

How can 5G help me reduce my carbon footprint?

Through improvements in speed, latency, capacity, and network efficiency, 5G technology can enhance your sustainability efforts

Customer lens

My business needs to reduce its carbon emissions, meet federal regulations, and spend less on energy consumption.



Features and benefits



1

Compared with 4G networks, 5G can help deliver 100-times higher bandwidth, which will support a greater number of connected devices.

That is important for organizations in helping reduce their carbon footprints because it enables greater connectivity of machine-to-machine communication, which is key to energy efficient technology such as smart and artificial intelligence systems.¹

Benefit: You use less energy to get the information needed to run your business.

¹ Monica Kuroki, Alexandru Alexa, Doug Waters, Janelle Ho, Charukesh N R B, 5G Connectivity: A Key Enabling Technology To Meet America's Climate Change Goals, (Accenture, 2022).

2

5G enables new and emerging tech

The Internet of Things (IoT), artificial intelligence (AI), and machine learning can help improve energy efficiency by providing real-time and granular data on energy consumption.

Benefit: Your business can more effectively plan or schedule energy usage.



3

5G helps enable emissions-reduction solutions

Higher data speeds and lower latency enable solutions that can help reduce emissions. For example, 5G can help provide near real-time HVAC monitoring and adjustments.²

Benefit: You can see your business impact of meeting Scope 1, 2, and 3 emissions.

² Daron Keskinian, Matthew Crull, and Swati Vyas: Accelerating 5G in Canada: The Role of 5G in the Fight Against Climate Change (Accenture, 2020).

Greenhouse Gas Protocol identifies scopes for emissions:³

- **Scope 1:** Direct emissions from sources owned or controlled by a company
- **Scope 2:** Indirect emissions from purchased or acquired electricity, steam, heat, and cooling*
- **Scope 3:** Indirect emissions across the entire value chain.*

*Not owned or controlled by the company

³ Greenhouse Gas Protocol, Accessed August 6, 2023



4

Cloud-native 5G networks help bring greater efficiency

Cloud-native architecture, which serves as a foundation for 5G, can help deliver huge improvements in power efficiency. This kind of 5G infrastructure can scale up and down based on demand, allowing you to consume less energy.⁴

Benefit: Your business uses less on-premises energy by moving processes to the cloud, which can help you meet a net-zero emissions goal.

⁴ David Allabaugh, "Beyond the hype: sustainable 5G cloud-native architecture and co-creation," Fujitsu, Accessed September 5, 2023.

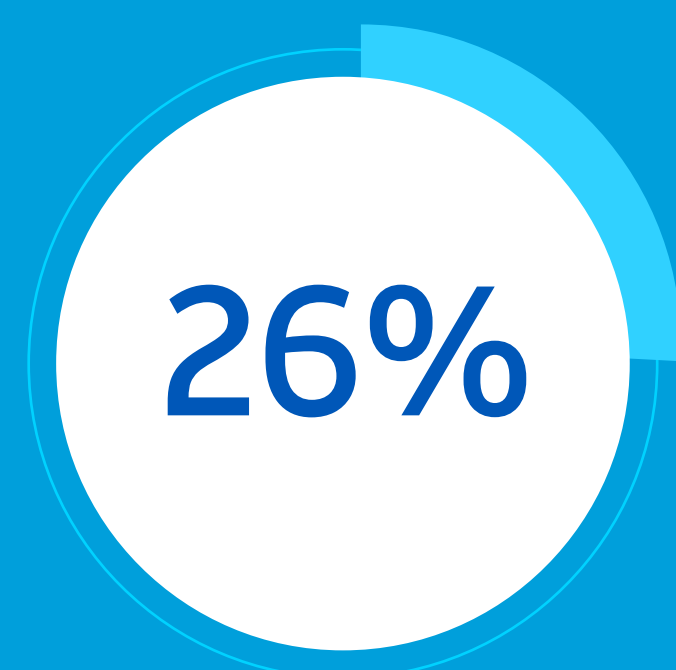


5G-enabled use cases are projected to make up to a **20% contribution** toward the country's carbon emission reduction targets by 2025.⁵

⁵ Monica Kuroki, Alexandru Alexa, Doug Waters, Janelle Ho, Charukesh N R B, 5G Connectivity: A Key Enabling Technology To Meet America's Climate Change Goals, (Accenture, 2022).

5G networks will enable up to 330.8 million metric tons of carbon dioxide equivalent (MMtCO₂e) of additional abatement by 2025. That is the equivalent of removing **26% of all passenger vehicles** from the road in the U.S. for a year—roughly 72 million vehicles.⁶

⁶ Monica Kuroki, Alexandru Alexa, Doug Waters, Janelle Ho, Charukesh N R B, 5G Connectivity: A Key Enabling Technology To Meet America's Climate Change Goals, (Accenture, 2022).



Manufacturing: the smart factory

A Purdue University study found that 5G (specifically, AT&T 5G mmWave) connectivity can help manufacturing facilities run more efficiently and reduce their power consumption and carbon footprint.⁷

⁷ 5G and sustainability in transportation and manufacturing: Discover how research by Texas A&M and Purdue reveals that 5G can be simultaneously great for the environment and bottom-line potential, AT&T Business, 2023.



Transportation: autonomous vehicles

Autonomous vehicles rely on high-speed, ultra-low-latency network performance to function well. And that's where 5G comes into the sustainability picture. It's fast, and it offers—critically—the lowest network latency.

A recent Texas A&M – RELLIS study showed that autonomous battery electric vehicles (BEVs) result in reduced traffic and decreased emissions. What's more, BEVs running in autonomous mode in stop and go conditions used 5G to **optimize battery performance and reduced battery energy consumption by 1.3-1.9%.**⁸

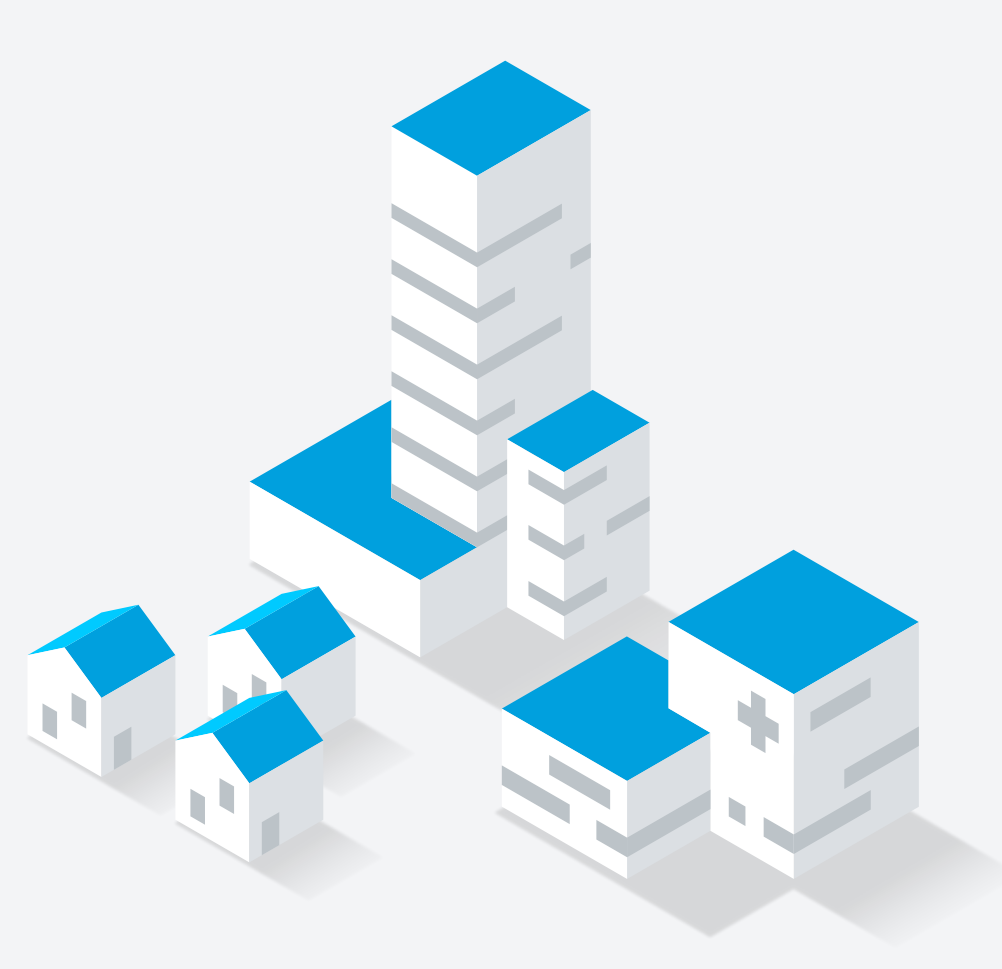
⁸ 5G and sustainability in transportation and manufacturing: Discover how research by Texas A&M and Purdue reveals that 5G can be simultaneously great for the environment and bottom-line potential, AT&T Business, 2023.



Smart cities: resource management

Accenture estimates that 5G's potential impact on cities and transportation could be the equivalent of taking **19.2 million cars** off the road or preventing **9.7 billion gallons of gasoline** from being consumed annually.⁹

⁹ How 5G is Making Cities Smarter and More Sustainable," AT&T, May 26, 2022.



How AT&T supports sustainability

AT&T is applying its global reach, resources, and scale to form the Connected Climate Initiative. By collaborating with other leading technology companies, researchers and non-profits, AT&T has set a goal to develop connectivity-enabled solutions that will reduce a Gigaton (1 billion metric tons) of greenhouse gas emissions by 2035.¹⁰

¹⁰ John Schulz, "Connecting for a Cleaner Future Across Industries," AT&T Connects, April 17, 2023.



Summary

5G can be more energy efficient at transferring data than its 4G predecessor. 5G also helps enable the adoption of new and emerging technologies such as IoT and AI that can help you monitor and optimize your energy consumption. The adoption of 5G technology can enhance sustainability in many industries, including manufacturing, transportation, and smart cities.

Learn more about AT&T 5G for business or contact your AT&T Business representative to connect with an expert who knows business.

[Learn more](#)

Why AT&T Business?

AT&T Business is committed to helping our customers reduce emissions at scale through the power of our connectivity. See how ultra-fast, reliable fiber and 5G connectivity protected by built-in security give you a new level of confidence in the possibilities of your network. Let our experts work with you to solve your challenges and accelerate outcomes. Your business deserves the AT&T Business difference—a **new standard for networking.**