

## Green telecommunications

As the world grapples with the pressing need for sustainable practices, the telecom industry is taking significant strides to reduce its environmental impact and promote green initiatives. In 2024, several key trends and innovations are shaping the path towards a greener telecom sector.

Many telecom companies are aggressively moving towards renewable energy sources to power their operations. For instance, some telecom operators have already achieved 100% renewable energy usage, and many more aim to reach at least 50% by 2025. This shift is crucial as the telecom sector is a significant consumer of energy, and transitioning to renewables can substantially lower its carbon footprint (Deloitte United States).

In 2024, it is expected that the telecom industry will see a 2% reduction in its carbon footprint, equivalent to about 12 million tons of CO<sub>2</sub>e. This trend is likely to continue into 2025 with similar reductions anticipated (-).

A significant sustainability initiative involves phasing out older, less efficient technologies. The industry is moving away from copper wireline networks, which are energy-intensive and less reliable compared to modern fibre optics. Countries like Singapore have already completed this transition, and many European nations are expected to follow suit, aiming for substantial copper network retirements by 2025 (Deloitte United States).

Similarly, 3G networks, which consume more power relative to the data they handle, are being decommissioned. The shift to more energy-efficient 4G and 5G networks not only improves service quality but also reduces operational energy costs by around 15% (Deloitte United States).

The deployment of 5G technology presents both challenges and opportunities for sustainability. While 5G equipment can be power-hungry, new technologies such as Massive MIMO and beamforming enable higher efficiency. Innovations that allow 5G radios to enter sleep mode when not in use are expected to save significant amounts of energy, translating to gigawatt-hours of electricity and megatons of CO<sub>2</sub>e annually (Deloitte United States).

The overall commitment of the telecom industry to sustainability has shown promising progress. According to the 2023 Telco Sustainability Index, the industry improved its overall sustainability score by 9 points, driven by better customer enablement and enhanced transparency in reporting. However, there is still room for improvement, particularly in recycling and waste management practices (BCG Global).

The telecom industry is at the forefront of adopting sustainable practices and technologies. From transitioning to renewable energy and phasing out inefficient networks to greening their vehicle fleets and optimizing 5G

technologies, telecom operators are making significant contributions to global sustainability efforts. As these initiatives continue to evolve, the industry is poised to make even greater strides in reducing its environmental impact and supporting a greener future.

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Telecommunications operators face pressure to build out infrastructure that supports high-speed communications, all with environmental and sustainability concerns in mind. While many operators have pledged to support climate initiatives, the reality is some sustainability strategies are unattainable without additional changes.

Recent reports from GSM Association (GSMA) and ABI Research highlighted the initiatives that telecom operators are taking to tackle climate concerns and the challenges that stand in the way of progress.

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