

Sustainable storage

A maturing marketplace needs to store information and requires facilities that can do both this and provide the demands of IT infrastructure. *BuildGreen* speaks to experts from the IT industry to find out how the data centre is fast adopting the prefix 'green'



'Green' data centres are cropping up across the Middle East.

As various markets across the Middle East mature and catch up with the western world, the amount of information stored and IT solutions used, in both the workplace and domestically, is growing immensely.

A key component of the region's growing economies is the data centre. ISIT Middle East chief executive officer Mahesh Vaidya says that data centres have become an integral part of today's urban infrastructure.

"Everything is now driven by technology and interactions between numerous data centres around the world that results in online transactions being processed in real-time," asserts Vaidya. "To power these data centres, companies need to ensure diverse sources of power are available all the time, which puts a level of strain on utility service providers. The majority of these utility service providers and electricity generation companies depend on fossil fuels such as coal, and lately, natural gas."

“ Pressure not only comes from outside factors such as environment organisations, but from within the industry itself”

Vaidya says that the use and importance of data centres across the world will continue to grow.

"The amount of data processed, transactions executed and populations served is only going to grow," he explains. "A 'green' data centre can help limit carbon emissions. Generally, however, data centres result in higher

level of emissions due to indirect dependence on non-renewable power sources and cooling systems."

APC by Schneider Electric Europe and Middle East enterprise and services director Olivier Delepine says that data centres are responsible for a great deal of mitigation of energy use in industries outside of the ICT arena, commerce and domestic life.

"It is not just the obvious examples of reducing travel by the use of video conferencing, but also the widespread use of IT to drive energy efficiency in industry such as mining and manufacturing," says Delepine.

According to Atul Kamat, head of program office at eHosting DataFort, two key factors that make a data centre 'green' are maximum energy efficiency and minimum environmental impact.

Kamat says that in order to have a less negative effect on the environment a data centre should have a strategic focus on efficient systems design, asset selection,

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green building, renewable energy sources, energy-efficient operations, capacity management, waste management and a minimal environmental footprint.

ISIT Middle East's Vaidya notes, however, that cost is a major hurdle to the implementation of these types of data centres in the Middle East.

"Almost 90% of the reasons why they are not widely accepted in this region are due to the cost factor," observes Vaidya. "We believe that a lack of incentives attached to green energy generation and use is a reason for a slow adoption rate. Energy derived from fossil fuels is still relatively cheaper, and therefore governments should look to diversify away from such energy sources."

Increasing importance

As pointed out by the experts, data centres tend to use a large amount of energy in order to function effectively. Despite this, APC's Delepine cites the World Wildlife Fund, in asserting that data centres have been touted as the way to "save the first billion tonnes" of CO₂.

He also points to the Global eSustainability Initiative SMART 2020 report, which states that "the intelligent application of ICT can reduce our annual global emissions by 15% by 2020".

Delepine says: "The European Commission Communication to the Parliament terms it 'a crucial part of the solution to climate change' on 'mobilising information and communication technologies to facilitate the transition to an energy-efficient low-carbon economy'. In other words, the green data centre is part of the solution to environmental impact and not a part of the problem."

Over the past two to three years, ISIT Middle East's Vaidya notes that the concept of green technology has grown from "a requirement to a necessity".

"The market is growing exponentially, and while this is a very promising thing from one side, on the other side the power requirement also is growing," he says.

"Today this balance is on the wrong side, but hope can be kept on tipping the scales soon. It is not only in data

centres, but also in other cases that green technology is catching up."

Vaidya points to improvements in technologies such as cloud data centres, improved server utilisation and server virtualisation, and storage, which currently accounts for up to 30% to 40% of data centre power requirements, as playing key roles in the ICT industry reducing its carbon footprint.

"It is very clear that human reliance on IT is only going to grow," he remarks. "If green initiatives are not adopted quickly enough, we stand to pollute the globe exponentially and this has a direct impact on people and communities. For long-term survival, adopting green technologies and executing green initiatives is imperative."

Size and design

A data centre, while focused on storage and operational roles, can also have a lower carbon footprint in the way it has been designed.

APC by Schneider Electric's Delepine says that his employers are committed



Data centres could have an important role to play in the fight against climate change.

to providing, wherever possible, materials and parts for its data centres that are not only designed to be recyclable but “more importantly reusable”.

“The design seeks to minimise energy use, water use and wastage while maximising human health and promoting biodiversity,” explains Delepine. “Site selection is important in placing the facility as close as possible to renewable energy sources and optimising the use of passive-mode systems.

These factors, says Delepine, include built-form configuration and site layout, orientation on the site, facade design, solar control devices, passive daylight devices, built form colour, vertical landscaping, wind and natural ventilation, and mixed-mode systems to augment ambient energies of the locality.

In respect to the power used to fuel one of these centres, eHosting DataFort’s Kamat comments that there is an ever increasing pressure on the IT industry to adopt green business practices through the use of renewable energy.

Kamat notes: “This pressure not only comes from outside factors such as environment organisations, but from within

the industry itself, as the global energy crisis can send the cost of power soaring. Data centres are notorious power drains, which makes them the most obvious starting place when it comes to addressing renewable energy sources.”

Kamat says that it is important to bear in mind that renewable energy can be reliable when compared to fossil fuels and that while the initial set up costs might be higher, running costs are “significantly lower” than traditional energy sources.

“The price of renewable energy isn’t likely to rise with demand, which means that running costs will remain relatively stable,” he points out. “Renewable energy is also less likely to suffer from periodic interruption owing to political instability or controversial world events.”

Government support

While ‘greener’ data centres begin to crop up in larger numbers across the Middle East, APC by Schneider Electric’s Delepine is adamant that the region’s governments must continue to spearhead such initiatives, and admits that APC are currently in discussion with a few of them.

“These activities are generating a high level of awareness among the public and private sectors and we hope that the pace picks up in the coming months,” comments Delepine.

eHosting DataFort’s Kamat says as the market in the Middle East matures, the

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understanding and relevance of green technologies is growing.

“The adoption is seen both in consumer and enterprise segment,” Kamat notes. “Data centres play a key role in an enterprise IT network and organisations are beginning to understand the immense resource requirements, especially in the area of cooling of the data centre space.

“Due to the extreme climate in the region, this is a major disadvantage and organisations are beginning to work with experts and consultants to address this issue.”



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