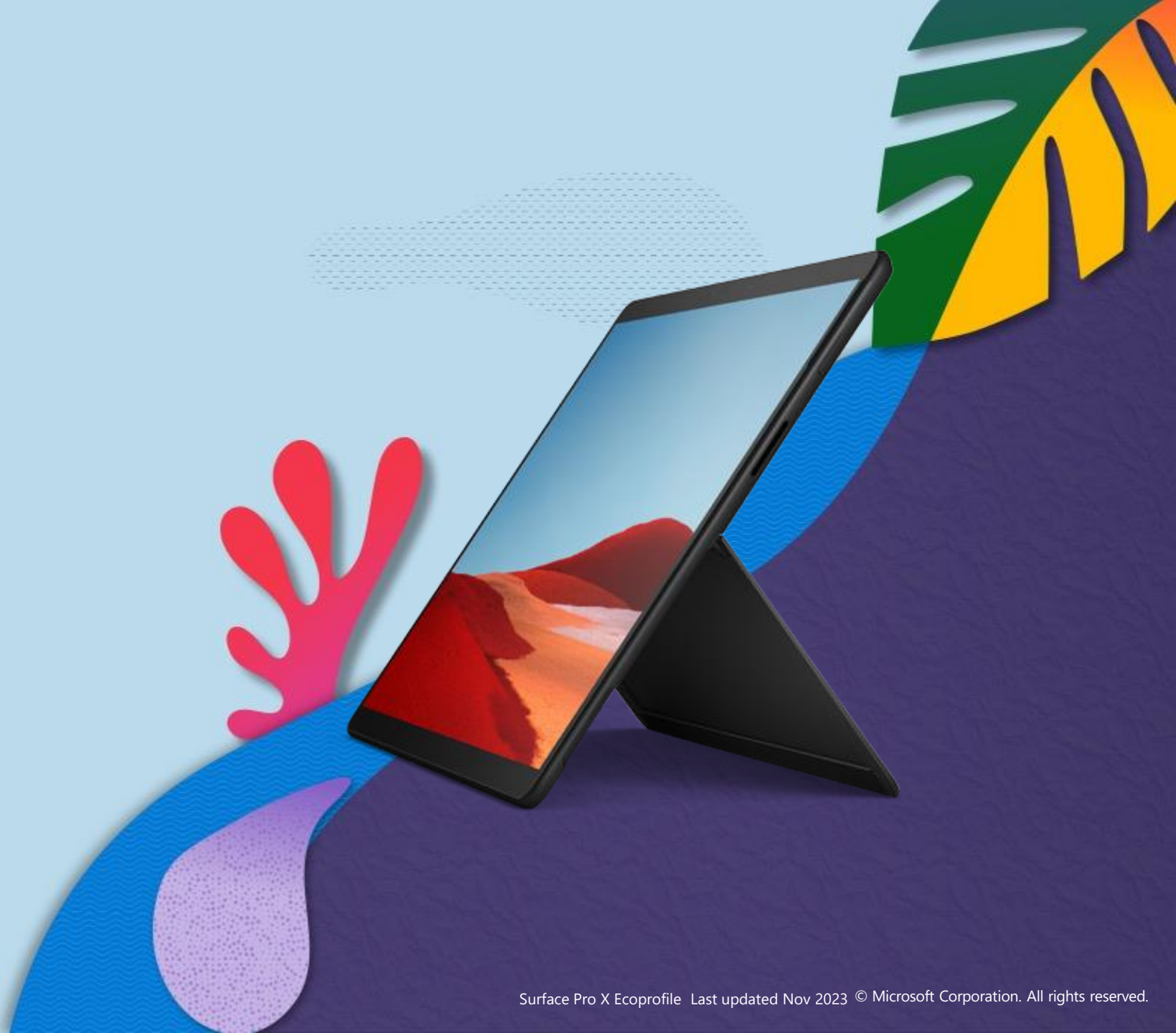




## ECOPROFILE

# Surface Pro X

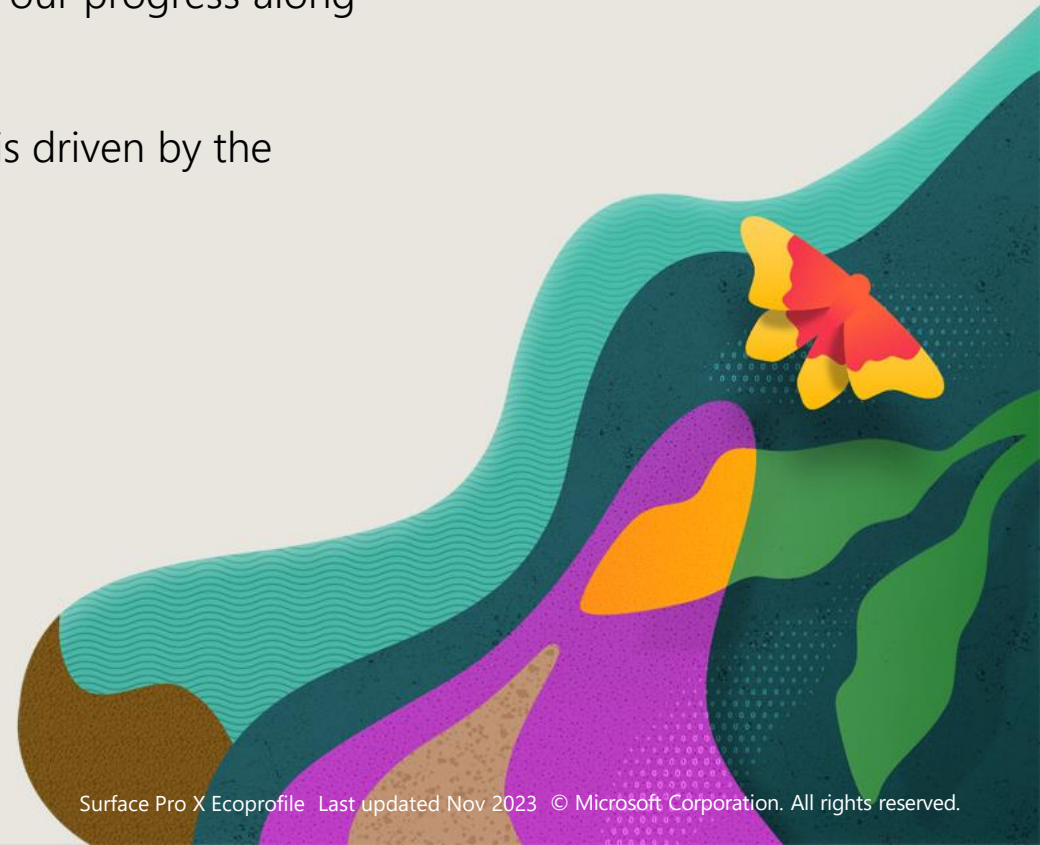


# Our commitments

Microsoft is committed to becoming carbon negative, water positive, and zero waste by 2030<sup>1</sup>. Surface plays a key role in helping Microsoft achieve these goals, so we are working to reduce the environmental impacts of our Surface products. Our approach embeds sustainability into the design, manufacturing, distribution, use, and end-of-life management of our devices. We will continue to innovate to meet our ambitious commitments and we will share our progress along the way.

We need to act quickly to meet our 2030 commitments. That's why Surface is driven by the following priorities:

1. Reducing carbon emissions
2. Designing with circularity in mind
3. Building with integrity



# Transparency to carbon impact

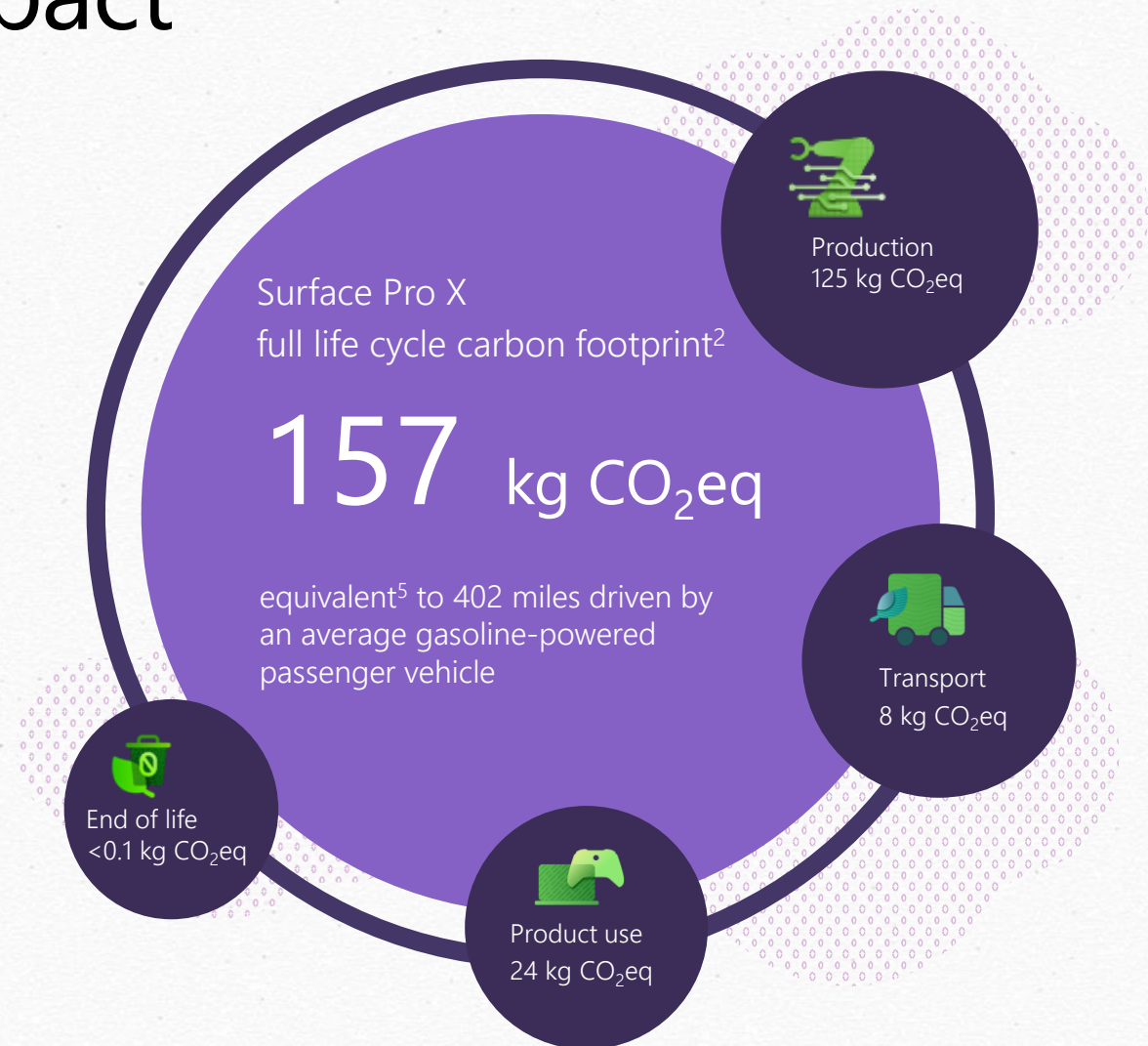
We have made significant investments to improve our life cycle assessment (LCA) approach. That's because quantifying the environmental impacts of our products is critical to make and track progress toward our carbon reduction goal. We use LCA to identify and prioritize opportunities to minimize the carbon footprint across the full life cycle of our devices. We'll continue to learn from this work and apply new insights to each product we design, make, and ship to customers.

The life cycle assessment<sup>2</sup> of Surface Pro X includes production of one device, distribution to customer, 3 years of product use<sup>3</sup>, and end-of-life management. The estimated annual electricity consumption<sup>4</sup> in use is 13.1 kWh per year.

The Production life cycle stage includes extraction of raw materials, upstream materials preparation, electronic component manufacturing, subassembly manufacturing and assembly, and final assembly.

Calculations are based on the US configuration of Surface Pro X Microsoft SQ® 1 8GB LPDDR4x RAM 128GB SSD. Included in the assessment are the device, power supply unit, and packaging. Other accessories are not included.

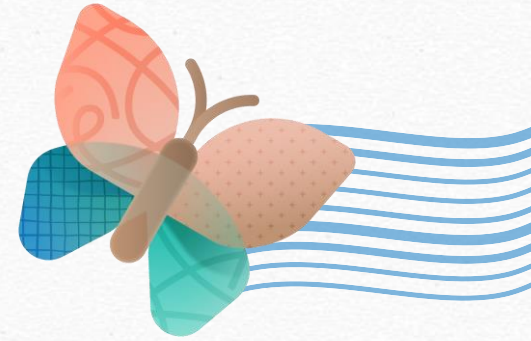
LCA methodology details are included in the Resources and notes page of this document.





# Reducing carbon emissions

Surface is helping achieve Microsoft's commitment to become carbon negative by improving efficiency in our operations, devices, software and supply chain.



Carbon footprint<sup>2</sup> of  
1 year of computing using  
Surface Pro X

52

kg CO<sub>2</sub>eq

assuming a 3-year  
total use period<sup>3</sup>

Surface Pro X  
energy consumption is

64%

less than the current  
ENERGY STAR® computer  
specification requirement<sup>4</sup>

We power key  
distribution centers with

100%

renewable energy<sup>6</sup>

Carbon aware  
Windows updates<sup>7</sup>

# What we've done

## Low carbon product design

### Sustainability integrated in design and manufacturing

We achieve reductions in the carbon footprint of Surface by implementing a structured ecodesign approach that balances design decisions based on technical, economic, and environmental considerations. Data drives our progress.

We are working with suppliers to build action plans of emission reduction activities leading up to 2030.

A repairable device can stay in use longer, delaying the need to replace it. Manufacturing a new device accounts for most of its carbon footprint, eclipsing the impact of electricity use over several years. Extending the life of products through reparability is part of our carbon reduction strategy.

Design improvements are dependent on many factors including available materials and technology. Carbon reduction progress may not be linear and we may see emissions rise or fall year-over-year. We are committed to improving and sharing our learnings.

## Supply chain carbon emission reductions

### Improvements in shipping & logistics

Microsoft is working to meet delivery demand without increasing our carbon footprint.

We are doing this by:

- Consolidating orders to reduce the number of shipments we make to stores and customers.
- Cutting back on expedited shipping when possible, decreasing the overall emissions from shipping our products.
- Powering key distribution centers with 100% renewable energy.
- Offering a lower carbon shipping option to Microsoft Stores customers. This options allows customers to avoid air freight, a higher carbon shipping mode, by selecting ground shipment when ordering from Microsoft.
- Participating in EPA's SmartWay initiative, a partnership that aims to better measure and improve freight transportation efficiency.

## Energy efficiency

### Achieving high efficiency

All Microsoft Surface computers are ENERGY STAR® certified and designed to be energy efficient while delivering the performance customers expect.

Surface Pro X is estimated to use 64% less energy than the current ENERGY STAR® computer specification requirement<sup>4</sup>, reflecting energy savings without sacrificing features or functionality.

## Windows and apps

### Carbon aware updates

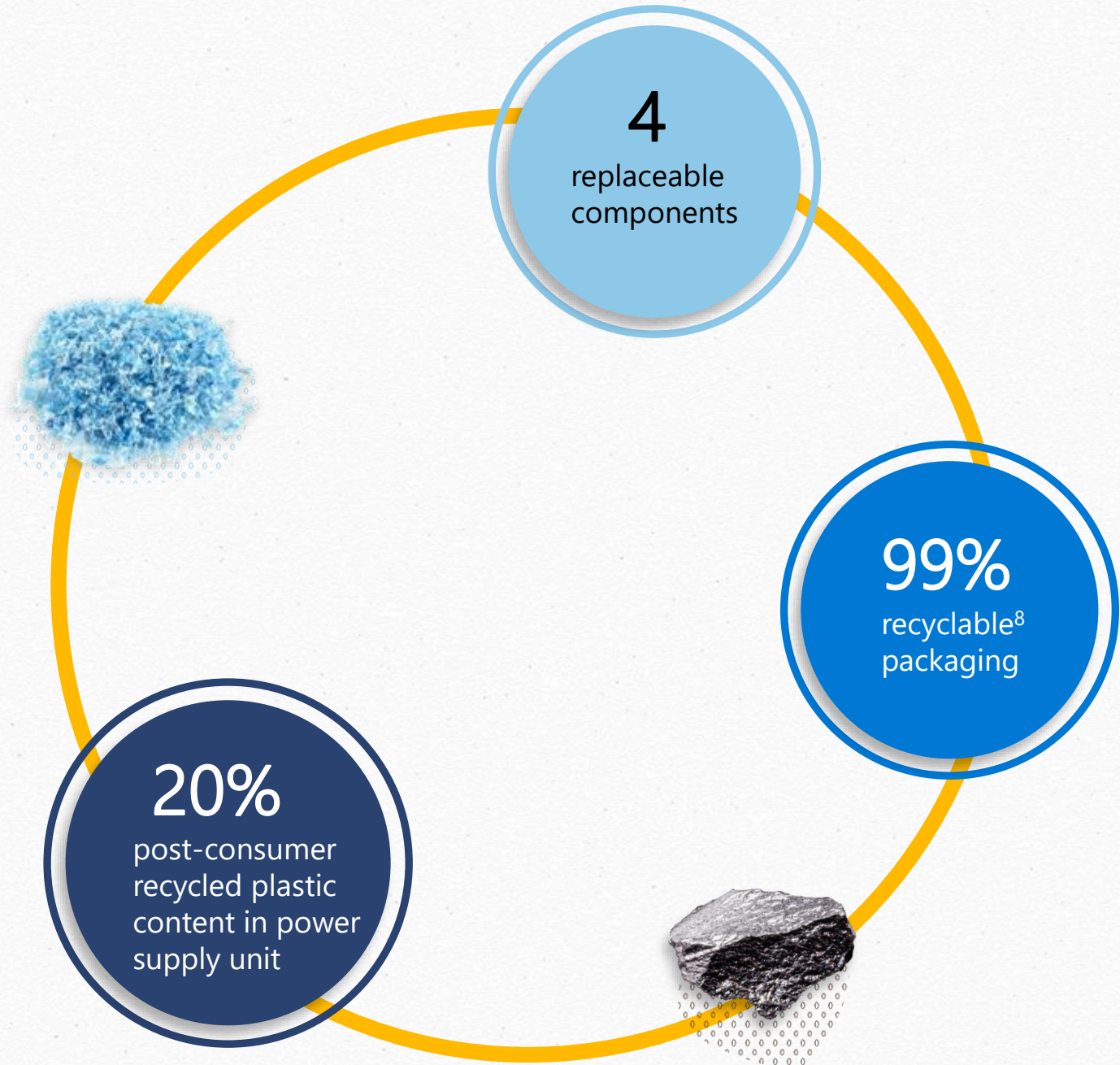
Innovative software can lower a device's energy use and carbon footprint.

Microsoft and third parties work to improve Windows and applications so that you need lower power to operate your device in the office or at home. Surface is designed to enable these software features and is the best platform to experience games that support sustainability.

Windows 11 Update has a new [carbon aware feature](#) that will schedule update installations at specific times of day, which we expect will result in lower carbon emissions.

# Circular by design

The linear 'take, make, and waste' approach is no longer viable. That's why we design products with circularity in mind, meaning we follow a 'reduce, reuse, and recover' model to minimize waste and maximize the reuse of resources.



Clockwise from the top of the circle, images are aluminum and plastic.



# What we've done

## Repairability

### Replaceable parts available

Microsoft designs devices with repairability in mind to ensure our devices continue to perform well and last longer.

We have a growing Authorized Service Provider (ASP) network to make repair services available to more customers in more locations.

Surface Pro X parts replaceable by an ASP include:

- Kickstand
- SSD and SSD Door
- Display

Replacement power supply units for Surface Pro X Are available from the [Microsoft Store](#) and other retailers.

[Surface help & learning](#) provides information about Surface maintenance, troubleshooting, support and repair.

## Recyclability and reusability

### Evaluating recyclability

Surface Pro X packaging contains 72% renewable materials that are certified sustainably forested. Our packaging is also 99% recyclable<sup>8</sup>.

By 2025, our goal is for our packaging to contain zero single-use plastics and, by 2030, will be 100% recyclable.

Microsoft supports multiple reuse, refurbishment, and recycling programs around the world that cover our consumer devices, batteries, and packaging. Visit our [End-of-life management and recycling](#) page for details.

Trade in your used laptop, table, phone, or game console. Learn more at [Microsoft Trade In & Recycling Program - Microsoft Store](#)

## Designing with recycled materials

### Qualifying recycled materials

The extraction and processing of raw materials causes negative environmental and social impacts. Microsoft is working with suppliers to qualify and source recycled materials. At the same time, we are designing products to increasingly use recycled materials.

The power supply unit that ships with Surface Pro X includes 20% post-consumer recycled content.

# Building with integrity

## Responsibly made

Our values of integrity, accountability, and respect provide the foundation for responsible sourcing. Engaging with our suppliers around issues of human rights, sustainability, and ethics helps us understand and mitigate risk, increase transparency, build capacity, and create shared value for society. Visit [Supply Chain Integrity](#) for more information.

We take a precautionary approach to [substance management](#). We follow legislative developments and research regarding chemical impacts on health and environment and update our specifications with new product and manufacturing substance restrictions to address risks.

## Labels and certifications

Surface Pro X is EPEAT registered in many countries at the Gold level, the highest available rating. EPEAT criteria cover topics including reduction of carbon transparency, energy efficiency, material selection, product design for repair and longevity, chemicals of concern, distribution, packaging, responsible end-of-life management, responsible manufacturing, and corporate performance and reporting. For more information, visit the [EPEAT registry](#).

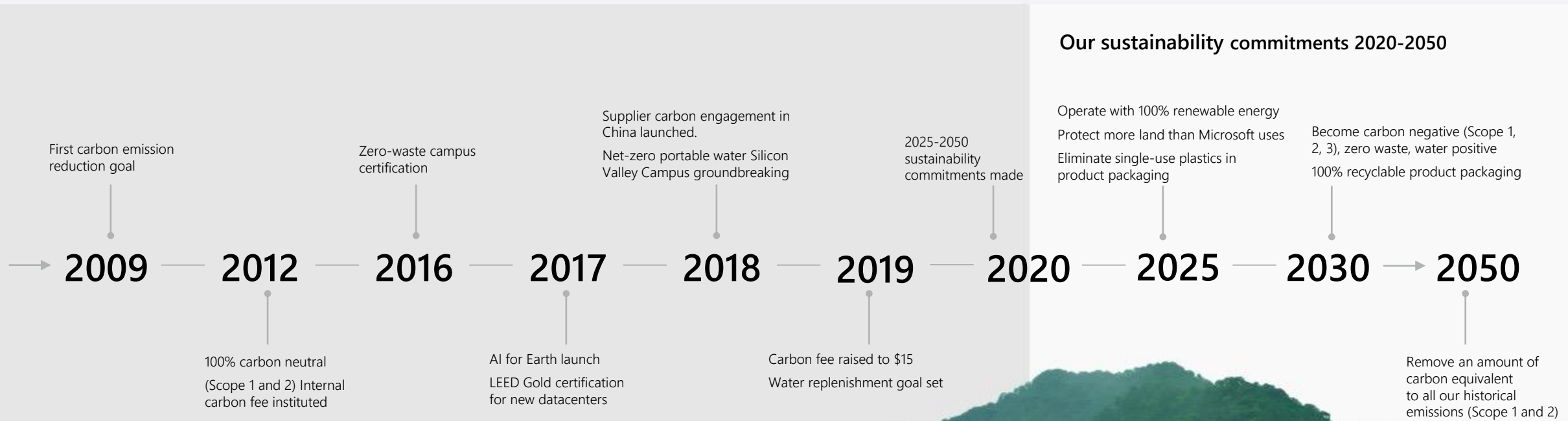
Surface Pro X is ENERGY STAR® certified. Visit the [ENERGY STAR website](#) for more information.





# Microsoft's Sustainability Journey

Microsoft has committed to be carbon negative, water positive, and zero waste by 2030. We will continue to be transparent about our progress, our challenges, and our learnings to help others on their journey.



# Resources and notes

- 1 For more information on Microsoft's sustainability commitments, approach, and progress visit our [corporate sustainability website](#) and read our annual [Sustainability Report](#).
- 2 The product carbon footprint and other environmental impacts are calculated in accordance with ISO 14040 and ISO 14044 using Microsoft Devices LCA Methodology v2.0 (available with our [Ecoprofiles](#)) and are not directly comparable to results calculated using Methodology v1.0-1.2 (Ecoprofiles dated before October 2022) nor to results calculated by other companies. Our new methodology enables us to model complex electronic products with greater accuracy, transparency, and representativeness. The Life Cycle Inventory (LCI) data is based on our own measurements, collected from suppliers, and content supplied by Makersite and Ecoinvent along with other internationally available LCI databases. Uncertainties are inherent in all LCA methodologies. We continually work to improve our data and models, and our results may be updated to reflect these improvements.  
  
LCA results are reported for a representative configuration of the product. The production result may vary by hardware configuration. The transport, product use, and end of life management results may vary by region.  
  
The carbon footprint is reported as carbon dioxide equivalent (CO<sub>2</sub>eq), a measure of global warming potential that converts all greenhouse gases to the equivalent amount of carbon dioxide with the same global warming potential over 100 years.
- 3 The product use period is an estimate of average product lifetime for the purpose of the life cycle assessment (LCA). We estimate the use period based on reliability and repairability of the device. Disclosure of the use period estimated for LCA does not imply a guarantee or warranty.
- 4 The estimated annual electricity consumption and energy efficiency are calculated using ENERGY STAR® Computer Specification version 8.0.
- 5 Equivalency to passenger vehicle miles is calculated using US EPA's [Greenhouse Gas Equivalencies Calculator](#).
- 6 More information on how we're working to reduce our distribution footprint can be found in our [Sustainability Report](#).
- 7 Carbon aware Windows Update is available starting with Windows 11, version 22H2.
- 8 Recyclability percentages reported in this document are valid in Organization for Economic Cooperation and Development (OECD) countries.