We are committed to creating products that enrich the lives of our customers in a way that protects the earth's resources that we all share. In 2018, we reached our goal of sourcing all electricity for our stores, data centers, and offices from renewable sources. Then in 2020, Apple became carbon neutral for our worldwide operations, including business travel and employee commute. We are now tackling the remainder of our footprint with an ambitious goal to make our products carbon neutral by 2030—from our supply chain to the energy customers use to power our devices.

Our strategy focuses on three interconnected areas: climate change, resources, and smarter chemistry. Our comprehensive carbon footprint informs the work we do to reduce our emissions, including our roadmap to carbon neutrality. Within our resources pillar, we're working to make our products using only recycled and renewable materials and eliminate plastic from our packaging. And we are committed to using safer materials to create better products for those who design, make, use, and recycle them. All the work we do aims to improve environmental health, not just for our customers, suppliers, and employees, but also for broader global communities.

Our work is led by Lisa Jackson, Apple's Vice President of Environment, Policy and Social Initiatives, reporting directly to CEO Tim Cook. The Office of Environment, Policy and Social Initiatives works with teams across Apple to set strategy, engage stakeholders, and communicate progress. Our integrated approach means that decisions about Apple's values, including environment, are reviewed and supported at the highest levels of the company.

Climate change

As climate change increasingly threatens biodiversity and puts people's access to clean air, adequate food, safe drinking water, and homes at risk, we believe we have a responsibility to take urgent and decisive action.

Since April 2020, Apple has been carbon neutral across all of our corporate emissions, including our stores, data centers, and corporate facilities, as well as business travel and employee commuting. We started by investing in clean energy around the world. Since 2018, Apple has sourced 100 percent of its corporate and retail electricity from 100 percent renewable sources.

In 2020, we unveiled an ambitious plan to achieve carbon neutrality for our entire carbon footprint, including our products, by 2030. We plan to reach this goal by reducing our emissions by 75 percent compared to 2015,[1] and by investing in carbon removal solutions for the remaining emissions.

Our 10-year climate roadmap will address Apple's carbon footprint through the following five pillars:

- **Low-carbon design:** We're making products with more recycled materials and working to reduce the amount of energy our devices use.
- **Energy efficiency:** We're using energy more efficiently across retail stores, offices, data centers, and manufacturing sites.
- **Renewable electricity:** We're committed to transitioning our entire manufacturing supply chain to 100 percent renewable electricity generated from solar, wind, and other renewable projects.
- **Direct emissions abatement:** We're innovating and improving the processes in our facilities and supply chain to reduce greenhouse gas emissions.
- **Carbon removal:** We're investing in working forests and ecosystem restoration in ways that respect communities and remove carbon from the atmosphere.

We're leveraging the funds from Apple's €2 billion (about $2.2 billion) bond issuance in 2019 to help meet our climate neutrality goal. Read about the projects funded over the last year in our **2020 Green Bond Report**. To date, Apple has issued about $4.7 billion in green bonds.

Read more about our environmental efforts in our **2021 Environmental Progress Report**, including information about **Apple's renewable energy projects**.

Progress toward neutrality

In 2020, we became carbon neutral for our corporate operations. To reach carbon neutrality for the full life cycle of our products by 2030, we've swiftly been deploying innovations at scale—like decarbonizing materials used in our products, rapidly deploying renewable energy across our operations and our supply chain, and launching a first-of-its-kind fund to invest in nature-based carbon removal solutions.

In 2020, Apple's comprehensive carbon footprint was 22.6 million metric tons. We've decreased this footprint by 40 percent since 2015, our baseline year, even as net revenue has increased. In 2020 alone, we avoided more than 15 million metric tons of carbon emissions by using low-carbon materials, driving energy efficiency, and switching to clean energy. Since 2011, our Scope 1 and 2 emissions have declined by 73 percent, and we had zero Scope 2 electricity-related emissions for the second year in a row.

Low-carbon design

We believe that well-designed products have a lower environmental footprint. Our carbon footprint helps us identify opportunities to reduce the carbon intensity of our product designs through material efficiency, use of low-carbon materials, and product energy efficiency. For example, several of our products use 100 percent recycled aluminum in their enclosures, helping reduce our carbon emissions associated with aluminum by 72 percent since 2015.

Product energy use accounts for 19 percent of our carbon footprint, so we've set aggressive targets to reduce this. By addressing this in the earliest design phases, the average product energy use across all our major product lines has declined by more than 70 percent since 2008.[2] And in fiscal year 2020, 100 percent of our eligible products received an ENERGY STAR rating for superior energy efficiency.[3]

Energy efficiency

Our energy efficiency goals extend well beyond our products. We're focused on using less energy across our operations and in our supply chain. At our facilities, we track energy use and explore ways to save energy: renovating and retrofitting older locations, designing new facilities with energy efficiency in mind, and working with local utilities on energy efficiency strategies.

40%

decrease in emissions across our entire value chain since 2015.

100%

renewable energy sourced for all Apple facilities.

110+

suppliers in 24 countries committed to **100 percent** renewable electricity for Apple production.

Read more about our efforts to tackle climate change, including risks and opportunities, in our **2021 Environmental Progress Report** and our **CDP Climate Change response**.

In total, Apple-created renewable energy account for 90 percent of the renewable electricity our facilities use, and include wind projects in Viborg, Denmark, and Prineville, Oregon (pictured above).

Smarter chemistry

We're committed to using safer materials to create safer products.

Our smarter chemistry strategy covers three areas:

- **Mapping and engagement:** Engage our supply chain partners to build a comprehensive inventory of chemicals used in our products and go beyond regulatory compliance.
- **Assessment:** Assess the potential human health and environmental risks of chemicals to evaluate compliance with our requirements—including our Regulated Substances Specification—and inform product design.
- **Innovation:** Exceed regional requirements by innovating safer alternatives and improving how we and our suppliers manage potential risks of chemicals.

Mapping and engagement

Our commitment to smarter chemistry starts with a deep understanding of the materials and chemistries used to make our products. In 2016, we launched the Full Material Disclosure program to catalog and map every chemical our products contain. Each supplier is required to report the materials used to manufacture Apple products, using our library of over 40,000 materials to accurately identify each material.

We prioritize the health and safety of the people who make our products. Our Supplier Code of Conduct and Supplier Responsibility Standards set clear workplace safety requirements, and our Chemical Safety Disclosure program advances disclosure around the chemistries used in manufacturing processes. We have identified 14,000 unique chemicals and applications, enabling us to remove those that don't meet our standards.

Assessment

With our products, we aim to make the best chemical and material choices to protect both personal and environmental health. Our Regulated Substances Specification sets standards for the chemicals in our products and manufacturing processes, which exceed many regional regulatory requirements.

Apple's Environmental Testing Lab performs chemical analyses to evaluate the safety of our products and materials and to monitor compliance with the specifications. Our assessment system helps ensure that only materials that meet our stringent requirements can be used in Apple products. Each year, we conduct more than 100 assessments on chemicals before they are used in our manufacturing processes.

Innovation

Our efforts to map and assess the chemicals within our supply chain ultimately fuel innovations at Apple and with our suppliers. We use toxicology data at each point in the product life cycle to seek out and develop safer chemistries, continually improving the overall safety of our products and processes.

Since the late 1990s, we have diligently identified and removed potentially harmful chemicals from our products. This has required developing alternatives by creating safer compounds to replace potentially harmful chemistries or replacing components with alternatives that meet our safety standards.

We're also partnering with nongovernmental organizations (NGOs) to cascade our materials data throughout the electronics industry. Through Chem*FORWARD*, we are able to share our list of safer cleaners and degreasers with companies beyond our supply chain and outside our industry. We've also worked with the Clean Electronics Production Network to develop the Process Chemicals Data Collection Tool, which supports data collection on process chemicals used in the electronics industry.

100%

of supplier final assembly sites use safer cleaners.

1400+

new materials evaluated for safety.

Our restrictions on potentially harmful chemicals are outlined in the **Apple Regulated Substances Specification** and in our **Restricted Chemicals for Prolonged Skin Contact Materials** list.