



Supplier Clean Energy

Program Update

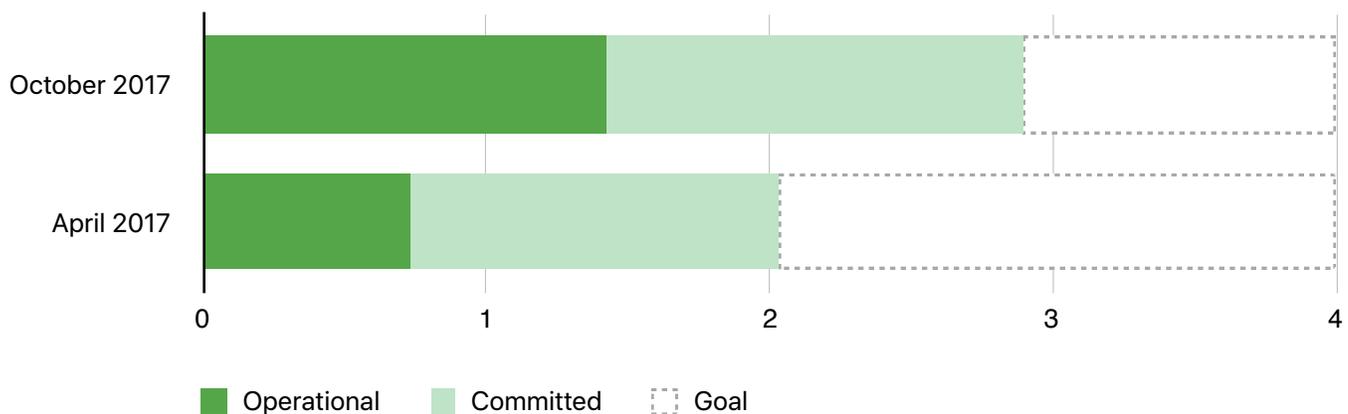
October 2017

We launched our supplier clean energy program in October 2015. Our aim is to reduce the carbon footprint of our manufacturing by helping our partners become more energy efficient and by transitioning our entire supply chain to 100 percent clean energy.

Our 2020 Goal

As part of our clean energy program, Apple and our suppliers will generate and source from more than 4 gigawatts of new clean energy worldwide by 2020. This includes all supplier clean energy projects dedicated to Apple production as well as Apple projects. To date, Apple has installed 485 megawatts of wind and solar projects across six provinces of China to address upstream emissions that are beyond the influence of our direct suppliers. Below is a snapshot of progress to date by Apple and our suppliers.

Progress toward 4 gigawatts



To date, 14 suppliers operating in 10 different countries have committed to 100 percent clean energy for Apple production. Other suppliers have also committed to generate or procure clean energy for portions of Apple production. In addition, Apple has installed 485 megawatts of wind and solar projects across six provinces of China to support upstream manufacturing.

Supplier Commitments

In just two years since the launch of the program, 14 manufacturing partners, operating in 10 different countries, have committed to powering all of their Apple production with clean energy by 2020. We now have 2.9 gigawatts of committed clean energy. Once operational, these projects will avoid 4.4 million metric tons of CO₂e emissions. In addition, over 75 suppliers have registered for Apple's Clean Energy Portal, an online platform Apple developed to help suppliers identify commercially viable renewable energy solutions in regions around the world.

Some manufacturing partners have already implemented projects that are generating clean energy today, while others are making great progress constructing new projects or identifying power purchase options to meet their commitments. These 14 suppliers have committed to globally producing Apple products with 100 percent clean energy:

- Biel Crystal Manufactory Ltd.
- Catcher Technology
- Compal Electronics
- Golden Arrow
- Ibsiden
- Jabil
- Lens Technology
- Mega Precision
- Qorvo
- Solvay Specialty Polymers
- Sunway Communication
- Sunwoda Electronics
- Yuto
- Wistron

Supplier Projects

We're working with our suppliers to ensure that the projects they select have the greatest potential for impact. We aim to displace fossil fuel-based energy sources by creating new clean energy that adds to the energy sources already delivering to the grid. And we ensure stringent accountability to ensure no double-counting. These clean energy solutions often take time to build, and each supplier is making great progress toward meeting its commitment to 100 percent renewable energy for all Apple production. The majority of suppliers find localized solutions in the same province or grid region, which we encourage. In certain countries, like South Korea, where the renewable energy market is less established, we are actively working with our suppliers to develop in-country solutions. The following describes the commitments made to date.

Biel Crystal Manufactory Ltd.

Biel, one of Apple's major glass suppliers, has committed to 100 percent renewable energy by year end 2018. It has already contracted 50 percent of its energy to come from wind and solar and will increase this to 100 percent in 2018. Going one step further, Biel is also building a 5-megawatt onsite rooftop solar system that will come online in 2018. And it is planning to build a 100-megawatt offsite renewable energy system to meet its remaining renewable energy commitments on the long term.

Catcher Technology

Catcher is one of Apple's largest aluminum enclosure suppliers. Its target is to power 100 percent of its production of Apple components with renewable energy by 2018. This will avoid nearly 600,000 metric tons of greenhouse gas emissions each year, equivalent to removing nearly 125,000 passenger vehicles from the road every year.

Compal Electronics

Compal will achieve its goal of 100 percent renewable energy for Apple production by 2018. Compal, which assembles iPad devices, is starting with constructing rooftop solar on its facilities across China starting in Nanjing. These projects are expected to total over 12 megawatts across 224,000 square meters of rooftop.

Golden Arrow*

Golden Arrow has committed to procure 100 percent renewable energy for Apple production by mid-2019. Along with Yuto, Golden Arrow is the first packaging supplier to commit to 100 percent renewable energy for Apple production. Golden Arrow primarily manufactures molded fiber product trays for Apple, which have significantly reduced amount of plastic used in iPhone, iPad and Apple Watch packaging. The company is currently exploring direct power purchase options in Jiangsu province as a first step toward achieving its goal, and has already installed 1.2 megawatts of onsite solar capacity at its production site.

Ibiden

Ibiden, a provider of integrated circuit substrates, is investing in more than 20 new renewable energy facilities, including one of the largest floating solar photovoltaic systems in Japan. The state-of-the-art 12-megawatt floating system is constructed on a converted lumber yard to maximize land use in the country. In addition, Ibiden invested in a 14 megawatt low-impact hydro solution to achieve any remaining portion of their renewable target not covered by solar PV. Apple worked with Ibiden to ensure that the small hydropower plant meets or exceeds a stringent set of environmental and social impact standards.

Jabil Circuit Inc.*

Jabil has committed to 100 percent renewable energy for Apple production by year end 2018. Jabil makes a number of components for Apple, primarily the aluminum housing for iPhone, along with plastic, silicone and stainless steel parts, across seven facilities on the Chinese mainland and Taiwan. Jabil has already achieved 67 percent renewable energy for their Apple production through a direct power purchase agreement—one of the first in China for renewable energy—and onsite installations. Jabil's commitment to be 100 percent renewable for its Apple production is the single largest commitment by a supplier to date, representing nearly 1 billion kilowatt-hours per year.

Lens Technology

Lens, one of Apple's major glass suppliers, has committed to power all of its glass production for Apple with 100 percent renewable energy by 2018. To achieve its target, Lens entered into a power purchase agreement with a local wind provider. This was at the time one of the first power purchase agreements for renewable energy in China. Wind energy will cover 100 percent of the electricity Lens facilities consumes to produce Apple products, avoiding nearly 450,000 metric tons of carbon dioxide each year, equivalent to the energy use in 380,000 Chinese homes.

Mega Precision*

Mega Precision produces precision metal components for iPhone and is based in Dongguan, Guangdong Province. It has committed to power its Apple production with 100 percent clean energy by the end of 2018. Mega intends to achieve its target by entering into a cost competitive renewable power purchase agreement with China's largest biomass plant, located in Guangdong Province. The project has undergone rigorous evaluation to ensure that it meets Apple's high standards to ensure sustainable and socially responsible power sourcing from biomass. The biomass plant generates electricity from biological waste (eucalyptus bark, sugar cane stalks, rubber tree waste, etc.) that would otherwise be incinerated. The biomass plant also has over 4 megawatts of installed solar.

Qorvo*

Greensboro, North Carolina-based Qorvo designs and manufactures solutions that help wirelessly connect Apple devices with cellular networks. Qorvo's technology is integral to nearly every call made on an iPhone and every download through global cellular networks. Qorvo is the first U.S.-based manufacturer with a majority of production in the U.S. (Texas, Florida, and Oregon) to commit to using 100 percent clean energy for all Apple production by the end of 2018 in the U.S. and globally by the end of 2019.

Solvay

Solvay Specialty Polymers is a business unit of Solvay and a supplier of materials used on antenna bands in iPhone. They have committed to 100 percent renewable energy by the end of 2018 for Apple production across 14 manufacturing facilities in seven countries: China, Belgium, France, Germany, Italy, India, and the United States. Solvay recently entered a 15-year purchase agreement from a 70-megawatt solar farm in South Carolina. The solar project is on track to be commissioned later this year or in early in 2018. Once completed, the project will be the largest solar farm in the state.

Sunwoda

Sunwoda is Apple's first battery supplier committed to achieving 100 percent clean energy for its Apple production by year end 2018. Sunwoda has built a 50-megawatt solar farm in central Henan province in China. A portion of the solar farm will be dedicated to Apple manufacturing.

Sunway Communications*

Sunway Communications manufactures antennas and enclosures for iPhone, and has committed to procure 100 percent renewable energy for their Apple production by year end 2018. Sunway's production for Apple takes place in Shenzhen and Beijing. Sunway plans to enter into a direct power purchase agreement with a local solar farm in Guangdong province.

Wistron*

Wistron is the first iPhone final assembly supplier to commit to 100 percent clean energy for its Apple production. The company has assembly facilities for Apple in both China and India. To meet its renewable energy commitments, Wistron plans to install 1.8 megawatts of rooftop solar in 2017 and gradually build up their renewable generation in the coming years. Wistron is committed to achieving 100 percent clean energy for its Apple production by year end 2019.

Yuto*

Along with Golden Arrow, Yuto is the first packaging supplier to commit to 100 percent clean energy for its Apple production by mid-2019. Yuto manufactures packaging boxes, in-box documentation, and ear pod carriers for Apple, along with molded fiber product trays that have reduced the amount of plastic used in iPhone, Apple Watch, and iPad packaging. Yuto manufactures for Apple across 5 sites, 4 in China and one in Hanoi, Vietnam.

* Suppliers that have committed since publication of the last Program Update in April 2017.