Why “tech for good” is good for business
Did you know some of the technology purchases you make today can help deliver positive incremental impacts on the environment, as well as on your business? Significant advancements in technology can help you meet your sustainability goals using innovative solutions.

**Executive Summary**

New and emerging technologies can help companies make better business decisions, improve efficiencies, save money, and even drive new revenue. In addition to financial benefits, these advancements can help your organization do your part in supporting the planet and meeting your sustainability goals.

Businesses face multiple pressures to make changes that positively affect the environment. Common issues include lowering emissions, reducing water use, and cutting waste. New networking and Internet of Things (IoT) solutions can help you address these issues in innovative ways, while solving some of your tough business problems.

Risks and opportunities related to sustainability are intensifying. Whether driven by your competition, investors, customers, employees, regulators, non-government organizations, or Mother Nature herself, the need to develop a robust environmental sustainability program is on the rise.

AT&T helps businesses integrate environmental responsibility into operations, products, and services. Read more about what the sustainability landscape looks like, where pressures are coming from, and a few of the ways AT&T has combined environmental considerations and tech innovations.

The pressure to prioritize sustainability comes from many sources:

- **48%** of Fortune 500 companies have at least 1 climate (emissions) or clean energy target.\(^1\)
- **69%** of small and medium businesses report that knowing the environmental benefits of a product contributes to purchase decisions.\(^2\)
- **90%** of CEOs say that sustainability is fundamental for success.\(^3\)
- **7,600** of Amazon employees ask for a robust report on how the company plans to deal with its environmental impact.\(^4\)
- **69%** of customers report that knowing the environmental benefits of a product contributes to purchase decisions.\(^2\)
- **48%** of Fortune 500 companies have at least 1 climate (emissions) or clean energy target.\(^1\)

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2. AT&T survey of 1001 small and medium size business responses in June 2018.
6. [https://sciencebasedtargets.org/companies-taking-action/](https://sciencebasedtargets.org/companies-taking-action/)
7. [https://sciencebasedtargets.org/companies-taking-action/](https://sciencebasedtargets.org/companies-taking-action/)
8. [https://sciencebasedtargets.org/companies-taking-action/](https://sciencebasedtargets.org/companies-taking-action/)
Investment in the right technology for sustainability can pay for itself

According to a 2018 analysis by the non-profit Carbon Disclosure Project (CDP), companies that shift to climate-friendly products or services have the potential to reap substantial rewards. How? Often the solution can drive cost reductions in a range of ways—by saving energy, fuel or water costs, or by helping the company make better operational decisions—and the company is able to recoup the original investment in incremental savings.

For example, the CDP report included information from 6,900 companies about the financial risks they are facing due to climate change. While the research group estimated $970 billion was at risk, they also estimated $2.1 trillion in benefits when those companies shift to climate-friendly products and services.³

³ http://smarter2030.gesi.org/

Research indicates that by 2030, information technology will provide benefits across the bottom line, from reducing CO2e and resource use to generating additional revenues and cost savings, as well as providing wider societal benefits.⁸

Lowe’s uses technology for smarter irrigation

Lowe’s, a Fortune 500 home improvement company, invested in a technology-enabled irrigation solution to decrease water waste and costs, reduce associated greenhouse gas (GHG) emissions, and increase operational efficiencies.

Lowe’s serves more than 17 million customers a week in the U.S., Canada, and Mexico. Water is scarce in many of the communities that Lowe’s serves, so Lowe’s looked for ways to reduce the amount of water that was being used for store landscaping. The solution they chose to implement was HydroPoint smart irrigation with AT&T IoT technology. This solution connects control points and sensors to a climate analysis system that controls precise water needs and usage.
Technology creates efficiencies and savings

Environmental considerations in network equipment design

Traditional business networks can be complex, capital intensive, and often have hidden energy use. To simplify and modernize traditional network equipment, the AT&T FlexWare™ device was designed as one device to replace three devices: a router, firewall, and WAN accelerator. The AT&T FlexWare device can reduce electricity use by 130 watts when compared to the average electricity use of a router, firewall, and WAN accelerator. As an example, if a business used 3,500 FlexWare devices to perform the functions previously performed by three devices, annual energy savings would be an estimated four million kWh, generating 2,200 metric tons of GHG emissions. This is equivalent to:

![Diagram showing energy savings](image)

- **Taking almost 475 cars off the road**
- **Not burning more than 250,000 gallons of gasoline**
- **Switching almost 85,000 incandescent bulbs to LEDs**

Technology like AT&T FlexWare not only simplifies and streamlines network deployment and management, but it can also help lower capital expenses, reduce power and cooling requirements, and increase operational efficiency. Read the full case study [here](https://www.business.att.com/content/dam/attbusiness/reports/FlexWare-10x-case-study-2019-report.pdf).
By 2025, there will be 80 billion devices connected via IoT. IoT can power fleet management in energy efficient ways.


IoT and innovative fleet telematics

IoT technology offers many ways businesses can reduce energy costs and GHG emissions. AT&T fleet and workforce management solutions can enable environmental sustainability by reducing idling times, optimizing routes and monitoring driver behavior with an eye towards reducing fuel usage and associated GHG emissions.

IoT delivers near-real-time insights and analytics to every aspect of your business, so you can make data-driven decisions that streamline processes, lower operating costs, and drive value. You can use IoT in an array of environmental sustainability efforts.
The AT&T Foundry

Whether your company is an enterprise or a startup, the AT&T Foundry helps bring ideas to market faster. Foundry projects are designed to be quick, with communicative, collaborative teams to work with you to co-create solutions to real problems. Plus, AT&T IoT Professional Services can help integrate IoT into your legacy products and services. We can provide strategy, business planning, and an IoT technology roadmap.

Customer demand can drive new revenue opportunities

As customers begin to demand products and services that help them operate in an environmentally responsible way, it can present an opportunity for you to drive new revenue. For instance, adding IoT to enable performance monitoring of a piece of industrial equipment could create a new product line for energy-conscious customers looking to reduce energy costs and environmental impacts. Similarly, adding IoT to a residential device could allow a homeowner to monitor and change behavior to reduce wasted resources like water or electricity.

With the proliferation of digital transformation adoption, edge-to-edge technologies, and the emergence of 5G, future use cases for new revenue opportunities with sustainability benefits have yet to be imagined. The AT&T Foundry helps companies bring such ideas to life—and to market.

“Nearly 2/3 of consumers globally now ‘buy on belief,’ meaning they will ‘choose, switch to, or boycott’ a brand based on its stand on societal issues.”

Grind2Energy™ turns waste into energy

Grind2Energy, the food waste recycling system from Emerson, created an industrial food grinder to address costs and environmental impacts of food waste disposal from grocery stores, restaurants, and stadiums. Grind2Energy turned to AT&T for IoT connectivity and robust reporting to increase the scalability and market competitiveness of the system.

The Grind2Energy solution turns food waste from commercial kitchens into nutrient-rich slurry that anaerobic digesters can turn into biogas, i.e., methane, that can be converted into electricity or heat—and fertilizer instead of greenhouse gas from landfills.

AT&T used expertise and technology, including its cellular network and the AT&T IoT platform, to develop the system that makes it possible for Grind2Energy to collect, organize, and analyze the data that helps Grind2Energy monitor operations via a central dashboard.\(^1\)

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Total 2018 Annual Benefits of Grind2Energy Food Waste Diversion

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food waste not dumped</td>
<td>Around 7,400 tons of food waste not dumped into landfills</td>
</tr>
<tr>
<td>Clean electricity generation</td>
<td>1.3 million kWh of clean electricity generation, equivalent to powering 125 homes for a year</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>420 tons of fertilizer</td>
</tr>
<tr>
<td>CO₂e avoided</td>
<td>Around 5,000 metric tons CO₂e avoided, equivalent to not consuming 570,000 gallons of gas</td>
</tr>
</tbody>
</table>

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Unlike old methods that use inefficient pick-up schedules and generate GHG, Grind2Energy efficiently turns food waste into energy and fertilizer.

**New Method:** As-Needed Slurry Hauled to Digester

**Old Method:** Scheduled Waste Hauled to Landfill

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Per the 2018 World Economic Forum annual meeting, 84% of existing IoT deployments can address UN Sustainable Development Goals.\(^2\)

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\(^1\) AT&T 10x Case Study: Emerson’s Grind2Energy™, 2018.

Our commitment to sustainability

At AT&T, we’re working to do our part in creating a better, more environmentally sustainable world. We’ve taken a multifaceted approach to reducing our environmental impact in areas that are most relevant to our business, and we’re thoughtfully tackling areas where we can make the biggest impact.

For example, our electricity usage is our biggest source of GHG emissions, so we’re working hard to use electricity more efficiently in our buildings and network equipment. Between 2014 and 2018, we implemented around 90,000 energy efficiency projects in our buildings. And our renewable energy purchases will surpass 1.5 gigawatts (GW) of clean energy capacity that support new wind and solar projects, and help solidify AT&T’s position as one of the largest corporate purchasers of renewable energy in the U.S. Together, AT&T’s renewable energy purchases to date are expected to reduce greenhouse gas emissions by an amount equivalent to providing electricity for more than 560,000 homes or taking 690,000 cars off the road for one year.

Beyond electricity, we recognize the need to reduce emissions in our fleet and to reduce solid waste in our operations. By increasing the fuel efficiency of our fleet and using fleet management technology, our U.S. ground fleet emissions have decreased 26% from our 2008 baseline. We’ve also committed to minimizing waste at 100 AT&T facilities—including our corporate headquarters—by the end of 2020.

We’ve set a goal to enable carbon savings 10 times the footprint of our operations by 2025. We’re calling this our 10x Carbon Reduction Goal, or more simply, our “10x” Goal. To meet the goal, we’re making our network more efficient and we’re working with our customers to deploy technology that can help reduce GHG emissions. AT&T is also teaming up with companies to measure the GHG emissions reduction of specific products. We’re highlighting some of these stories in our 10x case study series.

Because of our commitment to reduce our own carbon footprint by driving efficiency and renewable energy, we’re confident we’ll meet our 2025 goal. Adding to our confidence is the belief that carbon-reducing technology will soon boom in emission-intensive areas such as industrial manufacturing, energy, and transportation.

“We’ve set a goal to enable carbon savings that are 10x the footprint of our operations by 2025, and one way we’ll get there is by using our IoT expertise to deliver solutions that help customers reduce their own carbon emissions.”

Randall Stephenson, CEO, AT&T

Smart energy savings

Let’s look at this use case for the Energy and Building Management Solution that improved efficiencies and saved AT&T a whopping $600M in energy and operational savings since 2012.

- AT&T used sensors and IoT technology to collect and analyze data from energy and building management systems.
- The solution was deployed in 690 AT&T buildings across ~400 cities in 40 states.
- The data provided insights to improve facility and equipment performance through dashboards, fault detection, real-time alerts, proactive maintenance and benchmarking.
- 400+ unique fault rules were set up to alert that a piece of equipment isn’t running efficiently and 9.5M faults were identified.
- The solution achieved an average of 8-10% savings in operating expenses overall including energy, maintenance, and facility or equipment repairs.

AT&T IoT Professional Services now offers Consulting Services for Energy and Building Management Solution (EBMS) to customers.

15 https://about.att.com/cy/home/environment/renewable-energy.html
17 https://about.att.com/story/att_commits_to_minimize_waste.html
Real-world technology enabling sustainability today

As AT&T brings the network of the future to our customers, we’re employing edge technology that delivers dependable and highly secure connectivity while also focusing on driving efficiencies. Beyond our network, we’re working with customers on solutions that utilize connectivity to transform businesses. By delivering services through smart networking and IoT programs, we’re helping customers identify how AT&T technology can help them get to the next level of efficiency. We’re also teaming up with companies to measure how specific products reduce GHG emissions. As we progress, we’re publishing real-world case studies that demonstrate how AT&T technology is helping customers reduce the use of electricity, fuel, water, or raw materials.

AT&T is uniquely positioned to provide end-to-end solutions from our network to your hardware to edge-to-edge solutions. Whether you’re looking for ways to save money by reducing resources, drive new revenue from environmentally preferable products, or show your commitment to shrinking your environmental impact, we can help—while treating the planet with the respect it deserves. As a leader in environmental sustainability, AT&T wants to be your trusted resource to evaluate and deliver technology solutions that can help you achieve your sustainability goals. To learn more about how AT&T solutions are enabling customers to reduce their environmental impact, visit att.com/10x.

<table>
<thead>
<tr>
<th>Impact area</th>
<th>Solution benefits</th>
<th>Learn more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern workplace</td>
<td>Video conferencing and wireless connectivity reduce travel costs, fuel usage, and emissions.</td>
<td>AT&amp;T Office@Hand</td>
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<tr>
<td>Transportation</td>
<td>Fleet management tools allow operators to monitor and improve fuel efficiency and reduce emissions.</td>
<td>Vehicle Solutions IoT for Good -Transportation</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Remote patient monitoring reduces the number of trips patients take to see medical providers, saving time and reducing fuel use.</td>
<td>Healthcare on the edge IoT for Good - Health</td>
</tr>
<tr>
<td>Consumer and retail</td>
<td>Connected coolers with smart analytics can help optimize inventory and replenishment, reducing trips and preventing waste in retail and grocery stores.</td>
<td>IoT Platforms</td>
</tr>
<tr>
<td>Smart cities and buildings</td>
<td>Energy and building management solutions can help reduce costs and emissions in commercial buildings.</td>
<td>IoT for Good - Industry IoT Professional Services</td>
</tr>
<tr>
<td>Energy</td>
<td>The electricity grid is evolving into an integrated network ecosystem. We believe our expertise in highly-secure connectivity will be an important enabler for energy of the future.</td>
<td>Private LTE for Utilities Asset Management</td>
</tr>
<tr>
<td>Industrial</td>
<td>We help businesses use data to predict, learn, and make near-real-time decisions to improve operations. These solutions can make best use of assets, enable preventative maintenance, reduce electricity use, save fuel, and reduce GHG emissions.</td>
<td>Asset management Platforms for IoT</td>
</tr>
<tr>
<td>Food, beverage, and agriculture</td>
<td>Smart farming helps reduce water use, increase agricultural yields, and reduce the energy needed to clean and pump water. IoT Cold Chain solutions can help track and monitor shipments, including chain-of-custody verification, which helps keep food safe while reducing spoilage and waste.</td>
<td>IoT Professional Services IoT for Good - Industry</td>
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Learn more about our sustainability initiatives at www.att.com/business-sustainability

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