

How are operators driving sustainability in their metro networks?

In light of CSPs' net zero commitments, significant growth in network traffic makes it imperative to drive down emissions



Metro network traffic will grow by at least **3 times** by 2030, representing the largest growth area of the telco network

With the energy crisis, sustainability has now become top of the agenda. The CEO and CFO have become routinely involved in these discussions where they weren't before.

- EVP, Infrastructure, Tier-2 operator, EMEA

To meet their net zero commitments, operators must develop new strategies to reduce their Scope 1, 2 and 3 emissions

Scope 1	Direct emissions from daily operations e.g. fuel combustion	Scope 2	Indirect emissions from electricity suppliers	Scope 3	Indirect emissions from other suppliers e.g. embedded in kit
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Most operators are actively pursuing 'common practice' initiatives to reduce energy consumption



Upgrading with modern technology

Old, legacy technologies are replaced with newer and more efficient alternatives (e.g. copper with fibre).



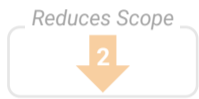
Sunsetting 2G/3G networks

These networks are supported by less efficient legacy equipment.



Eliminating waste

Improving reporting and tracking to identify and fix unintended, wasteful energy use e.g. blocked vents.



Upgrading from copper to fibre has also helped reduce fuel consumption – there are fewer breakdowns and truck tolls.

- Corporate sustainability team, Tier-1 operator, EMEA

Reusing specific energy metrics (watt per GB), we can see the impact of sunsetting 3G in some areas and refarming the spectrum.

- SVP, Head of Network Architecture, Tier-1 operator, EMEA



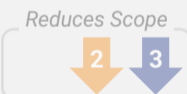
Resource sharing

Different services can be converged on a single architecture, reducing resource duplications and improving utilisation.



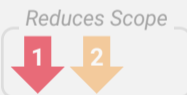
Modular design

Modular components can be individually replaced resulting in longer hardware lifetime and fewer rip-and-replace.



Automation

AI Ops can predict faults, optimise operations, reduce energy intensity of HVAC and introduce sleep modes.



Any automation for remote troubleshooting is important for saving both costs and emissions, always trying to minimise dispatch vehicles.

- Associate Fellow, Tier-1 operator, NAM

While network convergence was not driven by sustainability, we have seen benefits. We want to continue – fewer layers and devices to reduce consumption and embedded carbon.

- SVP, Head of Network Architecture, Tier-1 operator, EMEA



Some operators are already implementing 'best practice' initiatives, often learning from cloud practices

For operators already adopting 'best practice', focusing on 'next practice' will be key to meet net zero targets



Spine and leaf architecture

Horizontal network design that simplifies 'scaling out' and provides greater network resilience.



Decentralising routing fabric

Edge deployments provide decentralisation by keeping more traffic local and reducing traffic to the core.



Right-sizing equipment footprint

Operators are focusing on minimising their physical footprint with smaller equipment.



Decentralisation will have a meaningful impact. We will need to scale to additional network locations, but will need physically scaled down solutions to deliver on this.

- VP, Wireless Strategy & 5G Services, Tier-1 operator, NAM

Spine and leaf architecture does provide direct connectivity back to every line card, connecting them in a way that allows you to easily add more line cards.

- Network planning and technology, Tier-1 operator, NAM

What should operators do next?

Systematically incorporate sustainability in design & planning

Operators should incorporate solutions that clearly apply sustainability-by-design principles at all levels: technology, architecture, equipment

Embed sustainability more widely into your organisation

Best practice telcos have sustainability integrated within their culture, evaluation tools, metrics, KPIs to ensure ongoing systemic and sustainable change.

Find out more in our full length report

[Download the full report](#)

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