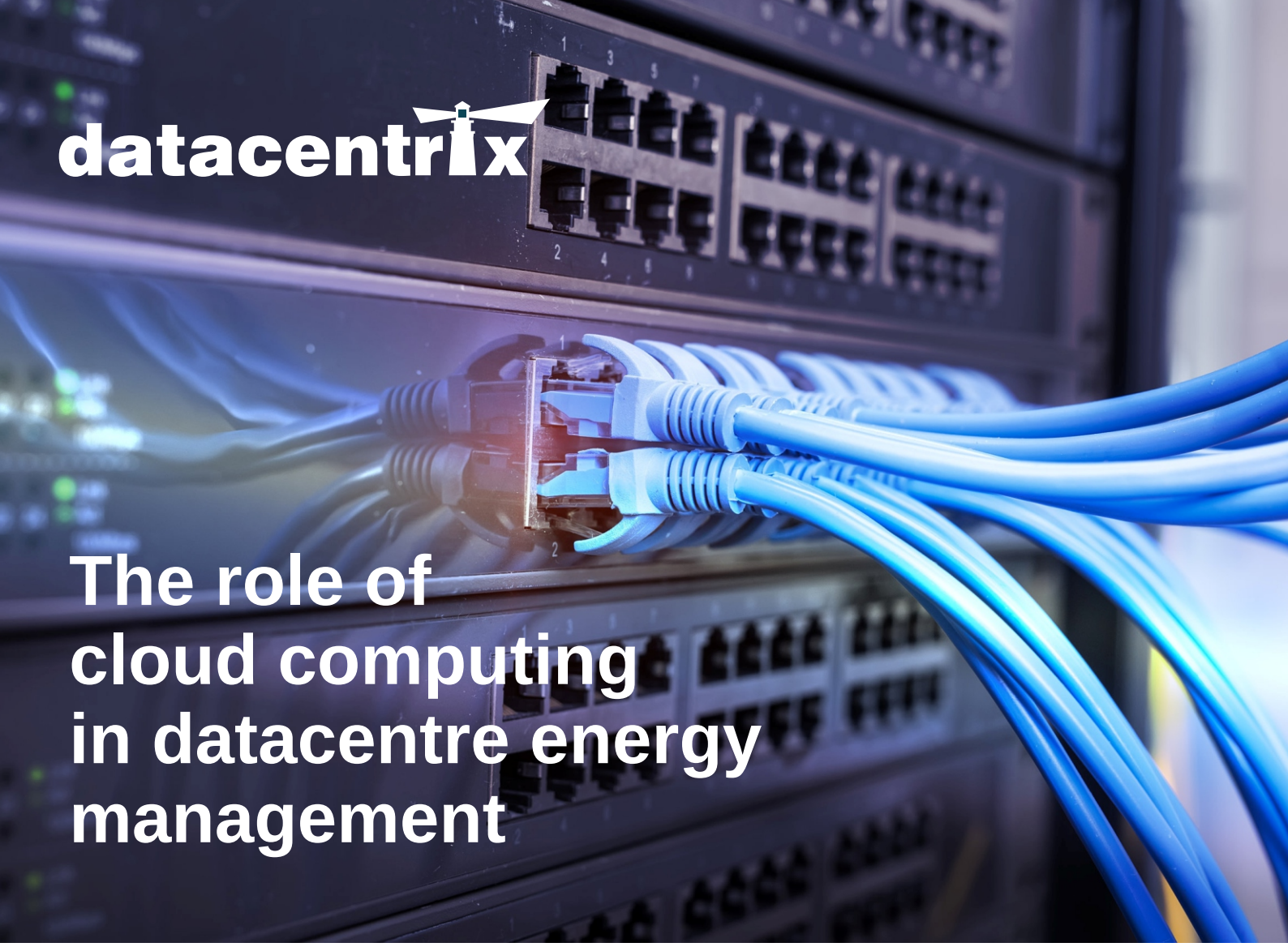

The role of cloud computing in datacentre energy management

Datacentres are an indispensable part of computing infrastructure, particularly from the perspective of cloud and colocation options. This is an excellent starting point for companies to transition towards more environmentally-friendly energy management practices, particularly when the abundance of potential renewable energy sources, like wind and solar in South Africa are considered. Many of the newer tier 3 and 4 datacentres utilise a hybrid energy solution including solar, wind or hydro power.

Datacentrix' Louis van den Berg provides his top recommendations on how and why this transition is not only necessary but also achievable in today's landscape.

Reducing datacentre dependency on the grid

Electric power is an important resource when it comes to critical infrastructure. The response protocol to a power outage should be part of any company's business continuity plan. However, the best option is to reduce dependency on the grid as far as possible. Two main options are to either select a service provider that offers a co-located, cloud-based service with the necessary energy management services in place. Or, to upgrade the existing datacentre or re-imagine it completely to include hybrid solutions that use a combination of renewable, battery and utility power.

Subscribing to sustainable practices

There is a thin line between the redundancy of infrastructure, and financial configurations and OPEX availability. A well-structured approach will ensure greater sustainability when designing a datacentre. Considerations about whether the datacentre will be hybrid, rely on batteries and uninterruptible power supplies (UPSes) or rely solely on solar or wind power must be asked upfront.

Making room for green energy

In South Africa, we are in a very fortunate position when it comes to wind and solar energy. Our coastal regions are ideal for wind farms, while inland regions have access to high levels of solar energy, as well as expansive areas for the building of solar farms. The presidential announcement earlier this year that companies producing excess power will be able to sell it through the transmission network, subject to agreements with Eskom and municipal authorities, is a favourable incentive for local energy entrepreneurs.

> The emphasis now is on moving to co-located services that harness cloud technology and using virtual machines and hyperconvergence to provide processing power. Companies are becoming more confident about moving their applications and data to the cloud where energy-efficient servers are utilised within a virtual environment.

Formulating an energy management strategy

The critical starting point in formulating an energy management plan is setting up a sustainability strategy, which outlines the planned approach – whether hybrid, solar or wind. If setting up your own green energy farm seems too extreme, then finding a service provider for green energy would be your next step. But, if building a green energy farm is for you, then contracts must be negotiated with the National Energy Regulator of South Africa (Nersa) and Eskom to establish the power to be sold back into the grid, or to be used to power other datacentres or office parks. Careful monitoring of carbon emissions will provide insight on the most financially viable options.

Cloud technology is helping companies to meet their green targets

Today, business leaders are under increasing pressure to control and decrease carbon emissions and to reduce carbon footprints. Legacy equipment ran everything on a specific server that emitted heat and used high levels of energy. Most legacy datacentres don't have the capacity to handle new volumes or the capability to handle the new complexities of digital transformation. The emphasis now is on moving to co-located services that harness cloud technology and using virtual machines and hyperconvergence to provide processing power. Companies are becoming more confident about moving their applications and data to the cloud where energy-efficient servers are utilised within a virtual environment.

Louis van den Berg,
Consultant at Datacentrix

Powering a datacentre efficiently

Efficient power management requires a holistic approach that must also include optimising certain datacentre operations and processes, such as using temperature control by way of a hot and cold aisle strategy for greater temperature efficiencies. It's also important to look at what the environment can provide. For instance, the use of cold water in a place like the Free State, where the Sterkfontein Dam could be used to generate hydropower, as well as to cool a datacentre.

Elzette du Preez on edupreez@datacentrix.co.za