

Advancing Sustainability: Embracing the Circular Economy in the Mobile Device Industry



ASSURANT®



The problem of electronic waste — commonly called e-waste — is growing rapidly.

In fact, it's estimated that over 60 million metric tons were discarded globally in 2024¹ alone. To put this number into perspective, 60 million metric tons is equal to 10,000 smartphones being dumped into a landfill every second of every day for an entire year. And the situation isn't getting better. It's anticipated that total e-waste will reach a whopping 74 million metric tons by 2030. Where does it all come from? Today's e-waste originates from a range of product categories with smartphones making up 12% of the total.²

E-waste isn't the only concern when it comes to mobile devices and the environment. Carbon emissions and their impact on climate change are also a concern. This is especially critical as the World Meteorological Organization has recently reported³ that 2024 was the hottest year recorded, and records were also broken for extreme weather, rising sea levels, and melting ice, all fueled by record-breaking greenhouse gas levels.

While the production of electronics is growing exponentially, their environmental impacts don't necessarily have to. With mobile device lifecycle programs that focus on circularity, future impacts can be minimized.

Since 2009, through our trade-in and upgrade programs, we have:

collected over
180M
devices

avoided **9.4M**
metric tons of CO2
emissions

prevented **36,000**
metric tons of
electronics from ending
up in landfills

E-waste: breaking the cycle with a circular economy

Throughout the 20th century, manufacturing primarily operated on what's called the "take, make, dispose" model — also known as the linear economy. In contrast, the concept of a circular economy reimagines this product lifecycle as a circular flow that repurposes and reuses materials until recycling becomes the last resort.

Applying the circular economy to mobile devices makes them more environmentally friendly and reduces their impact. Circularity is achieved by making devices that last longer, are easier to repair, and can be repurposed or recycled. In recent years, we've seen significant progress on the circular economy front as manufacturers, governments, and nongovernmental organizations have come together to address the problem of e-waste and carbon emissions. The initiatives in the following list have made significant impacts on the environment and human health, and they include international and regional efforts.

- The United Nations⁴ has established global targets of achieving net zero emissions by 2050. Further initiatives have been set to halve emissions by 2030. The GSMA⁵ has championed these goals within the mobile industry and, to date, 70 mobile operators have joined the GSMA's Climate Action Taskforce to promote and encourage action in meeting these goals.
- In recent years, Right to Repair laws have been put in place to make it easier and more accessible for devices to be repaired.

- In 2024, the Consumer Technology Association[®] launched the Consumer Technology Circularity Initiative,⁶ a voluntary industry plan to minimize waste, encourage more reuse, enhance recycling, lessen climate impact, and decrease the disposal of consumer electronics.
- Further, the GSMA has set new targets for take-back programs to amount to at least 20% of the number of new devices purchased directly by consumers by 2030. As of March 2024, 16 leading operators around the world have signed on to this initiative, which will help extend the longevity of mobile devices by giving them a second or even third life.⁵

United Nations Sustainable Development Goals

In 2015, the United Nations General Assembly adopted 17 sustainable development goals, laying out a roadmap to eradicate poverty, reduce inequality, and protect the planet from climate change. Devices that are returned through our programs align with 14 of the 17 SDGs. This includes diverting e-waste from landfills; reducing CO2 emissions; keeping our land, water, and air cleaner; and bridging the digital divide with more low-cost devices. For many, these devices are their only internet access and can provide critical access to education, remote health care, and mobile banking.

Assurant: sustainability through innovation

At Assurant, we've taken steps to address the environmental challenges we're all facing and help our clients reach their sustainability goals while benefiting their customers and the communities they operate in. One of the ways we accomplish this is through innovative programs that maximize and extend the useful life of mobile devices. This includes take-back programs like trade-in, upgrade, and buyer's remorse — all of which help ensure devices don't end up in landfills. We also look beyond extending the lives of just smartphones. Our services include other device categories such as tablets, smartwatches, wearables, smart home devices, computers, and gaming consoles, allowing our clients to offer a variety of take-back programs for their customers. Another way we drive sustainability for our clients is through device protection programs that enable customers to cost-effectively repair their phones rather than throw them away. In addition to these efforts, we operate an industry-leading mobile device certification and resale program that provides more affordable phones for customers while extending lifespan. Available through carriers, retailers, original equipment manufacturers, and multiservice operators, our programs allow consumers to participate in the circular economy and, in many cases, profit from them.

Achieving sustainability goals isn't easy. To help our clients reach theirs, we've built a suite of tools that collect, measure, and capture the carbon footprint of the mobile device lifecycle. With these tools, we provide clients with a clear assessment and understanding of their carbon emissions associated with mobile devices. This helps them target and measure their sustainability goals, quantify GHG emissions for mobile devices (which make up most of their overall emissions), simplify sustainability reporting, and boost their reputation as an advocate for the environment.

A growing number of consumers are making purchase decisions based on the environmental impacts of the products they buy. Being more sustainable helps carriers, retailers, OEMs, and MSOs build loyalty and drive revenue by giving customers access to the circular economy.

Assurant's sustainability vision is to advance a connected, respected, and protected world.



16M devices are processed annually at our device care centers in preparation for their next life

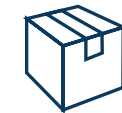


Extending the life of devices: how it works

Devices collected through our programs are sent to one of our state-of-the-art device care centers for processing and disposition. Once received, all devices are thoroughly examined for functionality and cosmetic condition using automation and machine learning to refurbish them as new, assuring the highest standards of quality. Consistency in the grading of devices is integral to the health of the secondary market by instilling confidence in the quality of devices being purchased.

In the U.S., the DCCs located in York, PA; Mt. Juliet, TN; and Lewisville, TX, are R2v3 certified, supporting industry best practices and standards for the testing, repairing, and reusing of electronics. These facilities are all certified by the Recycling Industry Operating Standard.

For the vast majority of devices that can be repurposed, there are several routes they can take.



Returned to carrier/retailer/OEM/MSO

Devices in excellent condition are often used for warranty and device protection fulfillment. This not only produces cost savings, but also leads to a more sustainable supply chain with fewer new replacement devices.



Sold as certified pre-owned

Certified pre-owned devices are increasing in popularity as demand for green products increase. In fact, Assurant research has shown that 35% of consumers are either extremely or very interested in buying a refurbished device for cost-saving and environmental reasons. Gen Z and millennials make up the biggest share of this group with half of each being at least very interested (49% and 50% respectively) in giving devices a second life.⁷ Many devices that come to our DCCs can be refurbished or repaired and used by clients for their certified pre-owned programs and protection plan replacements.



Resold into the secondary market

A large portion of our refurbished devices are sold through Assurant's sales platform to registered buyers located across five continents, and will go on to reach consumers around the world. For many, the cost of a new device is financially out of reach. The ability to own a high-quality, newer-generation device for less cost than new is critical in bridging the digital divide.



Recycled

For those devices that have reached the end of their lifecycle, Assurant partners with approved R2v3 recyclers to responsibly dispose of them. All recycling partners are thoroughly vetted to ensure they meet local regulations for recycling. For example, in the United States, we route devices that can't be data-cleared or repaired to appropriate R2v3 downstream vendors for data destruction and recovery of parts and precious metals. Anything remaining after that is incinerated to avoid being placed in landfills.

Innovation and sustainability: Assurant EcoPhone™

Specifically designed to meet the initial needs of the Latin American market, we introduced Assurant EcoPhone™, a sustainable solution that gives a second life to refurbished devices. These high-quality devices come with a 12-month warranty and eco-friendly packaging, and are more affordable than buying a new device.

Assurant EcoPhone™

Adopting a data-driven approach to carbon emissions reduction

Though our clients have embraced the net zero commitment, reporting supply chain emissions represents a challenge. Clients are faced with immense amounts of data to comb through and there are expertise gaps that make it difficult to efficiently navigate. To help address these challenges, we developed Assurant Carbon IQSM. This data product uses a science-based approach and offers insights into the carbon footprints of both new and used devices as well as potential carbon savings by calculating emissions associated with each stage of the lifecycle, from manufacturing to end of life. It also harnesses the power of machine learning models to fill in gaps within OEM data in order to provide a more complete view of emissions across the full portfolio and make use of large quantities of data.

Carbon IQ provides solutions for measuring, tracking, and optimizing carbon emissions associated with smartphones. It leverages machine learning algorithms and seamless data integration with clients' circularity programs to collect, analyze, and provide a holistic view at each stage of the device lifecycle. When integrated with Assurant device lifecycle solutions, Carbon IQ helps to optimize clients' circularity programs in achieving their emission reduction goals.

Educating and motivating consumers

Everyone agrees that reducing the amount of electronic waste in landfills is a net positive. Given that sustainability is becoming more universally important to consumers and nearly half of Generation Z and millennials are motivated by sustainable practices, it's the perfect time to focus on educating consumers on the environmental and the financial benefits of circularity programs such as device trade-in and upgrade. Including strong sustainability messaging at the point of sale can drive tangible results and device return rates. It can also grow client revenue by driving more sales, increasing high-margin accessory sales, and promoting the repurposing and resale of pre-owned devices.

At Assurant, circularity is more than a goal. It's an important part of who we are as a company. It drives innovation by demanding new solutions to complex problems. And it helps us to better serve our clients and to be better stewards of the environment. That's why we work so hard to be the world's most impactful reuse and refurbishment solutions provider. Our solutions enable clients to better participate in the circular economy and provide the same opportunity to an increasingly environmentally conscious customer.

Drive sustainability by optimizing your mobile programs

At Assurant, we take an integrated, multifaceted approach to helping our clients create a more sustainable mobile device value chain. Through our solutions, we support extending and maximizing the lifecycle of devices. With this in mind, we've identified a set of key strategies to better support circularity in the mobile device ecosystem.



Enable seamless integration of trade-in at point of sale: Ensure trade-in is part of the buyflow in all channels so that customers are always made aware of and given the option to trade in their device.



Promote upgrade programs: Provide early upgrade enrollment program options to consumers when they purchase a new device. These programs are known to bring devices back into the circular economy while increasing customer retention.



Monitor program effectiveness: Increase device returns by regularly reassessing the competitiveness of your trade-in offers. Ensure they're competitive with the rest of the industry.



Expand trade-in categories: Include other product categories beyond smartphones, such as wearables, hearables, and tablets, in your trade-in programs.



Encourage repair and reuse: Offer device protection on all new devices along with bring your own device (BYOD) opportunities. When consumers have a cost-effective option to fix a device instead of throwing it away, it extends the life of the device.



Highlight sustainability: Consumers are showing a growing interest in supporting the circular economy. Highlight the sustainability benefits of your take-back programs to increase participation.



Offer certified pre-owned devices: Many carriers now offer certified pre-owned devices as a lower-cost, more sustainable choice to consumers.



Leverage warranty and device fulfillment: Use pre-owned devices for warranty and device protection fulfillment as a less expensive, more environmentally friendly alternative than using new devices.



Achieve net zero carbon emissions: Gain better visibility of carbon emissions from your mobile programs with Assurant Carbon IQSM and adjust to meet your emission reduction goals.



Engage with industry organizations: Collaborate with industry organizations and incorporate their recommendations for reducing e-waste and carbon emissions into your programs.

¹[Global E-waste Monitor](#)

²[E-waste Management Needs Push from Industry, Consumer, Govt - Counterpoint \(counterpointresearch.com\)](#)

³[2024 warmest year on record: WMO](#)

⁴[UN Secretary-General issues new global roadmap to secure clean energy access for all by 2030 and net zero emissions by 2050 | United Nations](#)

⁵[Mobile-Net-Zero-2024-State-of-the-Industry-on-Climate-Action-1.pdf](#)

⁶[CTA Launches Consumer Technology Circularity Initiative](#)

⁷Assurant Connected Decade Research