iMac Pro
Environmental Report

Model MQ2Y2

Date introduced
December 14, 2017

Environmental Status Report

iMac Pro is designed with the following features to reduce environmental impact:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- Brominated flame retardant–free
- PVC-free[3]
- Beryllium-free
- Recyclable aluminum enclosure
- Speaker, keyboard, and trackpad enclosures made with 60 percent recycled plastic
- Fan assembly made with 26 percent bio-based plastic
- 100 percent of packaging fibers are sourced from responsibly managed forests or recycled paper

Meets ENERGY STAR® requirements

Achieves a Gold rating from EPEAT[4]

Apple and the Environment

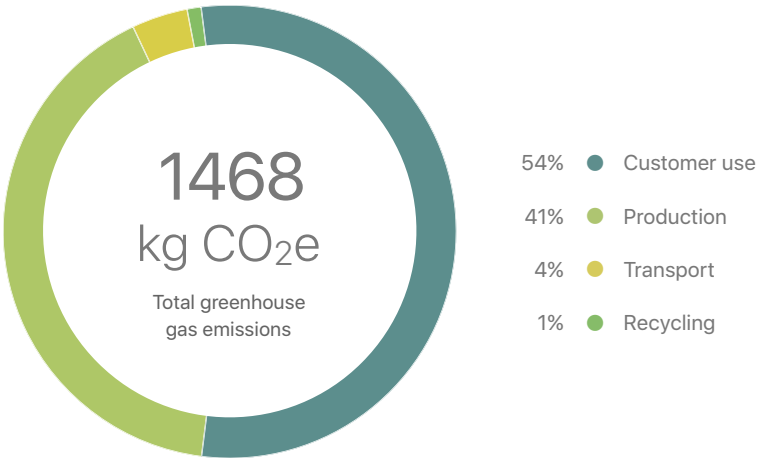
Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and types of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. The information below details the environmental performance of iMac Pro as it relates to climate change, energy efficiency, material efficiency, and restricted substances.[1]

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperatures. Most of Apple's greenhouse gas emissions come from the production, transport, use, and recycling of our products. Apple seeks to minimize greenhouse gas emissions by designing products to be as energy efficient as possible, sourcing materials with lower-carbon emissions, and partnering with suppliers to procure clean energy to power their facilities. The chart below provides the estimated greenhouse gas emissions for iMac Pro over its life cycle.[2]

Greenhouse Gas Emissions for iMac Pro

3.2GHz 8-Core Intel Xeon processor with 1TB SSD



Energy Efficiency

A significant portion of product-related greenhouse gas emissions occurs during the customer use phase. Energy efficiency is therefore prioritized throughout the product's design. For example, iMac Pro uses power-efficient components and software that can intelligently power them down during periods of inactivity. Additionally, iMac Pro incorporates a high-efficiency, dual-converter power supply design that consumes 40 percent less power during Sleep and Off modes.[5]

iMac Pro outperforms the ENERGY STAR Program Requirements for Computers. The following table details the power consumed by iMac Pro in different use modes.

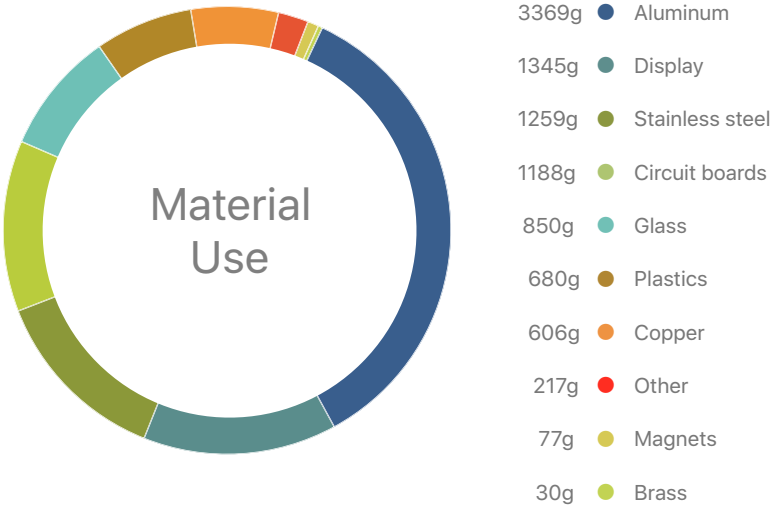
Power Consumption for iMac Pro

Mode	100V	115V	230V
Off	0.22W	0.22W	0.32W
Sleep	4.55W	4.52W	4.68W
Idle—Display on	61.0W	60.7W	60.3W
Power supply efficiency	90.9%	91.5%	92.9%

Material Efficiency

Apple's ultracompact product and packaging designs lead the industry in material efficiency. Reducing the material footprint of a product helps maximize shipping efficiency. It also helps reduce energy consumed during production and material waste generated at the end of the product's life. iMac Pro is made of aluminum and other materials highly desired by recyclers. In addition, the speakers, keyboard, and trackpad are made from plastics containing 60 percent recycled content and fan with 26 percent bio-based content, which reduces the dependence on finite resources. The chart below details the materials used in iMac Pro.[6]

Material Use for iMac Pro



The U.S. retail packaging of iMac Pro contains 78 percent less plastic than the 27-inch iMac with Retina 5K display, and contains 85 percent recycled content.

Packaging

The packaging for iMac Pro is highly recyclable, and 100 percent of the fiber in its retail box is from either recycled content or responsibly managed forests. The cushions in the iMac Pro retail box packaging are made from 100 percent recycled fiber. As a result, the retail box uses 78 percent less plastic than packaging for the 27-inch iMac with Retina 5K display, and contains 85 percent recycled content. The following table details the materials used in iMac Pro packaging.[1]

Packaging Breakdown for iMac Pro

Material	Retail box	Retail and shipping box
Fiber (corrugate, paperboard, kraft)	2877g	4626g
Polypropylene (film, fabric)	84g	84g
Other plastics	31g	201g

Restricted Substances

Apple has long taken a leadership role in restricting harmful substances from our products and packaging. As part of this strategy, all Apple products comply with the strict European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, also known as the RoHS Directive. Examples of materials restricted by RoHS include lead, mercury, cadmium, hexavalent chromium, and the brominated flame retardants (BFRs) PBB and PBDE. iMac Pro goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- BFR-free
- PVC-free[3]
- Beryllium-free

Recycling

Through ultra-efficient design and the use of highly recyclable materials, Apple has minimized material waste at the product's end of life. In addition, Apple offers and participates in various product take-back and recycling programs in 99 percent of the countries where Apple sells products, including at all Apple Stores. For more information on how to recycle your products at end of life, visit www.apple.com/recycling.

Definitions

Electronic Product Environmental Assessment Tool (EPEAT): A program that ranks computers and displays based on environmental attributes in accordance with IEEE 1680.1-2018. For more information, visit www.epeat.net.

Greenhouse gas emissions: Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO 14040 and ISO 14044. Calculation includes emissions for the following life-cycle phases contributing to Global Warming Potential (GWP 100 years) in CO_2 equivalency factors (CO_2e):

- **Production:** Includes the extraction, production, and transportation of raw materials, as well as the manufacture, transport, and assembly of all parts and product packaging.
- **Transport:** Includes air and sea transportation of the finished product and its associated packaging from the manufacturing site to regional distribution hubs. Transport of products from distribution hubs to end customer is modeled using average distances based on regional geography.
- **Customer use:** Apple conservatively assumes a four-year period for power use by first owners. Product use scenarios are based on historical customer use data for similar products, collected anonymously. Geographic differences in the power grid mix have been accounted for at a regional level.
- **Recycling:** Includes transportation from collection hubs to recycling centers, and the energy used in mechanical separation and shredding of parts.

Energy efficiency terms: The energy efficiency values in this report are based on the ENERGY STAR Program Requirements for Computers. For more information, visit www.energystar.gov.

- **Off:** Lowest power mode of the system when iMac Pro is shut down. Also referred to as Standby.
- **Sleep:** Low power state that is entered automatically after 10 minutes of inactivity (default), or by selecting Sleep from the Apple menu. Wake for network access enabled.
- **Idle—Display on:** System is on and has completed loading macOS. Display brightness was set as defined by ENERGY STAR Program Requirements for Computers, and Auto-Brightness was turned off. Connected to Wi-Fi.
- **Power supply efficiency:** Average of the power supply's measured efficiency when tested at 100 percent, 50 percent, and 20 percent of the power supply's rated output power.

Restricted substances: Apple defines a material as BFR-free and PVC-free if it contains less than 900 parts per million (ppm) of bromine and of chlorine. Apple defines a material as beryllium-free if it contains less than 1000 parts per million (ppm) of beryllium. A complete list of Apple's restrictions on hazardous substances is available at www.apple.com/environment/reports.

1. Product evaluations based on U.S. configurations of Model MQ2Y2.
2. Greenhouse gas emissions vary according to the configuration of iMac Pro. The following table details the estimated greenhouse gas emissions for U.S. configurations of iMac Pro over its life cycle.

Configuration	Greenhouse Gas Emissions
3.2GHz 8-Core Intel Xeon processor with 1TB SSD	1468 kg CO_2e
2.3GHz 18-Core Intel Xeon processor with 4TB SSD	1783 kg CO_2e

3. PVC-free AC power cord available in all regions except India and South Korea.
4. iMac Pro achieved a Gold rating from EPEAT in the United States and Canada.
5. Compared to a single-converter power supply design.
6. Excludes AC power cord. Mass will vary by configuration.