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**THE NEED FOR SUSTAINABILITY IN DATA CENTRES**

 ***“Switching from fossil fuel to renewable energy doesn’t resolve the data centre industry’s energy consumption problem, it just moves it sideways,”* says Steve Pass of DataQube**

For the last 30 years the UN has been bringing together world leaders to an annual summit, known as COP, to address climate change. 2021 marks the summit’s 26th anniversary. Taking place in Glasgow, and with the UK at the helm, [COP26](https://ukcop26.org/) will attempt to accelerate action towards the climate change goals set out in the [Paris Agreement](https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement).

Central to the climate change debate are the different energy sources and their associated CO2 emissions. As massive energy guzzlers, the world is closely watching the large data centres and the steps they’re taking to redress the situation. And you can understand why. As the world goes digital and embraces IoT and automation, an unavoidable side-effect is the unimaginable volume of data being generated as a result and this needs handling in real time. However, efficient data processing needs electricity and lots of it to power the required high-performance computers and associated cooling tech. According to the [IEA](https://www.iea.org/reports/data-centres-and-data-transmission-networks) the data centre industry accounted for 1% of global energy consumption in 2019. This figure is predicted to increase five-fold over the next 10 years as 5G goes mainstream and AI and machine learning (ML) technologies come into their own.

**Overall energy consumption needs to be reduced**

To put data centre energy usage into perspective, [binge watching “Peaky Blinders](https://bigwnews.com/celebrities/streaming-a-season-of-your-favourite-netflix-show-produces-pollution/)” generates as much CO2 as a 200-mile car journey, data pertaining to the emissions of a zoom video call is conspicuous in its absence, and the data centres, cables and servers used to stream the international hit “[Despacido”](https://www.aljazeera.com/economy/2020/2/28/emissions-possible-streaming-music-swells-carbon-footprints) consumed same amount of energy as Chad, Guinea Bissau, Somalia, Sierra Leone and the Central African Republic combined in a single year.

To exacerbate the situation, it is predicted that around 125billion IoT devices will be in widespread use by 2025, all generating data, and all-consuming energy. When you factor this in with the infrastructure changes and data processing requirements needed for smart cities, smart manufacturing, driverless vehicles etc, power consumption at these levels is simply unsustainable long term.

While the tech giants are doing their bit to redress climate change by switching from fossil fuel to renewable energy sources as part of their respective CSR policies, their overall energy usage levels are still going up and this what needs to be curbed. Renewable energy sources may well be less harmful to the environment than fossil fuels, if you start to examine the finer details of green energy supplies, they’re not quite as sustainable as they might appear on the surface.

**Some unspoken facts**

Solar energy production should in theory be the most sustainable energy source of all, it does however, have a number of unwanted side-effects associated with it. For starters, many of the solar panels installed on rooftops in Europe and the US have left behind a legacy of toxic pollution in rural China because the polysilicon producers, instead of installing the necessary pollution-control equipment, are simply dumping their toxic waste directly into the countryside. They are also highly reliant on water consumption. Most of the industrial-scale solar farms are situated in hot, dry countries with harsh climates, and the solar arrays need to be constantly kept free of debris if they are to perform optimally. As such millions of gallons of water are sprayed over these huge panels, depleting these already arid landscapes of a vital natural resource.

Wind energy isn’t without its challenges either because the giant blades that power the turbines are built from non-recyclable materials. What’s more, most of the wind turbines built in the 1990s are approaching end-of-life and thousands of disregarded blades being buried in huge landfill sites.

Switching energy sources is not overcoming the energy consumption problem it’s just moving the problem sideways; the industry needs to rethink its energy and infrastructure strategies. But this is easier said than done in a world driven by tech and with an industry undergrowing explosive growth to keep pace with public demand for seamless data handling.

**An alternative approach is needed**

What if there were an easy way for the data centres to reduce their overall energy consumption from day one? Not only would this go a long way towards optimized PUE, but it would also give them a smaller carbon footprint from the outset. The answer to the industry’s power dilemma is closer to hand than you might think thanks to a disruptive approach being pioneered by DataQube, which, if successful could change the face of the industry.

Built from the ground up by a group of experts who understand the impact IoT, and automation is set to have on data handling going forwards, DataQube have developed a novel data centre system that consumes less energy than regular data centres from day one.

This is achieved through a unique design architecture and person-free layout. This in turn delivers a significantly lower carbon footprint compared with traditional edge computing setups because the energy transfer is dedicated solely to powering computers. The system’s efficient use of space combined with its optimized IT capacity also makes for a smaller physical footprint because less land, raw materials and power are needed from the outset.

Indeed, feasibility studies have shown that DataQube’s fresh approach offer the potential to reduce power consumption by as much as 40% and Co2 emissions by as much as 60%.

With efficient data handling integral to everyday living, not to mention acceleration in AI and ML practices, both of which are fundamental to IoT and automation, data centres need to rethink their infrastructure layouts if they are to become carbon neutral and the UK’s 2030 targets are to be met. DataQube offers a viable means of making this possible.

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