

Raghad Salem

Next Big Leaf

What are Apple's plans for their environmental future? Are iPhones truly recyclable and renewable?

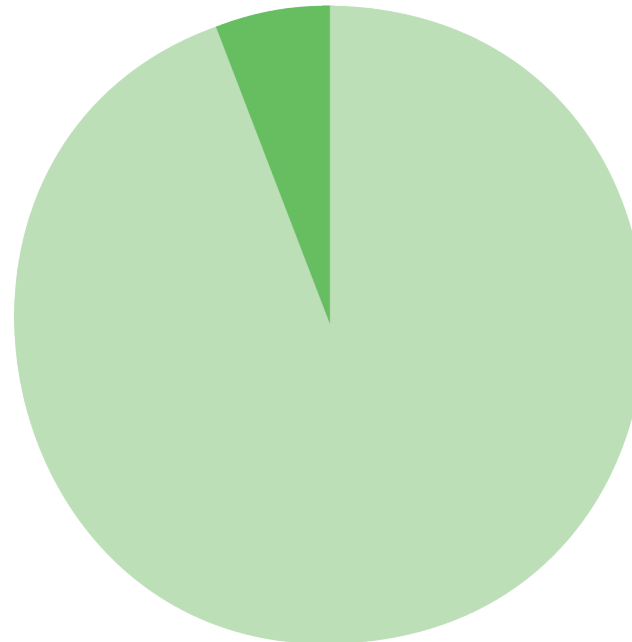


Next Big Leaf

Raghad Salem

As human society evolves, we create and invent new robotics and machinery for the world. Over 15 years ago, Apple introduced the first-generation iPhone, changing the smartphone world forever. Years of manufacturing millions of iPhones and as successful as Apple has become, has created a massive impact on the Earth's health, along with many other businesses and brands.

From 2008 to 2018, it's estimated that Apple's carbon footprint was 25.2 million tonnes of CO2. After taking notice, Apple have decided to reinvent their company to lessen their carbon emissions. With many environmental reports over the past 3 years, they explain the changes and goals such as Apple's aim to be entirely made using renewable electricity by 2030. They also wish to use safer materials, finding replacements for rare and important resources and decreasing their impact on climate change.

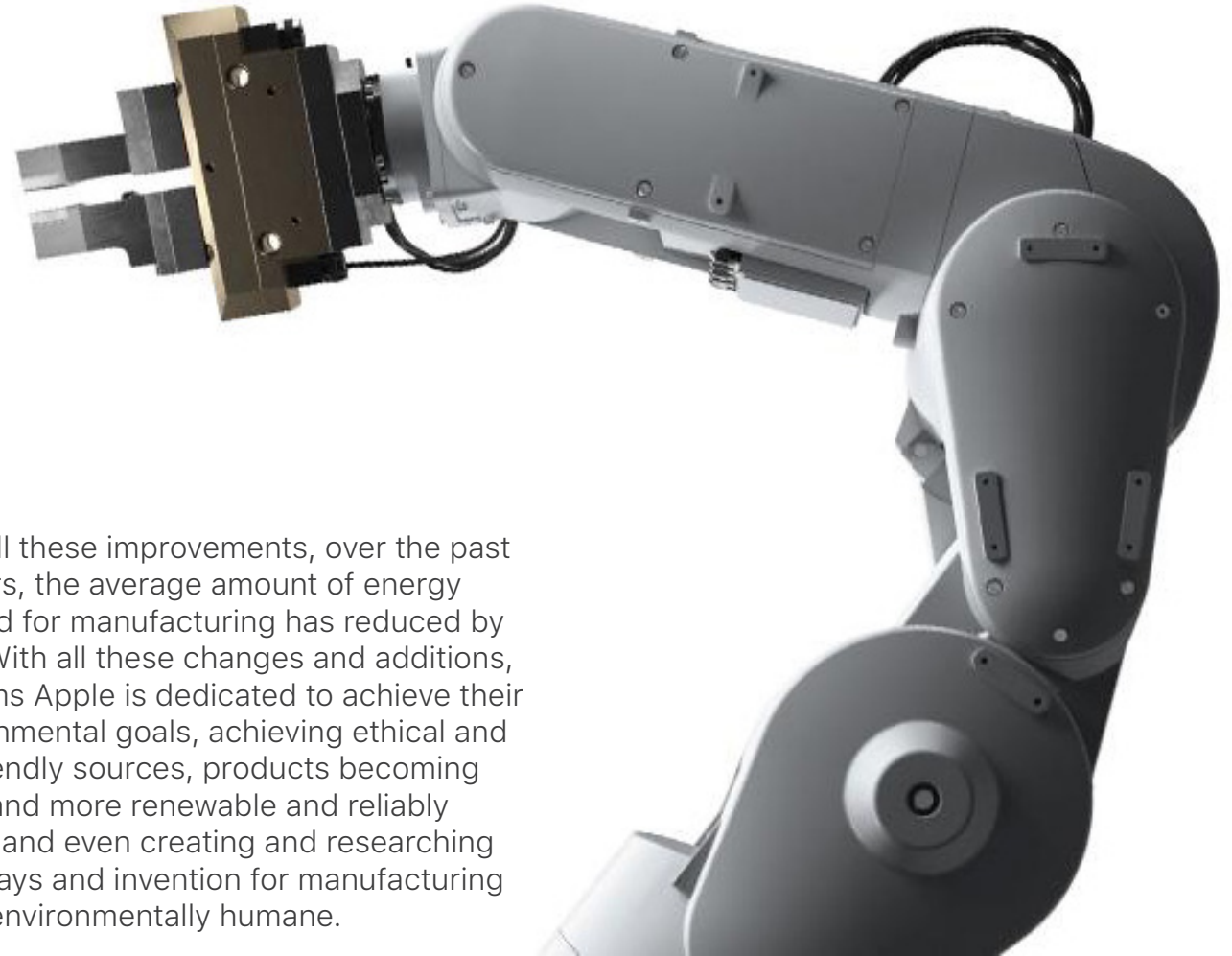


US National Carbon Emissions in 2015

- CO2 from mobile phones - 5.804%
- Total CO2 Emissions - 94.196%

Apple's roadmap to achieve their goals are already successfully underway, with Apple continuing to use their eco friendly packaging, which according to their 'iPhone 12 Product Environmental Report' from October 13th 2020, is 93% fiber based to use less plastic packaging and 100% of the wood fiber is from recycled and responsible sources. In the same report, it's said that the new iPhone 12 has been manufactured using 99% recycled tungsten and 98% recycled rare earth elements, becoming the first smartphone with 100% recycled rare earth elements in all of its magnets, but where do they source these recycled materials from? Apple has always provided a customer service called 'Trade-In', where customers could give in their previous iPhones for recycling when buying a new one for a possible discount. There are a lot of other electronics that can and is sent to recycling, but most when sent are pushed through shredders and pounders that break open the electronics, but damage and make the components inside impure, producing just as much trash. Apple have created, to help this recycling process, disassembling

robots named 'Dave' and 'Daisy'. Each of these robots help accurately disassemble up to 15 models of iPhones and its sensitive components to be safe and ready for reuse, a much more efficient way to collect the valuable materials in each iPhone. Daisy was Apple's first disassembly robot, with Dave being a more recent and updated rendition. The robot 'Dave' picks apart the Taptic Engine on each iPhone, which recovers key components and parts that include rare earth magnets and tungsten while keeping the steel secure enough to recover it. These robots strip up to 200 iPhones per hour of its screen, battery, logic board, sensors and screws, leaving each phones empty aluminium body. Along with different recycled sources for materials, Apple also has over 70 suppliers that also use 100% renewable energy, even committing to their suppliers being ecofriendly as well. Ensuring this will save over 14.3 million metric tons of CO2e every year. Previously in 2019, they had confirmed 44 of their suppliers had this commitment, proving Apple is developing this deal with all their suppliers.



With all these improvements, over the past 11 years, the average amount of energy needed for manufacturing has reduced by 73%. With all these changes and additions, it seems Apple is dedicated to achieve their environmental goals, achieving ethical and ecofriendly sources, products becoming more and more renewable and reliably made, and even creating and researching new ways and invention for manufacturing to be environmentally humane.

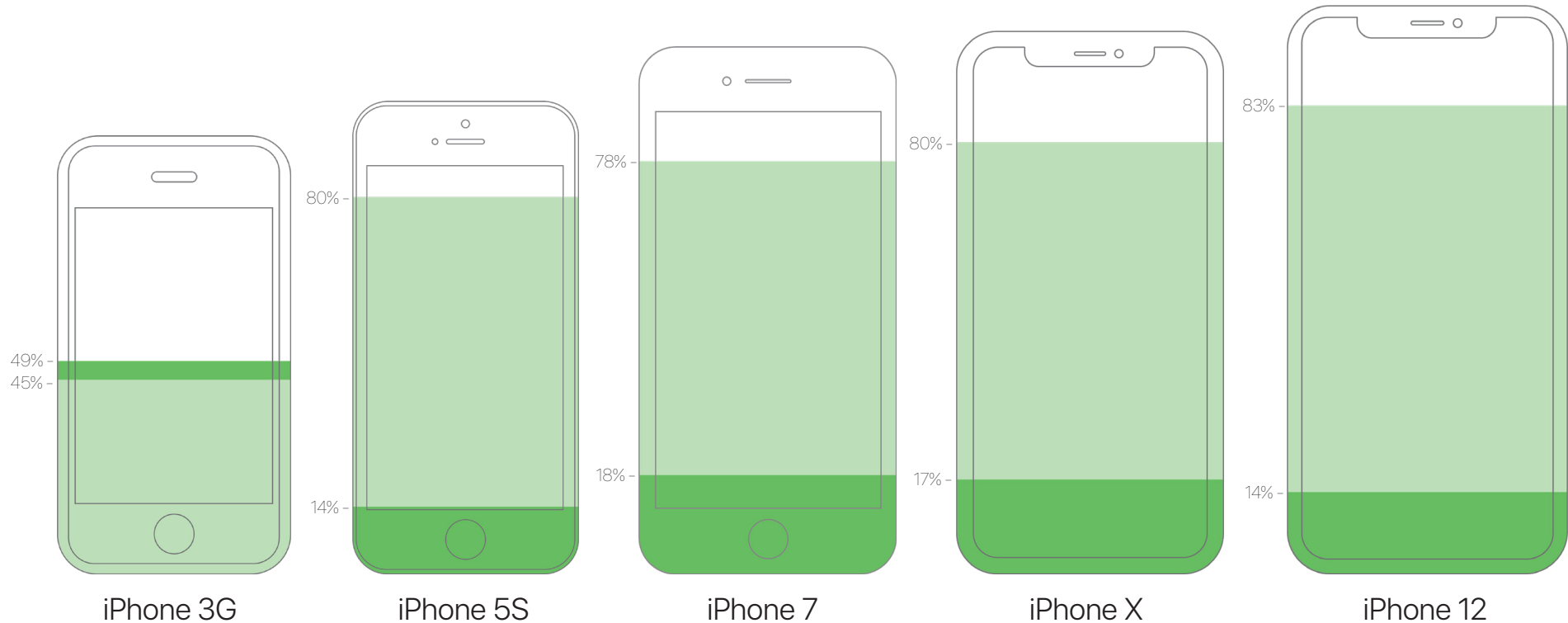
References:

Cave, E. (2019). Apple expands global recycling programs. <https://www.apple.com/au/newsroom/2019/04/apple-expands-global-recycling-programs/>. Kim, S. (2016). What happens to your recycled iPhones and Other Apple Products. <https://abcnews.go.com/Business/recycled-iphones-apple-products/story?id=37872881>. Sherr, I. (2019). Apple is opening up its world of iPhone recycling. <https://www.cnet.com/tech/mobile/apple-is-opening-up-its-world-of-iphone-recycling/>. Apple commits to be 100 percent carbon neutral for its supply chain and products by 2030.

(2020). Apple Newsroom. <https://www.apple.com/newsroom/2020/07/apple-commits-to-be-100-percent-carbon-neutral-for-its-supply-chain-and-products-by-2030/>. Sparks, H. (2019). A year of cell phone use emits as much CO2 as two round-trip flights. <https://nypost.com/2019/05/01/a-year-of-cell-phone-use-emits-as-much-co2-as-two-round-trip-flights/>. Apple. (2009). iPhone 3G Environmental Report. Apple. <https://www.apple.com/environment/pdf/products/archive/2009/iPhone-3G-Environmental-Report.pdf>. Apple. (2013). iPhone 5S Environmental Report. Apple.

iPhone's Total CO2e Emissions over the generations

CO2e from Customer Usage ■
 CO2e from Production ■



https://www.apple.com/environment/pdf/products/archive/2013/iPhone5s_PER_sept2013.pdf . **Apple. (2016)**. iPhone 7 Environmental Report. Apple. https://images.apple.com/environment/pdf/products/iphone/iPhone_7_PER_sept2016.pdf . **Apple. (2017)**. iPhone X Environmental Report. Apple. https://www.apple.com/environment/pdf/products/iphone/iPhone_X_PER_sept2017.pdf . **Apple. (2020)**. iPhone 12 Environmental Report. Apple. https://www.apple.com/environment/pdf/products/iphone/iPhone_12_PER_Oct2020.pdf . **N/A. (2018)**. Daisy Robot [Image of Daisy Robot]. Slash Gear. <https://www.slashgear.com/>

[apple-new-daisy-robot-19527950/](https://commons.wikimedia.org/wiki/File:Apple_logo_grey.svg) . **Janoff, R. (1977)**. Apple logo [Grey Apple Logo]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Apple_logo_grey.svg