

DELL SUSTAINABLE PRODUCTS & SOLUTIONS

Leading the industry in sustainable practices to reduce the environmental impact of our products and packaging.

TABLE OF CONTENTS

Advancing Our Sustainability Goals	2
Driving Sustainable Innovation	3
Lifecycle of a Product	4
Circular Design Principles	5
Concept Luna	6
Sustainable Materials	7
Responsible Packaging	8
Energy Efficient Client Devices	9
Energy Efficient Infrastructure	10
Responsible Asset Retirement	11
Evolving Our Business	12
Featured Products	13

ADVANCING OUR SUSTAINABILITY GOALS

We are working across all areas of our business to drive sustainable progress and innovation at every opportunity. Our climate and circular economy goals are how we track our progress and long-term impact on our business, our customers, and the planet.

CLIMATE ACTION

NET ZERO BY 2050

- Dell Technologies is committed to reaching net zero greenhouse gas emissions across scopes 1, 2, and 3 by 2050.

CIRCULAR ECONOMY

2030 GOALS

- For every product a customer buys, we will reuse or recycle an equivalent product.
- 100% of our packaging will be made from recycled or renewable materials.
- +50% of our product contents will be made with recycled or renewable materials.



DRIVING SUSTAINABLE INNOVATION

Dell is a demonstrated leader in sustainability, dating back to 1996, when we launched our first recycling program. Continuous innovation in our products, packaging and supply chain will help us drive the change we need to see in the industry to make real progress for our planet.



PRODUCTS

We incorporate responsible design processes and sustainable materials in our products, while reducing their energy consumption and ultimately their product carbon footprint.



PACKAGING

We are driving innovation to achieve 100% recycled and renewable materials in our product packaging by 2030.



SUPPLY CHAIN

We have the scale and responsibility to drive to the highest standards within our supply chain and with our partners.

Dell is a proven **leader** in sustainability

2007

1st

use of recycled plastic in our products

2014

1st

closed-loop materials in our products

2021

1st

use of renewable materials in our products¹

LIFECYCLE OF A PRODUCT

From the materials in our products and packaging, to the strength and integrity of our supply chain, we look for every opportunity to make, deliver, reuse, and recycle our products responsibly and sustainably.

Recovery



Dell offers solutions to reuse or recycle out-of-use technology from any brand.



[Learn more at Dell.com/recycle](https://www.dell.com/recycle)



Design

Products are designed to include sustainable materials, using efficient designs requiring fewer materials to maximize reusability and recyclability.



Use



We are reducing energy intensity across our products and increasing energy efficiency to help reduce emissions from use.



Build

We focus on operational efficiency and conservation, using renewable electricity and avoiding waste in all its forms whenever possible.

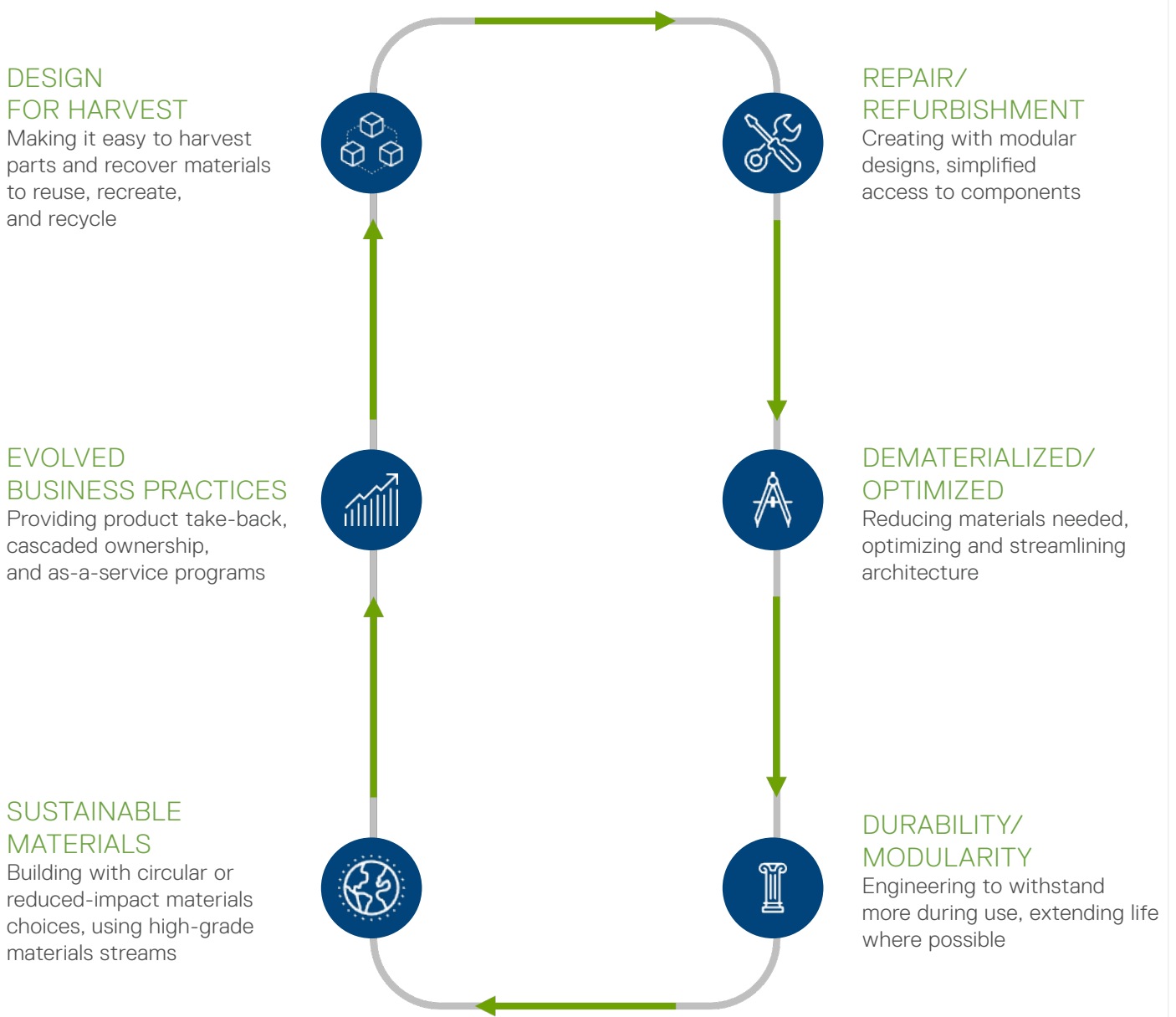


Ship

We use rapidly renewable packaging materials and efficient logistics to create a smaller transportation footprint.

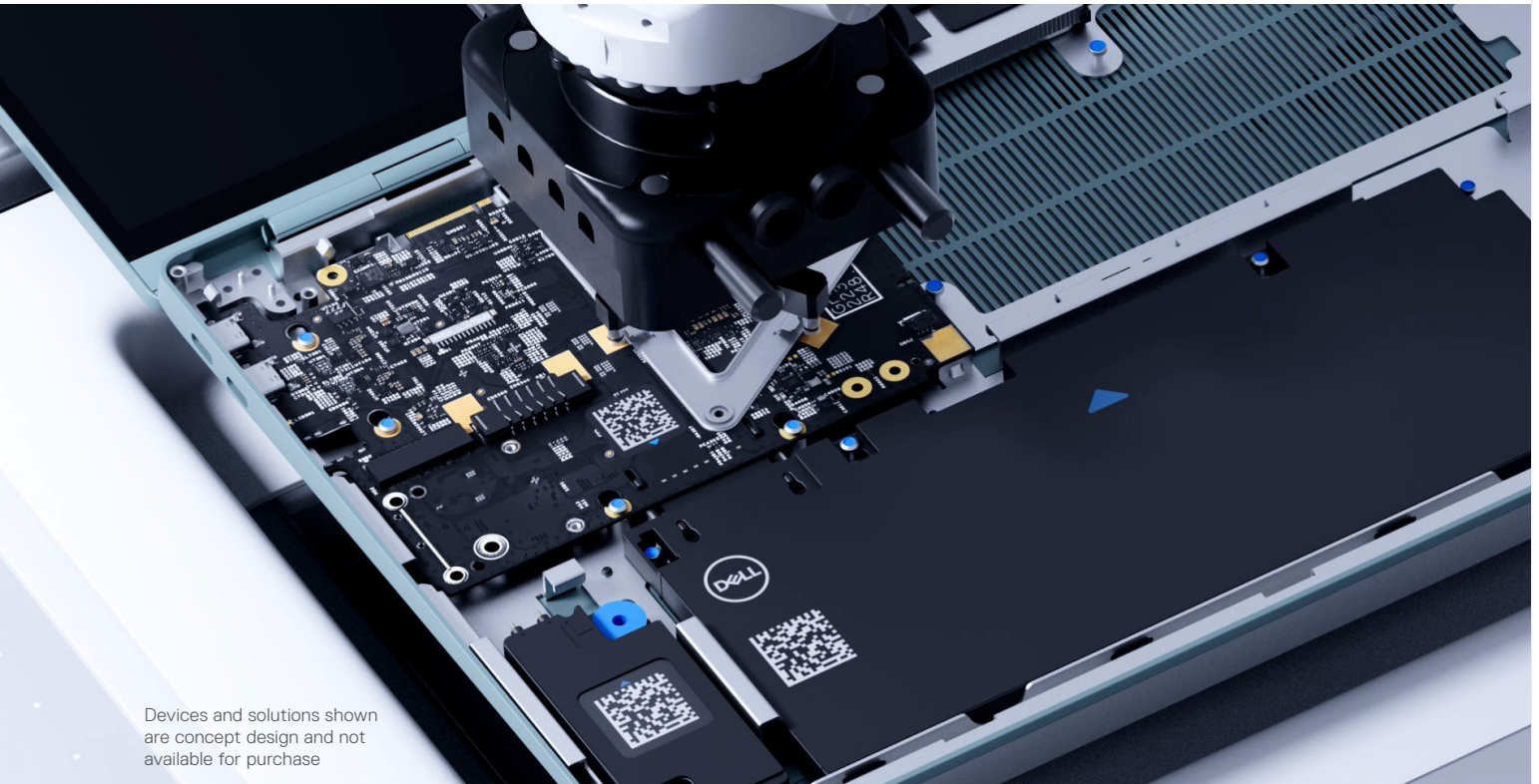
CIRCULAR DESIGN PRINCIPLES

To reduce the impact of our business on people and the planet, we implement [circular design principles](#) to make our products easy to repair, reuse, and recycle. By using sustainable materials, we extend product longevity and continuously recover materials creating a circular economy.



CONCEPT LUNA

At Dell Technologies, we are committed to climate action and supporting the circular economy. Concept Luna is an innovative prototype that explores how to address an interconnected and circular system supporting the future of PC manufacturing.



Devices and solutions shown are concept design and not available for purchase

Created to test what could be possible, not to be manufactured and sold, design ideas in Concept Luna explores making components easily accessible, replaceable, and reusable, pushing the boundaries of sustainable design beyond the device. Our use of intelligent telemetry and robotic automation could help scale PC innovation.

Part of an aspirational workstream led by our design engineers and asking the “what if” questions, Concept Luna provides the freedom and flexibility to test innovative ideas outside of regular design cycles. Our teams experiment boldly with transformative technologies to help reduce our environmental impact and move our industry forward responsibly and sustainably.

Sustainable Design:

We design Concept Luna for easy disassembly and harvesting using modular design techniques, we reduce the time needed to repair, upgrade or recover components for reuse and recycling.

Intelligent Telemetry:

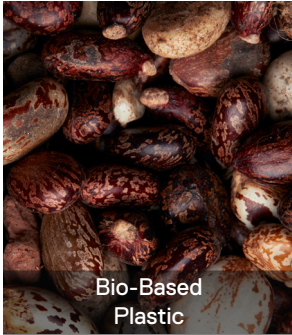
Telemetry determines which components can be reused in another device. By using onboard diagnostics and external AI image sensors, we can assess component health and remaining usable life to help inform proactive repairs and maximize longevity and component reuse at scale.

Robotic Automation:

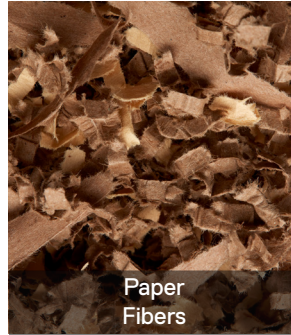
Using a micro-factory, we are exploring revolutionary methods to automate service, repair, and recycling of devices. Informed by telemetry, robotic automation would enable quick diagnostics, repair, and reassembly of devices.

SUSTAINABLE MATERIALS

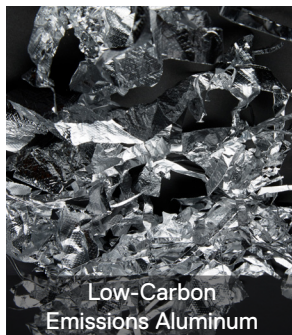
We are investing in sustainable materials to reach our goals. By 2030, 100% of our packaging and more than 50% of our product content will be made from recycled or renewable materials.



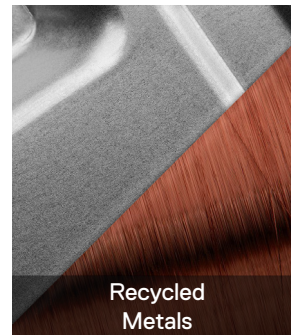
Castor beans, tall oil and POM ECO-B are naturally-replenishing alternatives to plastic.



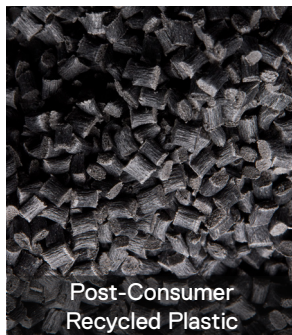
Our packaging is created from bamboo, recycled paper pulp, and sugarcane fibers.



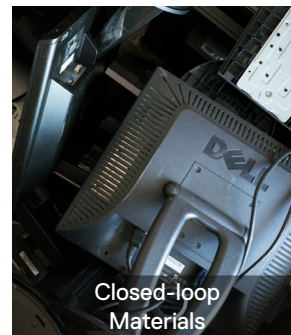
Aluminum produced using hydropower and/or recycled content reduces the emissions of this materials up to 90% over coal power production²



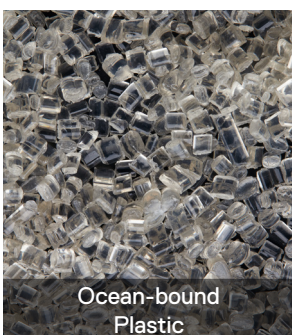
Using recycled metal reduces our dependence on mining and processing new materials.



Post-Consumer Recycled (PCR) plastic allows us to reuse existing materials, decreasing our need for new plastic.



Recovered e-waste is used to make parts for new devices and keeps components in the circular economy.



We've saved over 400,000 pounds of plastics from the ocean since 2019, recycling them for use in our products and packaging.³



Carbon fiber reclaimed from the aerospace and other industries are recycled for use in our laptops.

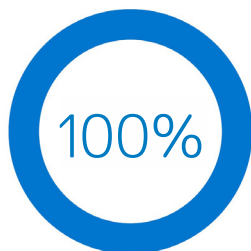
RESPONSIBLE PACKAGING

As a leader in responsible packaging, we strive to reduce waste and drive innovation to find recycled and renewable alternatives that protect our products while in transit. We aim to deliver all our products in packaging made from 100% recycled or renewable materials by 2030.



Sustainable Packaging

Our packaging is designed to maximize its recycling potential by using recycled and renewable materials. From PC devices, displays, and peripherals, to servers, storage, and networking — we design and package our products using recycled or renewable materials where possible.



We have packaging made from 100% recycled or renewable material on majority of our commercial notebooks.⁴

Multipack Solutions

Simplified Unboxing: To save time when deploying and installing new equipment, shipping multiple products in a single package reduces the time it takes to unbox and clean up packaging materials.

Easier to Manage, Less to Organize: Multipack increases the number of products on each pallet resulting in significant space savings with less packages to account for in planning and organization.

More Sustainable: By efficiently packing and shipping our products with fewer boxes and increased pallet sizes, we reduce the amount of goods transported and create less waste for our customers.

ENERGY EFFICIENT CLIENT DEVICES

We have already reduced the energy intensity across our entire product portfolio by 76% since 2010.⁵ By 2050, we have committed to achieving net zero greenhouse gas emissions and reduce the environmental impact of our products without compromising the power and performance of our technology.

Ecolabels

We adhere to the highest standards of sustainability set by the following ecolabels:

- ENERGY STAR
- EPEAT
- TCO
- 80 PLUS
- China Environmental Labeling Program (CELP)

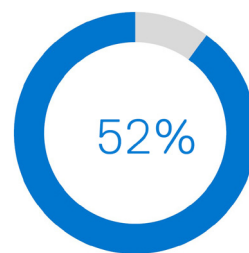
Dell has
300+
EPEAT registered products⁶

Efficient Client Devices

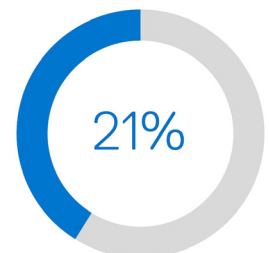
Energy Efficiency: To drive down the power consumption of our devices, we use energy-smart fans and efficient circuit boards, processors, power supplies, and memory.

Intelligent Devices: Our AI-based optimization software, Dell Optimizer – learns and responds to how users work, so you never have to compromise on performance or efficiency.

Efficient Workspaces: Using energy efficient devices beyond the PC, such as displays and peripherals with built-in eco settings, reduces wasted energy whether at home or in the office.



Reduction in energy intensity across client devices portfolio since 2016.⁷



Improvement in performance per watt with Dell Optimizer when Thermal Management feature is set to Quiet mode.⁸

ENERGY EFFICIENT INFRASTRUCTURE

Our technology and services allow us to partner on your journey to achieve a modern and sustainable data center. We can help you utilize equipment designed for efficient energy and reduced heat while optimizing and consolidating your infrastructure and hardware.

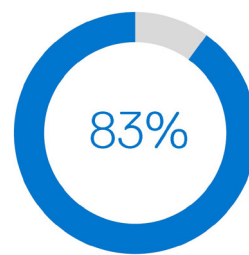


Efficient Infrastructure

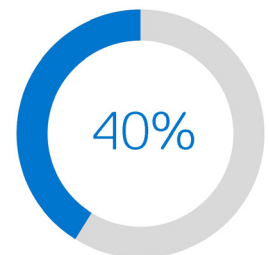
Energy Efficiency: Energy costs make up 40-60% of a data center's operating costs, that is why we are making our technology more efficient and less intensive to reduce energy waste.⁹

Thermals & Cooling: We engineer new ways to address the heat generated by our powerful machines. By reducing the heat, we can avoid energy wasted cooling the data center.

Infrastructure Consolidation: We make our technology denser while simplifying data storage to reduce physical and carbon footprints in the data centers.



Less energy intensive in our PowerEdge than servers from 2013¹⁰



More energy efficiency in our new PowerMax systems¹¹

RESPONSIBLE ASSET RETIREMENT

We offer convenient retirement solutions, accepting all brands, while protecting customer data, providing value back and reusing materials to extend product lifecycles and accelerate the circular economy. By 2030, for every product we sell, we will reuse or recycle an equivalent product.



Asset Recovery Services

Commercial customers can seamlessly transition from old to new technology by responsibly retiring out-of-use and legacy IT equipment. We manage the entire disposition process by leveraging our long-standing security expertise, environmental compliance and commitment to sustainability. We offer customers a service for removal, resale, recycling, lease return, and sanitization of legacy assets. Our [online self-service portal](#) provides real-time value estimates, comprehensive reporting and streamlined takeback of any device, regardless of brand.¹²



Dell Trade In

Consumers can easily retire eligible personal devices— of any brand, in any condition — for instant credit toward a new purchase of Dell products and services. By trading in, consumers are helping to keep e-waste out of landfills while contributing to a circular economy.¹³



EVOLVING OUR BUSINESS

We are continuing to evolve and drive innovation for new business models and solutions to help our customers reach their sustainability goals while we do what's right for the future of our planet.



APEX and as a Service (aaS) Offerings:

Businesses often overprovision their data centers leading to wasted energy. As a Service offerings, including APEX, allows our customers flexibility to maximize performance and right-size their current IT environments.



Technology Rotation Program

To help businesses drive transformation, our Technology Rotation Program allows organizations to optimize the lifecycle of their technology equipment. This allows them to benefit within their business operations and maintain cash flow flexibility, while contributing to the circular economy.

FEATURED PRODUCTS

DEVICES



Latitude 5440 Laptop

A lightweight and powerful laptop, made with ocean bound plastic, reclaimed carbon fiber, recycled bioplastic and bio based rubber¹⁴
Ships in our new 100% recyclable packaging¹⁵



Precision 3580 Workstation

Designed with ocean-bound plastic, reclaimed carbon fiber, recycled bioplastic and bio based rubber¹⁶
Packaging made from 100% recycled or renewable materials¹⁷



OptiPlex Micro

Made with up to 55% post consumer recycled plastic¹⁸
Design also includes components with ocean-bound plastic¹⁹



XPS 13 Plus Laptop

Utilizes a chassis made from low carbon emissions aluminum made with 100% hydropower²⁰
Ships in all new packaging made from 100% recyclable content²¹



Inspiron 13 Laptop

Bottom bumper of the laptop is made with 46% renewable bio-based TPU (Thermoplastic Urethane) material.²²
Ships in packaging made with up to 100% recycled or renewable content and is also 100% recyclable²³



Latitude 9440 2-in-1 Laptop

Chassis made with low carbon emissions aluminum with 75% recycled content²⁴ and ships in our new premium 100% recycled packaging²⁵

PERIPHERALS



Dell 24 Monitors P2423

Meets Energy Star 8.0 and EPEAT Gold standards. Designed with up to 85% post-consumer recycled plastic and 90% recycled aluminum²⁶
Ships in select packaging components made with up to 90% recycled materials²⁷



Dell Thunderbolt Dock WD22TB4

Made with up to 11.7% post-consumer recycled content²⁸
Ships in packaging made with up to 90% recycled content²⁹



EcoLoop Pro Backpack

Designed for organization and comfort, this product uses 100% ocean-bound plastic in the exterior main fabric
Ships in packaging made with 100% recycled content in the hang tag, hang loop, plastic bag³⁰

SERVERS & STORAGE



PowerEdge R660 Rack Server

New "Smart Flow" configurations delivers up to 14.6% more air flow than the traditional 10 x 2.5" chassis³¹



PowerEdge R7625 Rack Server

Delivers up to 55% CPU performance per watt improvements³²



PowerStore

80% power savings per TB with PowerMax and 60% more IOPs per watt with PowerStore³³

1 Per Dell Technologies FY21 Progress Made Real Report.

2 Based on internal analysis, March 2023.

3 Per FY22 ESG Report

4 Premium Packaging: Approximately 78% recycled content and 22% renewable content in the form of FSC paper fibers. Excludes optional items added to order and included in box.
Enhanced Packaging: Approximately 95% recycled content and 5% renewable content in the form of FSC paper fibers. Excludes optional items added to order and included in box.

5 Based on internal analysis, April 2021.

6 Based on EPEAT Registry data as of October 2022, varies by country.

7 Based on Dell Internal Analysis, November 2022. Energy intensity reduced by 52%. Measured between FY17 and FY21.

8 Based on internal study, testing power and performance within our Dell Optimizer power module. These workers primarily focus on general compute activities such as video conference calls, web browsing and general response time of opening and closing applications. [Whitepaper](#) published, November 2022.

9 Based on calculations using Schneider Electric's Data Center PUE Calculator assuming a range of 1.4-1.6 PUE.

10 Based on internal analysis, June 2022.

11 Based on internal analysis, June 2022.

12 Asset Recovery Services available in 36 locations.

13 Dell Trade In services only offered in the U.S.

14 Based on Dell internal analysis, November 2021. Percentage of bio based and recycled content by weight. Statements applies to Latitude 5000 series and future devices, starting April 2022.

15 Paper packaging materials can be recycled via municipal recycling, where available. System bag is made from recycled plastic and can be recycled along with other thin plastics.

16 Based on internal analysis, June 2022.

17 Enhanced Packaging: Approximately 95% recycled content and 5% renewable content in the form of FSC paper fibers. Excludes optional items added to order and included in box.

18 Based on internal analysis, September 2022.

19 OptiPlex 5000 MFF Fixed Workstation contain 13% recycled ocean bound plastics in the fan and fan housing.

20 Based on internal analysis, May 2022.

21 Paper packaging materials can be recycled via municipal recycling, where available. System bag is made from recycled plastic and can be recycled along with other thin plastics.

22 Based on internal analysis, December 2022.

23 Up to 16.8% recycled content and 83.2% renewable materials in the form of FSC fibers. Excludes optional items added to order and included in box. Paper packaging materials can be recycled via municipal recycling, where available. System bag is made from recycled plastic and can be recycled along with other thin plastics. See local recycling guidelines.

24 Based on internal analysis, June 2022.

25 Paper packaging materials can be recycled via municipal recycling, where available. System bag is made from recycled plastic and can be recycled along with other thin plastics.

26 Based on internal analysis, October 2022.

27 Applies to outer box and paper cushion packaging materials, based on internal analysis, October 2022.

28 Applicable to Dell Thunderbolt Dock WD22TB4 & Dell Dual Charge Dock HD22Q. Based on Internal Analysis, October 2022.

29 Based on internal analysis, October 2022.

30 Plastic bottle estimate assumes a 500 ml plastic water bottle. Recycled polyester exterior main fabric made from 100% ocean bound plastic. Ocean bound plastic is waste collected within 50 kilometers (30 miles) of an ocean coastline or major waterway.

31 Based on internal Dell testing conducted in the second half of 2022.

32 Based on Dell internal calculations using SPECfPRate score of 1410 achieved on a Dell PowerEdge R7625 and a processor cTDP of 400W with AMD Epyc 9654 (96 core) processors compared to a score of 636 and cTDP of 280W on a Dell PowerEdge R7525 with AMD Epyc 7763 (64 core) processors. Actual performance will vary.

33 Based on Dell's internal analysis comparing power (kVA) per effective terabyte of the PowerMax 2500 compared with the PowerMax 2000.