ITU Side Event -
Unlocking the potential of digital technologies for a sustainable energy transition

Sustainable Energy Transition through Energy Efficient Data Centres

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UNEP DTU PARTNERSHIP | COPENHAGEN CENTRE ON ENERGY EFFICIENCY
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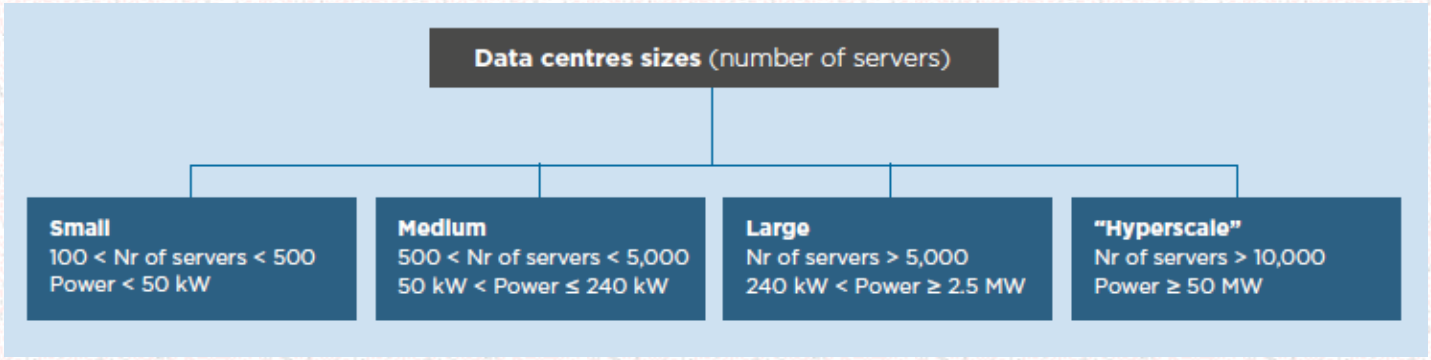
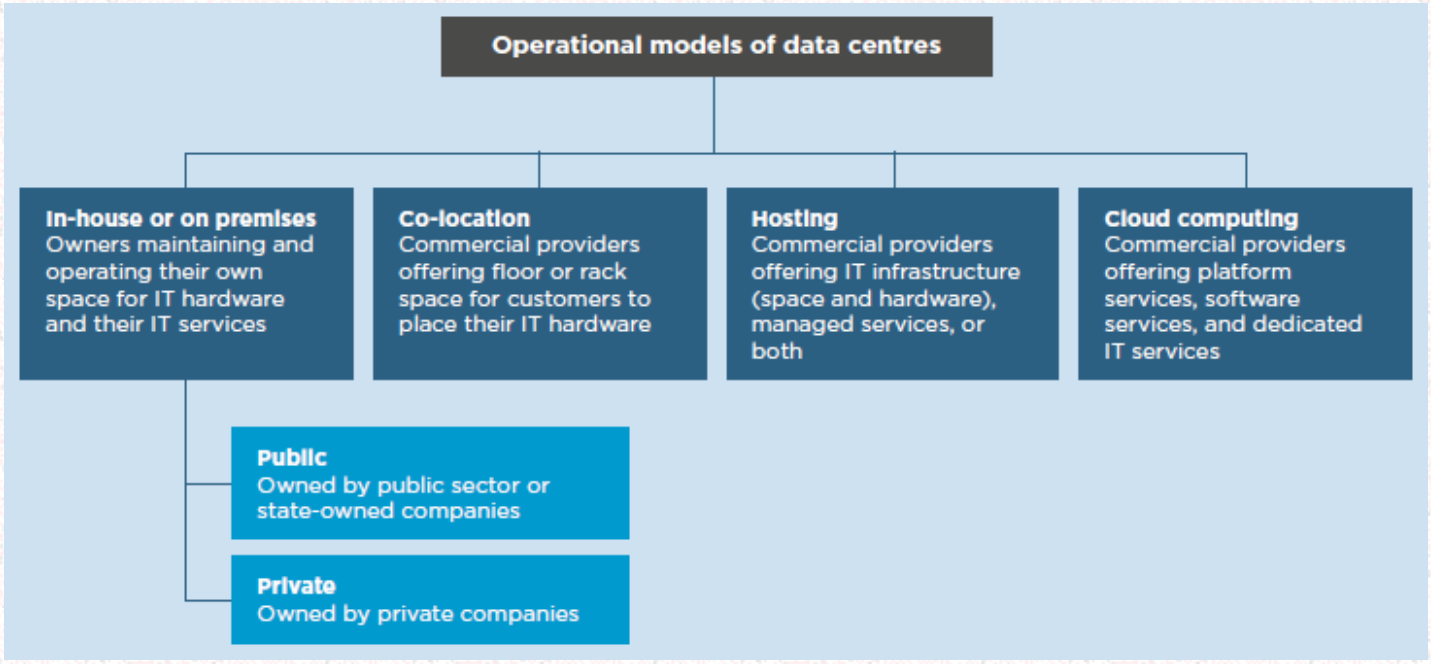
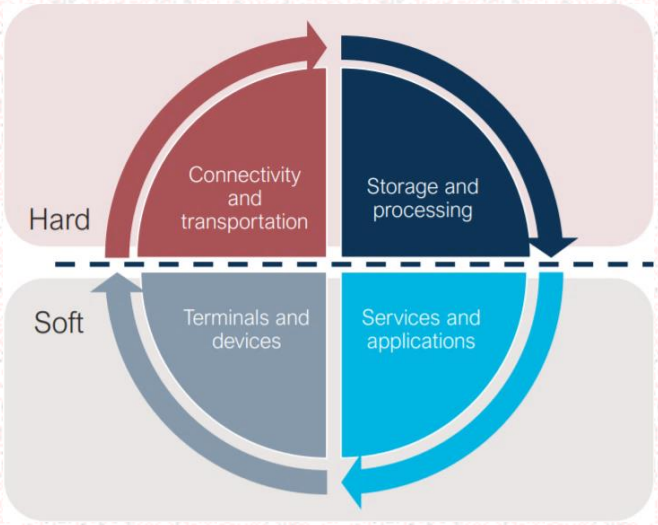
- Introduction to data centre
- Data centre - the power house of digital technologies
- Energy and environmental impacts of data centres
- Energy efficiency strategies
- Environmental efficiency solutions





A data centre is a dedicated building, which houses the technology for data processing, data storage and data communication of one or more organizations.

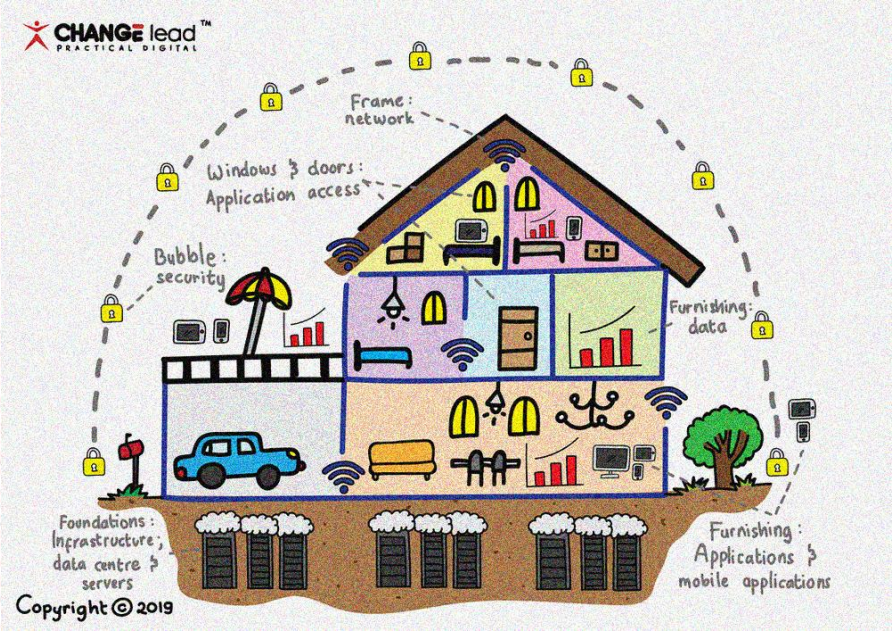


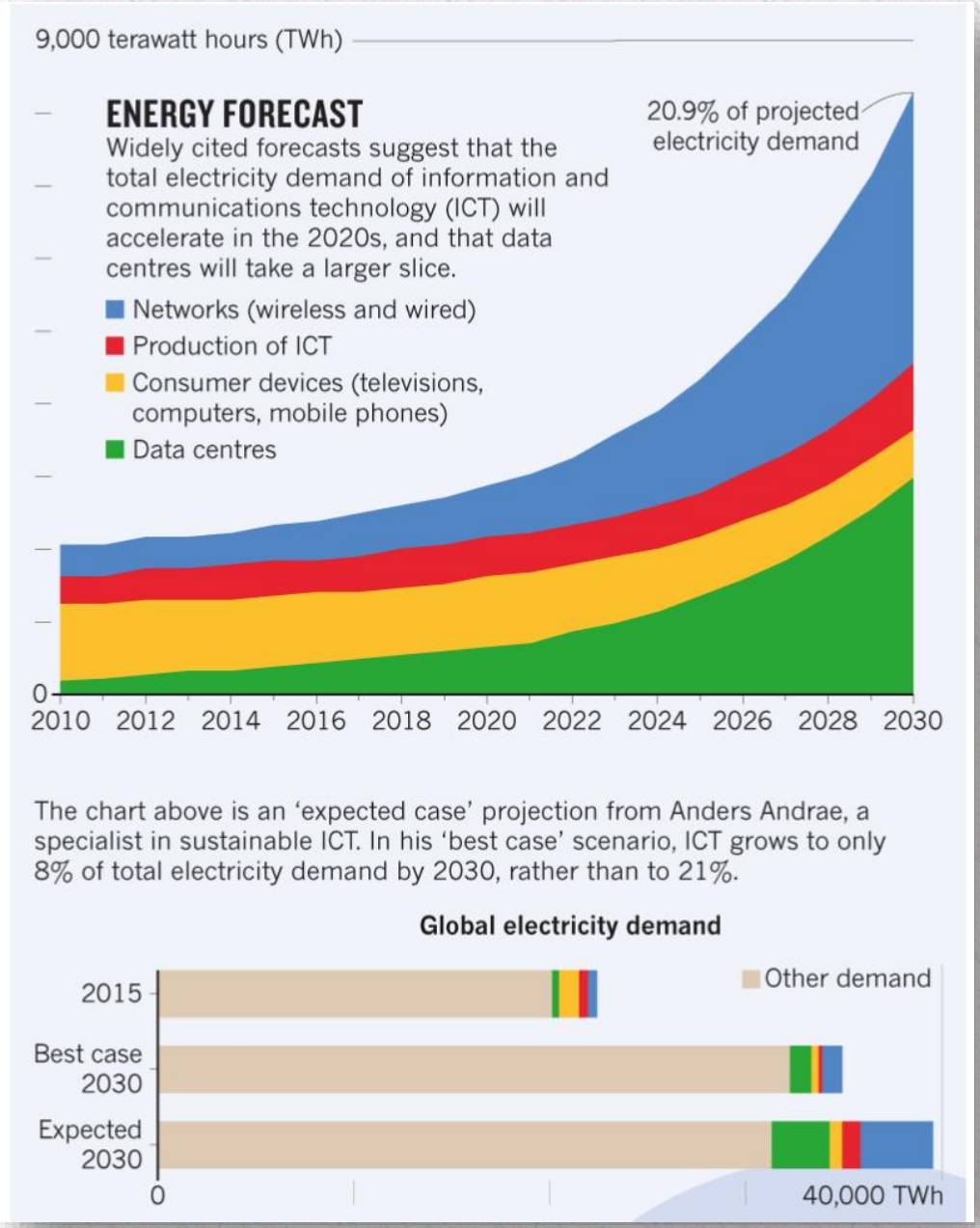
Digital Infrastructure is an integrated system including 2 categories:
(hard) physical and (soft) non-physical

It is the foundation of the digital economy.

Digital Infrastructure is no longer limited to hard physical assets, structures, and facilities. It extends to the architecture that connects it and to the technological applications to operate it.

We need connectivity infrastructure and datacenter infrastructure to support locally-deployed digital services and the growth of a local digital ecosystem.





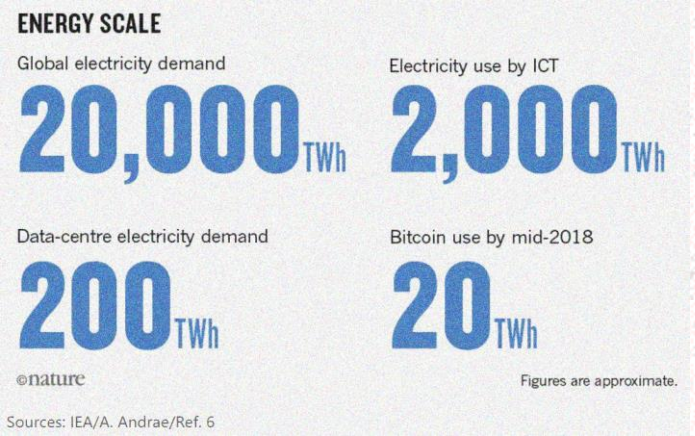
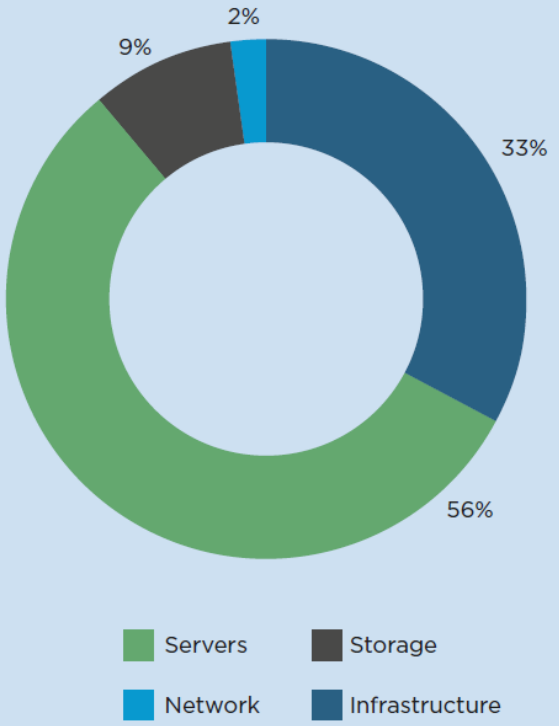
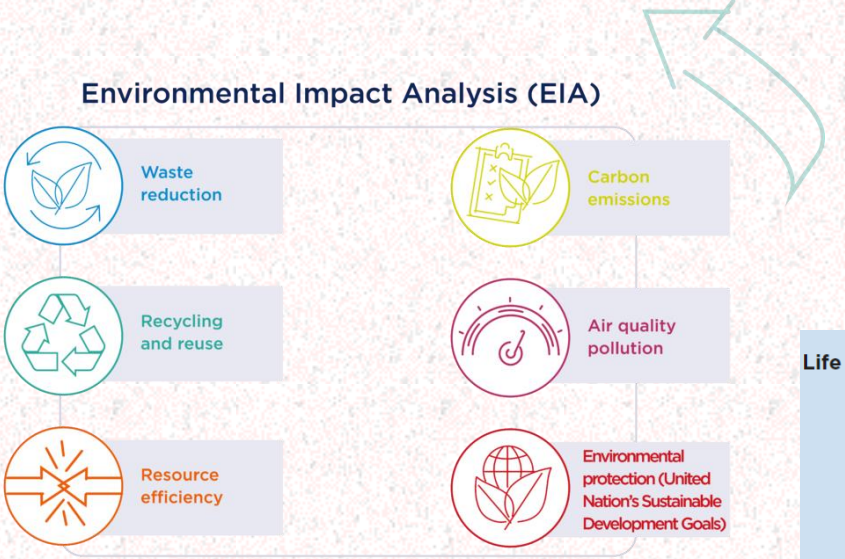


Figure 3. Share of energy demand by different components in data centres globally (2020). Elaborated with data from International Energy Agency[vi]

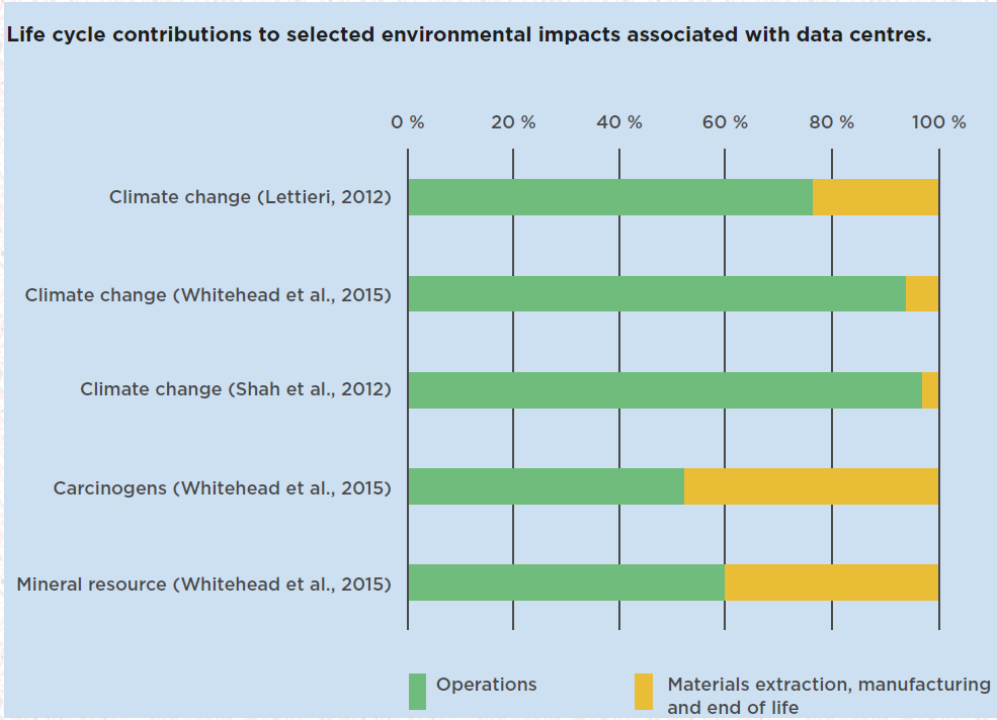


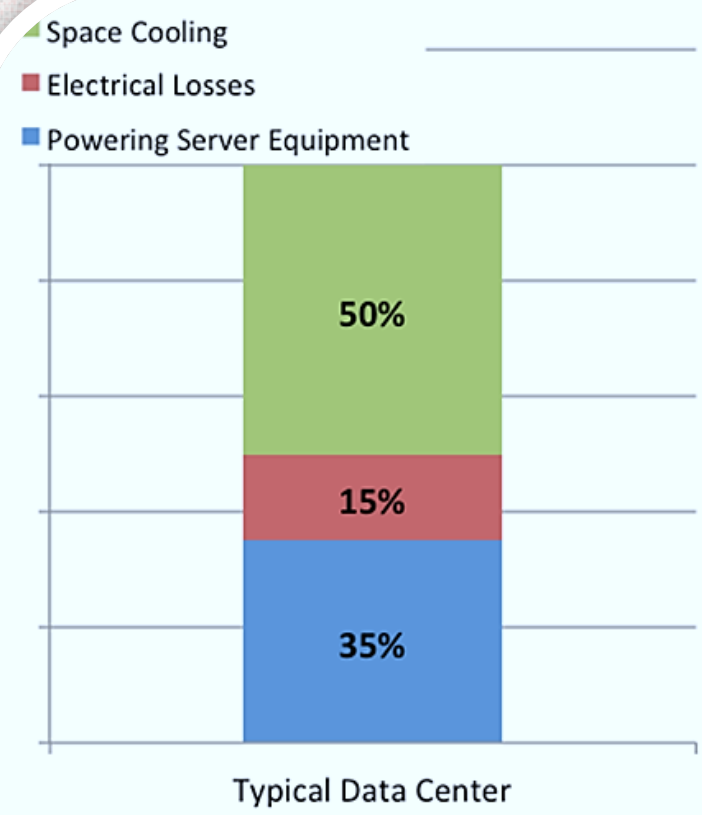


Source: rlb.com

The inclusion of the entire life cycle of data centres is essential to prevent environmental burden-shifting from one life cycle stage of the system to another or from one component to another.

An estimated 20 to 50 million metric tonnes of E-Waste is disposed of globally every year depositing heavy metals and other hazardous waste into our landfills. If measures are not taken E-Waste is expected to grow 8% each year.





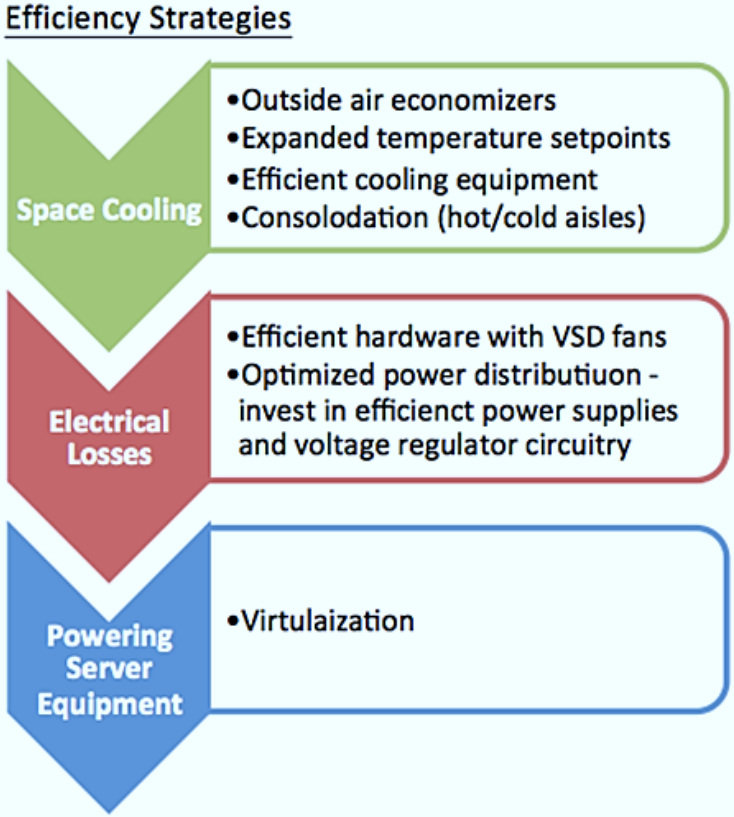
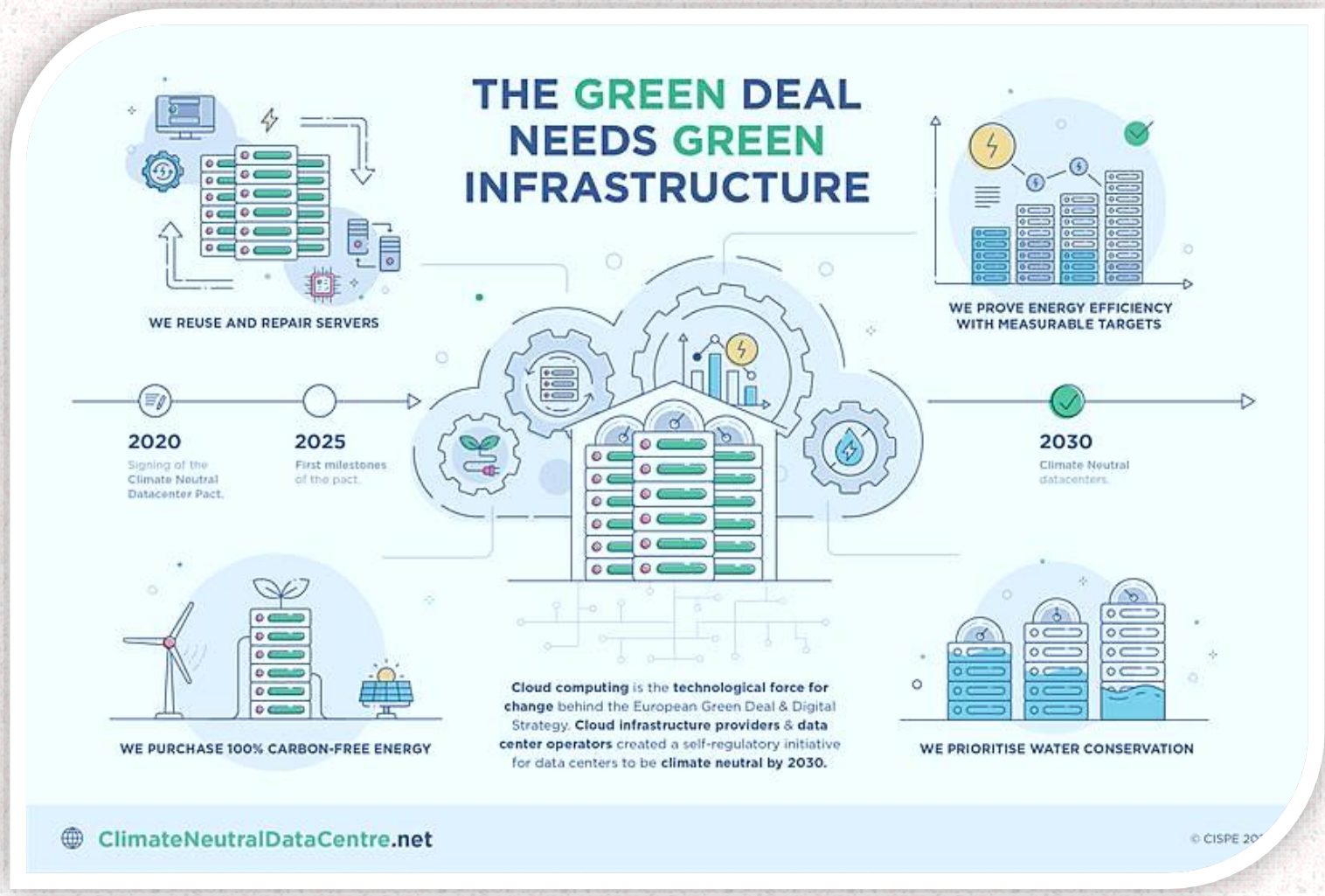


Figure 2: Energy Use Breakdown and Efficiency Stratgeies for Data Centers


THE GREEN DEAL NEEDS GREEN INFRASTRUCTURE
WE REUSE AND REPAIR SERVERS
WE PROVE ENERGY EFFICIENCY WITH MEASURABLE TARGETS
2020
Signing of the Climate Neutral Datacenter Pact.
2025
First milestones of the pact.
2030
Climate Neutral datacenters.
WE PURCHASE 100% CARBON-FREE ENERGY
Cloud computing is the technological force for change behind the European Green Deal & Digital Strategy. Cloud infrastructure providers & data center operators created a self-regulatory initiative for data centers to be climate neutral by 2030.
WE PRIORITISE WATER CONSERVATION
ClimateNeutralDataCentre.net

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Thank you!