



People and Environment in Our Supply Chain

2023 ANNUAL PROGRESS REPORT

“We think that the best products in the world ought to be the best products for the world.”

Tim Cook | CEO

A letter from Sabih Khan

Over the past year, teams at Apple worked across our global supply chain to put people first, navigate continuing challenges from the pandemic, and innovate in every detail of the technology we make — from how it's made, to how it enriches people's lives.

That means upholding the highest standards across our supply chain, in our care for people and the planet. In 2022, that meant continuing to push progress forward by leading with our values, adapting to new challenges, and collaborating across a global network of suppliers. Together, we found more ways to raise the bar than ever before — scaling programs we've spent years cultivating, and challenging ourselves to make a positive impact throughout our supply chain and across industries.

As always, this work starts with the high standards we set in our Supplier Code of Conduct, which requires the companies we do business with to abide by rigorous labor, health and safety, and environmental standards, and to respect the fundamental human rights of all people. We set standards, and we verify they're met — and in 2022, that included 808 independent, third-party assessments of our supplier facilities and 265 of smelters and refiners in our supply chain in more than 50 countries. We're consistently evaluating our progress, driving accountability, finding new ways to improve our suppliers' performance in meeting our requirements, and supporting people across our supply chain.

Last year, we also launched our Supplier Employee Development Fund with a \$50 million commitment. It's an initiative that connects people across our supply chain with education and opportunity, and builds on our partnerships with leading human rights and nonprofit organizations. It's a great example of our commitment to building a supply chain that is a force for good in the world and in the communities we reach.

In our third year navigating the COVID-19 pandemic, we continued to make people's health a front-and-center priority. We carried forward best practices and lessons learned, supporting our suppliers in their work to stagger shifts, provide onsite testing, and take other measures to maintain a healthy workplace. We've also continued to share our pandemic response tools across industry — dedicating time and resources to help our peers understand and adapt to the pandemic's challenges.

We've also continued to press forward in our environmental work, moving ever-closer to our 2030

goal — to become carbon neutral for our entire supply chain and the energy use of our customers' devices. That means working closely with our suppliers to use renewable energy for their Apple production, and in October of last year, calling on our major manufacturing and logistics partners to decarbonize their entire Apple footprint by 2030.

We're deeply proud of the strides we've made so far — from expanding renewable energy, to conserving more resources than ever. Last year, our suppliers avoided over 18.7 million metric tons of CO₂e, as we continued to improve energy efficiency and bring renewables online. We've saved 63.2 billion gallons of freshwater across 10 countries and regions since 2013. And our pioneering Zero Waste Program is scaling to more and more of our suppliers around the world, diverting more than 2.5 million metric tons of waste since 2015.

A key part of our work is to one day end our reliance on mining by using only recycled and renewable materials to build our products. Until then, we'll continue to responsibly source primary materials — and provide support to people and communities deeper in our supply chain.

That includes conducting due diligence as we source the materials that help build our products. We were the first in the industry to map and transparently publish our cobalt and lithium smelters. And we require identified smelters and refiners that provide key materials like tin, tungsten, tantalum, gold (3TG), cobalt, and lithium to our suppliers to participate in independent, third-party assessments.

Creating great products, and working with companies around the world, brings its fair share of complexities and challenges — and the past year was no exception. For us, every day is an opportunity to improve. We are always learning, and as a company in the business of innovation, we're always working to build an even better future.

In everything we do, we're committed to leading with our values — meeting the responsibilities we have to one another, to the planet, and to generations to come.

– Sabih



Sabih leads Apple's global supply chain, which includes Environment and Supply Chain Innovation.

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2022

in review



CLOCKWISE FROM TOP RIGHT:
Final assembly, Vietnam; product repair, the Netherlands; final assembly, India; component manufacturing, China; facilities services, United States.

2022: By the numbers



Labor and human rights

\$50M

committed by Apple to strengthening and scaling programs that support worker voice, rights training, and educational and skill development opportunities through our Supplier Employee Development Fund

26M+

supplier employees trained on their workplace rights since 2008

\$34M+

in recruitment fees paid back by suppliers to more than 37,700 of their employees since 2008 due to Apple's zero fees policy

277,000+

supplier employees and management trained on responsible labor recruitment best practices, supported by the Apple Responsible Labor Recruitment Due Diligence Toolkit; Apple supported the release of the IOM Fair and Ethical Recruitment Due Diligence Toolkit, a version of Apple's Recruitment Toolkit

1.6M

supplier employees whose working hours are reviewed on a weekly basis for compliance with our strict labor standards

70+

human rights and environmental defenders and organizations supported by Apple, reaching millions of people around the world



Health, safety, and education

3.7M+

supplier employees reached by our health and wellness education program since 2017

200+

companies across industries provided with access to Apple's COVID-19 tools and resources

6M+

supplier employees who have participated in technical training, professional development, and enrichment courses since 2008

28k

participants in Swift coding program since inception; 5 apps developed and launched on the App Store by supplier employees in 2022



Environment

250+

suppliers committed to transitioning to 100% renewable energy for Apple production, representing over 20 gigawatts of clean energy being brought online

20%

of product mass shipped in 2022 composed of recycled and renewable materials

63B+

gallons of freshwater saved by suppliers in our Clean Water Program since 2013, with participants achieving a 42% reuse rate

2.5M+

metric tons of waste diverted from landfills by suppliers in our Zero Waste Program since 2015; 523,000+ diverted in 2022

150+

new suppliers enrolled in our Zero Waste Program in 2022, for a total of 300+ participating suppliers across 14 countries



Supplier performance

808

independent, third-party assessments focused on the requirements of our Supplier Code of Conduct and 265 smelter and refiner assessments¹ conducted in the 2022 reporting period

50+

countries and regions where assessments were conducted

539,000+

supplier employees interviewed and surveyed about their workplace experiences, resulting in over 5,400 improvements made by suppliers

100%

of smelters and refiners of cobalt and lithium — key materials contained in batteries — were assessed through third-party audits in calendar year 2022, marking seven years of 100% participation for cobalt and three for lithium. 100% of 3TG (tin, tungsten, tantalum, and gold) smelters and refiners completed third-party assessments for the eighth consecutive year.

9%

of prospective suppliers evaluated for their ability to meet our Code and Standards were prevented from entering our supply chain since 2020

¹ | Apple reports 3TG smelter and refiner assessment information on a calendar year per U.S. Securities and Exchange Commission (SEC) requirements. See our annual Conflict Minerals Report by visiting apple.com/supplier-responsibility.



Update on the Apple Supplier Employee Development Fund

In March of 2022, we announced a \$50 million Supplier Employee Development Fund (SEDF) to further invest in the people in our supply chain, strengthen and scale worker rights-awareness training, amplify worker voice, and expand learning and skill development opportunities for more people in our supply chain and surrounding communities.

Part of this commitment includes supporting new and expanded labor rights programs that will reach more than 3.5 million supplier employees in over 40 countries, aided by our strategic partners, including the United Nations International Labour Organization (ILO) and the International Organization for Migration (IOM).

We have worked for decades to set and uphold the highest standards of labor and human rights, and have pushed our suppliers to create workplaces where people are treated with dignity and respect. As part of the SEDF, we are working alongside leading experts and organizations to develop and scale best-in-class worker rights training and digital tools; expand worker voice and grievance channels to promote more effective communication between management and employees; and advance fundamental labor rights across the industry, including our Responsible Labor Recruitment program. We are also investing in new partnerships to further drive improvements in workplace protections across our supply chain.

Apple has offered in-person and virtual education, skill-building, and enrichment courses since 2008. Through the SEDF, we are significantly expanding the scope of

these offerings for people in our supply chain — and their surrounding communities — by launching the Apple Education Hub. The collection of opportunities included in the Apple Education Hub, which builds on the momentum of our long-standing education programs, adds exciting new offerings while providing a scalable platform to develop the skills necessary for the future of work in our supply chain and beyond.

As we complete the SEDF's first year, we are proud to share that we have achieved significant progress, including expanding our worker voice programs, designed to empower people in our supply chain. In 2022, more than 459,000 people provided feedback on their workplace experience, and we worked with our suppliers to implement many of their suggestions.

We launched and scaled new worker rights training platforms, as well as a new toolkit alongside the IOM that companies across the industry are using to conduct responsible labor recruitment due diligence in their supply chains. We also continue to invest in and strengthen our partnerships with key labor and human rights experts who challenge us to improve, and help us share our learnings with others so that they can achieve progress more rapidly.

In its first year, the Apple Education Hub scaled our existing educational programs for supplier employees in the United States, China, India, and Vietnam in addition to launching new opportunities — and all despite the continued challenges presented by the COVID-19 pandemic.

In the United States, we expanded our educational opportunities to additional suppliers across the country, focusing on key opportunities including professional development, English-language training, and advanced and lean manufacturing fundamentals. To support the expansion of our programs in the United States, we formed a new partnership with experts at the Council for Adult and Experiential Learning (CAEL) to connect supplier employees to tailored educational opportunities.

In China, we opened a physical home for the Apple Education Hub at Zhejiang University, providing a state-of-the-art learning lab where supplier employees receive a first-rate, hands-on experience with advanced manufacturing equipment, including robotics and other automation equipment, and computer numerical control (CNC) machinery.

In the year ahead, we will continue to expand the impact of the SEDF by bringing its programs to more people and countries. To read more about our progress across all of the SEDF's programs, please see the sections of this report focused on [worker voice](#), [responsible labor recruitment](#), [health and safety](#), and [education](#).

\$50M

Committed by Apple to expand programs designed to improve workplace experiences and educational opportunities for people in our supply chain

1.2M

people participated in SEDF programs in the fund's first year

Continuing to keep people safe during the COVID-19 pandemic

Over the past year, we continued to work together with our suppliers to help them take the necessary precautions to keep people safe at work during the COVID-19 pandemic. These actions reflect our continued learning and enhancements to our supplier requirements that are designed to put the health, safety, and dignity of workers front and center.

Since the beginning of the pandemic, we have supported our suppliers in making adjustments to safeguard the health and safety of people across their facilities. This has included providing clear communication on their employees' rights and options during outbreaks, staggering shifts to reduce density when necessary, supporting vaccine awareness, providing onsite testing, maintaining thorough deep-cleaning standards, and emphasizing channels for people to share their concerns or feedback in real time.

Infectious Disease Preparedness and Response (IDPR) Standard

In 2020, we introduced an enhancement to our supplier requirements to specifically address IDPR. This standard contains a set of new requirements resulting from our learnings during the pandemic, which has helped our suppliers better prepare for and be ready to respond to a potential infectious disease outbreak at their facilities. In accordance with the IDPR Standard, we confirm suppliers' compliance with COVID-19 control protocols as part of every assessment we conduct. We also regularly distribute COVID-19 health and safety guidance and best practices to suppliers across our supply chain.

Sharing our pandemic response strategy with the industry

We continue to share our tools and best practices with others through our Apple COVID-19 Response Toolkit. This suite of resources, which includes planning tools, signage templates, and a podcast with Apple experts, was shared through the Responsible Business Alliance (RBA) early in the pandemic, and continues to be available to more than 200 companies that directly employ more than six million people and operate supply chains spanning 120 countries. The Toolkit helps companies adapt their operations in order to respond to outbreaks and protect the health of the people in their facilities.

Upholding labor and human rights during the COVID-19 pandemic

Throughout the COVID-19 pandemic, our decisions have been guided by our values and strict supplier requirements. This has enabled us to act quickly and effectively to safeguard people's health, well-being, and dignity — no matter what issues arise.

Last year, despite the rigorous health and safety protocols in place, a number of supplier facilities around the world faced COVID-19 infections during peak waves in their regions. This impacted operations and people throughout facilities, including both general employee populations and site management teams, which further compounded the challenges they faced.

When these situations arose, we partnered closely with our suppliers to provide the support necessary to safeguard the health and safety of people working at the sites, and to verify that the requirements of our Code were upheld at all times, including those of our IDPR Standard.

200+

companies provided access to COVID-19 tools and resources

164k+

people deeper in the supply chain reached with COVID-19 prevention strategies



Recycling, Taiwan

Leveraging all of the pandemic response and support tools we have developed over the past several years, as well as Apple team members onsite at the facilities, we worked with site management teams to help them contain outbreaks and uphold our strict standards for working and living conditions for their employees.

At one site that experienced significant challenges as a result of a local COVID-19 outbreak, our response went even further. In addition to the Apple teams already onsite, we dispatched more Apple employees to assist the facility in taking the measures necessary to support people during the outbreak, which included adjustments and pauses in operations when necessary, and providing additional care for supplier employees in quarantine.

We also engaged directly with supplier employees at the facility, in total conducting seven rounds of surveys over the course of eight weeks. This effort garnered feedback from more than 74,000 supplier employees on issues ranging from living and working conditions, to contract terms and management responsiveness, to the availability and efficacy of grievance channels. Results were shared with the supplier after each round, and more than 60 immediate actions were taken to address concerns raised by their employees. These actions included increasing the frequency of trash pickups from dormitories, optimizing employee shuttle services, enhancing food quality and options, simplifying contract terms to avoid confusion, and increasing the capacity and capability of counseling resources and health training available to people at the site.

Apple team members also conducted in-person interviews on a daily basis, with more than 450 supplier employees interviewed over the course of seven weeks.

Building on our learnings from these challenging situations, we developed and shared recommendations with the rest of our suppliers, emphasizing operational and communication best practices to help suppliers prepare, should similar situations arise at other facilities.

Supporting communities deeper in the supply chain

As part of our [responsible materials sourcing program](#), throughout the COVID-19 pandemic, we have continued to help communities deeper in our supply chain through our partnership with the international development organization Pact.

With support from Apple, Pact has worked to help mitigate the spread of COVID-19 in several mining communities in the Democratic Republic of the Congo (DRC). This includes the purchase and distribution of personal hygiene supplies and masks made by graduates of Pact's apprenticeship program, as well as sharing information about preventative measures like mask wearing, hand washing, and social distancing.

Pact supported training for community liaisons who helped raise awareness of prevention strategies and other techniques for driving improved health outcomes among their local communities. This initiative has reached more than 164,000 people since the program began in December 2020.

74K+

supplier employees directly surveyed regarding their working conditions

Our Supply Chain

The Apple Supply Chain →

Upholding the highest standards →

Supplier engagement and accountability →

Partnerships →



The Apple Supply Chain

A global network of people and businesses working together to build the best products in the world.

3M+
people

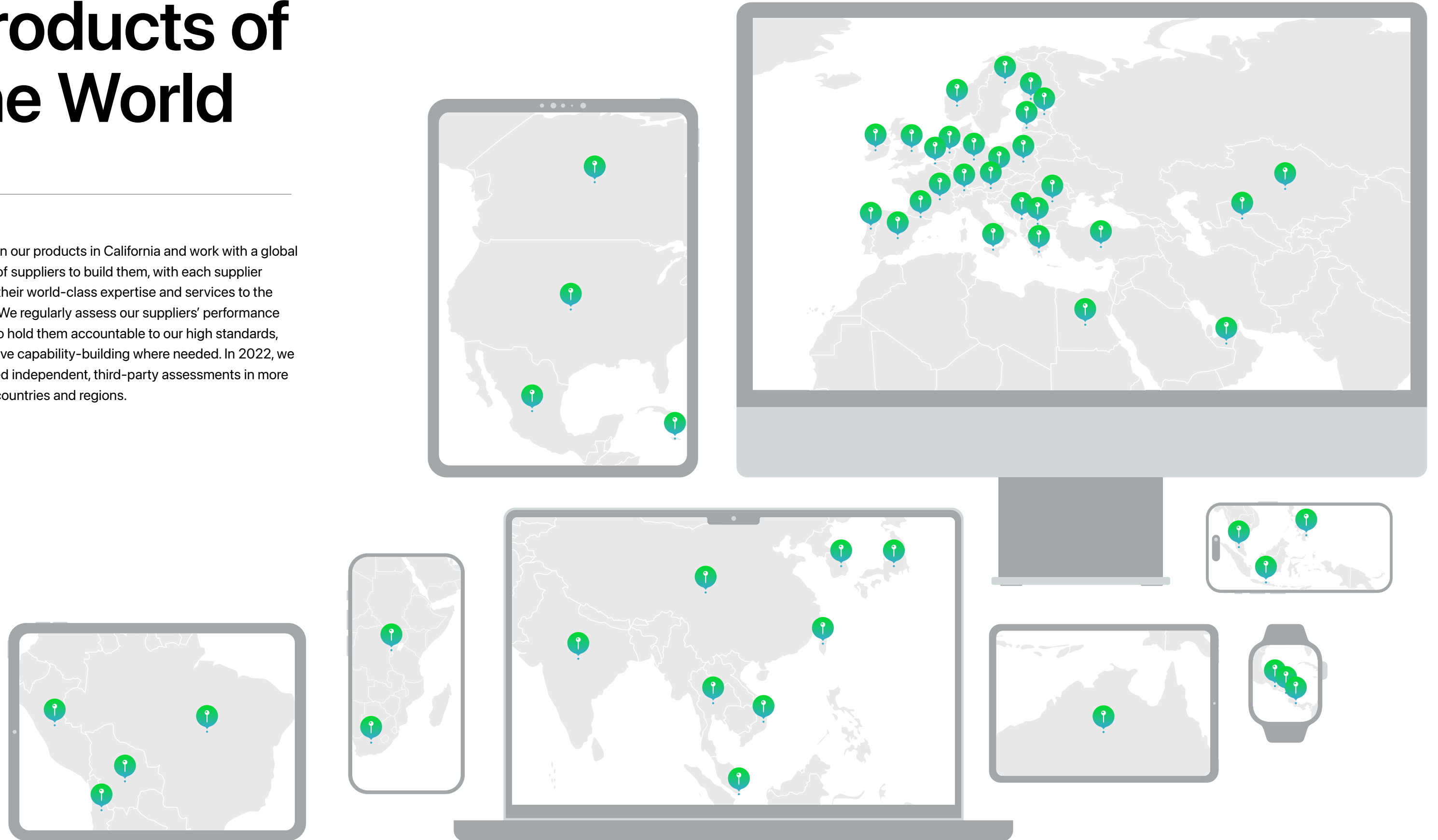
50+
countries and regions

Thousands
of businesses and facilities



Products of the World

We design our products in California and work with a global network of suppliers to build them, with each supplier bringing their world-class expertise and services to the process. We regularly assess our suppliers' performance in order to hold them accountable to our high standards, and to drive capability-building where needed. In 2022, we conducted independent, third-party assessments in more than 50 countries and regions.



Upholding the highest standards

We take a very broad view of our supply chain — and the responsibility that comes with it. We consider our supply chain to include everything that goes into designing, building, delivering, supporting, and recycling Apple products, as well as the suppliers that support our Retail Stores, our content and support services — including Apple One and AppleCare — and all of the logistics and operations that are part of our supply chain ecosystem.



Apple Human Rights Policy

Our Human Rights Policy outlines how we treat everyone, including our customers, employees, business partners, and people at every level of our supply chain. We are deeply committed to respecting internationally recognized human rights in our business operations, as set out in the United Nations International Bill of Human Rights, and the ILO Declaration on Fundamental Principles and Rights at Work. We uphold human rights and conduct environmental due diligence in our supply chain in alignment with the United Nations Guiding Principles on Business and Human Rights (UNGPs), in order to identify risks and mitigate them. We also seek to remedy potential adverse impacts, track and measure our progress, and report our findings.

Training Apple employees

All Apple employees are required to complete mandatory annual Business Conduct training based on our Business Conduct Policy, which educates them on key points of workplace behaviors, conflicts of interest, gifts, confidentiality, anti-corruption, competition, privacy, and Apple's Human Rights Policy. Employees receive this training annually, as well as additional online training

depending on their location and responsibilities associated with their role. As part of the Business Conduct Policy and training, Apple employees are provided with information annually on our Apple Supplier Code of Conduct (Code) and Apple Supplier Responsibility Standards (Standards), as well as Apple's reporting process for supply chain issues. We offer additional resources for employees to address questions and concerns, including the Business Conduct Helpline and the Business Conduct website, which allow employees and external parties to report concerns anonymously.

Apple supplier requirements

We believe our responsibility to people and the planet goes far beyond compliance — it is a shared responsibility between Apple and our suppliers to put people first by maintaining the highest standards, quickly addressing and remediating any issues that do occur, and committing to continuous improvement so they do not happen again.

Our Code and Standards communicate our requirements for suppliers in the areas of labor and human rights, health and safety, environment, management systems, and ethics.



The Standards explain in explicit detail the actions our suppliers must take to maintain compliance with our Code. They include broad coverage of labor and human rights requirements, including anti-discrimination and abuse, prevention of underage labor, working hours management, wages, benefits, contracts, freedom of association and collective bargaining, and the responsible sourcing of materials.

We work closely with many experts across Apple — from product and service designers to facility managers — to evaluate and update our Code and Standards annually to address emerging risks, new legal developments, industry best practices, and to reflect the needs of supplier employees in a dynamic operating environment. We engage with a range of stakeholders, including rights-holders, civil society organizations, academic experts, and program partners to verify that our Code and Standards adhere to internationally recognized standards.

Aligning with international frameworks

Developed in 2005 and made stronger each year since, the Code and Standards outline our requirements for suppliers in the areas of labor and human rights, health and safety, environment, management systems, and ethics. These requirements align with international labor and human rights standards, including those of the ILO, the UNGPs, the Organisation for Economic Co-operation and Development (OECD), the Responsible Business Alliance (RBA) Code of Conduct, as well as industry-leading health and safety organizations.

While we have been mapping salient human rights risks in our manufacturing supply chain for many years, in 2022 we began working with a leading international human rights organization to conduct a comprehensive human rights impact assessment of Apple's global manufacturing supply chain. The impact assessment will help to identify gaps in our programs in order to strengthen grievance and remediation mechanisms, as well as to refine key indicators to measure supplier performance and our own progress, as required by the UNGPs. This exercise will

also support a more integrated approach to how we assess the effectiveness of our human rights and environmental programs.

Continual improvement through regular stakeholder engagement

As part of our comprehensive approach to identifying, mitigating, and addressing salient human rights risks, we engage with civil society organizations, governments, non-governmental organizations (NGOs), UN agencies, rights-holders (through interviews and surveys), and other expert stakeholders throughout the year in both structured and informal roundtables and dialogues. And we are always expanding our network by engaging new stakeholders and organizations every year, such as The Remedy Project and the Fair Wage Network. This helps us understand what we are doing well, where we could be doing more, and to identify emerging areas of risk and opportunity.

The feedback we receive directly influences our strategy and programs, and has enabled us to make faster progress in our supply chain.

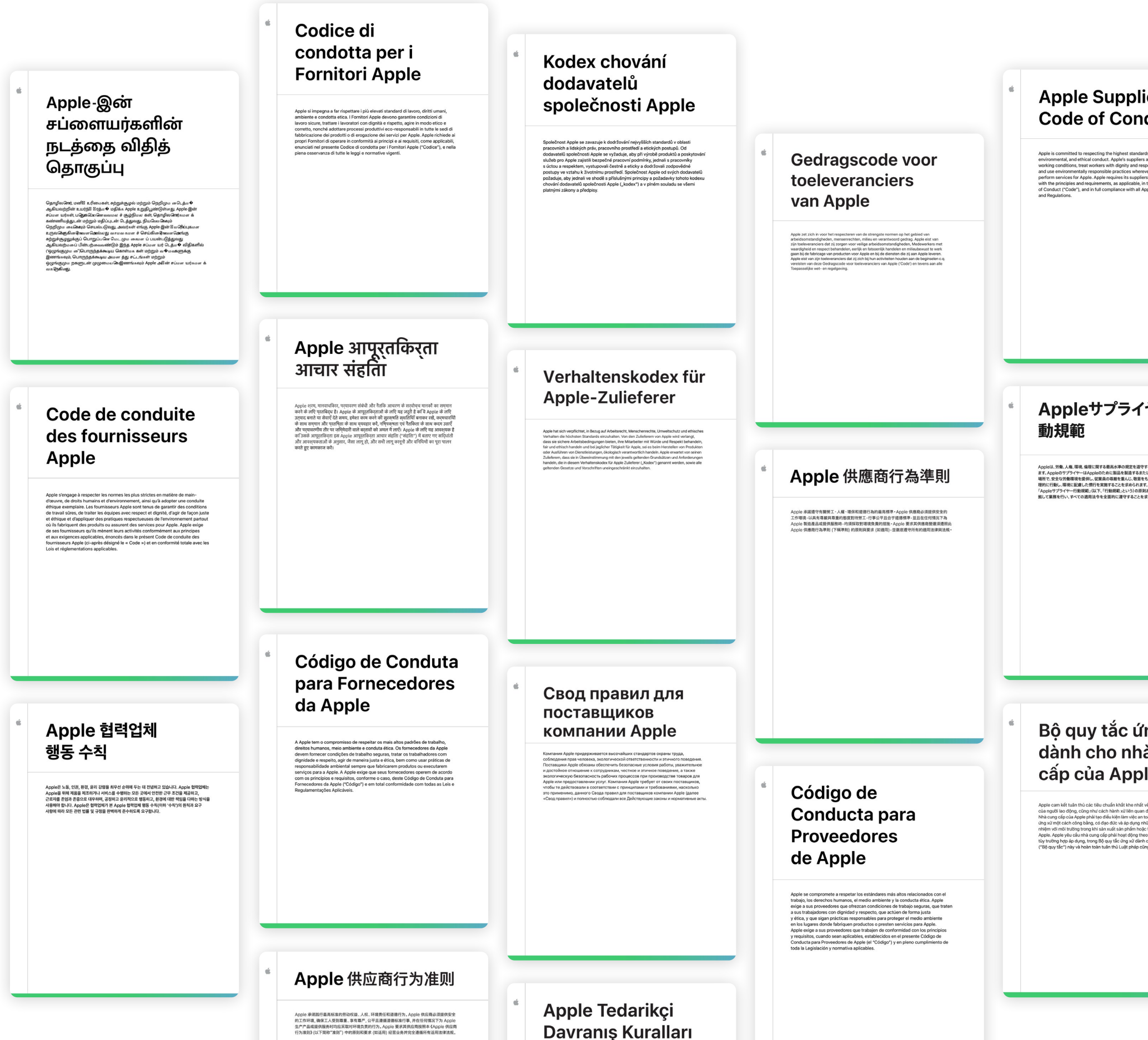


CLOCKWISE FROM TOP:

Facilities material manufacturing, the Netherlands; final assembly, Vietnam; technical support services, India

The highest standards. Applied everywhere.

The Apple Supplier Code of Conduct and Supplier Responsibility Standards outline our requirements for our supply chain in the areas of labor and human rights, health and safety, environment, ethics, and management systems. Since 2005, the Code and Standards have been updated annually, published on our website, and communicated to our suppliers via SupplierCare, our digital supplier communication platform, in 17 languages.



Supplier engagement and accountability



How we drive our standards across our supply chain

Our values are embedded in every decision we make, from the suppliers we choose to work with, to the products we create and the way we build them. Fundamental to this are our efforts to respect the rights of every person who is part of Apple's business, including the people who make our products and their broader communities. This commitment extends everywhere we and our suppliers operate or source materials, and it's a responsibility that grows with our business.

- **Product design and early engagement**

Our standards are built into the earliest stages of product design, development, and procurement. This influences the selection of our suppliers, materials, and the processes and equipment we use to make our products, and includes active engagement before production begins.

- **Code of Conduct assessments**

We conduct worker and management interviews, site walkthroughs, and detailed reviews of supplier operations and documentation to identify risks and gaps in compliance. Our assessments are conducted by independent, third-party auditing firms that are accredited to meet international auditing standards. Many of the firms that conduct our assessments are also those certified to meet the standards of the Responsible Business Alliance (RBA).

Apple employees are also often present for assessments to verify that our protocol is followed, and that the auditor does not experience interference.

- **Specialized assessments**

Suppliers may receive additional specialized assessments based on their specific salient risk profile. Many factors inform salient risk profiles, including geography, materials and processes, worker population (including employment of Foreign Contract Workers), and previous assessment performance.

- **Capability-building**

We work with suppliers to help them expediently correct any non-compliance and strengthen their management systems, which

improves performance across the supplier's entire operation

— benefiting people beyond Apple's business with the supplier.

Corrective actions are typically completed within 90 days, and require check-ins with Apple compliance experts every 30 days. In the event that a supplier is ultimately unable or unwilling to meet our standards, despite our investment of time and engagement in their improvement, they risk removal from our supply chain.

- **Ongoing training**

We provide extensive opportunities to supplier teams for training, learning, and development on the best practices required to meet compliance with our high standards. This includes virtual learning materials distributed via our supplier communication platform, and access to Apple subject matter experts who share their knowledge and provide tailored coaching.

- **Investigations**

We promptly investigate concerns, whether reported by employees, NGOs, news reports, social media, independent hotlines, grievance channels, or any other source. With few exceptions, Apple compliance experts are onsite within 24-48 hours of becoming aware of a concern. We then address any issues of non-compliance, work with suppliers to provide remedy to affected workers, address the root causes of the problem, and implement and sustain preventive measures.

- **Remedy for rights-holders**

Worker access to effective remedy is a core component of the remediation process where instances of non-compliance are found. As part of our Corrective Action Plan (CAP) process, or in direct response to complaints received from workers or through third-parties, we require our suppliers to provide remedy for any person in our supply chain who has been negatively impacted by our suppliers' failure to comply with the Code and Standards.



Remedy for rights-holders

Below are examples of remedy provided last year, resulting from allegations or grievances lodged by supplier employees, or as part of the corrective actions taken following an assessment. Remedy to the affected workers or rights-holders is part of every CAP process, and can take various forms in response to the harm done. This can include various punitive measures imposed on suppliers, a formal apology, financial compensation, or rectifying working or living conditions.

- In an instance where supplier employees reported verbal harassment by supervisors, we investigated immediately and took action to work with suppliers on appropriate remediation, which included reviewing supplier policies and training in relation to harassment, as well as corresponding remedies for affected supplier employees. Typical outcomes in situations like this include disciplinary action against the offending supervisors or line leaders, as well as official apologies to the individual supplier employees.
- During a supplier assessment, document reviews revealed failure to provide sufficient leave. The supplier was required to provide the appropriate leave or provide equivalent financial compensation according to the law and the preference of the supplier employees themselves.
- Through the Apple third-party hotline — which is made available to people across our supply chain — supplier employees reported non-payment of sign-on bonuses. In one case, after investigating information reported by an employee at a final assembly site, we worked with the supplier and their labor agency to make sure the bonus payment was provided to the affected supplier employee. As a result, other supplier employees came forward, and

the same back-payment process was implemented, including full payment of all sign-on bonuses.

- A group of short-term contract workers reported the under-payment of their wages through a third-party hotline. Following a full investigation, the supplier made back-payment of wages to 180 workers.
- In another case, through interviews with supplier employees and inspections of dormitories, multiple instances of non-compliance were discovered, including crowded living conditions, a lack of places to store private or valuable items, and insufficient bathrooms. Such cases require immediate action to restore living conditions to meet our standards, followed by capability-building to address the lapse in management systems that created the original issue.





OUR VALUES IN ACTION

Advancements in our supply chain standards start at home

Final assembly, Ireland

The Apple supply chain spans more than 50 countries, with supplier facilities around the world supporting functions across the full scope of activities required to build, deliver, and support Apple products and services. We partner with our suppliers closely on every aspect of their work. We are always looking for opportunities to raise the bar in developing the latest in advanced manufacturing and recycling techniques and processes, while also safeguarding the well-being of people and the planet. While our partnerships are key in testing and scaling new standards across our supply chain, much of this work begins at home — in Apple's own manufacturing and asset recovery facilities and operations.

This work began with our first campus and manufacturing location outside the United States in Cork, Ireland, in 1980. The campus has grown significantly over time, and today is Apple's European headquarters, hosting a wide range of corporate functions, an AppleCare contact center, logistics, and a final assembly factory that produces iMac devices for customers across Europe and the Middle East.

Austin, Texas, is home to our Material Recovery Lab (MRL), which was founded to develop innovations to maximize the recovery of precious materials during electronics recycling processes. The work conducted at the MRL, in partnership with one of our suppliers, has led to the development of new processes and machinery so that as Apple products are recycled, key materials are recovered at maximum efficiency, increasing the quantity of those materials available to be reused. The MRL also houses Daisy, Apple's iPhone disassembly robot, which, along with its companion installation at one of our supplier sites in Breda, the Netherlands, is capable of disassembling 2.4 million iPhone devices per year.

Many of the techniques developed at the MRL are then used at scale in recycling and material processing centers around the world — including at Apple's own asset recovery center, located in Santa Clara Valley, California. Here, devices returned by customers and Apple employees are evaluated for reuse, repair, and refurbishment, and if no further use is possible, they are processed to recover materials that can be reused or recycled. Using advanced

technologies, including artificial intelligence and machine learning, our asset recovery center is continuing to refine processes to maximize the efficiency, safety, and speed of these recovery processes.

Across all of Apple's manufacturing and material recovery facilities, we uphold our standards for labor and human rights, health and safety, and environmental stewardship, and are always looking for ways to do more. Many of the new processes and practices tested in our facilities become enhancements to our Code and Standards. This raises the bar all of our suppliers must meet, and improves operations and workplaces for millions of people and communities all over the world.

40+

years that Apple has operated its own manufacturing and material recovery facilities

Upholding our standards from the start through responsible procurement

Before we engage with a new supplier, we work to understand how they do business and the standards they have in place. Our responsible procurement process not only considers a prospective supplier's ability to meet our high-quality standards, but also our strict requirements for labor and human rights, health and safety, environmental stewardship, management systems, and ethics.

We are proactive in identifying and mitigating risks early in procurement and product development cycles. This includes assessing prospective manufacturing suppliers and facilities so that risks to people and the environment are mitigated before production starts. We will not award business unless we are satisfied that a supplier can resolve identified risks, and we continue to review new facilities entering Apple's supply chain for environment, health, and safety (EHS) risks after business is awarded, and prior to mass production. Since 2020, nine percent of prospective suppliers evaluated for Code-related risks have been prevented from entering our supply chain for being unable or unwilling to meet our Code and Standards. During the screening process, we regularly conduct onsite, independent, third-party due diligence to review, among other areas, EHS and labor and human rights risks before we move forward with awarding business.

We believe we have a responsibility to share our knowledge and expertise with others — whether or not there is a direct benefit to our supply chain. We extend our support to help prospective suppliers correct compliance issues found during the procurement process — even if the supplier is ultimately not awarded business. Participation is voluntary, and the program is offered at no cost. Since 2020, more than 60 percent of companies that were not awarded business have opted to participate, helping to protect people and the planet beyond the reach of our business and supply chain.

Identifying and mitigating risks prior to production

Leveraging the latest research, assessment data, and insights, we are continually looking for new opportunities to improve — from early product and process design, to material selection, to final production and logistics. Our approach aims to verify readiness throughout the product development process:

- **Onboarding Review**

We strengthen prospective suppliers' awareness of Apple's Code and Standards via the Onboarding Review (OBR) process, which provides guidance from Apple experts to enhance the ability of the supplier to meet compliance with legal and Apple requirements before and after mass production begins. These efforts include monitoring labor hiring plans and responsible labor recruitment, establishing labor and human rights policies and procedures, training, and implementation of grievance systems for supplier employees. As a result of the training and guidance they received, 100 percent of sites participating in OBR in 2022 improved their assessment scores, while 82 percent improved so significantly they achieved a high-performer classification.

- **Facility readiness**

Even after suppliers are awarded Apple business, we continue to review their new facilities entering Apple's supply chain for EHS risks prior to mass production. We follow suppliers through the preproduction phase, as they ramp up, to confirm they are exhibiting the required capabilities — paying special attention to those

suppliers that posed, and then remedied, risks during the responsible procurement process. These actions include verifying that the supplier is taking the actions necessary to meet Apple's Code and Standards during construction of new buildings, and that environmental commitments are secured before production begins. We have also continued to expand our efforts into newer, non-manufacturing areas of the business. In 2022, we began reviewing supplier facilities that support the content services included in Apple One, such as Apple TV+ and Apple Fitness+. In 2022 we reviewed 133 new facilities as part of this effort.

- **Manufacturing readiness**

As our suppliers grow and build new products, they also introduce new manufacturing processes. In 2022, our process safety engineers worked to mitigate 142 EHS risks in new manufacturing processes before operations started. The reviews included assessing adequate machine guarding, electrical safety precautions, and catastrophic incident prevention systems, among many other safety engineering measures. We also reviewed 89 materials and worked with suppliers to mitigate their hazards, including chemical exposure to workers, before production began. In 2022, we also partnered with an academic third-party expert to measure the impacts and effectiveness of identifying hazards and conducting manufacturing readiness reviews prior to mass production.

- **Labor recruitment**

As we onboard key new manufacturing suppliers, we perform thorough due diligence and mapping to understand how they recruit labor for their facilities. This includes identifying all labor agencies that a supplier employs, and then requiring both the supplier team and their labor agencies to be trained on our Responsible Labor Recruitment Due Diligence Toolkit (Recruitment Toolkit), which provides industry-leading tools to conduct thorough due diligence. This helps to confirm that as people are hired, all of our requirements for responsible labor recruitment, and the prevention of forced labor, are met. In 2022, we prioritized the training

of 31 new supplier facilities in nine countries on our Recruitment Toolkit prior to manufacturing ramp-up. To learn more, see the Responsible Labor Recruitment section on [page 39](#).

Standards that apply across Apple's business

As Apple's business continues to grow into new areas, we adapt our supplier engagement model accordingly. For many years, we have engaged closely with suppliers that provide logistics services, support services through AppleCare, and those that support our Retail Stores, such as janitorial service providers and manufacturers that create glass and fixtures for the construction of our stores.

We continue to expand the application of our Code and Standards by including references to the Code in agreements with suppliers supporting newer areas of Apple's business, including Apple Services providers, such as those that support our content services like Apple TV+ and Apple Fitness+, and key renewable energy project developers. We also continue to proactively engage with external experts in dialogue about ensuring a just and fair transition to renewable energy.



Supplier performance and development

Code of Conduct assessments

In the 2022 reporting period, 808 independent, third-party assessments that focused on the requirements of our Supplier Code of Conduct; and 265 assessments that focused on identified 3TG, cobalt, and lithium smelters and refiners in our supply chain²; were conducted across more than 50 countries. Every year, as part of our assessment program, we conduct unannounced assessments and visits, including to investigate supplier employees' concerns and allegations, and to verify risks at supplier facilities identified through predictive analytics. In 2022, investigations and more than 200 surprise assessments — where the supplier facility was given zero advance notice of our arrival — were conducted in the United States, China mainland, India, Japan, South Korea, Taiwan, and Vietnam.

Through our Code of Conduct assessment process, we evaluate suppliers against more than 500 criteria to verify their performance and identify areas for improvement. Once assessed, each facility is ranked on a 100-point scale across three categories: labor and human rights, health and safety, and environment. The average number of points is the facility's composite score for the year, which determines

if the supplier is designated as low-, medium-, or high-performing. These performance categories reflect both the frequency and severity of any issues found during the course of assessing a particular supplier.

Code of Conduct assessments are conducted globally by independent, third-party auditing firms that are accredited to meet international auditing standards. Many of the firms that conduct our assessments are also those [certified to meet the standards of the Responsible Business Alliance \(RBA\)](#).

We prohibit interference of any kind in our assessment process and require that interviews conducted as part of assessments take place in confidential places with no managers or cameras present. In the 2022 reporting period, our auditors did not report any experiences of interference from supplier management, local officials, or any other entities. In addition, we provide anonymous hotlines where supplier employees can contact Apple directly in the event that they experience retaliation, which is a Core Violation (the most serious level of violation) of our Code. These hotlines are accessible at any time and in any language.

In addition to assessments of our production lines and capability-building efforts conducted by our third-party auditors, we require many of our suppliers to also undergo the RBA's Validated Assessment Program (VAP), a facility-wide, third-party assessment widely used by the industry. VAP assessments evaluate a facility's entire operation including, but also beyond, Apple production lines. This combined effort works to prevent violations of our Code and Standards beyond our own production lines. Last year, a total of 98 VAP assessments were completed at Apple supplier sites.

Holding suppliers accountable

We are always looking for opportunities to raise the bar for ourselves and our suppliers, and to support our suppliers' development to meet the mark. We do this by expanding the scope of our due diligence to identify emerging risks; driving early engagement with new suppliers, facilities, and

processes; and using data to better target our resources and support. By leveraging predictive analytics, years of robust assessment data, external reports, and feedback received through third-party hotlines and interviews with supplier employees, we are able to identify salient human rights risks, and the suppliers that require additional support and oversight.

In the event that issues are discovered, we require suppliers to immediately implement a plan to correct the problem and provide remedy to affected supplier employees. Once the plan has been fulfilled, we verify that all corrective actions have been completed to our standards. We call these processes Corrective Action Plans (CAPs) and Corrective Action Verifications (CAVs). Most CAPs are typically completed within 90 days and require check-ins with Apple compliance experts every 30 days. The CAP and CAV processes successfully closed 95 percent of findings in 2022.

When we find violations of our requirements, our goal is to work together with suppliers to provide remedy to their affected employees, while also helping the suppliers improve their management systems and practices to prevent recurrence. When our risk monitoring identifies potential violations of our requirements, we request additional supporting documentation and evidence from suppliers to enable us to further assess and mitigate risks. Removing a supplier from our supply chain is a last resort because, in our experience, it does not provide workers with needed remedy, and could allow violations to continue elsewhere in the industry. In the event that a supplier is unwilling or unable to remedy violations and improve their operations to meet our requirements, despite our investment of time and engagement, they risk removal from our supply chain. Since 2009, we have directed the removal of 25 manufacturing supplier facilities and 205 smelters and refiners from our supply chain.

Addressing Core Violations

When we identify a Core Violation³, Apple notifies the supplier's Chief Executive Officer (CEO), and we immediately place the supplier on probation. The probation period begins when a Core Violation is discovered by Apple, and ends when Apple determines the supplier has completed all corrective actions and there is no reoccurrence of the violation. Depending on the violation, probation may last for a year or more after the completion of corrective actions. Examples of consequences resulting from probation include receiving no new projects or no new business, and the termination of existing business with Apple.

Beyond immediately addressing the Core Violation³, suppliers must provide remedy to affected workers, make changes in their management system that address the root causes of the violation, and sustain preventive measures to help prevent a reoccurrence of the issue.

Further examples of how we require suppliers to provide remedy are detailed in our supplementary [How We Work With Suppliers](#) guide.

In addition to our own third-party assessments of our production lines and capability-building efforts, we require suppliers with Core Violations to undergo a facility-wide assessment, such as the RBA's Validated Assessment Program (VAP).

The most serious violations are called Core Violations, and can include:

- Abuse
- Underage labor
- Debt-bonded labor
- Forced labor
- Falsification
- Retaliation
- Obstruction of an assessment
- Bribery
- Unsafe or unhealthy environment that may cause imminent, significant risk of serious injury, illness, property damage, or any form of loss

² | Apple reports 3TG smelter and refiner assessment information on a calendar year per U.S. Securities and Exchange Commission (SEC) requirements. See our annual Conflict Minerals Report by visiting apple.com/supplier-responsibility.

³ | Core Violations are the most serious level of violation of our Code and Standards.



Product repair, the Netherlands

- Defeated safety devices or impaired loss control system without additional controls to prevent serious incident
- Inadequate maintenance or intentional circumvention that demonstrates the failure of an environmental abatement system
- Lack of required environmental approvals or controls
- Use of prohibited substances, as defined by the Apple Restricted Substances Specification
- Illegal disposal of hazardous waste

Engaging across Apple's business

The Apple Environment and Supply Chain Innovation (ESCI) team works to drive our supply chain standards across Apple's entire business. Part of the World Wide Operations organization, ESCI engages teams across Apple to strengthen relationships, focusing support and capability-building resources on emerging areas of the business and suppliers that need the most attention. These partnerships include close work with teams supporting procurement, product design, manufacturing design, as well as legal, finance, and compliance teams.

Capability-building

We aim to continually raise the bar for ourselves and our suppliers. When our standards are not met, we verify our suppliers have the tools they need to improve their performance and prevent any issues from reoccurring. Every year, we invest in capability-building efforts that support supplier teams in making internal, sustainable changes.

While suppliers are required to correct any compliance deficiency, Core Violations remain the most serious infractions of Apple's Supplier Code of Conduct. In 2022, six Core Violations were discovered: a health and safety violation resulting from insufficient food service and dormitory management at a facility in India, data falsifications at four facilities in China mainland, and one data falsification at a facility in Taiwan.

In addition to assessments, we require suppliers to report data throughout the year, which helps us to verify compliance with our standards outside of the assessments. One example

of this is data on employee working hours, which we require key suppliers to report on a weekly basis. In 2022, we received weekly data reports for an average of 1.6 million supplier employees across more than 300 key facilities, with reporting suppliers maintaining 94 percent compliance with our requirements, despite the continued impacts of the COVID-19 pandemic.

Through capability-building, Apple experts support supplier teams to help them improve their management. In 2022, 143 supplier sites received customized support from experts to help them take steps to improve their performance. On average, the facilities saw their year-over-year overall scores increase from 83 to 94 after customized capability-building.

In one example of successful capability-building, after a Core Violation was discovered at a medium-performing supplier in 2021, the supplier's leadership team was motivated to make wide-ranging improvements beyond remediation of the Core Violation finding. We partnered with the supplier team to support them in forming a new human rights committee, and we implemented weekly labor process reviews, monthly internal audits, and Apple Supplier Code of Conduct training for their employees. We also increased the frequency of supplier employee interviews and satisfaction surveys. After implementing these improvements, assessments in 2022 elevated this supplier to a high-performer in all categories, and verified the presence of effective mechanisms to identify issues, such as those that caused the original violation.

We also continually expand the scope of our capability-building efforts. For example, in 2022, we introduced a new clean air capability-building program designed to support suppliers in better managing their air emissions, helping to improve air quality in the communities where they operate. Twenty-three high-priority sites worked with Apple experts to develop reduction goals and plans to achieve those goals, with a reduction of 20.1 tons of air pollutants achieved in the program's first year.



How we safeguard our assessment process

Our assessments are conducted globally

- Apple Supplier Code of Conduct assessments, including surprise assessments, are conducted globally. Since 2007, our assessments have covered 93 percent of Apple's direct manufacturing spend. In 2022, we conducted independent third-party assessments in more than 50 countries and regions.
- We publish and annually update our Supplier List, which covers at least 98 percent of our direct spend for materials, manufacturing, and assembly of our products worldwide.
- As required by our Code and Standards, suppliers cannot have operations in, recruit labor directly or indirectly from, or source materials, products, or services directly or indirectly from regions where Apple and third-parties cannot access and conduct a comprehensive, independent evaluation of the supplier's compliance with our Code and Standards.

We maintain robust safeguards against assessment interference

- All assessments globally are conducted by independent, third-party auditing firms that are accredited to meet international auditing standards. Many of the firms that conduct our assessments are also

those certified to meet the standards of the Responsible Business Alliance (RBA). Apple employees are also often present for assessments to verify that our protocol is followed, and that the auditor does not experience interference.

- We prohibit interference of any kind in our assessment process and require that interviews conducted as part of assessments take place in confidential places with no managers or cameras present. Apple partners with auditing firms that provide local auditors with native language capability so that no language barrier exists between the supplier employee being interviewed and the auditor.
- Retaliation in any form is a Core Violation⁴ of our Code, and last year, more than 46,000 follow-up phone calls were made to verify that supplier employees who participated in interviews did not experience retaliation as a result of their participation.
- In 2022, auditors did not report any experiences of interference from supplier management, local officials, or any other entities.
- We provide anonymous hotlines where supplier employees can contact Apple directly, accessible at any time and in any language, should they experience retaliation or have any other concern about their workplace experience.

- In 2021, we launched a third-party grievance hotline awareness campaign. In 2022 the campaign reached more than 390,000 supplier employees, which resulted in a 20 percent increase in utilization of the hotlines.

We investigate every report

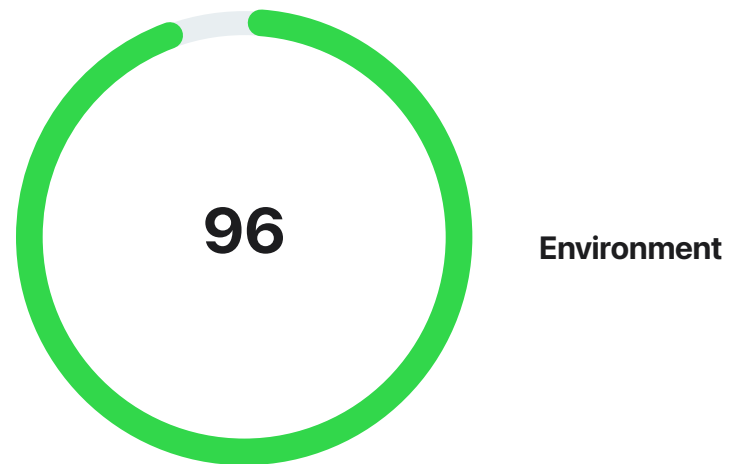
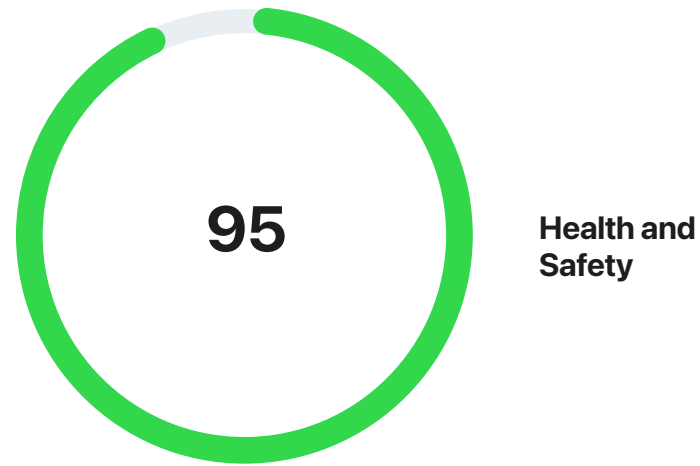
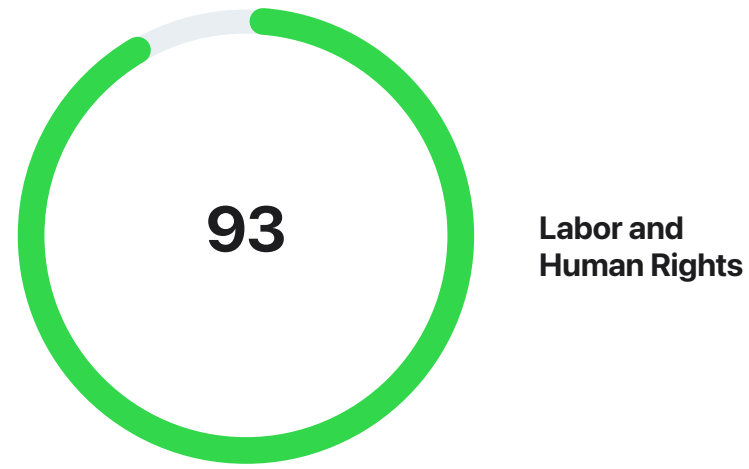
- In addition to thoroughly assessing our suppliers' performance in upholding our standards, we also receive reports from the press, governments, civil society, and people in our supply chain, and we encourage the public to report concerns via apple.com/supplier-responsibility. We investigate every report, and frequently have Apple teams onsite within 24 hours.

We consistently raise the bar

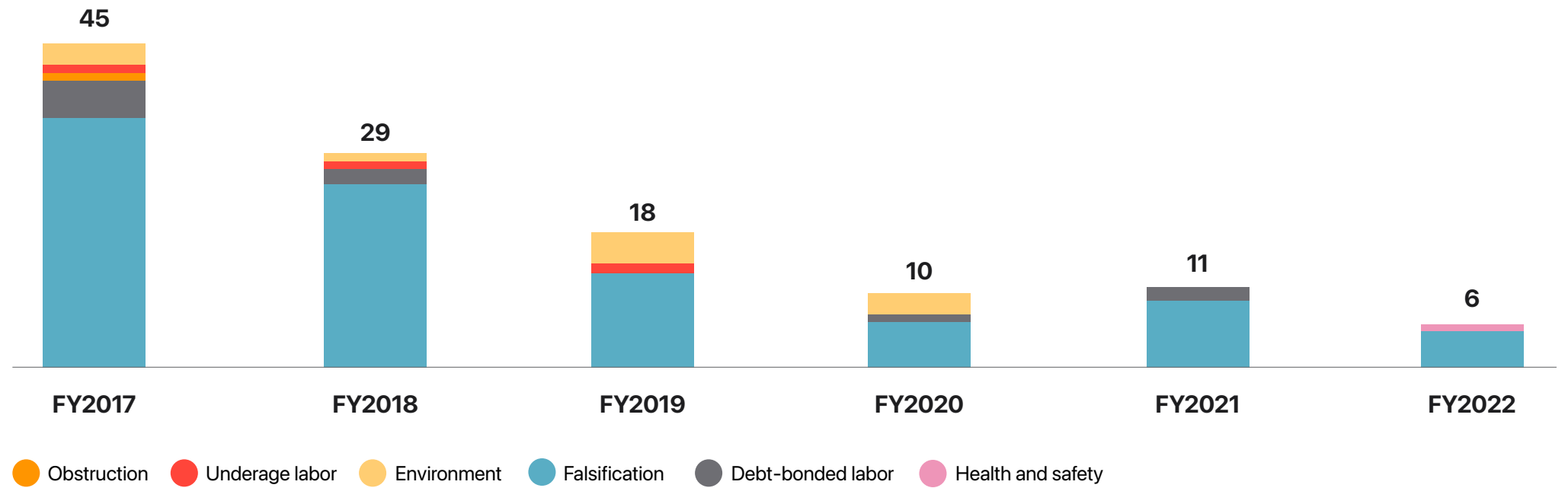
- We revisit all of our supplier requirements every year, consistently raising the bar that suppliers must meet in order to continue doing business with us, and publish the updates publicly.

⁴ | Core Violations are the most serious level of violation of our Code and Standards.

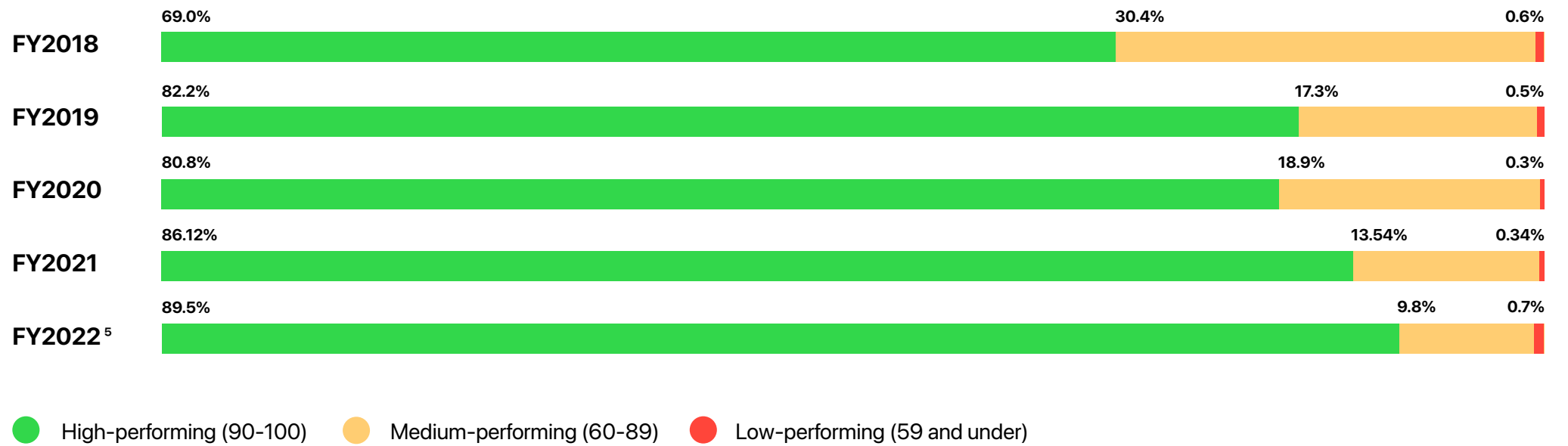
Our supply chain's average assessment performance, by evaluation category



Core Violations over time



Year-over-year supplier assessment performance



⁵ | Supplier assessment scores are reflective of a supplier's performance at the time of assessment. If violations are discovered through other engagements or reports, suppliers are required to follow standard remediation processes, including corrective action plans, corrective action verifications, and undergoing additional assessments as needed.

Beginning in fiscal year 2022, any supplier found to have a Core Violation of our Code, whether during or outside of an assessment, is automatically classified as a low-performer for the year, requiring them to complete additional capability-building programs and undergo additional assessments. For more information on how we score assessments, read the ["How We Work With Suppliers"](#) guide.

Partnerships



Working in partnership

Achieving meaningful progress requires collaboration — bringing together the best thinking from across sectors and geographies to design sustainable solutions that drive fundamental change at a systems-level — to create a ripple effect for people, the environment, and communities around the world. We are proud to lead in this space, working together with industry associations, civil society organizations, and multi-stakeholder initiatives around the world to promote best practices, to listen to and learn from others' perspectives and experiences, and to scale innovative solutions, helping everyone to more quickly achieve lasting progress.



Alliance for Water Stewardship (AWS)

AWS is a global initiative that fosters collaboration between businesses, governments, and civil society, offering a framework and standard for demonstrating world-class water stewardship practices.

—

Apple continues to raise awareness and drive the adoption of the AWS Standard among our suppliers and others in our industry in order to advance the sustainability of local water resources around the world.

Apple is the first electronics company to serve on the AWS board of trustees.

Apple participates in the AWS Information and Communications Technology (ICT) sector working group.



ChemFORWARD

ChemFORWARD is a value chain collaboration working to advance safer chemistry in product design and manufacturing by expanding access to verified, actionable chemical hazard data and safer alternatives.

—

Apple is a Co-Design Partner at ChemFORWARD. Apple co-chairs ChemFORWARD's Technical Advisory Group.



Clean Electronics Production Network (CEPN)

CEPN is a multi-stakeholder initiative working to improve chemical safety in the electronics supply chain.

—

Apple is a founding member and serves on the Design team for CEPN.



European Partnership for Responsible Minerals (EPRM)

EPRM is a partnership between civil society, industry, and government focused on responsible artisanal and small-scale mining (ASM) and sourcing practices, and on improving social and economic conditions for mining communities.

—

Apple is a member of the EPRM.



Fund for Global Human Rights

The Fund for Global Human Rights (the Fund) is a public foundation that works with local human rights organizations in more than 40 countries around the globe.

—
Apple partners with the Fund to support frontline human rights and environmental defenders.



Institute of Public and Environmental Affairs (IPE)

IPE is a leading nonprofit environmental research organization based in Beijing dedicated to collecting, collating, and analyzing government and corporate environmental data. Through its platforms and partnerships, IPE works to achieve environmental transformation, promote environmental information disclosure, and improve environmental governance mechanisms.

—
As the first recipient of IPE's Corporate Information Transparency Index Master's Level Designation, Apple is committed to actively engaging our suppliers in China to help achieve our climate resource conservation goals, and to help others in the industry do the same.



International Organization for Migration (IOM)

IOM is a United Nations agency and is the leading global expert on migration. IOM works to help ensure the orderly and humane management of migration, to promote international cooperation on migration issues, to assist in the search for practical solutions to migration problems, and to provide humanitarian assistance to migrants in need, including refugees and internally displaced people.

—
Apple partnered with IOM to develop our Responsible Labor Recruitment Due Diligence Toolkit (Recruitment Toolkit). IOM also delivers training to our suppliers on the Recruitment Toolkit.



Platform for Accelerating the Circular Economy (PACE)

PACE was created by the World Economic Forum, and has been hosted by the World Resources Institute since 2018. PACE brings leaders together to drive ambitious action along the Circular Economy Action Agenda, working together to accelerate the transition to a circular economy.

—
Apple sits on the board of PACE.



IMPACT

IMPACT is a nonprofit organization that transforms how natural resources are managed in areas where security and human rights are at risk.

—
Apple supported IMPACT's development of an interactive platform to measure and track human rights risks in mineral supply chains, as well as the impact of supply chain-related activities on social and environmental well-being in ASM communities in the Democratic Republic of the Congo (DRC).



International Labour Organization (ILO)

The ILO is the United Nations agency that governs labor rights and standards in the world of work. The ILO brings together governments, employers, and workers to "drive a human-centered approach to the future of work through employment creation, rights at work, social protection, and social dialogue."

—
Apple works with the ILO on a number of projects, including those related to rights training, freedom of association, and advancing worker voice.

—
Apple is a member of the ILO Global Business Network on Forced Labour, and serves on the steering committee.



Pact

Pact is an international development organization that works on the ground in nearly 40 countries to end poverty and marginalization.

—
Apple partners with Pact to deliver rights-awareness training and vocational education programs to miners, youth, and community officials in communities around mining areas in the DRC.



Public-Private Alliance for Responsible Minerals Trade (PPA)

The PPA is a multi-sector initiative supporting the ethical production, trade, and sourcing of minerals from the African Great Lakes region.

—
Apple serves on the Governance Committee, and traveled with the PPA to the DRC and Rwanda in 2019.



RE100

RE100 is a global initiative bringing together the world's most influential businesses driving the transition to 100 percent renewable electricity.

—
Apple sits on the RE100 Advisory Committee.



The Clean Energy Buyers Alliance (CEBA)

CEBA is a membership association for large-scale energy buyers, which seeks to democratize clean energy for all energy buyers, and create a resilient, zero-carbon energy future.

—
Apple serves on the Supply Chain and International Collaboration working group.



RESOLVE

RESOLVE is a leading sustainability NGO driving sustainable solutions to critical social, health, and environmental challenges by creating innovative partnerships where they are least likely and most needed.

—
Apple partners with RESOLVE and Tiffany & Co. on the Salmon Gold project, which works with small-scale gold miners and Indigenous peoples in remote regions of the Yukon, Alaska, and British Columbia to support a mining practice that helps restore rivers and streams so that salmon and other fish can thrive.

In 2022, we worked with RESOLVE to fund the newly created Regeneration project, which focuses on re-mining and processing waste material from legacy mines to restore natural environments and support rehabilitation and biodiversity. Regeneration is an expansion of the Salmon Gold project.



Working Capital Innovation Fund (incubated by Humanity United)

Working Capital Innovation Fund is an early-stage venture fund that invests in scalable supply chain tools to meet the need for more transparent and ethical supply chains, addressing the need to protect vulnerable workers and to source responsibly.

—
Apple is a founding member of and investor in the Working Capital Innovation Fund.



Responsible Business Alliance (RBA)

RBA is the world's largest industry coalition dedicated to corporate social responsibility in global supply chains.

—
Apple collaborates with the RBA and its member companies frequently throughout the year on initiatives spanning the entirety of the work we do across our supply chain. As a full member, Apple serves in several leadership capacities at the RBA, including:

- Serving on the RBA Board of Directors.
- Founding and former steering committee member of the Responsible Labor Initiative (RLI)
- Serving on the steering committee of the Responsible Minerals Initiative (RMI)



Responsible Labor Initiative (RLI)

Established by the RBA, the RLI is a multi-industry, multi-stakeholder initiative focused on ensuring that the rights of workers vulnerable to forced labor in global supply chains are consistently respected and promoted.

—
Apple is a founding member and formerly served on the RLI steering committee.



Responsible Minerals Initiative (RMI)

Part of the RBA, RMI is one of the most utilized resources for companies from a range of industries addressing responsible mineral sourcing issues in their supply chains.

—
Apple sits on RMI's steering committee, and is engaged in a number of RMI working groups and fund projects.



Thomson Reuters Foundation

Thomson Reuters Foundation — the corporate foundation of the global news and information services company Thomson Reuters — is an independent charity working to advance media freedom, foster more inclusive economies, and promote human rights. The organization aims to drive systemic change through news, media development, free legal assistance, and convening initiatives.

—
Apple is a former recipient of Thomson Reuters Foundation's Stop Slavery Award.

Apple supports TrustLaw, which provides pro bono legal support, research, training, tools, and resources for NGOs and social enterprises at the frontlines of social change.

Labor and Human Rights

Code and Standards highlights →

Worker voice and workplace rights training →

Preventing forced labor in our supply chain →



Code and Standards highlights

Every person has the right to a safe, healthy workplace where they are treated with dignity and respect. The labor and human rights provisions in our Apple Supplier Code of Conduct (Code) and the Apple Supplier Responsibility Standards (Standards) hold suppliers accountable at every step.



Anti-Discrimination

Supplier shall not discriminate against any Worker based on age, disability, ethnicity, gender, marital status, national origin, political affiliation, race, religion, sexual orientation, gender identity, union membership, or any other status protected by applicable national or local law, in hiring and other employment practices. Supplier shall not require pregnancy or medical tests, except where required by applicable laws or regulations or prudent for workplace safety, and shall not improperly discriminate based on test results.



Anti-Harassment and Abuse

Supplier shall commit to a workplace free of harassment and abuse. Supplier shall not threaten Workers with, or subject them to, harsh or inhumane treatment, including but not limited to verbal abuse and harassment, psychological harassment, mental and physical coercion, and sexual harassment.



Prevention of Involuntary Labor and Human Trafficking

Supplier shall ensure that all work is voluntary. Supplier shall not traffic persons or use any form of slave, forced, bonded, indentured, or prison labor. Involuntary labor includes the transportation, harboring, recruitment, transfer, receipt, or employment of persons by means of threat, force, coercion, abduction, fraud, or payment to any person having control over another person for the purpose of their exploitation.

Supplier shall not withhold Workers' original government-issued identification and travel documents. Supplier shall ensure that Workers' contracts clearly convey the conditions of employment in a language understood by the Workers. Supplier shall not impose unreasonable restrictions on movement within the workplace or upon entering or exiting company-provided facilities.

Workers shall not be required to pay employers' or their agents' recruitment fees or other similar fees to obtain their employment. If such fees are found to have been paid by Workers, such fees shall be repaid to the worker.



Third-Party Employment Agencies

Supplier shall ensure that the Third-Party Employment Agencies it uses are compliant with the provisions of this Code and the law.



Prevention of Underage Labor

Supplier shall employ only Workers who are at least 15 years of age, the applicable minimum legal age for employment, or the applicable age for completion of compulsory education, whichever is highest. Supplier may provide legitimate workplace apprenticeship programs for educational benefit that are consistent with Article 6 of the International Labour Organization (ILO) Minimum Age Convention No. 138 or light work consistent with Article 7 of ILO Minimum Age Convention No. 138.



Juvenile Worker Protections

Supplier may employ juveniles who are older than the applicable legal minimum age but are younger than 18 years of age, provided they do not perform work that might jeopardize their health, safety, or morals, consistent with ILO Minimum Age Convention No. 138. Supplier shall not require juvenile workers to work overtime or perform nighttime work.



Educational Program Management

Supplier shall ensure proper management of student programs at Supplier's facilities through proper maintenance of student records, rigorous due diligence of educational partners, and protection of students' rights in accordance with applicable laws and regulations. Supplier shall provide appropriate support and training to all such students at Supplier facilities. Supplier shall only hire or allow students to work at the Supplier's facilities in connection with a program at an educational institution. Supplier shall not hire students to meet its demand for workforce labor or to fill short-term gaps in labor supply.



Working Hours

A workweek shall be restricted to 60 hours, including overtime, and Workers shall have at least 1 day off every 7 days except in emergencies or unusual situations. Regular workweeks shall not exceed 48 hours. Supplier shall follow all applicable laws and regulations with respect to working hours and days of rest, and all overtime must be voluntary.



Grievance Management

Supplier shall ensure that workers have an effective mechanism to report grievances that facilitates open communication between management and workers.



Wages and Benefits

Supplier shall pay at least the minimum wage and provide any benefits required by law and/or contract. Supplier shall compensate Workers for overtime hours at the legal premium rate. Supplier shall communicate pay structure and pay periods to all Workers. Supplier shall meet all legal requirements relating to wages and benefits, pay accurate wages in a timely manner, and shall not use wage deductions as a disciplinary measure. All use of temporary and outsourced labor shall be within the limits of the local law.



Freedom of Association and Collective Bargaining

Supplier shall freely allow Workers' lawful rights to associate with others, form and join (or refrain from joining) organizations of their choice, and bargain collectively, without interference, discrimination, retaliation, or harassment.



Whistleblower Protection and Anonymous Complaints

Supplier shall provide an anonymous complaint mechanism for managers and Workers to report workplace grievances. Supplier shall protect whistleblower confidentiality and prohibit retaliation.



Audits and Assessments

Supplier will permit Apple, or a third-party designated by Apple, to periodically evaluate Supplier's facilities and operations, and those of its subcontractors and sub-tier suppliers providing goods or services to Apple, for Apple's benefit, or for use in Apple products, to assess Supplier's compliance with the applicable principles and requirements of the Code.

Supplier shall not have manufacturing operations in, recruit labor directly or indirectly from, or source materials, products, or services directly or indirectly from regions where Apple and Third-Parties cannot access and conduct a comprehensive, independent evaluation of Supplier's compliance with this Code.



Worker voice and workplace rights training

How we amplify worker voice and rights-awareness

We maintain open lines of communication with rights-holders in our supply chain, which enable us to receive real-time feedback — helping us to surface and investigate issues promptly. When necessary, we work with suppliers to provide appropriate remedy for affected workers. Direct engagement with our suppliers' employees helps to identify and mitigate the risks in our supply chain, examples of which include discrimination, obstructing freedom of association and collective bargaining, involuntary labor and human trafficking, and underage labor. Feedback from supplier employees also informs improvements to our Code and Standards.



Setting high standards and training rights-holders

Respecting labor rights begins with awareness and training, which we require our suppliers to provide to their employees before they begin work.

Apple's company-wide Human Rights Policy sets the standard for how we treat everyone, and establishes the foundation for respecting human rights in our supply chain. The policy aligns with the rights outlined by the United Nations International Bill of Human Rights and the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. Additionally, we implement the United Nations Guiding Principles on Business and Human Rights (UNGPs) framework across Apple's business and supply chain to identify salient risks, mitigate or prevent those risks, and provide or facilitate remedy in cases of rights violations.

- **Aligning with international standards**

Apple's supplier requirements align with international frameworks, such as those of the ILO Core Conventions and the Organisation for Economic Co-operation and Development (OECD).

- **Listening to feedback to drive progress**

We know that when people are trained on their rights, workplace satisfaction improves and the risk of issues decreases. Feedback from the people in our supply chain is critical to achieving continuous progress. In addition to requiring suppliers to provide grievance channels, we also provide ways for people to reach out to Apple directly, anonymously, and in any language.

- **Tailoring rights training to improve effectiveness**

Developed together with leading rights education organizations and the people who benefit from our tools, we continue to scale state-of-the-art digital rights training to reach people in their native language, and on the platforms and devices most readily available to them.



Taking action

We amplify worker voice to identify and mitigate potential risks, and to implement improvements proactively in our supply chain.

- **Transparent reporting of concerns and grievances**

Workplace grievance systems, independent satisfaction surveys, independent anonymous hotlines, and one-on-one private interviews are all channels available for supplier employees to report concerns and issues. We also review reports from the press, governments, civil society, and individuals in our supply chain, and encourage the public to report concerns via apple.com/supplier-responsibility.

- **Addressing reports promptly**

If a concern is raised through any communication channel or grievance mechanism, we investigate promptly. If any issue is found, supplier management is required to immediately initiate a plan to resolve the issue, and to provide remedy to people affected by the violation.

- **Preventing retaliation and recurrence**

Retaliation in any form against supplier employees for speaking up is a Core Violation⁶ of our Code, which carries immediate and significant penalties for suppliers.



Partnering to drive progress

Our work to amplify worker voice extends beyond Apple. We support a number of key organizations that are doing critical work to uphold labor rights and uplift the voices of workers across the levels of our supply chain and around the globe.

- **International Labour Organization (ILO)**

We work closely with the ILO to advance worker rights and worker voice in our supply chain and beyond. We also serve on the steering committee of the ILO Global Business Network on Forced Labour, working with others on tools and strategies to prevent forced labor globally.

- **International Organization for Migration (IOM)**

Our partnership with IOM helps us provide tools and training to suppliers and their labor agencies on preventing forced labor and respecting workers' rights during the labor recruitment process.

⁶ | Core Violations are the most serious level of violation of our Code and Standards. To learn more, read the [Supplier engagement and accountability](#) section.

Milestones

| | | | |
|-------------|--|-------------|---|
| 2022 | Launched Supplier Employee Development Fund (SEDF) supported by strategic partners, including the United Nations International Labour Organization (ILO) and the International Organization for Migration (IOM) | 2012 | Code of Conduct assessments expanded to our call centers, logistics, and repair centers |
| 2021 | Expanded application of our Code and Standards to suppliers supporting content services like Apple TV+ and Apple Fitness+ Updated Education Program Management Standard to prohibit the hiring of student workers to fill short-term gaps in labor supply Launched first digital rights training platform for supplier employees | 2011 | Launched working hours program |
| 2020 | Code of Conduct assessments expanded to additional services providers, such as those supporting Apple Retail, Apple Maps, and Artificial Intelligence and Machine Learning | 2008 | Debt-bonded labor defined as a Core Violation in the Code of Conduct Launched worker rights training program |
| 2017 | Strengthened supplier labor and human rights requirements for wages and benefits, involuntary labor prevention, and student intern management | 2007 | Extended Code of Conduct compliance deeper in our supply chain to component manufacturers |
| | | 2005 | Apple's Code of Conduct created |



2022 highlights

Training supplier employees on their rights

Our Code and Standards require our suppliers to provide rights training to all of their employees before they begin work — whether they were hired directly by one of our suppliers, or through other methods such as employment through an independent labor agency. The training must cover international labor standards, local labor laws, EHS standards, prevention of forced labor, how to access grievance mechanisms, and all of the other labor and human rights protections required by our Code and Standards. To date, over 26 million supplier employees have been trained by our suppliers on their workplace and human rights.

As we listen to and learn from the people in our supply chain, we continue to develop new tools to help our suppliers more effectively train their employees on their rights. In 2021, we launched the Responsible Recruitment Awareness Digital Learning Tool with Quizrr, an educational technology platform that educates workers, managers, and labor agents in global supply chains on their workplace rights and responsibilities. Quizrr allows for direct employee engagement and relatable capacity-building through a learning app, along with access to real-time data and insights to proactively prevent, mitigate, and address risks. Relying on direct feedback from training participants through focus groups, we have continued to develop this platform so that the content remains engaging and relevant. As part of the launch of the Apple Supplier Employee Development Fund (SEDF), in 2022, we accelerated the scaling of the platform.

Also as part of the SEDF, we expanded our partnership with Goodbit, an innovative rights education social enterprise, to design, test, and scale a new digital rights-training game delivered directly to supplier employees'

mobile devices. We co-designed the platform with supplier employees, integrating their feedback during testing, focus groups, and one-on-one interviews. By the end of 2022, 50 suppliers and over 275,000 supplier employees had participated in this new gamified digital rights training.

Promoting grievance channels

In 2022, we continued to promote our third-party grievance hotlines, reaching more than 390,000 supplier employees. The campaign included the distribution of more than 31,000 information cards and flyers, as well as videos, onsite information booths, and posters displayed around participating facilities. In 2022, we reached nine new suppliers, resulting in a 20 percent increase in usage of the third-party hotlines. Once investigated, 26 percent of reports we received in 2022 from supplier employees via hotlines uncovered violations of our Code, which led to CAPs to resolve the violations.

To illustrate this program in action, in a case last year, a supplier employee reported through a third-party grievance hotline that they were not provided pay stubs on a regular basis, and did not have clear visibility into how their paycheck was calculated each month. In response, we required the supplier to begin providing training on how salaries are calculated, and how their employees can check their pay details via an electronic payroll system. In another instance, a supplier employee reported that they were diagnosed with mild, occupational noise-induced hearing loss, but were not provided any accommodations by management. After raising the issue through a third-party grievance hotline, we worked with the supplier to provide their employee with medical care and additional compensation for their work-related injury.



Final assembly, China

Hearing directly from supplier employees

Every year, as part of supplier assessments, we interview tens of thousands of supplier employees about their workplace experience. Participation in interviews is completely voluntary and employees are selected randomly through a sampling methodology that seeks broad representation across the facility and employee population. Selected employees are informed about the conditions of the interview, including that the conversation will take place in a safe space with no cameras or supplier management present, and that the content of the interview is confidential. Interviews are conducted in the employee's native language so that nothing is lost in translation. The interviews are conducted by local employees of our independent, third-party auditing firms, and in the event that employees in a facility speak multiple languages, multiple auditors with the required language capabilities are engaged. In 2022, we interviewed over 79,000 people as part of supplier assessments, and surveyed more than

931K+

supplier employees engaged on their workplace experience, including more than 459,000 people surveyed, over 79,000 people interviewed as part of supplier assessments, and more than 390,000 people reached as part of grievance channel awareness campaigns

459,000 supplier employees — a 53 percent increase in engagement from the previous fiscal year.

Last year, more than 46,000 follow-up phone calls were made to verify that supplier employees who participated in interviews and were willing to be contacted afterward did not experience retaliation as a result of their participation. All interviewed employees are also provided with ways to contact anonymous third-party hotlines in case they experience retaliation at a later time. Should retaliation be found, our [Core Violation](#) process would apply. In 2022, we did not find any instances of retaliation.

Understanding workplace satisfaction

We also engage with supplier employees to understand their overall workplace satisfaction, which identifies opportunities to mitigate risks and issues early, as well as opportunities for general workplace improvement. In 2022, we anonymously surveyed more than 459,000 supplier employees in 282 facilities across the United States, Brazil, Canada, Costa Rica, China mainland, Guatemala, India, Ireland, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, Thailand, the UK, and Vietnam about their workplace experiences — a nearly 74 percent increase over the number of supplier employees surveyed in 2021. After collecting feedback, we work with suppliers to analyze the results and develop action plans to address their employees' needs and concerns. As a result of this effort last year, suppliers took more than 5,400 actions, including expanding transportation options, improving food-service offerings, and improving the speed and efficiency of workplace services.

Advancing communication between supplier employees and management

We provide comprehensive solutions and tools to improve worker-management communication, including for smaller or newer suppliers that are still working to develop their infrastructure. Our ongoing partnership with SCORE Academy, an organization supporting decent work in global supply chains, engages supplier employees directly in

decision-making and facilitating greater dialogue and accountability between supplier employees and their managers.

In 2021, we launched the SCORE Program at supplier sites in China, based on training curriculum developed by the ILO. Our work continued in 2022 as we collaborated with SCORE Academy to deliver a full package of training modules to select small- and medium-size supplier facilities in China.

The SCORE Program also allows management and supplier employee representatives to collaborate on solutions for EHS risks, and other issues such as the prevention of workplace harassment and productivity. All SCORE-enrolled facilities have set up enterprise improvement teams (EITs), which include both management and supplier employee representatives. Regular EIT meetings are conducted to discuss grievances and suggestions from employees and, to date, more than 2,600 actions have been taken as a result of these suggestions. While the COVID-19 pandemic did impede onsite training, more than 40 EIT members at three factories completed 392 SCORE Academy courses, 180 of which were held onsite. For suppliers that need additional support, Apple provides expert resources who share management methodologies and regularly visit the facilities to monitor progress.

Empowering human rights and environmental defenders

Encouraging independent voices in communities is critical to assessing risks and opportunities across and deep within our supply chain, including in mining communities in the Democratic Republic of the Congo (DRC). To do this effectively often requires partnering with experts who help us more effectively gather and better understand feedback. Last year, we supported more than 70 organizations, including human rights and environmental defenders working around the world on issues such as social and economic rights in mining communities, the prevention of modern slavery, and media freedom.

We've supported many of these organizations through our continuing partnership with the Fund for Global Human Rights (the Fund), a public foundation that works with local human rights organizations in more than 40 countries around the globe, to mobilize movements and improve lives by supporting groups and individuals working to create lasting change. We've provided financial support to the Fund's frontline activists and human rights defenders working on a range of issues, including economic and social rights of mining communities, inclusive economic growth, judicial advocacy, environmental justice, the rule of law, health and safety, and fair compensation for mining communities. In 2022, with the support of Apple, the Fund partnered with 16 grassroots organizations.

As a former recipient of their Stop Slavery Award, Apple has cultivated a strong partnership with the Thomson Reuters Foundation, supporting its work over the past three years to foster inclusive economies and promote human rights, including the training of 58 civil society organizations on new trends in the field of responsible business. We provide support to the Thomson Reuters Foundation's TrustLaw, which provides pro bono legal support, research, training, tools, and resources for human rights and environmental defenders around the world. With a presence in over 175 countries, TrustLaw works with hundreds of legal teams representing over 120,000 lawyers to support more than 5,500 NGOs and social enterprises with free legal assistance.

We have also continued our partnership with Pact to deliver rights-awareness training to miners, youth, and community officials in artisanal and small-scale mining (ASM) communities in the DRC, reaching over 25,000 community members last year.

In 2021, Pact also initiated a financial literacy and access program called WORTH that brings together small groups of local community members to save money, access credit, and expand their financial and business capabilities. WORTH members are also given business and financial training tailored to their needs, enabling them to access financial capital needed to start their own

businesses or go to school. In 2022, Pact continued to support the 14 WORTH community-based savings and loan groups formed in 2021, and formed three new ones with a total of 69 members. By the end of December 2022, the 17 groups (513 members) had collectively saved \$126,635 through membership contributions, with \$173,775 in loans disbursed.

Preventing forced labor in our supply chain



How we prevent forced labor

Apple does not tolerate forced labor. In the more than 50 countries and regions where our suppliers operate, we have teams of experts, including independent third-parties, who monitor our suppliers and put in place industry-leading procedures to help verify that no one is forced to work. Our comprehensive approach starts before we even sign a contract with suppliers, and is meant to confirm that people's rights are respected throughout the entirety of their employment journey, regardless of their job, location, or how they're hired — whether directly by one of our suppliers or through employment with an independent labor agency.



We set the highest standards

Eliminating forced labor begins with setting and maintaining the highest standards. Our standards often go above and beyond local requirements to protect people from forced labor risks.

- **Aligning with international frameworks**
Apple policies and our supplier requirements align with international labor and human rights standards, including those of the International Labour Organization (ILO), the United Nations Guiding Principles on Business and Human Rights (UNGPs), and the Organisation for Economic Co-operation and Development (OECD).
- **The Apple Human Rights Policy**
Our Human Rights Policy outlines how we treat everyone, including our customers, employees, business partners, and the people across every level of our supply chain.
- **The Apple Supplier Code of Conduct and Supplier Responsibility Standards**
Our supplier requirements contain strict standards for responsible labor recruitment, and apply to all suppliers, protecting workers globally. We go above and beyond legal requirements in many places by strictly prohibiting labor recruitment in regions where we cannot conduct adequate due diligence, and by maintaining a zero fees policy, because we believe no one should pay to secure a job.
[Read the Apple Supplier Code of Conduct and Supplier Responsibility Standards](#)



We engage early

To address forced labor risks at its roots, we know that our work has to begin before people enter our supply chain.

- **Labor recruitment mapping informs our strategy**
An effective strategy requires deep understanding of our supply chain. In 2022, we mapped over 2,500 labor recruitment agencies that work with our suppliers across 34 countries.
- **A leading strategy requires leading tools**
The Apple Responsible Labor Recruitment Due Diligence Toolkit, developed in partnership with the International Organization for Migration (IOM), provides suppliers and their labor agencies with easy-to-use tools that help them effectively manage and report data, which helps mitigate forced labor risks before people even enter our supply chain. In addition to providing hands-on training, we are making these tools openly available for others to use.
- **Awareness is power**
We require our suppliers to provide their employees with training on their workplace rights. This helps the people in our supply chain to be aware of their rights and what to do if they're not being respected, which includes the ability to anonymously contact Apple directly. Foreign Contract Workers (FCWs), who make up a very small percentage of people in our supply chain, also receive training prior to leaving their home country, as well as upon arriving in their destination country. To date, our suppliers have provided workplace rights training to over 26 million people. In addition, last year we directly engaged with over 539,000 people in our supply chain to learn more about their workplace experience.
- **Investing in consistent improvement**
Through our new Supplier Employee Development Fund, we're investing \$50 million to expand programs designed to continue to improve the rights-training experience, worker voice platforms, and supplier employee education opportunities.



We hold suppliers accountable

Once we've implemented thorough preventative measures, independent, third-party assessments verify that our suppliers are meeting our standards. Looking for evidence of forced labor is part of every supplier assessment. If we find any violations of our Code and Standards, we take swift action to remedy the issue and improve their operations.

- **A close look**
We regularly conduct independent, third-party assessments, including surprise assessments, of our suppliers to verify compliance with over 500 points across our standards. This includes an extensive document review to confirm that all hiring and personnel records are in place and accurate. In addition to specialized forced labor assessments for at-risk suppliers, we also require many suppliers to participate in facility-wide assessments, such as the Responsible Business Alliance's (RBA) Validated Assessment Program (VAP), to verify performance across the supplier's entire business. In the event that we find gaps in a supplier's compliance or capabilities, we require them to implement a Corrective Action Plan (CAP). Since 2007, our assessments have covered 93 percent of our direct manufacturing spend.
- **We investigate every report**
In addition to thoroughly assessing our suppliers' performance in upholding our standards, we also receive reports from the press, governments, civil society, and people in our supply chain, and we encourage the public to report concerns via apple.com/supplier-responsibility. We investigate every report, and frequently have Apple teams onsite within 24 hours.
- **Swift action and steep penalties**
Forced labor in any form is a Core Violation⁴ of our requirements. If a Core Violation is discovered, the supplier's CEO is notified and the supplier is immediately placed on probation, pending the successful completion of a CAP. Probation can include no new projects, no new business, and termination of existing business. In addition to commercial penalties, if a supplier is unable or unwilling to meet our standards, they risk removal from our supply chain.
- **Action this year**
In 2022, across more than 800 Code assessments, we found no instances where anyone was forced to work in our supply chain. To date, our suppliers have directly repaid \$34.2 million in recruitment fees to over 37,700 of their employees due to Apple's zero fees policy.



We track progress and report transparently

Consistent improvement requires transparency and accountability. Since 2007, we have been publishing reports on our efforts across all of our work to transparently share our progress and challenges.

- **People and Environment in Our Supply Chain Annual Progress Report**
Published annually since 2007 (formerly known as the Supplier Responsibility Progress Report), this report contains a detailed account of our progress, challenges, and future plans across all areas of our supplier requirements.
[Read our disclosure](#)
- **Efforts to Combat Human Trafficking and Slavery Disclosure**
This disclosure is a specialized filing that focuses specifically on our efforts to prevent and address forced labor risks throughout our supply chain, and includes our due diligence process for our entire business, including manufacturing, materials and goods sourcing, and services. This report also demonstrates our alignment with the UNGPs and meets regulatory requirements in the UK, Australia, and California.
[Read the Apple Supplier Code of Conduct and Supplier Responsibility Standards](#)
- **Consistently raising the bar**
We revisit all of our supplier requirements every year, consistently raising the bar that suppliers must meet in order to continue doing business with us, and publish the updates publicly.
[Read the Apple Supplier Code of Conduct and Supplier Responsibility Standards](#)
- **Learn more**
We publish additional reports that provide a transparent look at our supply chain. Our Conflict Minerals Report describes our work to responsibly source materials. Our Smelter and Refiner List publishes a list of all identified tin, tungsten, tantalum, gold (3TG), cobalt, and lithium smelters and refiners across our global supply chain, and the Apple Supplier List shares the companies and their locations that comprise at least 98 percent of our direct manufacturing spend.
[Read our disclosures](#)



We regularly engage and partner with experts

Engagement with stakeholders and rights-holders is critical to accountability, to taking action where it's needed, and to achieving rapid progress.

- **The International Labour Organization (ILO)**
We work closely with the ILO on a number of projects, including those related to rights and advancing worker voice. Apple is a member of the ILO Global Business Network on Forced Labour, and serves on the steering committee.
- **The International Organization for Migration (IOM)**
Apple partners with the IOM on multiple initiatives, including on the development of our Responsible Labor Recruitment Due Diligence Toolkit and training our suppliers on the Recruitment Toolkit.
- **Responsible Business Alliance (RBA)**
Apple collaborates with the RBA and its member companies frequently throughout the year on initiatives spanning the entirety of our program. As a full member, we serve in several leadership capacities including serving on the board of directors, being a founding and steering committee member of the Responsible Labor Initiative, and serving on the steering committee of the Responsible Minerals Initiative.
- **Responsible Labor Initiative (RLI)**
Apple is a founding member and formerly served on the steering committee of the RLI, which was established by the RBA as a multi-industry, multi-stakeholder initiative focused on ensuring that the rights of workers vulnerable to forced labor in global supply chains are consistently respected and promoted.
- **Fund for Global Human Rights (the Fund)**
Apple partners with the Fund, which empowers local voices, to support grassroots activists, as well as human rights and environmental defenders.

⁴ | Core Violations are the most serious level of violation of our Code and Standards. To learn more, read the [Supplier engagement and accountability](#) section.

Milestones

| | | |
|-------------|---|--|
| 2022 | <p>Began requiring prospective suppliers in Brazil, China mainland, India, Japan, Malaysia, Taiwan, Thailand, Singapore, South Korea, and Vietnam to complete labor agency mapping and responsible labor recruitment training as part of supplier selection and business award process</p> <p>Launched the IOM Fair and Ethical Recruitment Due Diligence Toolkit, based on Apple's Responsible Labor Recruitment Due Diligence Toolkit</p> | <p>2018</p> <p>Received Stop Slavery Award from Thomson Reuters Foundation</p> <p>Launched partnership with IOM to create a path for trafficking survivors to obtain full-time employment with Apple suppliers</p> <p>Mapped higher-risk migration corridors for Foreign Contract Worker movement and employment in our supply chain</p> <p>Scaled efforts to conduct pre-departure orientation training in the supply chain with IOM</p> |
| 2021 | <p>Expanded mapping of labor agencies, nearly tripling the number of agencies identified across our supply chain</p> <p>Launched Responsible Labor Recruitment Awareness Digital Learning Tool</p> | <p>2017</p> <p>Released our first modern slavery statement</p> <p>2015</p> <p>Enacted policy prohibiting recruitment fees</p> |
| 2020 | <p>Scaled Responsible Labor Recruitment Due Diligence Toolkit to the industry via RBA</p> <p>Conducted extensive mapping of labor agencies in our supply chain</p> | <p>2014</p> <p>Established partnership with IOM</p> <p>2008</p> <p>First Code requirement restricting workers' payment of recruitment fees</p> |
| 2019 | <p>Released Responsible Labor Recruitment Due Diligence Toolkit</p> <p>Scaled training opportunities for human trafficking survivors across the U.K.</p> | |

2022 highlights

Our work begins long before a person is hired, as we engage with and train suppliers and labor agents in partnership with expert international organizations. We continue to advance industry-leading responsible labor recruitment standards and tools that safeguard workers' rights and confirm that our requirements are implemented throughout all stages of recruitment. Once people are hired, we remain vigilant. Every supplier assessment we conduct looks for the presence of forced labor, and should evidence be found, we act swiftly to hold our suppliers accountable.

Mapping labor recruitment in our supply chain

Our Code and Standards apply to labor agencies that our suppliers employ to recruit workers. To safeguard supplier employees, we have pioneered new standards, tools, and practices to identify our suppliers' labor agencies, regardless of whether they recruit domestic labor or FCWs. We are among the first companies to undertake this mapping exercise, which we consider to be critical due diligence.

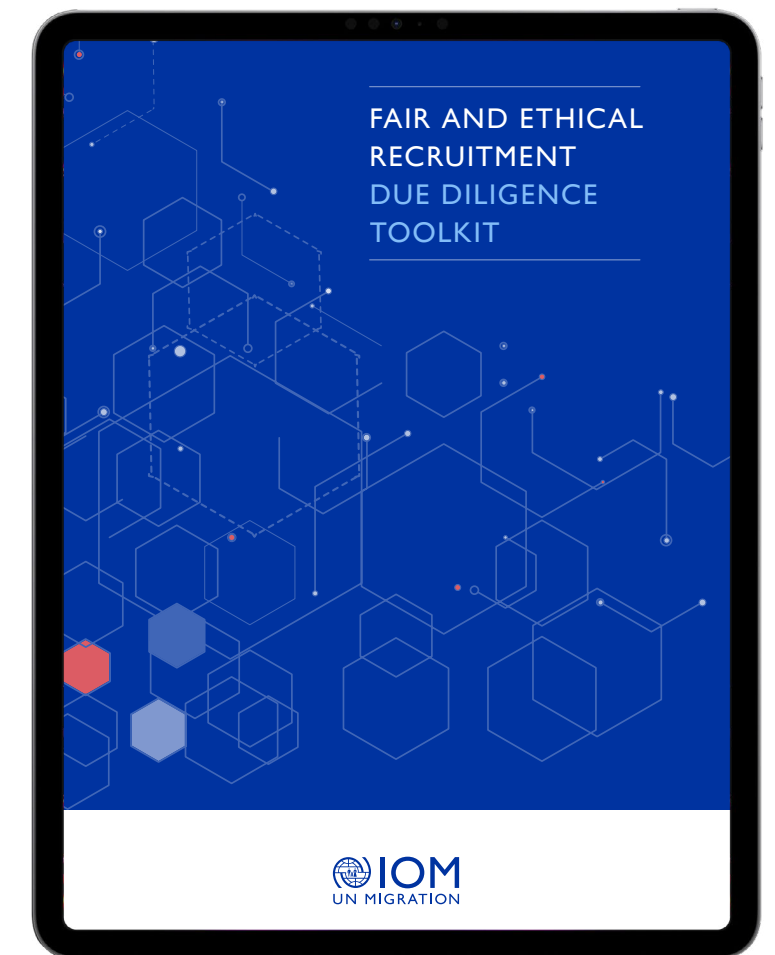
In 2021, we expanded our extensive labor agency mapping to further understand all recruitment channels within our supply chain, in order to better target our resources and training efforts. In 2022, we identified more than 2,500 labor agencies supporting more than 1,200 facilities in 34 countries and regions. We also began to require all prospective suppliers in Brazil, China mainland, India, Japan, Malaysia, South Korea, Taiwan, Singapore, and Vietnam to complete labor agency mapping and responsible labor recruitment training as part of our supplier selection due diligence and business award process.

Pioneering tools for responsible labor recruitment

In order for the workplace to be a respectful, supportive environment, everyone who plays a part in the recruitment process — including labor agencies and the companies for whom they recruit workers — must be knowledgeable, and then held accountable to respecting labor rights.

We've invested heavily in creating industry-leading tools for responsible labor recruitment, which we call the Responsible Labor Recruitment Due Diligence Toolkit (Recruitment Toolkit). We are proud of the progress we have made in our own supply chain through the use of the Recruitment Toolkit, and we're sharing the best practices we've honed over many years in order to help everyone — even those working beyond the electronics manufacturing industry — achieve progress more rapidly. We continue to expand our multi-year collaboration with the IOM and, in 2022, we supported the release of the IOM Fair and Ethical Recruitment Due Diligence Toolkit. The IOM Toolkit is designed to conduct comprehensive due diligence at every stage of recruitment, with the goal that businesses

We work tirelessly to prevent forced labor in our supply chain and utilize a comprehensive engagement approach to confirm that people's rights are respected throughout the entirety of their employment journey, regardless of their job, location, or how they're hired — whether directly by one of our suppliers or through employment with an independent labor agency.



In 2022, the IOM released the Fair and Ethical Recruitment Due Diligence Toolkit based on tools developed by Apple and tested in our supply chain.

across industries will use these tools to accelerate progress around the world, and across many industries.

Last year, we further expanded the scope of the Recruitment Toolkit, adding new and improved tools that we now require labor agencies use when conducting their own due diligence, even though they are not direct Apple suppliers. Updates included a self-assessment checklist and CAP template that we created as a result of direct engagement with labor agencies.

We also enhanced the Recruitment Toolkit with additional resources that help suppliers identify and standardize the process of addressing risks associated with all worker profiles and employment relationships, including educational institutions and subcontracted workers. In 2022, we delivered 59 Recruitment Toolkit training sessions in seven languages to 256 supplier facilities in 47 countries, reaching more than 277,000 supplier employees and management globally, with 59 percent of those working directly on Apple production lines.

In 2022, we began requiring use of the Recruitment Toolkit for all prospective suppliers engaged in the procurement process, enabling them to conduct self-assessments, risk assessments of their labor agencies, and evaluation of their processes for worker interviews and grievance management. Current suppliers also use the Recruitment Toolkit for assistance with capability-building on responsible recruitment practices.

In addition to our partnership with the IOM to make our tools and trainings available to everyone, we are also partnering with the RBA, which continues to share the Recruitment Toolkit internationally, reaching RBA member companies and hundreds of thousands of people around the world in 2022.

Preventing and remedying forced labor

Apple does not tolerate any form of forced labor. Debt-bonded labor, in which a person is charged fees in order to secure work, is considered a **Core Violation** of our Code, and is a practice which we've led the industry for many years in seeking to eradicate. The payment of

recruitment fees, or the presence of other conditions, such as withholding an employee's personal identity or travel documents, restricting an employee's freedom of movement, or involuntary employment as a consequence for not having paid off said fees, all constitute salient risks in our supply chain and are violations of our Code and Standards. The programs and tools we created have been shared beyond Apple's supply chain to other industries to help prevent, identify, and remedy such violations.

Foreign Contract Workers (FCWs) are people who choose to leave their home countries to seek employment abroad. FCWs make up approximately one percent of the people in our supply chain, but are at higher risk of being charged recruitment fees in the process of securing a job. For this reason, we carry out specialized assessments at facilities where FCWs are employed. In 2022, 58 specialized assessments and investigations of facilities employing FCWs were conducted in Australia, Japan, Malaysia, Singapore, Taiwan, and Thailand. These assessments verify whether any fees were paid by workers at any point during their labor recruitment process. Each specialized assessment includes verification of documents from suppliers and their labor agents, as well as interviews with labor agents and FCWs.

We were among the first companies to align with international best practices for preventing debt-bonded labor by prohibiting our suppliers from charging workers any fees connected to their recruitment or employment — even if charging such fees is legal in the supplier's operating country or the worker's home country. To enforce our zero fees policy, we look for evidence of debt-bonded labor in every supplier assessment we conduct, which includes detailed employment record reviews, and private interviews with employees in their native language to be sure their employment experience matches our observations. We also regularly conduct field visits and interviews with workers, suppliers, and their labor agencies to verify their recruitment processes, and conduct targeted investigations into supplier hiring processes as needed.

If, in the course of any of these activities, we discover recruitment fees have been paid, we require our suppliers

to promptly provide remedy by directly repaying any recruitment fees to their affected employees. We then verify full and timely repayment via an independent, third-party auditor. From 2008 through 2022, \$34.2 million in recruitment fees have been repaid to more than 37,700 people by our suppliers. In 2022, \$1 million in recruitment fees resulting from violations reaching back to 2021 were repaid to over 380 people.

Taking immediate action to address potential forced labor

Where other risks or indicators of potential forced labor in our supply chain have been raised, we have taken prompt action. In 2022, during assessments of suppliers employing FCWs, there were isolated findings regarding the withholding of passports by labor agencies for the purposes of work permit renewals. As part of their CAP, the supplier was required to establish a system to track the passport handover process and return the passport to workers in a timely manner after completing the work permit renewal, and with the full knowledge and consent of the employee regarding the process. In another case, employees living at a supplier dormitory were not allowed to enter or exit the supplier site and residential areas after 23:00 due to security concerns. We required the supplier to remove these restrictions and establish a process to manage the safe entry and exit of workers, without limitation on freedom of movement.

256

supplier facilities across
47 countries trained on our
Recruitment Toolkit

Health, Safety, and Wellness

[Code and Standards highlights →](#)

[Health and safety →](#)

[Wellness education and training →](#)

[Smarter chemistry →](#)



Code and Standards highlights

Worker health, safety, and well-being come first — now and always. We require our suppliers to provide and maintain safe workplaces, where workers have access to the information and resources they need to stay safe and feel empowered to speak up if they have concerns.



Incident Management

Supplier shall have a system for workers to report health and safety incidents and near-misses, as well as a system to investigate, track, and manage such reports. Supplier shall implement Corrective Action Plans (CAPs) to mitigate risks, provide necessary medical treatment, and facilitate workers' return to work.



Working and Living Conditions

Supplier shall provide workers with reasonably accessible and clean toilet facilities, as well as potable water. Supplier-provided dining, food preparation, and storage facilities shall be sanitary. Worker dormitories provided by Supplier or a Third-Party shall be clean, safe, and provide reasonable living space.



Occupational Health and Safety Management

Supplier shall identify, evaluate, and manage occupational health and safety hazards through a prioritized process of hazard elimination, substitution, engineering controls, administrative controls, and/or personal protective equipment.



Chemical Management

Supplier shall develop and implement a program to take reasonable steps to prevent adverse impacts to people and the planet arising from processes and operations of chemicals. Supplier shall comply with Apple's Regulated Substances Specifications for all goods it manufactures for, or provides to, Apple.



Emergency Preparedness and Response

Supplier shall identify and assess potential emergency situations. For each situation, Supplier shall develop and implement emergency plans and response procedures that will minimize harm to life, environment, and property.



Infectious Disease Preparedness and Response

Supplier shall develop and implement a program to take reasonable steps to prepare for, prevent, and respond to the potential for an infectious disease among its employees.



Health and Safety Communication

Supplier shall provide workers with appropriate workplace health and safety training in their primary language. Health and safety-related information shall be clearly posted in the facility.



Machine Safety

Supplier shall develop and implement a program to purchase, install, and operate machines it uses to manufacture Apple products in a safe manner.



Health and Safety Permits

Supplier shall obtain, keep current, and comply with all required health and safety permits.



Health and safety

How we support safe and healthy workplaces

Everyone has the right to be safe and healthy at work. We aim to cultivate a supply chain that prioritizes health and safety through strict standards; two-way communication that is direct, transparent, and engaging; and partnerships with leading experts to advance requirements for safety — as well as the protection of labor rights — at every stage of production. In addition, we maintain programs that focus on improving health beyond the workplace, providing valuable knowledge and life skills to supplier employees and members of their communities.



Defining expectations

Building a culture that prioritizes safety requires setting and upholding the highest standards, and continually raising the bar for performance through clear, consistent guidance and ongoing supplier engagement.

• Clear communication

We regularly review and communicate the policies that underpin our supplier requirements for health and safety, which include the [Apple Supplier Code of Conduct](#), the [Supplier Responsibility Standards](#), and the [Apple Regulated Substances Specification](#). We communicate updates via SupplierCare, Apple's online communication and training platform for suppliers, to provide suppliers with the latest in safety best practices and training resources to educate supplier teams on how to implement our strict standards.

• Comprehensive engagement

In addition to conducting regular supplier assessments to evaluate compliance with our requirements, we provide focused support to those suppliers whose processes or management systems require additional attention or whose workplace satisfaction survey results related to health and safety indicate opportunities for improvement. We provide suppliers with tools and resources to support them in building and maintaining a culture that puts health and safety at the forefront every day.



Progress through collaboration

A workplace culture that values health and safety requires everyone to be trained and knowledgeable about the measures required to keep everyone safe. It also requires working in the collective to bring companies, experts, and civil society together to drive change across the industry.

• Safety training implementation

Supplier employees receive regular training on safety best practices from Apple experts, including machine safety awareness, safe work procedures, and workplace hazard awareness. This training supports compliance with our requirements, as supplier employees gain the knowledge to identify opportunities to improve efficiency and safety.

• Capability-building across teams

We help suppliers build cross-functional teams with leaders from a variety of specialties, who help to promote the implementation of our guidelines and standards to create the safest environment possible. These cross-functional teams receive dedicated trainings and then share learnings with their peers to increase the institutionalization and impact of the training throughout the business.

• Strengthening standards through partnerships

We believe that our work to help suppliers build safe workplaces should not stop with our supply chain. We work in the collective to drive industry standards and practices forward by participating in leading industry associations and openly sharing our tools and practices with others.



Environmental rights are human rights

Our approach to health and safety focuses on safeguarding not just the well-being of the people in our supply chain, but also the communities where our suppliers operate. We know that a safer supply chain is also better for the environment, and for people in local communities. Learn more on [page 64](#).

Milestones

- 2022** | Began reviewing new supplier facilities for EHS risks that support content services, such as those supporting Apple TV+ and Apple Fitness+
- 2021** | Developed supplier safety culture guide
- 2020** | Enhanced Code and Standards requirements on infectious disease management

Developed Machine Safety Design Guideline for machine builders responsible for enclosure manufacturing
- 2019** | Launched EHS Leadership Workshop

New Code requirements added on occupational health and safety, chemical identification and evaluation, process safety management, chemical hazard communication, and emergency preparedness and response

Launched Environmental Permit Database
- 2017** | EHS Academy content was adapted for members of Responsible Business Alliance (RBA) and Institute for Sustainable Communities (ISC)
- 2015** | Established EHS Subject Matter Expert Capability-Building program
- 2013** | Launched EHS Academy
- 2012** | Published Combustible Dust Hazards Standard



2022 highlights

Building a culture of safety

We uphold the highest standards to keep people safe and healthy on the job, and this work also extends to local communities. Compliance with our rigorous health and safety standards is verified in every supplier assessment, and is a critical focus of our extensive supplier capability-building efforts, which focus on prevention and education.

Tools to build a safer culture

In 2022, we continued to expand the supplier safety culture guide we created in 2021, designed to reinforce Apple's standards, reduce risks, prevent safety incidents, and identify processes or suppliers that need additional support. The guide includes a checklist and other tools that help supplier leadership address performance opportunities and develop improvement plans.

In listening to feedback from supplier management and their employees, we are continuing to evolve the guide to strengthen our tools focused on facility safety. This will include, for example, recommendations on improving experiential safety education through risk simulation, and enhancing how facilities visually provide essential information through signage and symbols.

Machine safety awareness and compliance

As our products continue to advance, so do the machines used to build them, which is why in 2022, we continued to strengthen our machine safety requirements by adopting a requirement for new capital equipment to conform to CE safety requirements as described in our Machine Safety

Standard. This builds on Apple's comprehensive machine safety management programs and provides a new, even higher bar for machine design, installation, and operation.

Last year, to support suppliers in adhering to this new standard, we launched additional trainings on SupplierCare, our supplier communication and training platform, to increase awareness of machine safety standards and machine-associated risks. Trainees learned fundamentals such as the use of safety devices, inspection basics, and hazards associated with moving parts. While it is crucial that everyone has the same understanding about how to operate machinery safely, this training is particularly important for medium- and small-size suppliers that may not have a complete cross-functional team dedicated to managing machinery lifecycles. The training also provides knowledge about safety inspections suppliers are expected to conduct on all existing machines by using our safety checklist — which clearly outlines best practices for the usage of signs and barriers, daily tasks for improving safety protocols, and methods for minimizing hazards. To date, more than 5,700 employees responsible for safety management at 749 supplier sites across China, India, Thailand, and Vietnam have completed our new machine safety awareness training on SupplierCare.

Embedding safety throughout facilities

In order to manage safety protocols and training, many suppliers utilize cross-functional teams that are focused on implementing and upholding our health and safety standards across their business. We believe cross-functional teams focused on this work are critical to upholding a culture of safety, and in 2022, we helped

enable these kinds of teams at key suppliers' sites through direct capability-building.

With one supplier in China, we built up a cross-functional machine safety management team of more than 300 employees across 18 of the supplier's facilities. By engaging with our supplier at a corporate level, rather than site by site, we elevated their machine safety knowledge, which helped to identify machine safety gaps and administrative issues, which were then corrected.

During the COVID-19 pandemic, we continued to adapt and innovate in order to support our suppliers in improving their performance. We established a hybrid capability-building model and implemented remote document reviews and virtual interviews to evaluate suppliers' safety management teams and their skill level in managing end-to-end processes. After completing the online portion, we conduct onsite validations when necessary, and provide Corrective Action Plans (CAPs) and other in-person trainings. In 2022, 100 suppliers were prioritized for this effort, with more than 2,500 supplier employees receiving cross-functional capability-building.

Increasing inspection effectiveness and efficiency

Regular inspections of equipment and evaluations of safety procedures are integral to minimizing risk and maintaining site-wide safety — and are also critical to respecting people's right to a safe and healthy workplace. In 2022, we completed onsite safety inspections at 74 key supplier sites. Over 2,000 machines were inspected, and through onsite capability-building, suppliers mitigated all identified risks in those machines.

After machinery is inspected, we offer recommendations for corrective measures and work with suppliers to develop action plans for any additional actions needed. Progress is monitored and verified, and suppliers apply their learnings from the inspection program to conduct parallel inspections of other machines. This effort has also influenced how cross-functional teams focused on machine safety are created and operate, and has enhanced suppliers' risk identification capabilities.

Wellness education and training



Milestones

- 2022**
 - Developed training in India focused on preventing long-term health issues related to COVID-19 and other illnesses
 - Launched mindfulness course pilot for frontline managers in China to improve worker satisfaction
- 2021**
 - Developed enhanced mental health program in partnership with experts and supplier employees
 - Evolved new employee orientation to include more tools, resources, and information about mental health, diet and exercise, relaxation, personal hygiene, and sleep
- 2019**
 - Health education program expanded to Vietnam
 - Introduced training to staff working at onsite clinics in Vietnam
 - 1M supplier employees reached by health education program
- 2018**
 - Health education program expanded to India
 - Funded independent, anonymous health testing for a range of health and reproductive issues at key supplier sites
- 2017**
 - Health education program established in China
 - Launched health awareness programming for female employees



2022 highlights

Since 2017, over 3.7 million supplier employees have received training on a number of health and wellness-related topics, including general health, nutrition, mental well-being, reproductive health, and training on early disease detection. This includes information and resources shared as part of suppliers' New Employee Orientation, as well as specialized health and wellness training opportunities. And through the Apple Education Hub, we are continuing to deliver important health and wellness programs to a growing number of people in our supply chain.

In 2022, we interviewed, surveyed, and conducted focus groups led by academic experts with over 1,600 supplier employees in six facilities to learn how we can better evolve our current programming, and what health knowledge and skills would be most valuable to them. We are using this feedback to help suppliers provide their employees with more tools, resources, and information about diet and exercise, relaxation, personal hygiene, sleep, and mental health.

Expanding mental health support

Mental well-being is a critical component of overall health. We're committed to giving our suppliers the resources they need to support their employees' mental health, including trainings, toolkits, and connections to leading experts.

In 2022, we continued working with leading experts from Beijing Normal University, who specialize in Occupational Health Psychology, to enhance our holistic approach to health and wellness by conducting a pilot on mindfulness and positive management training with selected line leaders and production managers. We conducted a four-week course to help frontline managers cultivate the skills to monitor their own emotions and therefore improve interactions with their employees. Results showed that the course was effective in improving emotional awareness, as well as communication and leadership skills. Attendance rates increased as did worker satisfaction rates; two months after the pilot concluded, worker satisfaction had improved by nearly 13 percent. When participants continued with their own practice after training concluded,

the effects continued, with worker satisfaction increasing by 23 percent. Given the positive learnings from the pilot, we will be providing this as an ongoing program in 2023.

While we continue to work with our suppliers to assess programming opportunities to support mental health, we are providing three types of training aimed at cultivating a better understanding of mental health across our suppliers' teams. This includes training to improve mental health literacy, support peer volunteers at seven factories as part of a pilot program in China, and improve frontline managers' awareness of their employees' mental well-being.

To supplement these trainings, we are developing a mental health management toolkit, complete with guidelines on workplace mental health management and volunteer operations, instructions on selecting employee assistance programs, and a guide to help managers support employees in moments of crisis. When mental health and overall employee wellness is a priority, the result is a more positive, healthy environment that fosters workplace satisfaction and retention.

Addressing challenges associated with long COVID

Challenges associated with the COVID-19 pandemic have affected all of our communities. We have made particular efforts to support our suppliers in India where communities are seeing a number of health challenges associated with long COVID. With this in mind, we launched a campaign with our ongoing collaborator and leading local health organization St. John's Medical College, Bangalore, to offer specialized sessions as an extension of our mental well-being programming. These sessions focused on the importance of vaccinations in preventing severe symptoms related to COVID and other influenza-like illnesses, and increased awareness of seeking timely follow-up care. Trainings were made available to all supplier employees, regardless of their current health status, and also addressed COVID-19 transmission, prevention methods, and treatments that can alleviate lingering effects.

Supporting women's reproductive health

In Vietnam, where up to 70 percent of employees at participating suppliers are women, we continued with our long-standing program that addresses reproductive health. Through programs that invest in community healthcare providers, supplier employees in Vietnam have access to critical services tailored to their needs, which include family planning, sexual health counseling, cervical cancer screenings, and more. Last year, more than 3,400 people in Vietnam took advantage of these services, bringing the total to over 19,700 people reached since the launch of the program.

We support the people in our supply chain with tools and resources to manage their own health, which creates a resilient, supportive workplace where they can thrive.

Smarter chemistry



How we advance smarter and safer chemistry

Our approach to safeguarding the health of people across our supply chain is comprehensive. We take necessary precautions and work collectively to drive progress toward safer alternative chemicals, which helps safeguard the health and safety of people across Apple's supply chain, and beyond.



Setting the highest safety standards

We work to protect human health and the environment by setting and upholding strict material safety standards that often exceed regulatory requirements.



Implementing safer alternatives across the supply chain

We make it easier for suppliers to use safer alternative chemicals by providing them access to the information and resources they need to identify and select preferred materials from the start.



Leading the industry on transparency and disclosure

We advance the understanding and practices of smarter chemistry by achieving a level of transparency beyond industry norms — gathering data from our suppliers on how chemicals are used, stored, and handled, and how protections are implemented.



Sharing our tools to achieve impact across our industry

We push to advance smarter chemistry standards in our industry, helping to create the right market conditions to achieve progress at scale and to benefit employees in our supply chain and beyond.



FROM TOP:
Recycling, United States; Recycling, Taiwan

Milestones

- | | | | |
|-------------|---|-------------|--|
| 2022 | <p>Publicly committed to eliminating PFAS across our supply chain</p> <p>Launched IPC-1402 Standard for Greener Cleaners Used in Electronic Manufacturing</p> <p>Received IPC's Stan Plzak Corporate Recognition Award</p> | 2018 | <p>All supplier final assembly sites use only safer alternatives for cleaners and degreasers</p> |
| 2021 | <p>Received U.S. EPA Safer Choice Partner of the Year Award for second consecutive year</p> <p>Expanded collection of data through Chemical Safety Disclosure (CSD)</p> <p>Founding signatory of the Clean Electronics Production Network (CEPN) Toward Zero Exposure program</p> <p>Developed GreenScreen Certified™ for Cleaners & Degreasers in partnership with Clean Production Action (CPA)</p> | 2017 | <p>Began requiring final assembly suppliers to report full chemical inventory to Apple</p> <p>Replaced all GreenScreen Benchmark 1 and 2 cleaners with safer alternatives in all final assembly facilities</p> |
| 2020 | <p>Ranked #1 of 50 retailers on Mind the Store Retailer Report Card</p> <p>A+ rating from Mind the Store campaign for third consecutive year</p> <p>First company in electronics industry to receive U.S. EPA Safer Choice Partner of the Year Award</p> | | |



2022 highlights

Safeguarding health through strict standards

Everyone has the right to a safe and healthy workplace, and keeping workers and customers safe is our top priority. Upholding this right is at the center of the decisions we make about the materials we include in our products and the processes and substances we use to build them.

Chemicals are required for many manufacturing processes. By selecting safer, more environmentally preferred materials, we proactively safeguard health and safety, and our products can more easily be recycled within circular supply chains. These health and safety benefits extend beyond our supply chain to the communities where our suppliers operate, and to the planet as a whole.

This begins with defining safe materials for suppliers, which involves setting and upholding strict material safety standards as outlined in our Code and Standards and our Regulated Substances Specification (RSS). These guidelines are derived from, but often go beyond, international laws or directives, regulatory agencies, eco-label requirements, and environmental standards to protect human health and the environment.

We design our products and manufacturing processes to use materials that meet our standards — and we continually revisit our specifications. In 2022, Apple publicly committed to eliminating per- and polyfluoroalkyl substances, known as PFAS, due to the environmental implications of their use. As part of this effort, we are engaging with all of our supply

chain partners to build on our current work to restrict all PFAS from our products and manufacturing processes.

Safety begins with transparency

In order to understand opportunities for safer alternatives, we first map the chemicals in our supply chain. In accordance with the International Labour Organization (ILO)'s Chemicals Convention, we require and provide mechanisms for suppliers to disclose information about the chemicals used at their facilities, including how each is stored and handled. This is accomplished through our Full Material Disclosure (FMD) and Chemical Safety Disclosure (CSD) programs — rigorous processes through which our suppliers provide an inventory that we can use to verify compliance with our standards, as well as to identify and implement safer alternatives and other initiatives to protect workers from chemical hazards. Through these efforts, we've identified more than 19,000 unique chemicals and applications.

Finding and implementing safer alternatives

The chemical data disclosed by our suppliers enables us to find opportunities to implement safer alternatives by identifying substances that carry increased risk, either by their nature or the frequency or volume with which they are used. For example, process chemicals — like cleaners and degreasers — account for some of the most used materials by volume within our final assembly sites. Because of this factor, these are also the chemicals that workers most often use, which made them prime candidates to be replaced with safer alternatives.

In 2022, we approved 58 safer cleaners for use in our supply chain, bringing the total safer cleaners we have approved over the past three years to 133. Since 2018, our final assembly sites have exclusively used safer alternative cleaners and degreasers, as identified by Apple. We have since expanded this work to the component manufacturers who create modules used in final assembly, helping them identify and implement opportunities to use safer alternatives in their operations.

Driving industry change

Our goal is to be the ripple that creates change, driving higher standards across the industry and enabling others to accelerate progress in their supply chains. We continue to share our learnings and best practices with the industry — from the criteria we set for chemicals, to the tools we have developed for our own suppliers — in order to protect workers and accelerate progress across the industry. We collaborate with standard-setting bodies, trade associations, and non-governmental organizations (NGOs) to achieve this, developing tools, standards, and mechanisms to drive the identification and adoption of smarter chemicals.

In 2022, we continued our role as a founding signatory of the Clean Electronics Production Network (CEPN) Toward Zero Exposure program. CEPN is a multi-stakeholder initiative led by the NGO Green America to accelerate companies' efforts to eliminate workers' exposure to hazardous chemicals, and raise awareness of the need to improve chemical management practices across the global electronics manufacturing industry.

As a signatory, we are leading the electronics industry in reporting on the removal of priority chemicals identified by CEPN in our final assembly sites. We not only focus on employing safer alternatives from the start, but also emphasize effective engineering solutions and administrative controls to safeguard people across manufacturing processes.

We continued to partner with ChemFORWARD, a nonprofit organization committed to creating broad access to chemical hazard data and a registry of cleaners, to make it easier for suppliers to choose safer alternatives. We also supported the Responsible Business Alliance (RBA) in producing a comprehensive technical guide on responsible chemical management, as well as over 20 hours of related training content to educate workers across thousands of companies on controlling occupational exposures to hazardous chemicals. More than 3,800 EHS managers have completed the new courses since their launch in 2022.

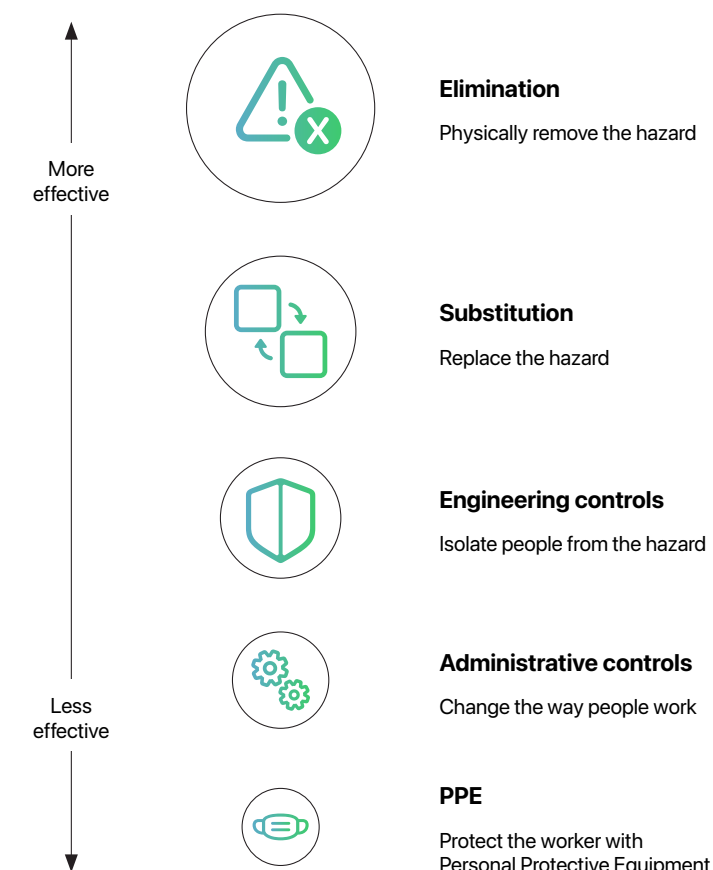
In 2022, we continued our collaboration with IPC, the premier global electronics standard-setting body globally,

by drafting and helping to launch the IPC-1402, *Standard for Greener Cleaners Used in Electronics Manufacturing*. This standard resulted from work over the past two years with the Green Cleaners in Manufacturing task group, where Apple has served as a chair, working with more than 20 industry partners. This new standard will help suppliers across the electronics industry select cleaners that are safer for employees and the environment. Last year, Apple received IPC's Stan Plzak Corporate Recognition Award in recognition of our work on this effort and our contributions to the industry.

We also consult with experts from the ILO on safer chemistry, as well as with other worker rights and protection organizations.

Hierarchy of controls

Apple's approach to smarter chemistry prioritizes elimination and substitution.



Education

The Apple Education Hub →

Cultivating leadership and capability →

Scaling educational opportunities →



How we support personal and professional development in our supply chain

Education is a powerful equalizing force, and we work hard to create technology that empowers every kind of educator and learner. We are proud to invest in the people in our supply chain, supporting them with opportunities to become leaders, learn from others' expertise, and prepare for the jobs of today and tomorrow.

We rely on feedback directly from suppliers and their employees — gathered via interviews, focus groups, and surveys — to help curate educational and development opportunities that best support the advancement of manufacturing processes, technology, and quality. This process also helps create opportunities that accelerate personal development, unlock new career opportunities, and create a more skilled and empowered workforce.



Tailoring programs to the needs of supplier employees

We use feedback gathered directly from suppliers and their employees, as well as employment market trends, to deliver and adapt educational opportunities with immediate and future applicability.

- **Building career-oriented skills**

Employees across all levels and positions at participating suppliers have access to a diverse array of technical opportunities that aim to empower people to take ownership of their career, from programs that teach coding skills, to those that support personal development and leadership skills.

- **Continuing to invest in health and wellness support**

When employees have the resources, knowledge, and agency to cultivate emotional resilience and awareness, they are better able to manage their well-being and address challenges in and out of the workplace, resulting in a workplace where they can thrive.



Creating space for learning

For training that requires hands-on instruction, we create spaces for people to come together and learn.

- **Apple Education Hub**

Last year, we opened a physical home for the Apple Education Hub in China — a state-of-the-art facility created in partnership with Zhejiang University — where supplier employees can supplement their learning and find career support in custom-built learning labs.

- **Supplier facility labs**

Over many years, we've outfitted classrooms at supplier facilities with iMac and iPad devices for workers to learn, study, and gain experience through tailored curricula.



Virtual and person-to-person resources

We scale our investment in the people in our supply chain through virtual trainings and by developing volunteer peer educators.

- **Virtual learning**

We leverage leading online learning platforms and tools for skills that do not require in-person instruction, enabling people to learn from anywhere at any time.

- **Train-the-trainer model**

We deepen our impact by teaching groups of people who are then able to go back to their respective facilities and train their coworkers, bringing many more people into our programs and equipping them with the skills to accelerate their development.

Milestones

| | | | |
|-------------|---|-------------|---|
| 2022 | <p>Launched Apple Education Hub as part of the Supplier Employee Development Fund (SEDF)</p> <p>Opened physical learning lab in China in partnership with Zhejiang University</p> <p>Introduced Vocational Education for Persons with Disabilities program in China</p> <p>Expanded educational offerings for U.S.-based supplier employees</p> | 2017 | <p>SEED program expanded to include Swift and vocational certification program</p> <p>Launched Line Leader Program</p> <p>Advanced Manufacturing Fund announced, providing investments and training to U.S.-based suppliers</p> |
| 2021 | <p>Updated our requirements to include a new Education Program Management Standard</p> <p>Supplier Employee Education and Development (SEED) program reached over 5M participants</p> | 2015 | SEED program reached 1.4M participants |
| 2019 | <p>Launched skill-building program for employees of U.S.-based suppliers</p> <p>Developed curriculum for automation technicians</p> | 2008 | Launched SEED program |
| 2018 | First Line Leader cohort graduated | | |



2022 highlights

Launching the Apple Education Hub

In 2022 we introduced the Apple Education Hub, part of our \$50 million commitment to the SEDF. The Education Hub is the evolution of our supplier employee education programs, which have been in operation since 2008. Since the launch of the Education Hub, over 484,000 supplier employees have participated in programming to develop skills necessary for the future of work in our supply chain and surrounding communities.

As part of this commitment, we opened a physical home for the Apple Education Hub in China — a learning lab, built in partnership with Zhejiang University outside of Shanghai. The lab is a physical extension of Apple's ongoing dedication to offering and improving educational access. There, supplier employees and other attendees participate in seminars and conferences, and complete coursework that requires hands-on instruction, such as robotics training. In addition to this lab, we continue to maintain classrooms at facilities throughout the supply chain, outfitted with iMac and iPad devices enabling people to study and gain experience through leading virtual training platforms.

Expanding our investment in the United States

Last year, as part of the launch of the Apple Education Hub, we made a major investment in workforce development and expanding the educational offerings available to supplier employees in the United States. Our efforts join other Apple programs focused on investing in and building the capacity of U.S.-based businesses, including

the Advanced Manufacturing Fund, which supports U.S. suppliers in their development of breakthrough innovations, and the [Racial Equity and Justice Initiative's Impact Accelerator](#), which is dedicated to supporting equity and opportunity in the environmental sector by finding and cultivating the next generation of Black- and Brown-owned businesses working on the frontiers of green technology and clean energy. Focusing on our diverse supplier base in the United States, which includes companies across many industries including manufacturing, services, recycling, and technical support, we created new programs tailored to the needs of supplier employees across the country.

Partnering with the Council for Adult and Experiential Learning (CAEL), a national nonprofit membership organization working to improve education-to-career pathways for adult learners, we invested heavily in learning from our U.S.-based suppliers and their employees to create new opportunities for people to learn and grow, and to create a brand new online platform where people can discover opportunities and create a plan for their learning. Focus areas include professional development and technical skills, such as advanced and lean manufacturing fundamentals, and spoken and written English skills.

We have also supported efforts to improve recycling capacity and efficiency with our U.S.-based recycling suppliers by providing education on lean methodologies and management systems for supplier employees working in recycling facilities. With an emphasis on continuous improvement of efficiency and quality, these educational opportunities bolster employee engagement, mitigate safety issues, and improve recycling economics.

We continue to invest heavily in scaling our programs to

suppliers across the United States, expanding access to new learning opportunities for people across the country.

Cultivating leadership and capability

We are focused on equipping supplier employees with meaningful educational and leadership opportunities, wherever they learn, that enrich their workplace experiences and open new career paths. Over the past six years, more than 8,000 students have participated in line leader, automation technician, and other technical trainings, and more than 4,300 trainees have taken part in our vocational education programs, with many moving into technical or management positions at supplier facilities soon after graduating. We have also organized 84 capability-building activities, designed to provide skill-building for trainers in facilities, that have reached more than 2,000 people over the past four years.

Our Line Leader program enables supplier employees to receive production management training and advance into highly technical roles such as production line supervisors. Formerly geared toward vocational school students who expressed interest in advanced manufacturing roles, the pilot we developed in 2021 made these opportunities available to current supplier employees who are working to advance their expertise and become eligible for internal promotions. In 2022, we also began offering automation technician training to people in supplier facilities who are excited to kick-start their careers and learn the ins and outs of troubleshooting and machine maintenance.

In 2022, we introduced a Vocational Education for Persons with Disabilities program in China to improve safety, accessibility, and inclusion for people who may have challenges working in standard facility conditions. The program provides people with disabilities employment opportunities as well as training related to the workplace. Peers of program participants also receive inclusion training to help them support their coworkers, and industrial engineers at the facilities are taught how to design systems and layouts that create a more welcoming, comfortable workplace. Next year, we plan to scale this program,

directing our efforts to better support recruiting and identifying positions that best match prospective worker capabilities. In the initial rollout of the program in 2022, over 600 individuals participated in the program.

Developing teachers and scaling educational opportunities

When people are able to impart their knowledge, they are able to gain a deeper understanding of the subject — while also supporting the growth and development of others. This concept is the basis of our train-the-trainer model, a method we employ to extend the reach of our educational programs.

Utilizing a train-the-trainer methodology allows supplier employees to learn directly from other employees to enrich each other's knowledge, which, in turn, develops more teachers, helping to scale access to our educational opportunities. In one example, Apple Retail Store employees share their knowledge of iMac and iPad basics with trainers from supplier facilities, which gives both the teachers and students a more comprehensive understanding of our technology, and the productivity and efficiency that it enables. Those trainers are then able to go back to their facility and share their knowledge widely, reaching far more people. In 2022, we expanded this particular effort to Taiwan, our first expansion beyond mainland China.

Expanding coding education

Coding is a skill critical for advancement in many of the roles in our supply chain, as well as one that provides extensive opportunity across many industries. Last year, our Swift coding program continued to expand as we integrated feedback from past participants and tailored the curriculum to opportunities identified by our suppliers.

Since 2017, we have offered this program to supplier employees, and have seen increasing interest every year. In order to make this training more available to people across different levels of learning, we adopted a hybrid learning

model, moving many of the lessons online. In 2022, we provided entry-level introductions to computer science and coding in an online, self-paced video format. Over 10,000 supplier employees at 12 sites participated in introductory coding training in 2022.

In 2022, we extended our hybrid coding education model that launched as a pilot in 2021 to 12 suppliers. In this program, advanced coding students attend five weeks of webinars and two weeks of classroom training. Facility IT departments are also involved in advanced curriculum review, and they offer feedback on case studies as well as on students' work. During the experience, coding students learn to accurately problem-solve for real-world challenges, develop apps, and gain valuable experience. Once they graduate from this training, many employees move from production positions into technology and automation jobs at their same facility.

The number of people participating in our advanced coding program tripled in 2022. Since 2017, more than 400 supplier employees have graduated from our advanced coding program, and 19 apps built in the program have been published on the App Store, with five published in 2022 alone.

Developing technical skills for advanced manufacturing

Providing opportunities for workers to gain valuable technical expertise benefits both suppliers and their employees by improving suppliers' operational capability and efficiency while improving their employees' career mobility and opportunities.

Last year, we continued to scale our technical training program — which includes courses on robotics, machine vision, mobile device repair, and industrial computer tools and software, such as programmable logic controllers (PLC) and computer numerical control (CNC) — expanding to 23 supplier sites in 2022. Additionally, we set up new robotics education courses at two key suppliers in 2022. Since 2018, more than 5,700 supplier employees have received robotics training through these hands-on courses.

In 2022, 60 supplier training management team members along with 120 internal trainers took part in program management and technical skill training at 18 supplier sites. Designed to build training capabilities for junior employees, the program management courses aim to cultivate teaching and presentation skills, as well as skills in curriculum and video course development. For technical trainees, six sites hosted competitions in which participants developed solutions to automation challenges by applying their knowledge to hands-on scenarios.



FROM TOP:
Manufacturing education program, China; responsible labor recruitment training, Vietnam

Materials and Resources

Code and Standards highlights →

Closed loop →

Recycling →

Responsible sourcing of materials →

Zero waste →

Water stewardship →



Code and Standards highlights

Apple is committed to protecting the environment, and environmental responsibility is at the core of how we operate. We require that our suppliers develop, implement, and maintain environmentally responsible business practices.

Our Code also supports our goal to one day use only recycled and renewable materials, as well as our ongoing commitment to source all materials responsibly.



Environmental Permits and Reporting

Supplier shall obtain, keep current, and comply with all required environmental permits. Supplier shall comply with the reporting requirements of applicable permits and regulations.



Regulated Substances

Supplier shall comply with Apple's Regulated Substances Specifications for all goods it manufactures for, or provides to, Apple.



Solid Waste Management

Supplier shall implement a systematic approach to identify, manage, reduce, responsibly control disposal, and minimize waste to landfills from its operations.



Water and Wastewater Management

Supplier shall implement a systematic approach to identify, control, and reduce wastewater produced by its operations. Supplier shall conduct routine monitoring of the performance of its wastewater treatment systems.



Stormwater Management

Supplier shall implement a systematic approach to prevent contamination of stormwater runoff. Supplier shall prevent illegal discharges and spills from entering storm drains, the public water supply, or public bodies of water.



Air Emissions Management

Supplier shall identify, manage, reduce, and responsibly control air emissions emanating from its operations that pose a hazard to the environment. Supplier shall conduct routine monitoring of the performance of its air emission control systems.



Greenhouse Gas Emissions Management

Supplier shall identify, manage, reduce, and responsibly control Greenhouse Gas (GHG) emissions from its operations.

Supplier shall regularly quantify, set targets, monitor progress, and reduce its emissions of Greenhouse Gases through conservation, use of clean energy, or other measures.



Boundary Noise Management

Supplier shall identify, control, monitor, and reduce noise generated by the facility that affects boundary noise levels.



Resource Consumption Management

Supplier shall regularly quantify, set targets, monitor progress, and reduce consumption of fossil fuel, water, hazardous substances, and natural resources through conservation, reuse, recycling, substitution, or other measures.



Responsible Sourcing of Materials

Supplier shall exercise due diligence on relevant materials in its supply chains. Supplier shall develop particular due diligence policies and management systems in order to identify applicable risks and take appropriate steps to mitigate them. Due diligence shall be conducted down to the material processing level in order to determine whether Relevant Materials originate from High-risk Regions, which include areas associated with conflict, child labor, forced labor and human trafficking, gross human rights violations such as widespread sexual violence, or other reasonably objective high-risk activities, including severe health and safety risks, as well as negative environmental impacts.

This Standard applies to all Apple suppliers, their subcontractors, and all entities within their supply chains directly or indirectly producing and/or procuring goods for use in Apple's products. While Apple considers compliance with this Standard to be the minimum a supplier must do to remain in Apple's supply chain, a supplier should seek to go beyond the minimum and apply any relevant best practices wherever possible. Apple anticipates that in the future, only suppliers exceeding minimum requirements and operating at the best practices level are likely to remain in Apple's supply chain.

Our environmental strategy

Environmental rights are human rights. Our environmental strategy touches every aspect of how we design, make, sell, reuse, and recycle our products — as well as the labor and human rights, health and safety, and environmental impacts of those actions and decisions.

Our approach to environmental stewardship takes into consideration our entire business, including corporate operations and our supply chain. Throughout this report, we share the story of the progress we have achieved in our supply chain environmental programs in 2022. For a more comprehensive look at Apple's broader environmental strategy and progress, see our [Environmental Progress Report](#).



Daisy, Apple's iPhone recycling robot, the Netherlands

Closed loop



Our progress on recycled and renewable materials

iPhone 14

- 100% Recycled tin in the flexible printed circuit boards
- 100% Recycled rare earth elements in all magnets
- 100% Recycled gold in the wire of all cameras and flexible circuit boards



Apple Watch Series 8

- 100% Recycled rare earth elements in all magnets
- 100% Recycled gold in the plating of multiple printed circuit boards



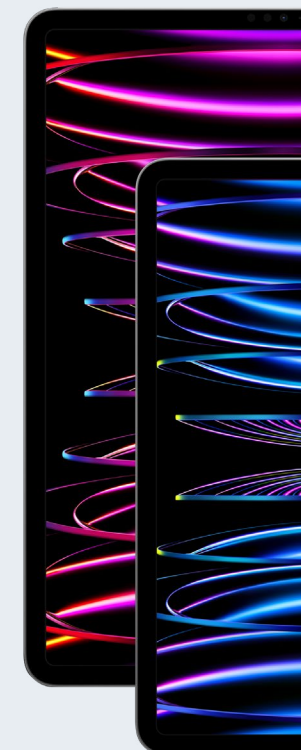
Apple TV 4K 3rd generation

- 100% Recycled tin in the solder of multiple printed circuit boards
- 80% Recycled aluminum in the thermal module
- 100% Tin, tungsten, tantalum, gold, cobalt, and lithium smelters and refiners participated in independent, third-party assessments to verify compliance with our standards



iPad Pro 12.9" 6th generation iPad Pro 11" 4th generation

- 100% Recycled aluminum enclosure
- 100% Recycled copper in the foil of the main logic board
- 100% Recycled gold on the plating of the main logic board
- 99% Recycled rare earth elements



Studio Display

- 100% Recycled rare earth elements in the device
- 100% Recycled aluminum in the stand
- 100% Recycled tin in the solder of the main logic board



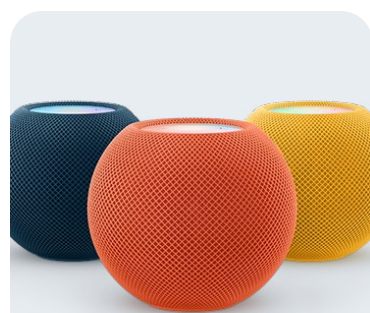
iPad Air 5th generation

- 100% Recycled aluminum enclosure
- 100% Recycled copper in the foil of the main logic board
- 100% Recycled rare earth elements in the enclosure and audio magnets
- 100% Recycled gold on the plating of the main logic board



HomePod mini

- 99% Recycled rare earth elements
- 90% Recycled plastic in the mesh fabric
- 35% or more recycled plastic in seven components



iPad 10th generation

- 100% Recycled aluminum enclosure
- 100% Recycled copper in the foil of the main logic board
- 100% Recycled gold on the plating of the main logic board
- 99% Recycled rare earth elements



Apple Watch Ultra

- 100% Recycled rare earth elements in all magnets
- 100% Recycled gold in the plating of multiple printed circuit boards



MacBook Air with M2 chip

- 100% Recycled recycled aluminum in the enclosure
- 90% Recycled steel in the battery tray
- 100% Recycled rare earth elements in all magnets
- 100% Recycled tin in the solder of the main logic board



Mac Studio

- 100% Recycled rare earth elements in all magnets
- 100% Recycled tin in the solder of the main logic board
- 100% Recycled copper and zinc in AC inlet and cable prongs
- 80% Recycled aluminum enclosure



2022 highlights

Creating circular supply chains for our products

Our goal is to one day eliminate our need for mined materials — and the environmental and social impacts associated with them. As we make progress toward this ambitious goal, we continue to source materials responsibly while working to improve conditions in and around mining communities.

We make our products from high-quality, high-performance materials, and we continue to work on solutions to responsibly source these materials solely from recycled and renewable sources, while maintaining our unparalleled standards for quality and durability. This work requires innovation. We are continuing to develop and find new sources of recycled and renewable content, as well as innovate new approaches to recycling materials — to close the loop within our supply chain and beyond.

The benefits of this change will be felt beyond our own supply chain — from the people who use and interact with our products, to the markets in which we operate, to communities around the globe. While we recognize that the scale of this challenge is significant, the potential for creating a lasting, positive impact motivates us.

Focusing on priority materials

Our recycled and renewable efforts continue to focus on 14 materials that we've prioritized based on their environmental and social impacts within Apple's supply

chain. These include aluminum, cobalt, copper, glass, gold, lithium, paper, plastics, rare earth elements, steel, tantalum, tin, tungsten, and zinc, which account for 87 percent of the total product mass shipped to our customers in 2022. For more information on how we prioritized these materials, read Apple's [Material Impact Profiles](#).

In 2022, we moved closer to creating a circular supply chain for several of these materials. Our efforts to use recycled tin began with the main logic board for iPhone 6s, and last year expanded to many flexible printed circuit boards used across many products, resulting in our recycled tin use jumping from 30 percent in 2021 to 38 percent across all product lines in 2022. We took a similar approach with gold. We increased recycled gold content from one percent in 2021 to approximately four percent across all product lines in 2022. This includes using recycled gold for the plating on the main logic board on iPhone, as well as for other products' main logic boards and flexible printed circuit boards. Recyclers are required to uphold — and are assessed according to — our rigorous standards for labor and human rights, security, and environment, health, and safety (EHS).

We've also achieved several first milestones with copper and zinc. For iPad models introduced in October 2022, we're newly using 100 percent recycled copper foil in the main logic board. For Mac Studio and Studio Display, we've developed a brass alloy using 100 percent recycled copper and zinc for use in the AC inlet and cable prongs. And since last year, we've nearly doubled our use of recycled cobalt in batteries across iPhone, iPad, and Mac devices year-over-year, bringing the total for 2022 to 25 percent. For more on our recycled and renewable material accomplishments last year, see the graphic on [page 66](#).

Advancing material recovery through innovation

To be the best stewards of the materials we ship in our products, and to support our efforts to build a circular supply chain, we have a responsibility to reuse, recover, and recycle materials from our products at their end of life.

At our Material Recovery Lab (MRL) based in Austin, Texas, we're pursuing innovations to minimize waste and maximize recovery of these materials by developing better, more efficient recycling technologies.

We're also working to engage consumers and other stakeholders on the importance of recycling collection opportunities. By raising awareness of our MRL and the capabilities of Daisy, our iPhone disassembly robot, we're introducing new audiences to the potential for recovery as we push for greater adoption of recycling opportunities. One such opportunity is the Apple Trade In program which enables customers to return products they're no longer using to be reused or recycled. In some cases, when customers return eligible products, they receive credit toward the purchase of new Apple products.

While we're working tirelessly on creating our own circular supply chain, we're also investing in recycling innovations that can have industry-wide impacts. For several years, we've worked with Carnegie Mellon University's Biorobotics Lab, in the School of Computer Science's Robotics Institute, to identify and disassemble e-scrap. This innovation has the potential to enable recyclers to recover the materials at a higher quality. The software from this project will be open source and available to others in the industry working to maximize recovery of recyclable materials.

Recycled content claims for materials used in our products have been verified by an independent third-party to a recycled content standard that conforms to ISO 14021.



Materials recovered by Daisy, Apple's iPhone disassembly robot, the Netherlands

Recycling



How we advance a circular supply chain

Maximizing the full potential of the resources that go into our products requires innovative approaches to recycling.



Understanding material flow

We map and analyze the flow and recovery of recycling processes by focusing on specific materials



Scaling beyond our supply chain

We develop and invest in economical, easy-to-deploy solutions that facilitate the recovery of challenging materials.



Maximizing recovery

We direct materials to specialty refiners and recyclers with the best recovery capabilities for each material.



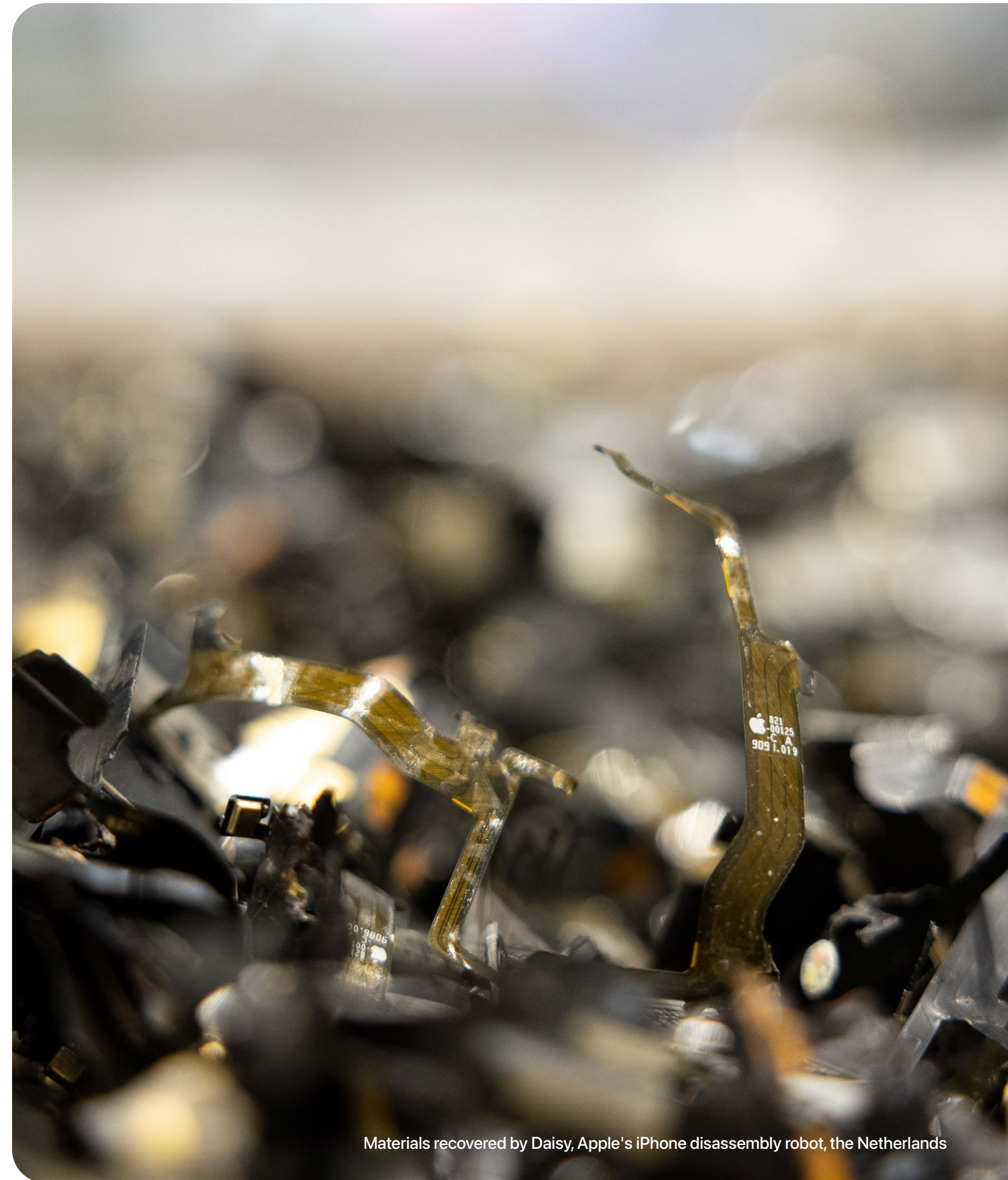
Driving the highest standards

We require recyclers to meet our rigorous material sourcing standards, and conduct regular assessments to verify they meet our bar.



Increasing efficiency through technology

We identify and address technology gaps in the recycling industry to enable improved material recovery.



Materials recovered by Daisy, Apple's iPhone disassembly robot, the Netherlands

2022 highlights

Maximizing recycling and recovery of valuable materials

Recycling is at the center of our efforts to create circular supply chains. It helps unlock the potential of the resources in our products — particularly when materials can be recovered at their highest quality. Recycling also can reduce the energy required to manufacture new products, and significantly reduce direct emissions. This approach to the end of the product lifecycle enables us to design and build the next generation of devices to be even better for people and the planet. Through both retail and online platforms like Trade In, we continue to provide product take-back collection programs in 99 percent of the countries where we sell products.

Building a global network of best-in-class recycling partners

We work with best-in-class recyclers to make sure we can maximize the potential of the recycling materials stream, as well as drive our efforts to close the loop on key materials. We define best-in-class recyclers as those capable of recovering materials at high rates, and doing so with the best environmental and safety performance. We verify recyclers' compliance with our Code and Standards through independent, third-party assessments. All of our recyclers in North America are either e-Stewards® or R2 certified, which are the electronics industry's leading certifications for recycling operations and processes.

As we expand our partnerships with recyclers across the globe, we're maintaining the rigorous standards we require of all suppliers. We assess our recyclers regularly for compliance with labor and human rights, security, and

EHS standards, regulations, and best practices. In 2022, we conducted 61 recycler assessments. We have increasingly sought out specialty providers capable of handling specific material streams in order to increase the quantity and quality of materials, and saw volumes handled by these suppliers grow by over 70 percent in 2022. This global footprint of recyclers also helps us build a more resilient recycling supply chain and innovate with more suppliers around the world.

Improving material recovery rates

Innovation plays a key role in realizing the potential for recycling — not just for Apple products but throughout our industry. We have invested heavily in facilities and research to support recycling innovation, including our asset recovery center in Santa Clara Valley, California, and our Material Recovery Lab (MRL) in Austin, Texas. The MRL, developed and managed by Apple, has led the way in developing automated approaches to material recovery through our disassembly robots, Daisy and Dave. We're also developing new technologies at our California asset recovery center that leverage automation and machine learning to facilitate reuse and recycling processes that typically require manual sorting, which can be time intensive and error-prone. This work aims to create low-cost solutions that our recycling suppliers can deploy to recover more materials.

The benefits we're trying to achieve are not strictly focused on material recovery. We're also working to improve training and ergonomics for supplier employees involved in the work of de-manufacturing. One example of this is an overhead projector-based augmented reality system, which projects instructions and cues for de-manufacturing



Material sorting, United States

processes, next steps, and where to place tools on the work surface. This innovation is designed to improve safety, reduce fatigue, and improve efficiency. After a successful trial, we're beginning to deploy this system at several supplier recycling centers globally.

Developing capabilities and capacity through training

Improved recovery rates can also be achieved through education and training. We've invested deeply in providing educational opportunities to recyclers, providing them with nontechnical solutions to improve efficiency and capacity.

In 2022, we expanded our Apple Recycler Guides to include iPhone and the new Studio Display. These guides demonstrate the steps professional electronics recyclers should follow to disassemble Apple products — and to maximize recovery of resources safely. As we continue to

improve material recovery, we're increasing the availability of high-quality recycled content on the market for us and others.

Through the Apple Education Hub, part of our Supplier Employee Development Fund, we've also supported efforts to improve recycling capacity and efficiency with our U.S.-based recycling suppliers by providing education on lean methodologies and management systems for supplier employees working in recycling facilities. With an emphasis on continuous improvement of efficiency and quality, these educational opportunities bolster employee engagement, mitigate safety issues, and improve recycling economics.

Responsible sourcing of materials



How we responsibly source materials

While we pursue our goal to one day eliminate our need for mining and build our products using only renewable and recyclable materials, we continue to uphold strict standards for the responsible sourcing of materials. By employing a comprehensive range of strategies and tools, we aim to assess and minimize risk, promote transparency, and empower local communities.



Working to mitigate risk

Throughout our supply chain, independent, third-party assessments — conducted by leading industry certification programs — verify compliance with our requirements, which are designed to prevent negative impacts on people, their communities, and the environment.

• Progress starts with mapping

Driving the highest standards begins with understanding the supply chain through thorough mapping of the smelters and refiners that provide materials to suppliers deep in our supply chain — a practice we've continually strengthened over many years.

• Developing and driving common industry standards

Our Responsible Sourcing of Materials Standard aligns with leading international standards, including the Organisation for Economic Co-operation and Development's Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance) and the United Nations Guiding Principles on Business and Human Rights (UNGPs).

• Due diligence powered by leading tools

We innovate, develop, and scale tools to enhance risk identification and assessment beginning at the mining-level. Apple first funded and developed the Risk Readiness Assessment (RRA) — which since 2017 has been deployed by the Responsible Minerals Initiative (RMI) and is now used by hundreds of companies across industries — and the RMI's cross-industry Minerals Grievance Platform. Apple also participates in Material Insights working groups to help drive functionality in the platform.

• Holding suppliers accountable

We require independent, third-party assessments of identified smelters and refiners of key materials in our supply chain in order to verify compliance with our strict standards for materials processors, which includes recyclers. Any smelter or refiner that is unable or unwilling to meet our standards, including participation in assessments, is removed from our supply chain.



A commitment to transparency

We believe progress is fueled by transparency. We require our suppliers to conduct due diligence and disclose their materials suppliers to us. In turn, we report transparently on the mapping we conduct.

• Leading the industry

We were the first electronics company to publish a list of cobalt refiners in our supply chain in 2016, followed by lithium refiners starting in 2020. Every year, we publish our Smelter and Refiner List, which is a complete list of identified 3TG (tin, tungsten, tantalum, and gold), cobalt, and lithium smelters and refiners in our supply chain.

While our standards apply universally, we prioritize mapping specific materials based on the salient risks associated with their sourcing as outlined in Annex II of the OECD Due Diligence Guidance. These risks include conflict, human rights abuses, money laundering, and illegal taxation. We also map other materials in our products such as mica, copper, graphite, and nickel, and, before production, evaluate suppliers of new materials for compliance with our requirements.

• Strengthening industry traceability systems

In addition to supporting the strengthening of existing traceability systems, we continue to support new technologies, such as blockchain, that improve material traceability. In 2022, we worked with sustainability nonprofit RESOLVE to fund the newly created Regeneration project — an expansion of the Salmon Gold project — which focuses on re-mining and processing waste material from legacy mines to restore natural environments and support rehabilitation and biodiversity. Since RESOLVE first introduced the Salmon Gold project in 2018, the organization has connected local placer miners, environmentalists, and government agencies to mitigate the damage done by historic mining activities. The gold mined from this project is then traced from its origin to a refiner in Apple's supply chain using blockchain technology.



Strengthening communities and initiatives

Empowering independent voices at the mining-level and supporting industry-wide alliances are critical to identifying and assessing risks, and safeguarding the well-being of mining communities.

• Supporting local rights-awareness and training

We continue to support the International Tin Association's International Tin Supply Chain Initiative's (ITSCI) whistleblowing mechanism in the Democratic Republic of the Congo (DRC), and our partnership with Pact provides rights-awareness training and vocational education opportunities to mining communities.

With our support, the Massachusetts Institute of Technology's (MIT) D-Lab Innovation Center provides training to local gold miners and community leaders in Colombia to help them sustainably address artisanal and small-scale mining (ASM) challenges.

• Championing human rights and environmental defenders

We continue to provide financial support to the Fund for Global Human Rights, which empowers frontline activists, as well as human rights and environmental defenders in more than 40 countries around the world.

• Innovation in material sourcing

We're hard at work on solutions to source our materials solely from recycled and renewable sources. Our efforts to close the loop within our supply chain focus on 14 materials that carry significant environmental, social, and supply chain impacts, and account for 87 percent of the total product mass shipped to our customers. And as we make progress, we continue to responsibly source materials, and support work to improve conditions in and around mining communities.

• Working with experts

We continue to advance work across the industry via leadership in key industry associations and multi-stakeholder initiatives, including serving on:

- The board of the Responsible Business Alliance (RBA)
- The steering committee of the RBA's Responsible Minerals Initiative (RMI)
- The Governance Committee of the Public-Private Alliance for Responsible Minerals Trade (PPA)
- The European Partnership for Responsible Minerals (EPRM)

Milestones



Final assembly, Vietnam

- 2022**
 - 100% of identified 3TG, cobalt, and lithium smelters and refiners participated in independent, third-party audits; marking eight consecutive years for 3TG, seven for cobalt, and three for lithium
 - Funded Regeneration project, an expansion of the Salmon Gold project
 - Supported Congo Power Project to provide solar power to healthcare facilities in DRC mining communities
- 2020**
 - Published lithium processor list for first time
- 2019**
 - Began mapping lithium processors in the supply chain
 - Launched Salmon Gold project with Tiffany & Co. and RESOLVE
- 2016**
 - Established DRC vocational education and rights awareness raising program with Pact
 - Published list of identified cobalt refiners in the supply chain
 - Developed Risk Readiness Assessment tool
- 2014**
 - Began mapping cobalt refiners in our supply chain
 - Published list of identified 3TG smelters and refiners in our supply chain
- 2010**
 - Began mapping 3TG smelters and refiners in our supply chain

2022 highlights

While we make progress toward achieving independence from mined materials by transitioning to recycled and renewable materials, we continue to responsibly source primary materials — including 3TG, cobalt, lithium, copper, nickel, and others.

As part of this work, we collaborate with leading government, civil society, and industry experts, as well as provide support to local human rights and environmental defenders, to verify that our responsible sourcing initiatives continue to address current challenges.

Our Responsible Sourcing of Materials Standard applies to all suppliers of materials, including advanced and bio-based materials. It aligns with leading international standards, including the UNGPs and the OECD Due Diligence Guidance.

Every year we publish a list of all identified 3TG, cobalt, and lithium smelters and refiners in our supply chain. In 2016, we became the first electronics company to publish a list of cobalt refiners in our supply chain, and in 2020, we were the first to publish a list of lithium refiners. We also map other materials in our products such as mica, copper, graphite, and nickel, and, before production, evaluate suppliers of new materials for compliance with our requirements. This includes recycled and bio-based materials, including cotton which is sourced from the United States and Australia. In 2022, we conducted due diligence on 26 recycled or bio-based materials to verify that their sourcing met Apple's standards and expectations.

In 2022, 100 percent of the identified 3TG, cobalt, and lithium smelters and refiners in our supply chain completed assessments to verify compliance with our standards, and to aid in identifying social, environmental, human rights, and governance risks. This marks eight consecutive years of 100 percent compliance for 3TG, seven consecutive years for cobalt, and three consecutive years for lithium. Since 2009, Apple has directed the removal of 198 3TG and seven cobalt smelters and refiners from our supply chain, including 23 in 2022.

Sharing tools and resources to accelerate progress

Along with conducting our own supply chain due diligence, we work closely with third-party assessment programs — in particular, the RMI and the London Bullion Market

Association (LBMA) — to identify risks at the smelter, refiner, and mining levels, and to help strengthen industry auditing and certification bodies.

We also utilize various tools, including the Risk Readiness Assessment (RRA), which was first funded and developed in 2016 by Apple, and has been a tool of the RMI since 2017. The RRA has been widely adopted across industries via the RMI, and remains in use by downstream companies and upstream refiners and mining companies. Collectively, 428 RRAs were completed across all users in 2022, compared with 366 completed the prior year. Also last year, the Copper Mark, an assurance framework for responsible copper production, used the RRA as part of its criteria at 46 sites — nearly 50 percent more than in 2021. We use the RRA to assess risk in our global supply chain, in particular for those associated with smelters and refiners that are new to our supply chain.

We also require all suppliers that use 3TG in parts and products to submit an industry-standard Conflict Minerals Reporting Template (CMRT). We collect and process data provided by suppliers through their completion of the CMRT to map our supply chain to the smelter and refiner level and, to the extent available, to the mining-level. Under the Responsible Sourcing Standard, suppliers are also required to inform Apple immediately if they identify certain high risks included in Annex II of the OECD Due Diligence Guidance, such as conflict or human rights risks associated with 3TG.

We also utilize the RMI's Minerals Grievance Platform, a cross-industry platform managed by RMI where allegations concerning minerals supply chains are investigated and addressed. Grievances can be anonymously submitted by NGOs, companies, or any member of the public. The RMI's Material Insights Platform is a dynamic online industry solution that helps actors in material supply chains strengthen their due diligence and facilitates joint efforts to address sourcing risks. It is designed to facilitate learning, collaboration, and improved environmental, social, and governance management in mineral supply chains for more than 21 materials across 30 industries.

Empowering independent voices

Empowering independent voices at the mining-level is critical to identifying and assessing risks. This includes engaging in dialogue with industry experts and NGOs on “just transition”. Through our work with the Fund for Global Human Rights, we also support human rights, labor, and environmental defenders in the DRC who work on a range of issues, including the economic and social rights of mining communities, inclusive economic growth, judicial advocacy, environmental justice, and the rule of law, as well as health, safety, and fair compensation for mining communities.

For the seventh consecutive year, we provided funding to ITSCI's whistleblowing mechanism, which enables people in and around mining communities in seven provinces of the DRC to anonymously raise concerns, via local networks, related to mineral extraction, trade, handling, and exporting. In 2022, ITSCI and its partner organizations continued to amplify information about its whistleblowing mechanism through radio campaigns in mining communities, the distribution of promotional materials, and by consulting with local civil society organizations and other stakeholders.

We also continued supporting artisanal and small-scale mining (ASM) communities in the DRC through our partnership with Pact, an international development NGO, to deliver rights-awareness training to miners, youth, and community officials. In 2022, Pact organized 29 neighborhood committee meetings. These neighborhood committees reached over 21,000 community members — including more than 12,000 children — with awareness-raising activities on a range of human rights topics, with special attention focused on the prevention of child labor. In addition, we contributed funding to the RBA Foundation in support of Pact's sixth year of vocational education programming that provides mentorship, literacy classes, and career training for trades such as hairdressing, carpentry, auto mechanics, and welding to youths in the mining communities of the Lualaba province. Since 2019, 375 adolescent miners have received training — 150 of them in 2022 alone — and 99 percent of apprentices have successfully graduated from the program.

Supporting mining communities

In addition to providing rights-awareness training, Pact hosts WORTH, a financial literacy and access program that brings together small groups of local community members to save money, access credit, and expand their financial and business capabilities. WORTH members are also given business and financial training tailored to their needs, enabling them to access financial capital needed to start their own businesses or go to school. In 2022, Pact continued to support the 14 WORTH community-based savings and loan groups formed in 2021, and formed three new ones with a total of 69 members. By the end of December 2022, the 17 groups (513 members) had collectively saved \$126,635 through membership contributions, with \$173,775 in loans disbursed.

We continue to support the Massachusetts Institute of Technology's (MIT) D-Lab Innovation Centers in Colombia. These Innovation Centers support training for local gold miners and community leaders to develop sustainable solutions to ASM challenges. Using iPads donated by Apple, 250 people participated in the D-Lab's mobile Creative Capacity Building program, which included 10 training modules on topics including design, mining practices, and entrepreneurship.

In 2022, we joined with other Public-Private Alliance for Responsible Minerals Trade (PPA) member companies to provide funding to the Panzi Foundation's Congo Power Project, which supports solar power initiatives for the Panzi Foundation's healthcare facilities in DRC mining areas.

Driving impact across industries

Challenges to responsible sourcing vary by material, and we tailor our approach to address identified risks. We continue to address remaining challenges in the global gold supply chain through our robust due diligence program, which is aligned with the OECD Due Diligence Guidance Supplement on Gold and other sources, as well as through innovation. Apple is pioneering industry-leading levels of traceability in recycled materials to build a gold supply chain exclusively containing recycled material.

In 2022, we continued reviewing gold refiners in our supply chain to identify potential risks and other sourcing challenges, and we work with suppliers to address findings and to remove refiners as necessary.

Creating change through collective action

In addition to conducting independent assessments of our own supply chain programs, we support a range of multi-stakeholder-led research initiatives that contribute to broader learnings on the impact of due diligence programs and opportunities for future innovations.

We are a member of the EPRM, and in 2022, we continued serving on RMI's steering committee and on the Governance Committee of the PPA, a multi-sector initiative supporting the ethical production, trade, and sourcing of minerals from the African Great Lakes region. We also continued participating in wider PPA working groups to drive responsible sourcing innovations, and advising on initiatives aimed at effectively using data to understand and drive impact. In addition, we supported the continued development of industry-wide, responsible-sourcing standards, including a responsible-sourcing framework being co-developed by the RMI and other stakeholders for artisanally mined cobalt.

In 2022, we continued to support the independent nonprofit organization IMPACT to digitize a framework based on the United Nations Sustainable Development Goals (SDGs), which aims to harmonize how the impact of supply chain-related activities on socioeconomic and environmental well-being in ASM communities is measured. These harmonized metrics and the management of information enable stakeholders to more readily uncover opportunities, areas of risk, and potential issues — and to address them proactively. Furthermore, they allow for interventions to be viewed more broadly, beyond particular mine sites or project areas, which will help mitigate risks, rather than simply displace them.

We believe that innovative and data-driven solutions to sourcing help reduce risk and improve traceability. In 2022, we continued to fund and scale the Salmon Gold



Material sorting, United States

project with Tiffany & Co. The project is designed and led by RESOLVE, a sustainability nonprofit. The Salmon Gold project works with small-scale miners and Indigenous Peoples in remote regions of the Yukon, Alaska, and British Columbia where habitats for fish have been impacted by waste from placer gold mining. The project supports a mining practice that benefits local communities and helps restore rivers and streams so that salmon and other fish can thrive. Since RESOLVE first introduced the Salmon Gold project in 2018, the organization has connected local First Nations leaders, placer miners, environmentalists, and government agencies to course-correct the damage historically done by mining activities. The gold mined from this project is then traced from its origin to a refiner in Apple's supply chain using blockchain technology, and is eventually used in Apple products.

We also worked with RESOLVE to fund the newly created Regeneration project, an extension of the Salmon Gold project, which focuses on re-mining and processing waste material from legacy mines to restore natural environments and support rehabilitation and biodiversity.

Earnings from the sale of these responsibly-sourced materials will be reinvested in funding habitat restoration, including at former mine sites. Regeneration will also seek to create and trade biodiversity and carbon credits through the rehabilitation of land. These credits will serve as environmental offsets, and the improved condition of the land is also a benefit to local communities.

Regeneration is actively scouting larger legacy mine sites where waste can be re-mined, and is developing a portfolio of new technologies that can more efficiently and safely extract metals while helping to clean up and restore the site. Regeneration's targets include energy transition minerals including copper, cobalt, and platinum. Regeneration is already testing re-mining at two sites.

Responsibly sourced batteries

Many Apple products are powered by batteries. Whether primary or recycled, all materials in our products must meet the requirements of our Responsible Sourcing of Materials Standard. For key materials contained in batteries, we conduct extensive due diligence to confirm that our suppliers are meeting our requirements as they source these critical minerals.



Cobalt

In 2016, we were the first major electronics manufacturer to map and publish our cobalt supply chain. Every year since then, 100% of the cobalt refiners in our supply chain have completed independent, third-party assessments. To date, we have removed seven cobalt refiners for failure to meet our standards. We're also progressing toward gaining independence from mined materials. Since last year, we've doubled our use of recycled cobalt in batteries across iPhone, iPad, and Mac devices year-over-year, bringing the total for 2022 to 25 percent.



Lithium

In 2020, we were the first major electronics manufacturer to map and publish our lithium supply chain. Every year since, 100% of the lithium refiners in our supply chain have completed independent, third-party assessments.

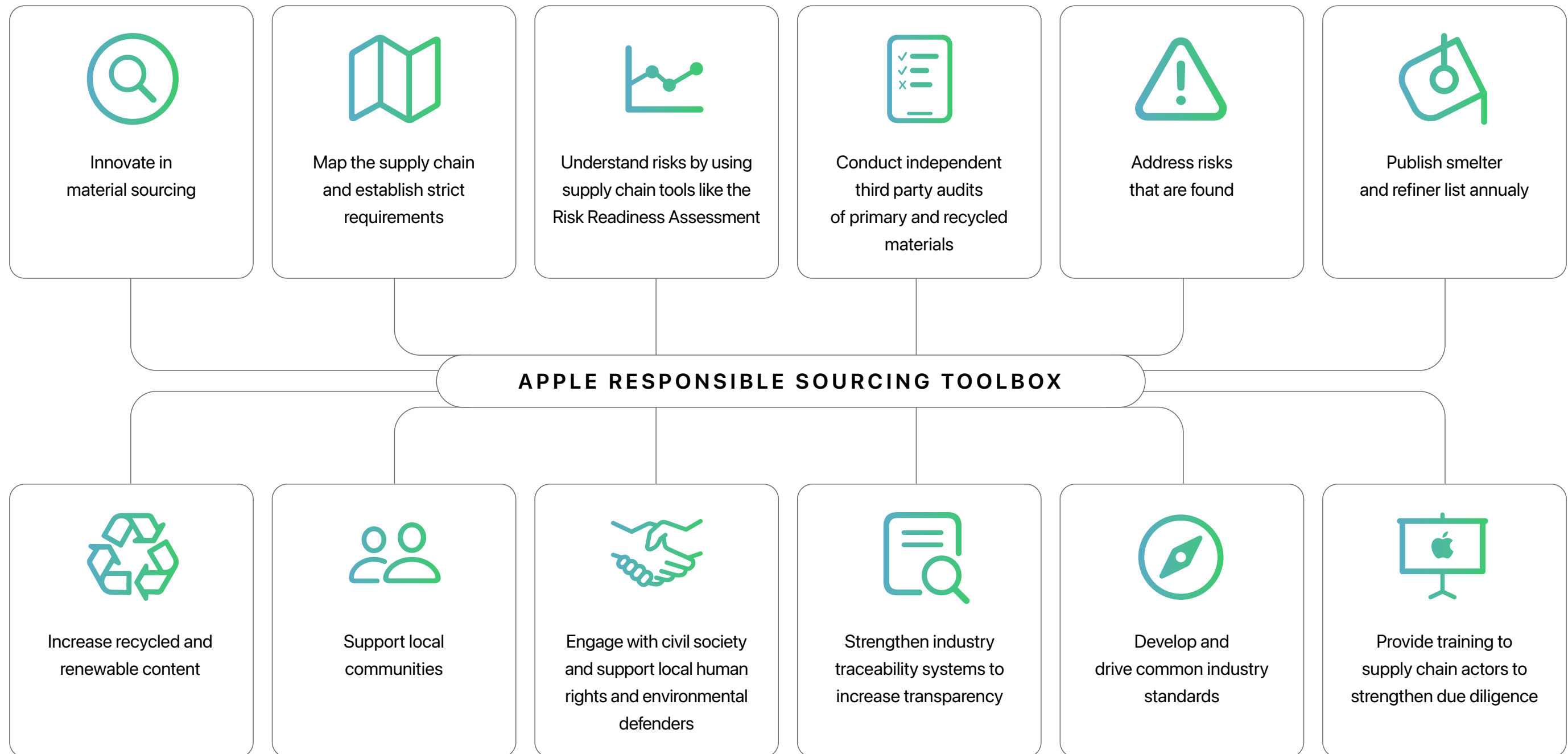


Other materials

We map and conduct due diligence on additional materials contained in the batteries found in our products, including aluminum, copper, graphite, and nickel. As we complete mapping activities, identified smelters and refiners are required to complete independent, third-party assessments to confirm they meet the requirements of our Responsible Sourcing of Materials Standard.



Upholding standards deeper in the supply chain



Zero waste



How we're eliminating waste across our supply chain

Increasing and strengthening our effort to eliminate waste at every stage of a product's lifecycle is a top priority.



Steering the industry through innovation

We continue to lead the way in adopting novel recycling strategies, identifying alternative materials, and achieving reductions.



Stringent requirements — and expectations — for our partners

As part of our Supplier Code of Conduct, participation in our Zero Waste Program is now mandatory for all suppliers.



Sharing knowledge and advancing best practices

We host connection opportunities, via online platforms and quarterly summits, for suppliers and recyclers to convene and share strategies in pursuit of minimizing waste.



Certification and assurance

Supplier facilities can certify against clear benchmarks for waste diversion, and gain system-wide assurance that allows for more efficient adoption of our practices and expectations.



FROM TOP:
Waste diversion, Vietnam; final assembly, China

Milestones



Finished product logistics, utilizing new thinner shrink wrap, final assembly, Vietnam

| | | | |
|-------------|---|-------------|---|
| 2022 | <p>First Zero Waste certified site in Thailand</p> <p>More than 150 supplier facilities zero waste verified through UL Solutions' new management system assurance program</p> <p>New Code requirement for minimizing landfill waste and tracking diversion rate</p> | 2016 | 100% UL Solutions Zero Waste certification achieved for final assembly sites in China |
| 2021 | <p>Partnered with UL Solutions to develop industry's first supply chain zero waste management system assurance program</p> <p>Diverted more than 2M tons of waste from landfills since 2015</p> | 2015 | <p>Launched Zero Waste Program</p> <p>First final assembly site to achieve UL Solutions Zero Waste certification in China</p> |
| 2020 | <p>First Zero Waste certified site in Vietnam</p> <p>100% of established final assembly sites certified by UL Solutions</p> | | |
| 2018 | <p>1M metric tons of waste diverted from landfill</p> <p>Introduced industry's first Recyclable Protective Film (RPF)</p> | | |
| 2017 | <p>First UL Solutions Zero Waste certification in India</p> | | |

2022 highlights

Our Zero Waste Program

Apple is committed to eliminating waste at every stage of our products' lifecycle — from the moment a product is designed to when it is manufactured and, ultimately, recycled. When it comes to zero waste, we have both a responsibility and an opportunity to make the most of Earth's resources and to drive change within our industry through innovation.

Starting in 2022, we made participation in our Zero Waste Program mandatory as part of our Supplier Code of Conduct. Previously an opt-in program, suppliers are now required to implement a systematic approach to identifying all sources of waste and characterizing each stream in the waste inventory, developing a program or solution to quantify and monitor their waste-to-landfill diversion rate, setting waste-minimization goals, and maintaining progress toward achieving zero waste to landfill.

Since we launched the Zero Waste Program in 2015, we've achieved considerable progress — including maintaining zero waste performance at 100 percent of our established final assembly sites for iPhone, iPad, Mac, Apple Watch, Apple TV, AirPods, HomePod mini, and Beats. The program has expanded to include more than 300 supplier facilities across 14 countries. In 2022, supplier efforts resulted in more than 523,000 metric tons of waste being diverted from landfills, which is equivalent to 3.1 million square meters of landfill space. Over 2.5 million metric tons of waste have been diverted from landfills since 2015.

We continue to advance our work with suppliers that manufacture components for our products. These suppliers have more complex waste streams requiring innovative zero waste solutions tailored to their operations.

The opportunity for waste diversion with module suppliers is also considerable. This year, module suppliers participating in the Zero Waste Program increased by 50 percent, and included the core technology suppliers in our camera, sensors, inductive technology, and haptics sectors, as well as housing and interconnect suppliers. Module suppliers alone contributed to over 357,000 metric tons of waste diverted from landfills in 2022.

Advancing progress through engagement

We continue to support the program through outreach and engagement to share knowledge and bring more suppliers on board. Every quarter we host a free zero waste summit that is open to all Apple suppliers, providing opportunities to learn best practices from supplier employees who are leading the way on diversion approaches in environment management and waste solutions. This year we saw even more enthusiasm to engage with zero waste strategies, with over 900 participants registering for just one of the events.

Our engagement on zero waste also extends to those working outside of our supply chain. We work with the China Association of Circular Economy, which is responsible for implementing the nation's Circular Economy Promotion Law in support of environmental protection and resource conservation. Our other collaborators include brand partners, solution providers, and external suppliers that share our interest in accelerating progress toward zero waste in the electronics industry.

We're committed to creating opportunities for stakeholders to exchange best practices. In 2021, we developed an externally hosted, free, open platform so any company can access our zero waste resources — including lists of

recommended recyclers — in pursuit of their own goals. Last year, the platform extended its reach from China to Thailand and Vietnam. Our goal is to continue enhancing the platform, making it easier for suppliers to navigate a readily accessible list of recyclers in their country.

Getting to zero through innovation

Innovation plays a significant role in advancing progress toward zero waste. We utilize novel recycling strategies and approaches to divert waste at even greater rates from our supplier facilities. But, we also pursue material solutions to impact the waste streams coming into these facilities — to simplify and maximize the recyclable content our suppliers use.

In 2018, we helped develop the industry's first recyclable protective films (RPF). These films, which protect products during manufacturing, have since been widely adopted among our final assembly sites, preventing more than 10,000 metric tons of plastic waste from being sent to landfills. And we're promoting the use of RPFs across industries, having worked with 12 suppliers to verify their material qualifies through recyclability testing, so that others beyond Apple can make this change.

We've also achieved reductions by developing thinner stretch wrapping film used on pallets for finished product shipping. Product wrapping film accounts for considerable amounts of virgin plastic usage within our supply chain. By adopting the thinner film, we're reducing the plastic used during this process by up to 50 percent. We have shared the formula for our proprietary thinner stretch film with our suppliers' current vendors to help accelerate its adoption and reduce reliance on virgin material while better protecting products during shipment.

Another opportunity for waste reduction we've identified is to reduce the amount of plastic tape used on our production lines — and to develop a stronger paper tape that can act as an alternative. An assessment of our production processes showed that the plastic tape used to secure parts before assembly is often mixed with paper tape, making it difficult to sort and divert from landfill to a

recycling process. And in many cases it wasn't needed. We found that for 75 percent of the parts secured with plastic tape, paper tape could perform equally well. We then worked with an industry-leading tape producer with the technology to produce a strong, lower-cost paper alternative. This new paper tape alternative was put into use for 200 parts, eliminating over 1,200 metric tons of virgin plastic from our waste streams.

Accelerating progress in Zero Waste certification and assurance

We align to industry best practices for waste reduction, which helps to confirm suppliers are meeting a high bar, and advances collective progress. The foundation of our Zero Waste Program since launch has been the UL 2799 Zero Waste to Landfill Environmental Claim Validation Procedure (ECVP), which requires at least 90 percent diversion through methods other than waste-to-energy. Through this stringent, independent standard verified by UL Solutions, the industry's leading certification body, our supplier facilities can certify against clear benchmarks for waste diversion, including Platinum, Gold, and Silver levels of certification. We've spent the last seven years expanding this program throughout our supply chain with suppliers in China, India, and Vietnam becoming certified by UL Solutions. In 2022, Thailand joined that list when an Apple supplier there became the first to receive UL Gold certification.

In 2021, we championed an innovation in the zero waste certification space. We pioneered a supply chain zero waste management system assurance program that verifies results at an entire company system-wide level rather than through a site-by-site certification process. This allows UL Solutions and our suppliers to efficiently collaborate on reducing diversion rates of waste-to-landfill, allowing for much faster adoption of rigorous zero waste practices across a supplier's business. In its first year, this streamlined approach has brought even more suppliers into our program, with more than 150 joining in 2022 — a 50 percent increase from the previous year.

Water stewardship



Supplier water treatment facility, Vietnam

How we preserve, protect, and improve water resources

Water is a local resource with global implications. Our strategy to preserve, protect, and improve availability starts with our suppliers and looks far beyond our supply chain.



Designing with low-water consumption in mind

We incorporate water-smart approaches into the design and manufacturing of our products and services.



Replenishing through nature-based solutions

We leverage regenerative approaches to improve water availability, quality, and access.



Conserving water through efficiency

We conserve water at Apple, supplier sites, and in the manufacturing of our products.



Promoting leadership and advocacy

We advance water stewardship to protect local watersheds through policy, advocacy, and innovation.



Promoting stewardship at the local level

We engage with the communities around our facilities to ensure the protection of local watersheds.



Component manufacturing, India

Milestones

2022 First electronics company to join Alliance for Water Stewardship (AWS) Board of Trustees

234 supplier sites enrolled in the Clean Water Program

2018 Joined AWS

2 supplier sites earned AWS certification, including industry's first Gold certification

Resource Consumption Management Standard published

2021 Formed partnership to help Suzhou Industrial Park become world's first industrial park certified through AWS

17 supplier facilities have achieved AWS certification since 2018

2017 Enhanced quality standards developed for wastewater discharge

Stormwater management added to Code and Standards

2020 Established water stewardship working group for the information and communications technology (ICT) sector with AWS and Responsible Business Alliance

Adopted new approach to estimate upstream water use in our supply chain

2015 First supplier graduated Clean Water Program

2013 Clean Water Program established

2019 3 supplier sites earned Platinum AWS certification

136 supplier sites enrolled in the Clean Water Program

Began requiring suppliers to provide water consumption data



Supplier water treatment facility, Vietnam

2022 highlights

Our commitment to protecting water resources

Access to clean, safe water is a basic human right, and a critical community resource required by people and ecosystems.

As potable water becomes increasingly scarce, we take a comprehensive, holistic approach to addressing issues of water availability, quality, and access within our supply chain. We employ three key principles in our approach, as our suppliers play a role in communities around the world: water sources should be available to communities consistently and reliably; water should be clean and usable for everyday needs; and everyone should have equal access to the community resource of the local watershed.

Driving progress through our Clean Water Program

This work begins with understanding how our suppliers use water. Each year, we survey our suppliers to get a detailed picture of water use related to Apple production. Combined with our corporate water footprint, this data informs our comprehensive view of Apple's water impact.

Many companies focus their efforts on directly controlled water use while collecting limited data on their supply chain. We take a different approach. Our supply chain — which includes the sourcing of materials and manufacturing of products — accounts for 99 percent of Apple's total water use. We believe we have a responsibility and opportunity to engage our suppliers to advance water stewardship practices. Our work considers the needs and activities within the walls of suppliers' facilities, as well as those in and around the communities where they operate.

The program addresses an urgent need — and we see it as an essential element of every supplier relationship. We make our expectations for water management and stewardship clear to our suppliers and help define operational approaches to pursue optimal levels of water efficiency and conservation. We see a clear business imperative to develop these practices, particularly in manufacturing and production, where water is critical for power generation, cleaning, and cooling processes.

Water scarcity around the world requires that we focus on shifting this program away from voluntary engagement. This means moving toward a water specification that lays out the business requirements around supplier water use, and enables Apple to verify that suppliers are taking action to improve resilience, water efficiency, and water stewardship.

Last year, our average reuse rate increased to 42 percent, an all-time high achievement, resulting in our suppliers saving 13 billion gallons of freshwater in 2022. This helped bring our collective savings to 63.2 billion gallons of water across 10 countries and regions since 2013.

The conservation activities in our Clean Water Program are critical to driving progress, but we also know that we, and our suppliers, need to do more by being stewards of the local water basins where our supply chain operations are located. Our success in protecting the health of watersheds depends on our ability to work with our suppliers, the communities where we operate, and other industries that depend on these resources.

Advancing water stewardship

Protecting these critical resources requires solutions that are resilient, and that enable our suppliers to take environmentally sound and economically sustainable

approaches to water stewardship. Since water is a location-specific resource, our efforts begin with a strong understanding of local needs and collective action to promote standards and accountability that we and our suppliers can follow in the pursuit of progress.

We've approached understanding local needs through our partnership with the Alliance for Water Stewardship (AWS). Since 2018, we've worked with AWS to advance the AWS Standard, the first global framework to measure responsible water stewardship across social, cultural, environmental, and economic criteria. Through AWS, we're able to give both our suppliers, and the broader industry, the tools and resources needed to address water use more holistically and make a broader impact.

Through a rigorous certification process, AWS confirms that suppliers' facilities meet its strict standards. Suppliers must listen to a broad range of stakeholders and rights-holders, including independent auditors, local community members, NGOs, and public officials, to confirm that water stewardship measures support the local water catchment — and benefit the communities where our suppliers operate. Since 2018, 17 supplier facilities have achieved certification to the AWS standard, and 15 of those have achieved the Platinum level, the highest rating possible.

In 2022, we expanded our engagement with AWS by joining the Board of Trustees as the first electronics company to do so. We are also supporting AWS to convene a water stewardship working group for the electronics sector and to expand their outreach in India.

We shared our progress at the AWS Forum in May 2022 by speaking alongside industry partners and our suppliers that share our belief in the value of this work. In October 2022,

we further amplified the opportunity for collective action among our suppliers and value chain partners at the RBA's annual conference, sharing opportunities, alongside AWS, for supplier hubs in priority water basins.

In 2022, we also partnered with Frank Water in India to develop and implement a water resource management plan through a community-based water sanitation and hygiene (WASH) grant that focuses on increasing water stewardship through improving decision-making around water and climate resilience. Frank Water works alongside local partners to ensure safe water, sanitation, and hygiene are within reach for communities experiencing challenges in accessing water resources.

Climate

Decarbonizing our supply chain →

Supplier Clean Energy Program →

Supplier Energy Efficiency Program →



Carbon solutions



Solar array installation, India

Milestones

- 
- 2022** Apple sets expectation for suppliers to decarbonize their entire Apple footprint by 2030
- Suppliers making up over 85 percent of Apple's direct spend for materials, manufacturing, and assembly committed to using renewable energy for their Apple production
- 2020** iPhone final assembly sites in China achieved 20 percent reductions in energy use, meeting the three-year target set in 2018
- 2019** Clean Energy Program commitments reached in major supply chain countries
- Launched partnership with Asia Green Fund to drive energy efficiency
- 2018** Launched China Clean Energy Fund, enabling Apple and suppliers to invest in more than 1 gigawatt of renewable energy in China
- 2017** Launched Supplier Clean Energy Portal
- Made initial investment in development of nearly 500 megawatts of solar and wind projects in China and Japan to address upstream emissions in our supply chain
- Supplier Code of Conduct requires suppliers to maintain inventory of air emissions, including greenhouse gases
- 2015** Launched Supplier Clean Energy Program and Supplier Energy Efficiency Program

2022 highlights

Addressing climate change is the defining challenge of our time. Apple has a plan, and we are deeply committed to decarbonizing our supply chain and building a more resilient, efficient future powered by renewable energy.

In 2020, we achieved carbon neutrality for our global corporate operations, and set a goal to achieve carbon neutrality across our comprehensive carbon footprint by 2030, including our supply chain and the lifetime use of our products. This goal is ambitious, requiring us to achieve progress 20 years ahead of the recommendation for global carbon neutrality by 2050 set by the United Nations Intergovernmental Panel on Climate Change. But we're already well on our way, having cut emissions across our value chain by over 45 percent since 2015. To achieve the rest of our goal, we've developed, and continue to expand, a scalable approach to decarbonization for our suppliers across the globe.

Decarbonizing our supply chain

Our manufacturing supply chain currently accounts for 65 percent of our gross carbon footprint. Reaching our carbon neutrality goal will require a sustained effort to reduce emissions across our manufacturing processes — from material extraction to component manufacturing to final product assembly and transportation. And because the vast majority of emissions related to manufacturing result from electricity generation, it also requires that we transition to 100 percent renewable electricity across our global supply chain.

Since 2015, we've worked to address supplier emissions through targeted programs that have continued to evolve with our strategy and goals. Our Supplier Clean Energy Program and Energy Efficiency Program focus on decarbonizing electricity usage at our supplier sites. Our direct emissions programs address diverse sources of carbon across our supply chain, from fluorinated greenhouse gases (F-GHGs) to thermal, process, and transportation emissions.

While we know there's much work still to do, we continue to make consistent and significant progress. As of March 2023, more than 250 suppliers had committed to using renewable energy for their Apple production, with over 85 percent of Apple's direct spend for materials, manufacturing, and assembly of our products worldwide — included in those commitments. Last year, our suppliers'

actions have yielded tangible results, with their energy efficiency efforts, and the renewable energy that has been brought online, helping to avoid over 18.7 million metric tons of CO₂e — the equivalent of taking more than four million cars off the road each year.

At the same time, we've set, and continue to advance, clear expectations for our suppliers on the decarbonization required to meet our 2030 goal in the years to come. In October 2022, we sent a letter to executives of our major manufacturing partners to share the expectation that our suppliers decarbonize their entire Apple footprint by 2030.

Supplier Clean Energy Program

The electricity our manufacturing suppliers use represents our single largest source of carbon emissions. Our Supplier Clean Energy Program helps enable suppliers' transition to clean, renewable electricity through levers such as policy advocacy, information about renewable energy procurement options, data insights, and engagement opportunities with renewable energy experts. The Supplier Clean Energy Program now has nearly 20 gigawatts of clean energy commitments, of which nearly two-thirds are already operational.

Suppliers are also finding new operational solutions, including first-of-their-kind procurement structures in their regions — particularly in China. In China, Green Power Trading Platform and cross-provincial power purchasing agreements have provided suppliers another avenue to procure renewable energy. The China Clean Energy Fund also continues to make progress with 647 megawatts of clean energy having been brought online through the fund's projects.

In South Korea and Japan, our suppliers are also participating in new opportunities for acquiring renewable energy. South Korea has expanded its options for green power, including power purchase agreements and the ability to purchase renewable energy credits. Japan has also seen new renewable energy options introduced, including power purchase agreements and price-competitive non-fossil credits that have the potential to

scale access to renewable energy across the market. While we have seen progress in key markets, we continue to advocate for policies that enable renewable energy to compete fairly with fossil fuels, opening more avenues for our suppliers to make the transition.

We lend our voice and stand with other companies and NGOs to break down policy barriers to achieve thriving clean energy markets. Across regions where our suppliers operate, we engage with policymakers to support renewable energy that is cost-effective, accessible to companies, and sourced from high-quality projects with a material impact on local markets. For example, we work closely with RE100 to identify country-level policy barriers to procuring renewable electricity, so that they can collate company challenges and advocate for changes on our behalf. We also co-founded the Asia Clean Energy Coalition, which convenes a diverse coalition of leading renewables private sector actors to enact critical policy shifts in Asia that will enable a variety of corporate procurement options for renewable energy.

Supplier Energy Efficiency Program

We work to reduce energy use at every point in our supply chain, creating leaner, more efficient factories all over the world. Through our Supplier Energy Efficiency Program, we help suppliers uncover significant carbon savings at the facility-level. These opportunities can be as simple as replacing outmoded and inefficient equipment and capturing leaking heat for reuse, or honing manufacturing processes using smart machine management to complete the same work with less electricity. In 2022, the Supplier Energy Efficiency Program helped suppliers avoid more than 1.3 million annual metric tons of supply chain carbon emissions.

We support our suppliers' energy efficiency projects by helping to identify optimization opportunities and design solutions through assessments, and by providing extensive education and training opportunities that include technical assistance and connections to funding for energy efficiency projects — which can be obstacles

to making improvements. As suppliers become more knowledgeable in this space, they become more able to tackle deeper decarbonization challenges.

One way we do this is through the Asia Green Fund, which Apple launched in 2019 to help provide energy efficiency expertise and finance capital-intensive energy efficiency projects. As of 2022, the Asia Green Fund has provided \$8.9 million of investments toward supplier efficiency projects.

Direct emissions abatement

We remain focused on abatement strategies for direct emissions, including electrification or switching to lower-emissions alternatives.

One of the largest contributors of direct emissions in our supply chain is the use of fluorinated greenhouse gases (F-GHGs). F-GHGs are used in the electronics manufacturing of semiconductors and flat panel displays (FPDs), and they have global warming potential that is thousands of times greater than that of CO₂. So while the use of F-GHGs is unavoidable today in certain manufacturing processes, emissions can be abated by switching to alternative input gases, optimizing production processes to use and emit fewer fluorinated GHGs, and installing gas abatement tools.

By continuing to engage our suppliers, we are aligning today's solutions to current challenges while identifying future approaches to decarbonization that may not yet be available.

Supplier clean energy capability-building

Knowledge empowers our suppliers to identify and pursue opportunities to decarbonize as their businesses continue to evolve. For this reason, we invest heavily in providing education and training across our supply chain, through programs such as our Clean Energy Academy.

The Academy offers updates on available energy procurement options in our suppliers' manufacturing

locations, helps suppliers prepare for upcoming renewable energy pilots, and provides guidance from local experts on implementation. More than 170 supplier participants in China, Japan, South Korea, and Vietnam have participated in our Clean Energy Academy. This program supplements our Clean Energy Portal, which is available to all suppliers and provides training materials, resources, and country-specific information to guide them in their transition to renewable energy.

In 2022, we announced plans to donate these resources to create a first-of-its-kind public training platform that is free for businesses across many different industries, providing companies of all sizes — in Apple's supply chain and beyond — access to the resources and advocacy networks. And we support the creation and growth of renewable energy and carbon industry associations that our suppliers can join to learn about local opportunities. By connecting our suppliers and other companies with resources to help them assess their performance and opportunities to transition to renewable energy, our teams are scaling impact across not only our own supply chain but in supply chains across the globe.



Facilities material manufacturing, the Netherlands

Additional resources

[Additional reports and filings →](#)

[Aligning with the United Nations Guiding Principles on Business and Human Rights →](#)

[Materials diligence index →](#)



Additional reports and filings

Supplier Code of Conduct and Supplier Responsibility Standards

Our Supplier Code of Conduct outlines Apple's requirements for its suppliers regarding conduct related to labor and human rights, health and safety, environmental protection, ethics, and management practices. Apple's Supplier Responsibility Standards provide additional clarity regarding Apple's requirements. Apple suppliers must meet these Standards to be in compliance with our Supplier Code of Conduct.

[Supplier Code and Standards →](#)

Apple Human Rights Policy

Our Human Rights Policy is based on internationally-recognized standards, including the United Nations International Bill of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, and the United Nations Guiding Principles on Business and Human Rights, and governs how we treat everyone from our customers and teams, to our business partners, and people at every level of our supply chain.

[Human Rights Policy →](#)

How We Work With Suppliers

How We Work With Suppliers is a guide to our comprehensive approach to supplier engagement and ensuring compliance with our Code and Standards.

[How We Work With Suppliers →](#)

Corporate Environmental Health and Safety Policy

Apple is committed to protecting the environment, health, and safety of our employees, customers, and the global communities where we operate.

This policy is contained in the Environmental Progress Report available at [apple.com/environment](#)

Environmental Progress Report

Every year, we release a report with detailed information about our environmental efforts, how we measure our overall environmental footprint, and the progress we've made over the past year.

Apple's Environmental Progress Report is available at [apple.com/environment](#)

Product Environmental Reports

Key Apple product releases are accompanied by a Product Environmental Report, which provides environmental information relevant to the entire life cycle impact of that product.

Product Environmental Reports are available at [apple.com/environment](#)

Material Impact Profiles

This paper details how we've prioritized the materials in our products based on their environmental, social, and supply impacts. The prioritized list of materials represents those which we will first transition to recycled or renewable content, driving toward our goal of using 100 percent recycled or renewable materials in our products.

[Material Impact Profiles →](#)

Supplier List

The Supplier List contains Apple's suppliers involved in the manufacturing of products, covering 98 percent or more of Apple's spend.

[Supplier List →](#)

Conflict Minerals Report

The Conflict Minerals Report serves as our filing to the United States Securities and Exchange Commission in compliance with Dodd-Frank Section 1502 reporting related to the sourcing of tin, tungsten, tantalum, and gold (3TG), and lithium, and gold from the DRC and adjoining countries.

[Conflict Minerals Report →](#)

Smelter and Refiner List

The Smelter and Refiner List includes smelters and refiners of tin, tungsten, tantalum, gold, lithium, and cobalt in our supply chain.

[Smelter and Refiner List →](#)

Efforts to Combat Human Trafficking and Slavery Report

This report meets disclosure requirements for the California Transparency in Supply Chains Act of 2010, the UK Modern Slavery Act 2015, and The Australian Commonwealth Modern Slavery Act 2018.

[Efforts to Combat Human Trafficking and Slavery Report →](#)

In addition to this annual progress report, Apple releases annual policy updates, public reports, and disclosures.

Aligning with the United Nations Guiding Principles on Business and Human Rights

Our efforts to identify, mitigate, prevent, and remedy human rights risks align with the Business and Human Rights Due Diligence process set forth in the United Nations Guiding Principles on Business and Human Rights (UNGPs).

Policy commitment

We are deeply committed to respecting internationally recognized human rights in our business operations as set out in the United Nations International Bill of Human Rights and the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work. Our approach is based on the UNGPs, which means we conduct human rights due diligence to identify risks and work to mitigate them. We also seek to remedy adverse impacts, track and measure our progress, and report our findings. In keeping with the UNGPs, where national law and international human rights standards differ, we follow the higher standard, and where they are in conflict, we respect national law while seeking to respect the principles of internationally recognized human rights. Our Apple Human Rights Policy outlines how we treat everyone, including our customers, Apple employees, business partners, and people at every level of our supply chain. Our Board of Directors adopted the Apple Human Rights Policy and is responsible for overseeing and periodically reviewing it. Apple's Senior Vice President and General Counsel is responsible for its ongoing implementation and reports to the Board and its committees on any significant issues identified during the due diligence process and our progress.

Embedding respect for human rights

Apple's Board of Directors oversees its Chief Executive Officer (CEO) and other senior management in the competent and ethical operation of Apple on a day-to-day basis. A number of cross-functional teams are responsible for carrying out human rights due diligence, including, but not limited to, Legal and Global Security, Compliance and Business Conduct, and Environment and Supply Chain Innovation (ESCI). Apple's ESCI team sits in Apple's World Wide Operations organization and coordinates activities related to human rights across Apple's supply chain.

In 2005, the Apple Supplier Code of Conduct and the Supplier Responsibility Standards (Code and Standards, respectively) were developed to clearly set out, in detail, our requirements for suppliers relating to human rights. Every year since then, we have incorporated feedback from stakeholders, together with evolving legal norms and best practices, to verify that our Code and Standards reflect current internationally accepted human rights standards.

One of the ways we measure our ability to uphold human rights standards is by assessing our suppliers against our Code and Standards to drive improvements in the areas of labor and human rights, health and safety, environment, ethics, and management systems. In order for a workplace to be safe, healthy, and respectful, employees must be aware of and able to exercise their rights. That's why we require all suppliers to train their employees on their rights. Supplier employees attend a new employee orientation session

where they are trained on international labor standards, local labor law, and the labor and human rights protections required by our Code and Standards. Topics in the training include working hours and overtime policies, grievance mechanisms and hotlines, our zero tolerance for retaliation policy, and occupational health and safety standards. Deeper in our supply chain, we work with partners to raise rights-awareness through our Responsible Sourcing program.

Identifying salient human rights risks

Identifying risks in our global supply chain is the first step to eliminating those risks through improvements to our policies and strategies, and through collaborative capability-building with our suppliers. Our efforts to identify, mitigate, prevent, and remedy human rights risks align with the Business and Human Rights Due Diligence process set forth in the UNGPs. We identify salient human rights risks through our robust assessment processes, conducting human rights impact assessments, and by participating in industry-level, third-party assessments. Apple selects suppliers for assessment based on a number of factors, including geographic risk, previous assessment performance, manufacturing process risks, and planned spending.

We also identify salient human rights risks through our own risk analysis and through the channels we maintain with key rights-holders, stakeholders, and partners. These include supplier employee interviews and surveys; consultations with human rights, labor, and environmental

experts; expert groups we convene on specialized or emerging human rights topics; UN and government labor and human rights reporting and consultations; media reports; the results of our supplier assessments; discussions with supplier management teams; and reports received through our partners around the world.

In addition to our own internal monitoring, reports identifying possible risks come to us from civil society organizations, news outlets, people in the supply chain or supply chain communities, local whistleblower mechanisms, and third-party hotlines. They also come through the reporting mechanisms we make available directly to all supplier employees, Apple employees, and the general public. These reports can come to us in any language and can be anonymous.

The following are examples of salient human rights risks in our supply chain that relate to the ILO Core Conventions, which are based on supplier assessments, due diligence deeper in our supply chain, work within our industry, and public reporting. Each of these is addressed in our Code and Standards:

- Discrimination
- Freedom of Association and Collective Bargaining
- Involuntary Labor and Human Trafficking
- Underage Labor

Managing salient human rights issues

Suppliers are required to operate in accordance with our Code of Conduct and in full compliance with all applicable laws and regulations. Our Code is supplemented by our Standards, which provide additional clarity regarding Apple's requirements. Our suppliers must meet these Standards to be in compliance with the Code. Additionally, as part of our Standards, we require suppliers to comply with specific international frameworks and requirements, including ILO Convention No. 182 on the worst forms of child labor.

We require all suppliers to train their employees on their rights. The ability for supplier employees to speak up without fear of retaliation is fundamental to labor and human rights. Apple's Code and Standards align with the ILO's fundamental conventions, including standards relating to the right to freedom of association and collective bargaining. Even where the right to freedom of association and collective bargaining is restricted under local law, suppliers are prohibited from obstructing alternative legal means for workers to associate and to individually and collectively engage with their employer without interference, discrimination, retaliation, or harassment.

Assessing impacts, integrating findings, and taking action

Supplier performance is assessed against our Code and Standards to drive improvements in the areas of labor and human rights, health and safety, environment, ethics, and management systems. Assessments are a comprehensive process that can require multiple days at a supplier in order to conduct site inspections, review documents, and complete worker and management interviews. We evaluate suppliers on more than 500 criteria, verify compliance, and identify areas for improvement. Each assessed facility is ranked on a 100-point scale in each of the three assessment categories (labor and human rights, health and safety, and environment), with the average of those scores comprising the facility's composite score for theyear. Achieving progress requires having strong processes to hold suppliers accountable, verifying that suppliers address violations when they are discovered, and validating that

corrective actions have been completed. We call these processes Corrective Action Plans (CAPs) and Corrective Action Verifications (CAVs).

If non-compliance is identified during an assessment, we create a CAP for the supplier, requiring 30-, 60-, and 90-day check-ins. As part of the process, our capability-building team provides suppliers with training on industry best practices and guidance in resolving identified issues, as well as support in strengthening management systems and practices to prevent any issues from reoccurring.

We identify and mitigate risks in our supply chain through improvements to our policies and strategies, and through collaborative capability-building with our suppliers. We report on [Core Violations](#)⁵ of our requirements, and we integrate findings and learnings into the annual updates to our Code and Standards.

Tracking progress

We track and measure our performance across a range of areas, and we apply the lessons we learn to continually improve. We report our performance publicly in several ways, including in our annual progress report, our [Statement on Efforts to Combat Human Trafficking and Slavery in Our Business and Supply Chains](#), and our [Conflict Minerals Disclosure](#). In addition, we report Code Violation metrics in this annual progress report.

Stakeholder engagement

Apple is committed to working in collaboration with stakeholders beyond its own supply chain to achieve industry-wide change. To do this, we engage with industry associations, civil society organizations, academics, UN agencies, and governments to share our progress and promote best practices. We also convene regular stakeholder roundtables and expert groups to learn from others' perspectives and seek critical feedback on our programs.

In 2021, we launched a digital platform to deliver enhanced training directly to supplier employees in their native language. The new platform helps to identify gaps in

knowledge of labor laws and workplace requirements, and it adapts the user experience accordingly to improve comprehension of the material. We conducted focus groups with supplier employees in order to better tailor the content in ways that are most effective and engaging. We continued to roll out the platform to additional suppliers in 2022, and we continually use feedback from participants to update and strengthen the training.

We also continued our partnership with SCORE Academy, an organization supporting decent work in global supply chains, to successfully launch the SCORE Program, based on training curriculum developed by the ILO. The program, which has been launched at supplier sites in China, provides opportunities for management and supplier employee representatives to collaborate on solutions for environment, health, and safety (EHS) risks, workplace dialogue, productivity, and issues such as the prevention of harassment in the workplace.

Examples of remediation processes

The following are descriptions of the types of Code of Conduct violations we are working to identify and address, including debt-bonded labor, working hour infractions, and underage labor:

- **Prevention and remediation of debt-bonded labor**
Apple has zero tolerance for debt-bonded labor. That's why in 2015, we mandated our zero fees policy across our supply chain, going above and beyond internationally recognized labor standards.

Our remediation process for labor recruitment fees requires direct remedy, with suppliers repaying employees for any fees paid in the process of obtaining a job. If any fees are discovered, the supplier's CEO is notified, and the supplier is placed on probation, requiring them to submit a worker repayment plan for approval by Apple. Once approved, the supplier directly repays their employees for all fees paid, and repayment is verified by a third-party auditor. Since 2008, \$34.2 million in recruitment fees have been repaid to over 37,700 workers by our suppliers.

- **Monitoring working hours**

Proper time for rest and leisure is fundamental to a safe and healthy work environment. In addition to tracking working hours weekly at key supplier facilities, we review working hours as part of our assessments and work with suppliers to implement CAPs as needed. Falsification of employee working hours is a [Core Violation](#) of our Code, and if discovered, the supplier is placed on probation and its CEO is notified. The supplier's ethics policy and management systems are then thoroughly reviewed to identify root causes. The supplier is also required to undergo additional assessments to confirm that policy changes have been implemented in order to prevent future violations. In addition, if employee hours were misrepresented, the supplier must revise all records to reflect an accurate accounting of hours worked.


- **Prevention and remediation of underage labor**

The use of underage labor is a Core Violation of our Code. There were zero findings of underage labor in our supply chain in the 2022 reporting period. If underage labor is discovered through our supplier assessments, specialized third-party assessors are brought in for an in-depth review, and the supplier is required to immediately and safely return the underage individual to his or her home. Educational opportunities are presented to the underage individual and his or her guardians. The supplier is required to pay all tuition and educational fees, and to continue to pay the individual's wages that would have been earned at the supplier facility until the individual reaches legal working age. Follow-up is conducted to verify the individual's overall well-being both at school and at home. Once the individual reaches legal working age, the supplier is also required to offer the individual employment.

Based on the reduction in age-related violations over the last decade, our efforts have driven significant progress in this area.

⁵ | Core Violations are the most serious level of violation of our Code and Standards. To learn more, read the [Supplier engagement and accountability](#) section.

Materials diligence index

| Material | Smelters and refiners supplying primary material required to complete independent third-party assessments | Smelters and refiners supplying recycled material required to complete independent third-party assessments | Apple priority material for transitioning to recycled sources | Partners and programs supporting our due diligence and community support programs |
|---|---|--|---|--|
|  Tin |  |  |  |  Congo Power  The Fund for Global Human Rights |
|  Tungsten |  |  |  |  IMPACT Transforming natural resource management. Empowering communities.  MITD-Lab MITD-Lab |
|  Tantalum |  |  |  |  RESOLVE Resolve (Salmon Gold and Regeneration projects)  PACT building local promise. |
|  Gold |  |  |  | |
|  Cobalt |  |  |  | |

A relentless focus on better.

Continuous improvement is in Apple's DNA, and our work to uphold the highest standards across our global supply chain is no exception.

We believe that business can and should be an innovative force for good. By upholding our values everywhere that our business reaches, we strive to prove this to be true, and share what we've learned with others, so that everyone moves forward, faster.

Our work continues.

