



# Supplier Clean Energy

## April 2019 Program Update

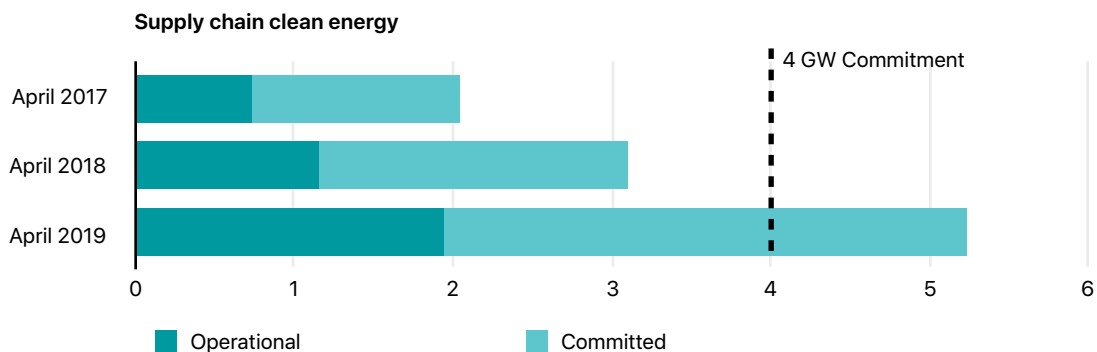
Apple is committed to addressing climate change and increasing the use of renewable energy. We launched the Supplier Clean Energy Program in October 2015 to advance the use of clean energy in our supply chain. We continue to demonstrate that powering operations with clean energy is good, not just for the environment, but for business, too. That's why we've worked hard to source 100 percent renewable energy for all of Apple's global facilities. When companies join the Supplier Clean Energy Program, they make a clear statement to Apple and to the broader business community that they share Apple's beliefs and are ready to lead.

Manufacturing is energy intensive and historically has relied heavily on fossil fuels. So we partner with our suppliers to ensure that clean energy is cost competitive and readily accessible in the markets where they operate. These efforts are helping to reduce product-related carbon emissions, create a more resilient supply chain, and contribute to healthier communities—while also paving the way for others to follow.

### Supplier Clean Energy Program

The Supplier Clean Energy Program is integral to reducing Apple's overall emissions. Manufacturing makes up 74 percent of Apple's carbon footprint. And most of those emissions are from the electricity used to make the parts in our products. So we're focused on increasing energy efficiency at supplier facilities, and then on transitioning suppliers to clean, renewable energy.

As a first step, we're partnering with our suppliers to generate and source more than 4 gigawatts of new clean energy in Apple's global supply chain by 2020. This represents over one-third of all the electricity used to make our products.<sup>1</sup>



To ensure that our program achieves the greatest positive impact, we require stringent social and environmental reviews of all supplier clean energy projects. The data above reflects only those projects that meet our strict standards and include only clean energy generated or sourced since Apple's engagement. Operational data is based on our last annual supplier energy survey conducted in January 2019.

<sup>1</sup>We've estimated electricity use for manufacturing using a life cycle analysis methodology, based on fiscal year 2018 data.

We're proud of the progress our suppliers have made. To date, 44 manufacturing partners in 16 different countries have committed to 100 percent renewable energy for Apple production. Additional suppliers have committed to generate or procure clean energy for portions of Apple production, and Apple itself has invested directly in renewable energy projects to cover upstream emissions.

To date, the Supplier Clean Energy Program has 5.3 gigawatts of clean energy commitments. Once completed, these commitments will avoid over 8.6 million metric tons of CO<sub>2</sub>e annually —the equivalent of taking over 1.8 million cars off the road each year.<sup>2</sup>

**“The Supplier Clean Energy Program is at the center of Apple’s commitment to making world-class products with greener manufacturing. Our suppliers are taking significant actions to join us in this work, and we look forward to seeing more bold pledges as we continue to address our environmental impact.”**

— Jeff Williams, Apple’s Chief Operating Officer

## Apple’s Role

Apple supports supplier transitions to clean energy. We work with them to advocate for policy change in key markets. We connect suppliers with high-quality clean energy projects and developers. And we educate them on how they can take full advantage of the benefits of clean energy.

**Demonstrating leadership.** The transition to renewable energy can be highly complex. It often requires complicated deal structures across many regions with diverse statutory and regulatory requirements. Apple navigated many of these challenges in meeting our own 100 percent renewable energy goal in over 40 countries, and in developing nearly 500 megawatts of solar and wind projects in China and Japan to address upstream emissions in our supply chain.

**Connecting suppliers to high-quality projects.** In July 2018, Apple launched a first-of-its-kind investment fund in China to connect suppliers with renewable energy sources. Initially, 10 suppliers and Apple will jointly invest nearly \$300 million over the next four years into the China Clean Energy Fund. By virtue of its size and scale, the Fund will give its participants the advantage of greater purchasing power and the ability to attain more attractive and diverse clean energy solutions. The fund will invest in and develop clean energy projects totaling more than 1 gigawatt of renewable energy in China.

**Educating partners.** We share our learnings with our supplier partners and help them plot their transition to renewable energy. In 2017, Apple developed the Clean Energy Portal, an online platform to help suppliers identify commercially viable renewable energy solutions in regions around the world. We continue to add new content, including policy guidance and financial analysis tools, intended to make adoption of clean energy in key markets even easier. Over 100 suppliers have registered for the site.

**Advocating for strong policy.** Clean energy technology offers tremendous benefits to our suppliers, to electricity grids, and to countries. We believe that if policymakers fully and properly value these benefits, clean energy becomes more cost competitive than fossil fuel energy. So we actively support policies that create cost-effective renewable energy markets, and we work closely with suppliers to engage local, regional, and national governments. This encourages the development of country-specific policies that support scalable renewable energy solutions.

<sup>2</sup>Greenhouse gas equivalency is calculated using the U.S. EPA Greenhouse Gas Equivalencies Calculator: [www.epa.gov/energy/greenhouse-gas-equivalencies-calculator](http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator).

# Supplier Commitments

As we continue transitioning our supply chain to clean energy, these 44 suppliers—including 15 new commitments in the past six months—have committed globally to producing Apple products with 100 percent clean energy:

- Advanced International Multitech\*
- Arkema
- AT&S\*
- Bemis Associates\*
- Biel Crystal (HK) Manufactory Ltd.
- BOE\*
- Catcher Technology
- Compal Electronics
- Corning Incorporated\*
- COSMO\*
- DSM Engineering Plastics
- ECCO Leather
- Fastway Creation
- Finisar
- Goertek\*
- Golden Arrow
- H.B. Fuller\*
- Hon Hai Precision Industry\*
- Ibiden
- Jabil
- LEALEA Enterprise\*
- Lens Technology
- Lishen
- Luxshare-ICT
- Mega Precision
- Nidec\*
- Pegatron
- Primax Group
- Qorvo
- Quadrant
- Quanta Computer
- RRD
- RyPax
- SanHuan\*
- SDK\*
- Solvay
- STMicroelectronics\*
- Sunway Communication
- Sunwoda Electronics
- Taiyo Ink Mfg. Co.
- tesa SE
- TSMC\*
- Wistron
- Yuto

\*Suppliers that have committed to 100 percent renewable energy since publication of the last Program Update in October 2018.

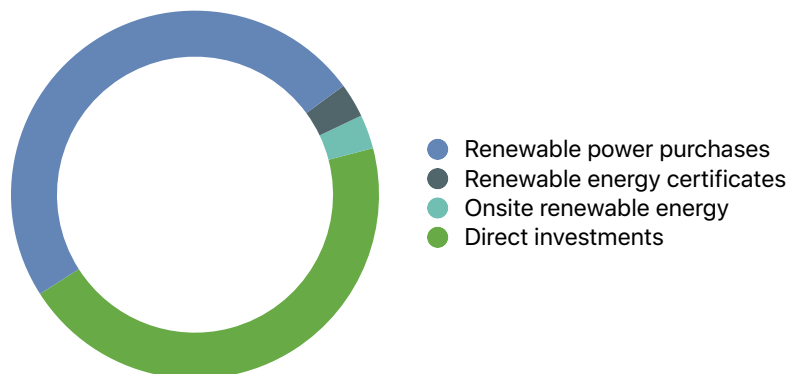
## Supplier Projects

We're working with our suppliers to ensure that projects they select have the greatest potential for impact. We uphold stringent accountability standards to ensure that all clean energy can be verified. These clean energy solutions often take time to build, and each of the following suppliers is making progress toward meeting their commitment to 100 percent renewable energy for all Apple production. The majority of suppliers find localized solutions in the same province, state, or grid region in which they operate.



































We want our involvement in a renewable energy project to be a driving force to getting the project built by either providing needed financial support, or by overcoming regulatory or other barriers. With the rapidly changing policy dynamics in some of our key countries, we're adapting our framework to continue to comply with local laws and regulations and to yield the most positive and real energy transformation.

















## Identified supplier renewable energy solutions

Apple and its suppliers are implementing clean energy solutions using a variety of contracting mechanisms—with renewable power purchases and direct project investments representing 49 and 45 percent, respectively, of all solutions identified or implemented to date.



## Supplier-identified renewable energy solutions

Supplier	Onsite Renewable Projects	Offsite Renewable Projects					Markets
		Power Purchases	Direct Investments	China Clean Energy Fund	Utility	Certificates	
Advanced International Multitech		TBD					China
Arkema						✓	China, France, USA
AT&S		TBD					China
Bemis Associates						✓	USA
Biel Crystal (HK) Manufactory Ltd.							China
BOE		TBD					China
Catcher Technology				✓			China
Compal Electronics				✓			China
Corning Incorporated		 		✓			Japan, South Korea, Taiwan, USA
COSMO							China
DSM Engineering Plastics							China, Netherlands, Taiwan
ECCO Leather	 					✓	China, Netherlands
Fastway Creation							China
Finisar						✓	USA
Goertek		TBD					China, Vietnam
Golden Arrow				✓			China
H.B. Fuller		TBD					China, Germany, USA
Hon Hai Precision Industry		 					Brazil, China, India, USA
Ibiden*							Japan
Jabil		 		✓			China, Taiwan
LEALEA Enterprise							Taiwan
Lens Technology		 					China
Lishen							China
Luxshare-ICT				✓			China
Mega Precision							China

Supplier	Onsite Renewable Projects	Offsite Renewable Projects					Markets	
		Power Purchases	Direct Investments	China Clean Energy Fund	Utility	Certificates		
Nidec		TBD					China, Philippines, Vietnam	
Pegatron				✓			China	
Primax Group							China	
Qorvo						✓	China, USA	
Quadrant							China	
Quanta Computer			 				China	
RRD		TBD					China	
RyPax		TBD					China	
SanHuan						✓	China	
SDK							China	
Solvay				✓		✓	Belgium, China, France, Germany, India, USA	
STMicroelectronics		TBD					✓	China, France, Italy, Malaysia, Malta, Philippines, Singapore,
Sunway Communication				✓			China	
Sunwoda							China, India	
TSMC		 				✓	China, Taiwan	
Taiyo Ink Mfg. Co.							Japan	
tesa SE						✓	China, Germany	
Wistron				✓			China, India	
Yuto			 				China, India, Vietnam	

**Legend**



Solar energy



Wind energy



Low impact hydro



Biomass



Biogas

\*Apple worked with Ibiden to ensure that the small hydropower plant meets or exceeds a stringent set of environmental and social impact standards.

**Notes:**

- Solutions are either online, in process, or planned.
- TBD reflects solutions not yet finalized.
- Biomass is sourced from China's largest biomass plant, located in Guangdong Province. The project has undergone rigorous evaluation to make sure it meets Apple's high standards to ensure sustainable and socially responsible power sourcing from biomass. The biomass plant generates electricity from biological waste (such as eucalyptus bark, sugarcane stalks, and rubber tree waste) that would otherwise be incinerated.