

SUSTAINABILITY – MOVING TO THE CLOUD



WHITE PAPER

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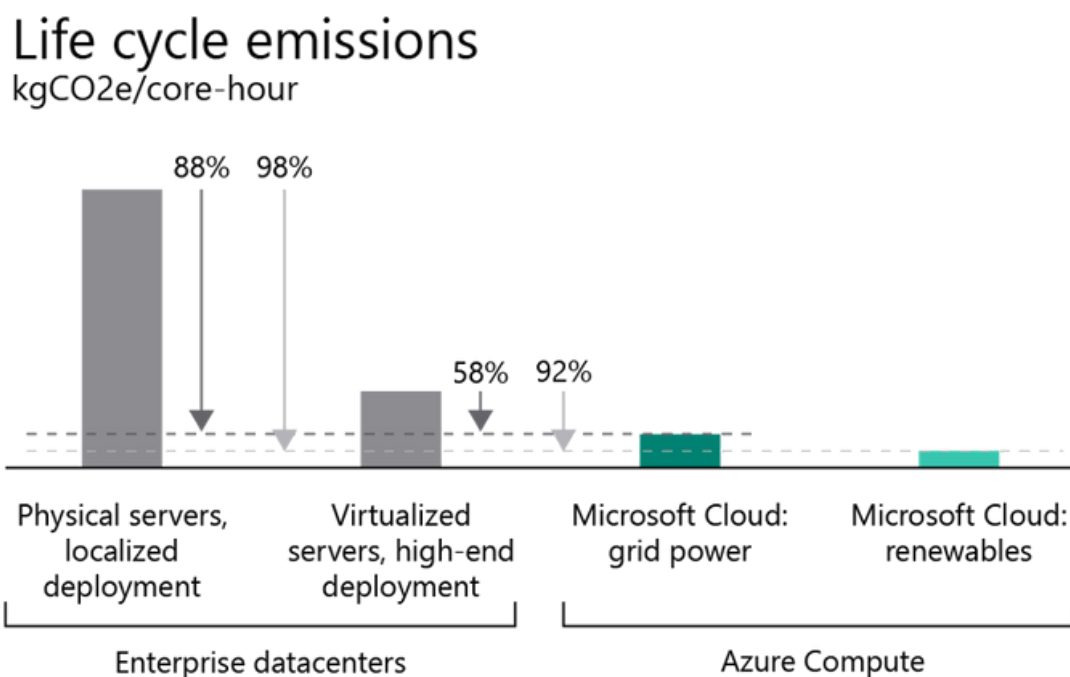
SUSTAINABILITY - MOVING TO THE CLOUD

Cloud computing has the potential to offer huge operational and financial advantages to businesses that adopt it, but recently, large data centres are receiving negative publicity for their energy use.

It is possible to lower overall IT energy usage and associated carbon emissions by switching from numerous on-premises servers to a few large data centres. With this in mind, Microsoft commissioned a study to compare the energy consumption and carbon emissions of four applications in the Microsoft Cloud with their on-premises equivalents:

- Microsoft Azure Compute
- Microsoft Azure Storage
- Microsoft Exchange Online
- Microsoft SharePoint Online

Together, these cloud services use roughly half of the energy used in Microsoft datacentres. The study took into account the entire life cycle for the computing scenarios to provide the most complete and accurate picture possible (from manufacturing to end-of-life).



kgCO₂e = kilograms of carbon dioxide equivalent. Microsoft Cloud: grid power includes emissions associated with data centre electricity consumption before taking into account the purchase of renewable electricity.

Main Drivers of Sustainability with Cloud

Four main drivers contribute to the smaller energy and carbon footprint of the Microsoft Cloud.

- IT operational efficiency,
- IT equipment efficiency,
- Data centre infrastructure efficiency and
- Renewable electricity.

The energy needed to provide the services is decreased by the first three factors—IT operational efficiency, IT equipment efficiency, and data centre infrastructure efficiency. The fourth is the procurement of renewable energy, which by 2025 will supply all the electricity used in Microsoft's campuses, buildings, and data centres. Given that the utilisation of servers in the cloud is significantly higher than on-premise this gives a huge efficiency gain. Increasing the utilization rate from 10 per cent to 40 per cent will allow a server to process four times the previous load, while the power draw by the server may only increase 1.7 times.

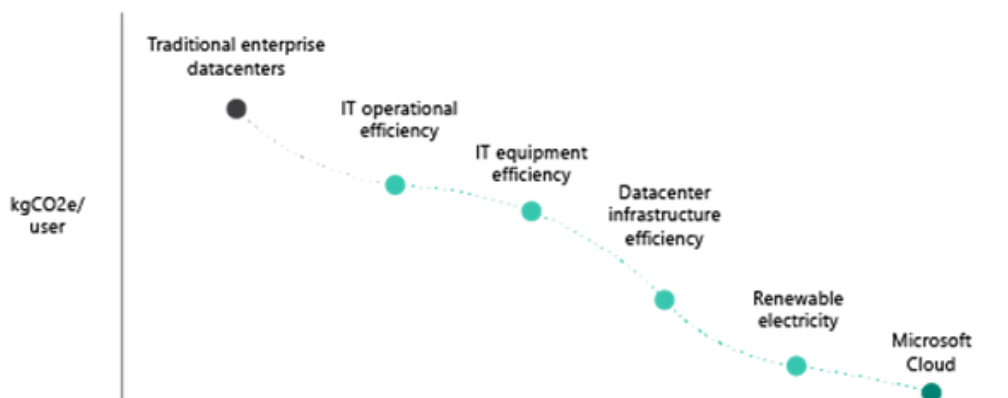


Figure 1*: The four features of the Microsoft Cloud that reduce environmental impact.*kgCO2e= kilograms of carbon dioxide equivalent

By using cloud-based spatial analysis, renewable energy transitions are made possible, as are material waste savings resulting from superior data insights, and focused medical R&D as a result of quicker analytics platforms.

**“Migrations to the public cloud can reduce CO2 emissions by 59 million tons per year which equates to taking 22 million cars off the road”
- Accenture**

Why Opt for Cloud Computing

- With the cloud, there is no need to own and maintain physical hardware or worry about disposing or recycling either.
- Instead of buying and operating IT equipment, you can use the cloud as a service and only pay for what you need, without the worry to buy the equipment you may or may not need e.g., computers sitting around idly.
- After migrating to the cloud, you no longer need to worry about power requirements, space considerations, expensive computer hardware, or software updates.
- Switching to a cloud experience can fast-track your ESG goals because when an IT department switches to a greener, more sustainable cloud technology, the whole company benefits.
- Moreover, by moving from storing and analysing data in legacy infrastructure to a modern cloud, you can choose a greener solution and sustainable growth for many years to come.



Massive amounts of data can be gathered, analysed, and stored using cloud computing, which also lowers the total cost of ownership for IT and boosts business agility. Now, businesses, governments, and community organizations can gather, store, and analyse data at the size, speed, and depth never before possible.



The globe is currently experiencing significant technical advancements in fields including robotics, genetics, materials sciences, 3D printing, and others. The catalyst for these technological developments is cloud computing. By delivering considerable economies of scale and enabling access to data and apps from anywhere, moving to the cloud can help businesses lower their total cost of ownership and achieve more business agility.