Capital, told **Emirates Business**: "The current economic climate is causing existing hotels, residential and commercial towers, and residents to look at ways of decreasing their cooling costs, while any new developments under construction are also closely watching their investment levels." Due to its phenomenal growth the Gulf region is seeing an annual average increase in demand for power at around eight per cent.

With all the GCC countries requiring significant growth in the power and water sectors, an estimated \$120 billion (Dh440bn) investment is anticipated in the industry over the next ten years.

In fact, in order to address the issue of the increasing demand for power that goes hand in hand with economic development, the UAE will be participating in Power-Gen Middle East 2009, to be hosted in Bahrain from February 17 until 19 this year.

This year's theme, "Keeping Pace with the Middle East's Economic Expansion", is quite pertinent as it aims to discuss how the Middle East can plan and meet the power and energy demands of the future.

The first phase of the GCC interconnection grid was due to come online in 2008, providing inter-connected states with the chance to improve the economic and operational efficiency of their local power systems, while strengthening supply reliability and security.

According to Wam, an estimated eight per cent of all Arab investment is going into the power sector over the next few years.

A study undertaken by Dubai-based facilities management company Farnek Avireal, reveals that five-star hotels in Dubai on an average consume between 275 and 325kwh of power per guest.

Add to this the fact that the harsh desert climate of the country necessitates high levels of energy consumption for cooling.

Research by Tabreed said given the region's hot climate cooling takes up to 70 per cent of the region's energy bills. Keeping this in mind GreenWave Capital has brought PermaFrost, a new technology to the region that it said is an effective and affordable cooling solution that is simple to use and offers immediate cost and efficiency benefits.

McCaffery said: "Permafrost's efficiency and cost-reducing technology can deliver significant benefits to a region that requires tremendous cooling power now and in the future.

"Given the region's increased focus on more environmentally-friendly initiatives, PermaFrost offers a solution that not only has a profound effect on profitability, but also provides a sustainable, environmentally sound method to significantly reduce energy costs by increasing the efficiency of air conditioning and refrigerant equipment, which represent a large component of increasing energy

consumption regionally.

"PermaFrost enhances the overall performance of HVAC equipment without mechanical modifications or alterations to the system itself. PermaFrost works by helping cooling systems reach their set temperature faster, while consuming less energy to do so.

"It is a one-time application that lasts the life of the system and requires no equipment modification or downtime to install.

"Also, PermaFrost has been extensively tested in the United States for safety and environmental friendliness," said McCaffery.

"This product is of course a green product because of the associated energy savings. Just as important, however, is the significant impact that PermaFrost can have in reducing the carbon footprint it's end users leave on the environment. Electricity in the region is based on the burning of fossil fuels, such as coal, oil and natural gas. The less energy your AC system requires the less carbon your home or business is responsible for putting into the atmosphere," he said.

According to the company, existing PermaFrost users globally are reporting system efficiency increases of 20 per cent to 40 per cent and overall energy cost savings of 10 per cent and 20 per cent.

GreenWave Capital's management believe that this cooling technology could offer a respite for companies in the Middle East faced with rising energy costs.

However, it is not just the companies in UAE who are looking to cut on their power bills, even the government is upbeat about conservation of vital energy sources and the need for supporting alternative energy sources and initiatives.

In February 2008 the Emirates Energy Awards were launched by the Dubai Quality Group (DQG), a non-profit organisation established by the Department of Economic Development. Dr Wafi Dawood, chairman, DQG, told Emirates Business: "The significant increase in the demand for energy consumption and its subsequent impact on the environment and economy in the region necessitate the need for continuous and improved energy efficiency, conservation and management measures.

"We launched the Emirates Energy Award last year to recognise the best implemented practices in energy conservation and management that showcase innovative, cost effective and replicable energy efficiency measures. Such practices should have a sound, positive impact on the gulf region and stir energy awareness on a broad level across the different facets of society."

Energy can also be conserved with the use of energy-efficient initiatives like green buildings.

This is due to their reduced demand on energy, water and natural resources as they are designed to conserve energy and may use renewable sources, incorporate recycling systems and controlling devices that will enhance the power and water efficiency. And the UAE is already abreast with this and last year His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, gave a directive that all new buildings that come up in the UAE must meet green standards.

Markus Oberlin, General Manager, Farnek Avireal, a facilities management company said: "Green building technology does not necessarily bring up the cost of construction and maintenance at the entry level. Also, this cost is normally recovered from the savings in operating cost in a very short period of time.

"Also the cost of maintenance could be lower as there are lots of systems introduced at the time of design which will ensure smooth and efficient operation of all electro mechanical systems and also checks and balances prescribed in commissioning procedure will make maintenance a much easier and less expensive job.

## **Green buildings**

Green buildings utilise solar energy which is abundantly available in this region, through thermal solar panels or photovoltaic elements.

Some green buildings use other renewable energy sources such as wind and geo-thermal, which can be transferred through invertors to provide electricity for the buildings.

In these cases, the utility providers need to allow the consumers to join the electrical grid in order to allow for flexibility and encourage consumers to tap into renewable sources.

The usage of energy and water is designed in green buildings in such a way that there is no wastage of either of the sources.

## **Cutting cooling costs**

Enhanced insulation of a building's exterior envelope (be it walls or curtain walls and glazing) leads to a much better controlled environment with lesser heat gain.

Appropriate orientation of the building to suit the sun direction, proper selection of material of the façade (using double glazing and glass with proper UV protection) and enhanced insulation all contribute to reduced energy demand and save a lot of energy.

Better insulation of the roof is another way to save energy in cooling and rooftop gardens have the added advantage of cooling the building, reusing water and reducing the reflection from the roofs.

Use of natural light into various sections of the building, in addition to utilising lights that do not produce excessive heat, such as Tungsten lamps and Halogen lights also helps to cool better.

All this affects sizing of the air-conditioning equipment. It would be reduced and eventually require less energy and will save lot of money.

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