



THE IMPACT OF 5G IN CLIMATE CHANGE

**CXOS CAN INCREASE BUSINESS EFFICIENCY -
AS WELL AS ENVIRONMENTAL, SOCIAL
AND GOVERNANCE DEMANDS - BY ADOPTING
5G TECHNOLOGY**

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Australia continues to suffer from the ravages of climate change. Still reeling from the devastating bushfires of 2019-2020, recent flooding on the eastern coast is a grim reminder of climate change's far-flung impact. Australia is not alone. Floods across Europe and wildfires in the United States have caused significant damage.

What does this have to do with 5G? The fifth-generation mobile network will enable organizations and communities to curtail our carbon footprint and foster a more sustainable economy through wider connectivity and cloud computing.

5G is expected to reduce carbon dioxide emissions by 330.8 million metric tons by 2025, according to 5G Connectivity: A Key Enabling Technology to Meet America's Climate Change Goals, a report by business advisory firm Accenture.

"This study confirms that U.S. 5G wireless networks will be instrumental in tackling the pressing challenge of climate change," said Meredith Attwell Baker, CTIA President, and CEO, who commissioned the study. 5G implementations combined can contribute 20% to helping the U.S. meet carbon emission reduction goals by 2025, the report states.

Smart cities, optimized buildings, streamlined transport networks, and increased efficiency of inventory stocks and manufacturing are all becoming viable to CXOs that adopt 5G. Accenture states that 86.5 million metric tons of carbon dioxide can be removed from the U.S. economy alone by reducing vehicle traffic, optimizing routes and shifting transport away from private vehicles.

The industry advocacy group UK5G has provided working examples of 5G improving public transport. A tram service in the Midlands area of England uses 5G-enabled closed-circuit television (CCTV) to improve the maintenance of its services.

In the past, tram maintenance occurred at the end of the working day, creating delays and leading to worsening maintenance issues. Now 5G updates of tram conditions are placed into the maintenance system as soon as they are identified.

UK5G says that confidence in public transport has suffered since the pandemic and poorly maintained trams exacerbated the problem. However, 5G ensures that the trams are always in good condition, making travelers feel more confident about the using the service instead of driving. European neighbors Alba lulia in Romania and the BART system in San Francisco have similar 5G deployments.

Public roadways are also expected to leverage 5G. Francesco del Greco, CIO for the Italian highway operator Autostrade, is introducing innovations that will provide connectivity for motorists on the go.

“Based on the route you take, and if you get stuck in traffic, you may not want to pay as much,” he said of dynamic road toll payments. “We are moving from a fixed price to a flexible price. In September 2021, we started offering cashback via our app, which correlates the average time, roadwork information, and toll usage. This lets us determine if you should be credited for time lost.”

In U.S. manufacturing, 67.4 million metric tons of carbon dioxide can be eliminated through inventory management improvements, real-time asset management, predictive maintenance, reductions in travel, and better processes. These improvements are equivalent to cutting the carbon dioxide emissions of 17 coal-fired power stations in a year.

Real-time monitoring of the built environment, alongside increased use of sustainable energy sources, has the potential to reduce carbon emissions by 67.9 million metric tons, the Accenture report finds. 5G enabled smart meters, energy management systems, and energy grids will enable this reduction.



Smart communities

The European Union is offering grants to civic bodies in member states to develop and implement 5G smart city technologies across the continent. Known as CEF2, the program is part of a broader technology approach to rebuild the EU economy in a post-COVID-19 world.

“5G-quality connectivity has the potential to improve digital services in local areas, playing a key role in supporting a long-lasting economic recovery and social cohesion,” according to the European Commission that oversees the program.

The IEEE has noted that a big challenge for civic bodies is the 5G requirement for cell sites to be 152 meters apart, which can cause planning issues in communities that benefit most from reduced traffic pollution and more efficient cities.

Public utilities are also adopting 5G-enabled smart technologies to reduce carbon emissions and encourage more efficient use of limited natural resources. Thames Water, the largest water company in the UK, uses 5G enabled smart meters in customers' homes and IoT sensors to monitor its infrastructure.

“This will use data sets and machine learning to build predictive algorithms around blockages and the impact on the customer so we can be more proactive rather than reactive,” said Mike Potter, digital transformation director at Thames Water.

“The crucial piece will be how industries leverage cloud-first 5G networks to bring greater innovation into key operational processes,” said Accenture's Peters Suh about his study on the environmental impact of 5G. “Organizations can reap the climate benefits of 5G across their cloud continuum, which includes everything from the public cloud to the edge.”

The COP26 international summit on climate change in Glasgow in 2021 demonstrated to the world economy that climate change is not a future challenge. It must be dealt with now. The growth of 5G is already playing a vital role in helping organizations reduce carbon emissions. CXOs can use 5G to increase cloud-based applications, support remote workforces, cut travel, and enable local communities to thrive. The impact is significant and equally beneficial to organizations and society.



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