

IronWolf® 3.5" 4TB



Sustainability report*



Sustainability at Seagate

Seagate is committed to sustainable storage. Our engineering focus is on increasing storage capacity and utilization, while controlling the quantity and types of materials we use and improving energy efficiency and recyclability.

Sustainable design features

- PowerBalance™ feature optimizes watts/TB
- Maximize total cost of ownership savings through lower power and weight with helium sealed-drive design
- Base plate manufactured using 90% post-consumer recycled aluminum

Energy and greenhouse gases

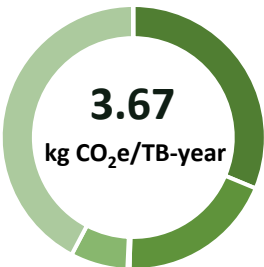
Manufacturing and using our products requires energy and produces greenhouse gas (GHG) emissions. We assess life cycle energy and GHG impacts and work towards improving energy and GHG efficiency and reducing ownership costs with each new generation of our products. Since 2022, our manufacturing facilities have operated using 100% renewable energy.

Power consumption	Per unit	Per TB
Average idle power (W)	2.5	0.6
Operating (W)	1.0	0.2
Average annual (kWh)	8.4	2.1

Greenhouse gas emissions by life cycle stage

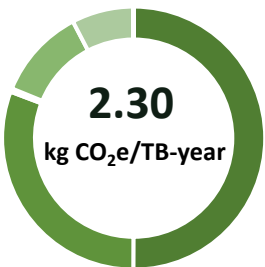
Use phase — conventional energy

- 31.3% Bill of materials
- 19.2% Manufacturing
- 0.3% Packaging
- 7.0% Distribution
- 42.3% Use phase
- 0.0% End of life



Use phase — renewable energy

- 50.0% Bill of materials
- 30.7% Manufacturing
- 0.4% Packaging
- 11.2% Distribution
- 7.6% Use phase
- 0.0% End of life



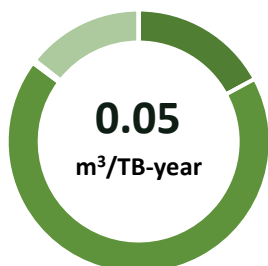
Scarce resources

We aim to reduce our use of scarce resources during the life cycle of our products. We assess the water and mineral resource depletion impacts of our products in order to minimize dependence on key natural resources and reduce manufacturing and product ownership costs.

Water consumption by life cycle stage

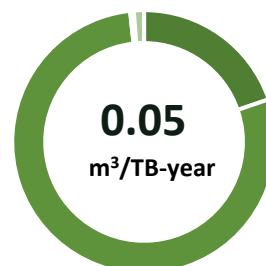
Use phase — conventional energy

17.1%	■	Bill of materials
68.1%	■	Manufacturing
0.2%	■	Packaging
0.2%	■	Distribution
14.4%	■	Use phase
0.0%	■	End of life



Use phase — renewable energy

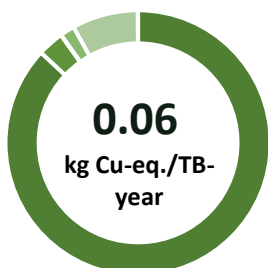
19.8%	■	Bill of materials
78.5%	■	Manufacturing
0.2%	■	Packaging
0.2%	■	Distribution
1.2%	■	Use phase
0.0%	■	End of life



Mineral resource scarcity by life cycle stage

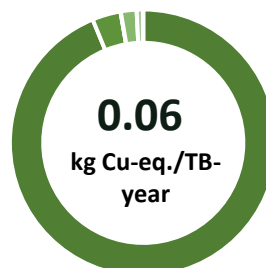
Use phase — conventional energy

86.9%	■	Bill of materials
3.2%	■	Manufacturing
0.0%	■	Packaging
1.8%	■	Distribution
8.1%	■	Use phase
0.0%	■	End of life



Use phase — renewable energy

93.8%	■	Bill of materials
3.5%	■	Manufacturing
0.0%	■	Packaging
1.9%	■	Distribution
0.8%	■	Use phase
0.0%	■	End of life



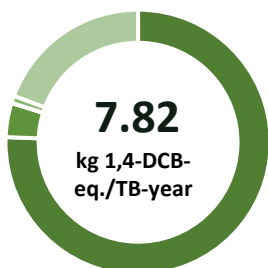
Safer materials

As a leading supplier to major original equipment manufacturers, Seagate helps to establish standards for direct materials — components that make up our products — to meet customers' strictest specifications. We are meticulous about cataloging restricted substances; currently we list more than 2,000.

Human toxicity* by life cycle stage

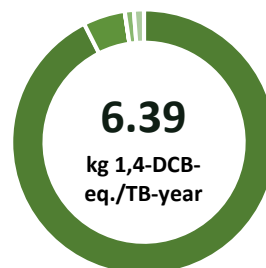
Use phase — conventional energy

75.6%	■	Bill of materials
4.2%	■	Manufacturing
0.0%	■	Packaging
0.9%	■	Distribution
19.3%	■	Use phase
0.0%	■	End of life



Use phase — renewable energy

92.5%	■	Bill of materials
5.1%	■	Manufacturing
0.0%	■	Packaging
1.1%	■	Distribution
1.2%	■	Use phase
0.0%	■	End of life

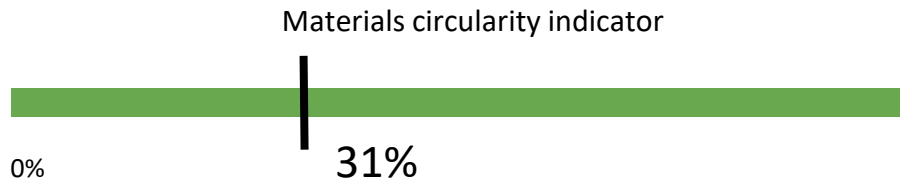


*Human toxicity results are reported as total kg 1,4-DCB-eq. by combining the carcinogenic and non-carcinogenic midpoint indicators. These categories are calculated independently using ReCiPe impact assessment method and disaggregated results are available upon request. Results are driven primarily by non-carcinogenic human toxicity.

Materials efficiency and circularity

Seagate recognizes the traditional “take, make, dispose” linear approach to business is unsustainable. We measure our progress towards a circular economy with a variety of indicators including material used per TB of storage, use of recycled content, reuse rates and recycling type and efficiency.

Device weight — shipped (g)		Per unit	Per TB
Drive	Enclosure	489	122
	Media	130	33
	Electronics	15.2	4
Packaging	Cardboard and paper	55	14
	Other materials	19	5
Total		708	177



Key circularity parameters	Per unit
Estimated operating life	Five years
Recycled aluminum in base plate	90%
Recycled aluminum in other parts	World average
Recycled steel content	World average
Recycled cardboard	100%
Reused content	Zero
Recycling rate	25%
Residual disposal	100% landfill
Reuse rate	Zero
Recycling efficiency	95%
Recycling collections efficiency	90%

Seagate measures and reports its product sustainability performance on a TB-year basis. Seagate's drives come in different storage sizes and have different estimated useful lives. When referring to drive capacity, one terabyte, or TB, equals one trillion bytes. The TB-year measure combines these factors so that sustainability performance data is comparable across products and that annual impacts are directly reported. Seagate uses the Ecoinvent 3.10 Life Cycle Inventory database.