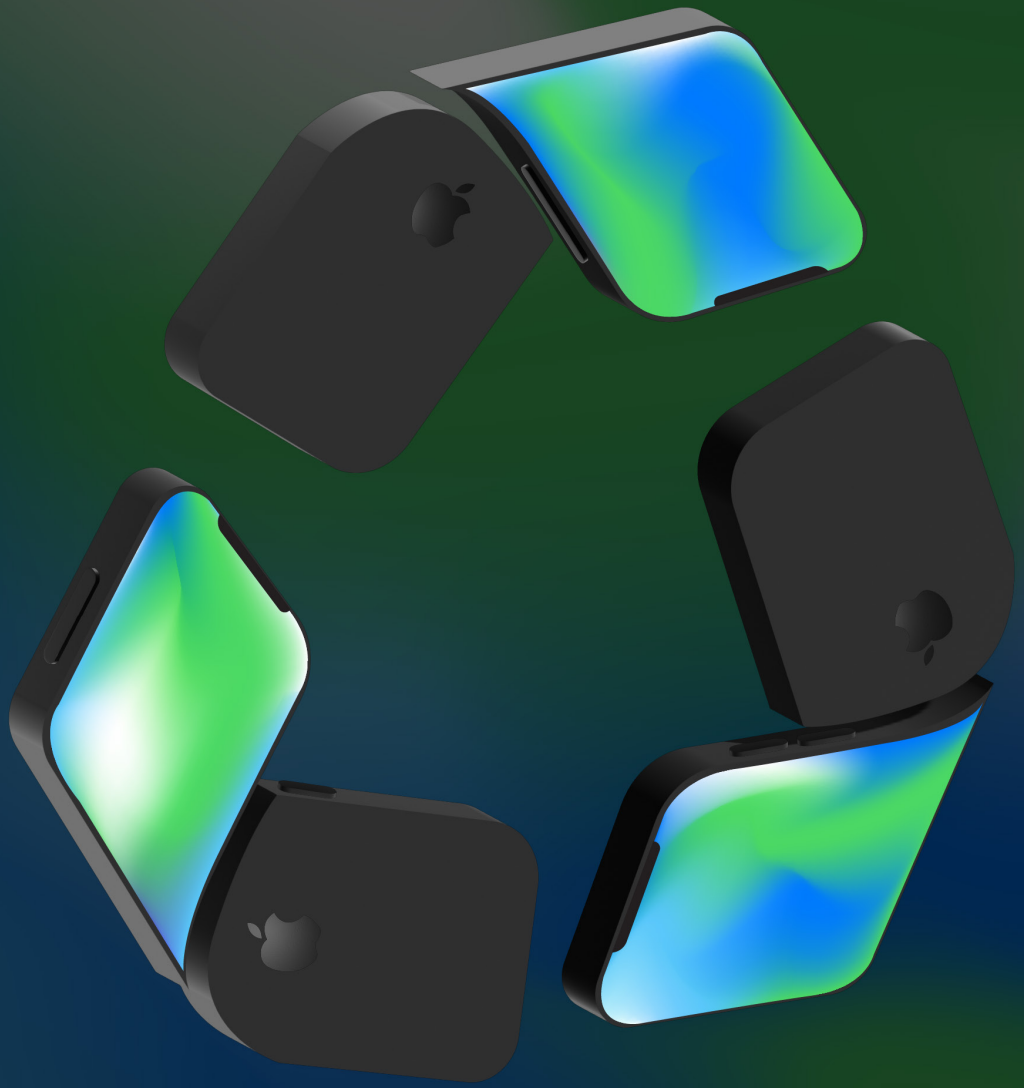
Italia Mafulu & Laetitia Rachman

Reducing iWaste

How eco-friendly is your iPhone?



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The release of Apple's iconic first iPhone in 2007 revolutionised the mobile phone market, its primitive standards of a mobile device have traversed into today's advancements of modern smartphones. However, with this surplus in consumer demand, it is imperative the smartphone industry reaches decarbonization targets to achieve sustainable solutions across the value chain. In 2014, an estimated 41.8 million tons of e-waste was generated manually through the demand for newer, smaller devices and consumer electronics. In recent years, many of its marketing campaigns have announced Apple's sustainable efforts. Apple's CEO, Tim Cook stated "...Climate action can be the foundation for a new era of innovative potential, job creation, and durable economic growth. With our commitment to carbon neutrality, we hope to be a ripple in the pond that creates a much larger change". Apple aims to achieve this circularity by transitioning to sourcing recycled and renewable materials in their products and packaging, maximising material efficiency, product longevity and recovery.

Apple has announced their aim towards achieving a closed-loop system goal. "A system chain, where products are built using renewable resources or recycled materials". The '2022 Environmental progress report' released by Apple, details their recycling innovation efforts and renewable material solutions to achieve carbon neutrality across their entire value chain by 2030. Apple has marketed their reverse logistic efforts of reuse and recycling of rare earth materials on newer products. Their strategy to reduce the carbon footprint of products is to manufacture materials using low-carbon energy and recycled content. Since 2015, Apple has expanded use of 100 percent recycled and low-carbon aluminium into their products. Resulting in a 68 percent decrease of carbon emissions associated with aluminium. Prior to this, the inefficient processes of mining were used to extract minerals and REM which are difficult to recycle in the products end-of-life. These large deposits of REM were found in China and Mongolia, where most of Apple's suppliers are located.

As Apple's shifts into a low carbon product design through recycling rare elements of the iPhone, the latest recycling innovation of disassembly robots ``Dave `` and ''Daisy `` have been introduced, recovering approximately 32kg of rare materials from every 100,000 iPhones. These robots are designed to disassemble the Taptic Engine from the iPhone to recover valuable materials including rare earth magnets and tungsten while also enabling recovery of steel, aluminium, gold, copper, tin and cobalt.

To sustain Apple's promise of reducing their packaging fibre and plastic footprint, significant progress in the elimination of plastic packaging has been successful in newer models as seen in the release of the iPhone 13 using zero plastic components. This commitment to ensuring efficient shipping and packaging solutions has not always been successful in Apple's efforts to reduce their e-waste. The release of the iPhone 12 series in October of 2020, revealed a more efficient process of shipping by allowing more volume by mass. The rationale stated in their keynote suggested removing standard charging power bricks that were already in consumer use would reduce the size of additional units on shipping pallets. However, implications with the USB cables receivers of newer models being unable to pair with these old charging blocks exposed a liability in causing significant amounts of e-waste. Although this has proven a limitation in their efforts to reduce e-waste and emissions,

Apple announced a magsafe system for the iPhone 12 and later models. This allows devices to securely and magnetically attach to various charging accessories so customers can dispose of older accessories and adopt this new system. Through Apple's brand recognition of reliability, sustainability and customer satisfaction, efforts in reducing their carbon footprint in the manufacturing supply chain and product life are apparent.

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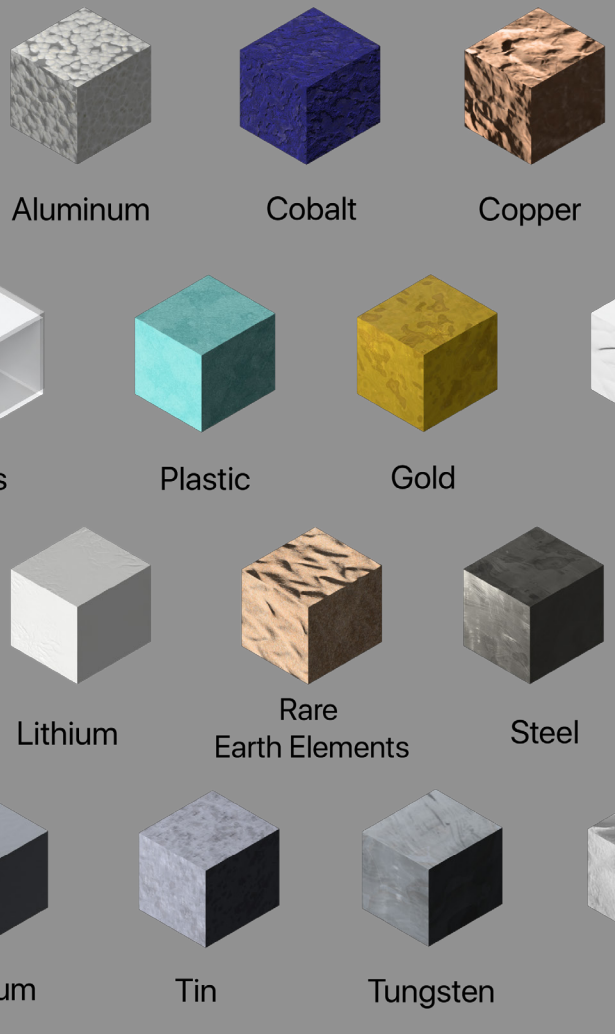
Materials used in iPhones

Materials



Apples gross emmisions 2020