



# EndoFresh Single-Use GI Endoscopes: Environmental Sustainability Statement

To our valued Customers,

Amid rapid advancements in medical technology and a growing global emphasis on environmental sustainability, we, as an innovative leader in the field of single-use GI endoscopes, fully recognize and attach great importance to the environmental impact of our products. EndoFresh has always adhered to the core philosophy of "Empowering Doctors Worldwide, Serving Human Health" integrating environmental responsibility into every stage of our product's lifecycle.

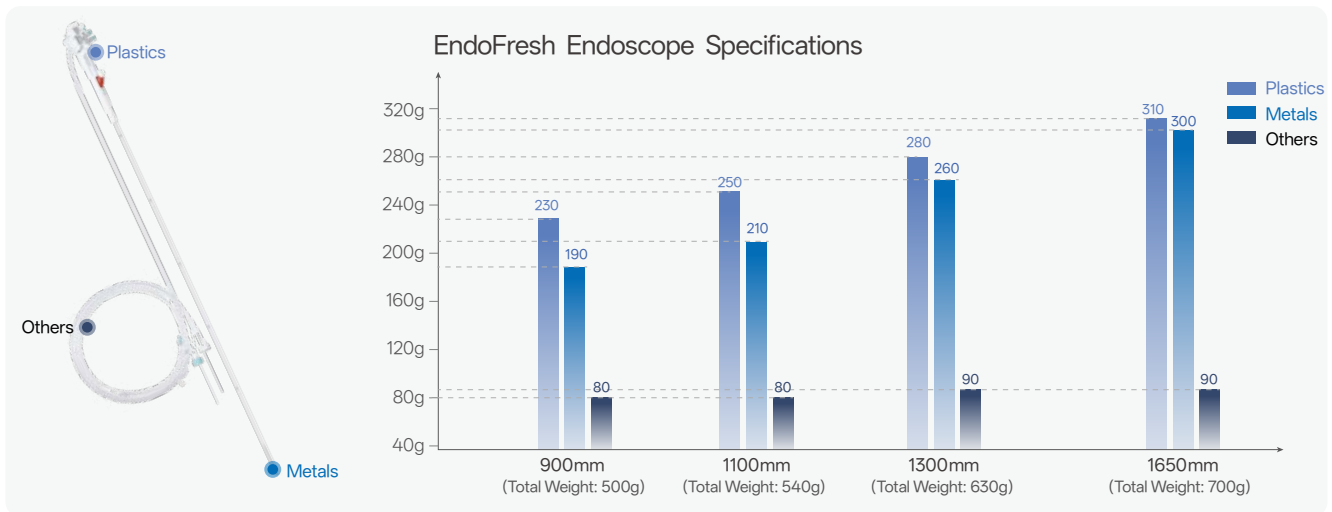
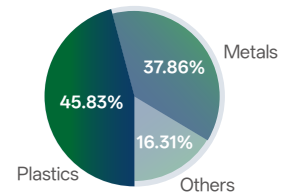
In response to recent market concerns regarding the environmental footprint of single-use GI endoscopes, we hereby provide the following detailed explanation based on our company's strategies and practices:



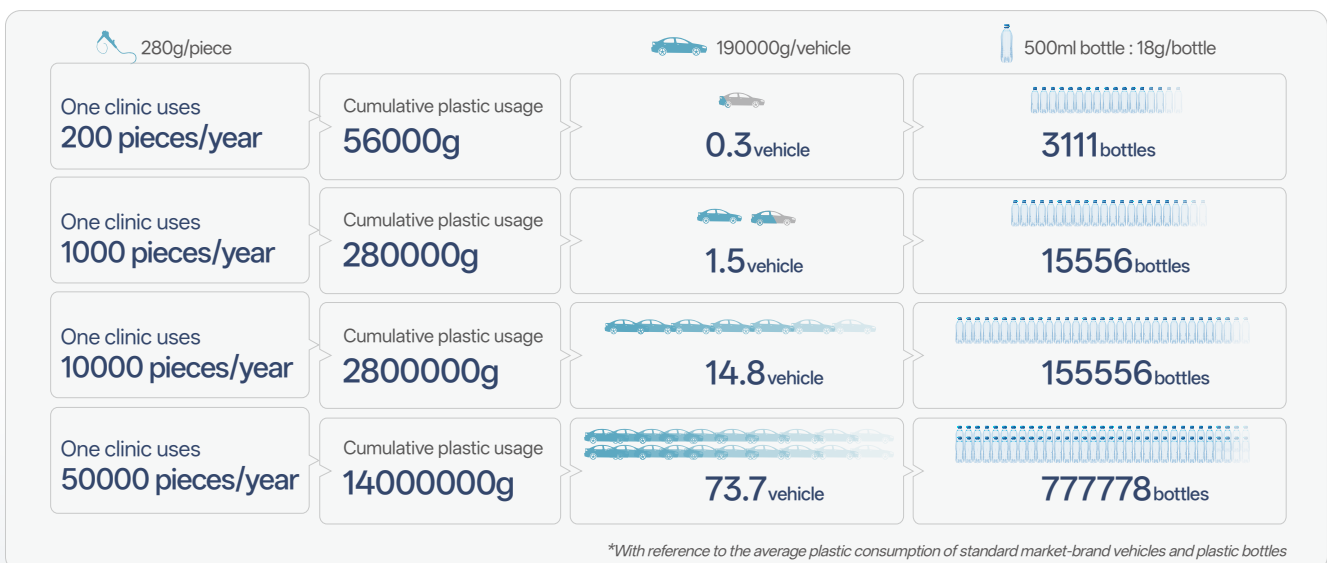
## Closed-Loop Endoscope Ecosystem – A Green Revolution Through Modular Deconstruction

Since its initial design phase, EndoFresh single-use GI endoscopes have been built around the core concept of a "closed-loop ecosystem," fully committed to developing environmentally friendly medical devices. Our R&D team employs an advanced modular design approach, allowing each component of the endoscope to be easily disassembled and reassembled, while also enabling efficient separation of different materials during the recycling process. This significantly enhances the feasibility and efficiency of resource recovery, establishing a solid foundation for sustainable development.

Currently, EndoFresh endoscopes are available in various lengths including 0.9m, 1.1m, 1.3m, and 1.65m. Taking the 0.9m single-use electronic gastroscope as an example, the scope body weighs approximately 0.5kg, with metals comprising **37.86%**, plastics **45.83%**, and other materials making up **16.31%**. Metal components can be recycled, melted, and reprocessed, significantly reducing resource waste.



## In terms of plastic usage, EndoFresh also demonstrates remarkable environmental advantages



From design philosophy to practical application, EndoFresh single-use GI endoscopes consistently prioritize environmental responsibility, using technological innovation and data-driven results to illustrate new possibilities for harmonious coexistence between medical devices and the ecological environment.



## (一) Elimination of Resource Consumption and Health Risks Associated with Reprocessing

Traditional reusable endoscopes require complex and stringent cleaning and disinfection procedures after each use, consuming substantial amounts of water, energy, and chemical disinfectants—which can also lead to environmental contamination<sup>[1]</sup>. Studies indicate that commonly used chemical disinfectants such as glutaraldehyde can cause severe water pollution after disposal. Moreover, these high-level disinfectants pose potential health risks to healthcare workers, including skin irritation, eye discomfort, respiratory tract damage, and allergic reactions<sup>[2-3]</sup>. In contrast, EndoFresh single-use GI endoscopes are designed for immediate disposal after use, completely eliminating the need for reprocessing. This approach prevents resource consumption and environmental pollution at the source, while also removing health threats to healthcare workers. It offers strong support for green and sustainable development in the healthcare sector.



## (二) Reduces Solid Waste Generation

The reprocessing of traditional endoscopes involves extensive use of disposable cleaning tools and protective equipment, significantly increasing the volume of solid waste<sup>[4-5]</sup>.



EndoFresh single-use endoscopes, however, generate only a single type of product waste after use. Additionally, metal components can be recycled and reprocessed, enabling effective reuse and greatly reducing the amount of solid waste ultimately entering the environment.

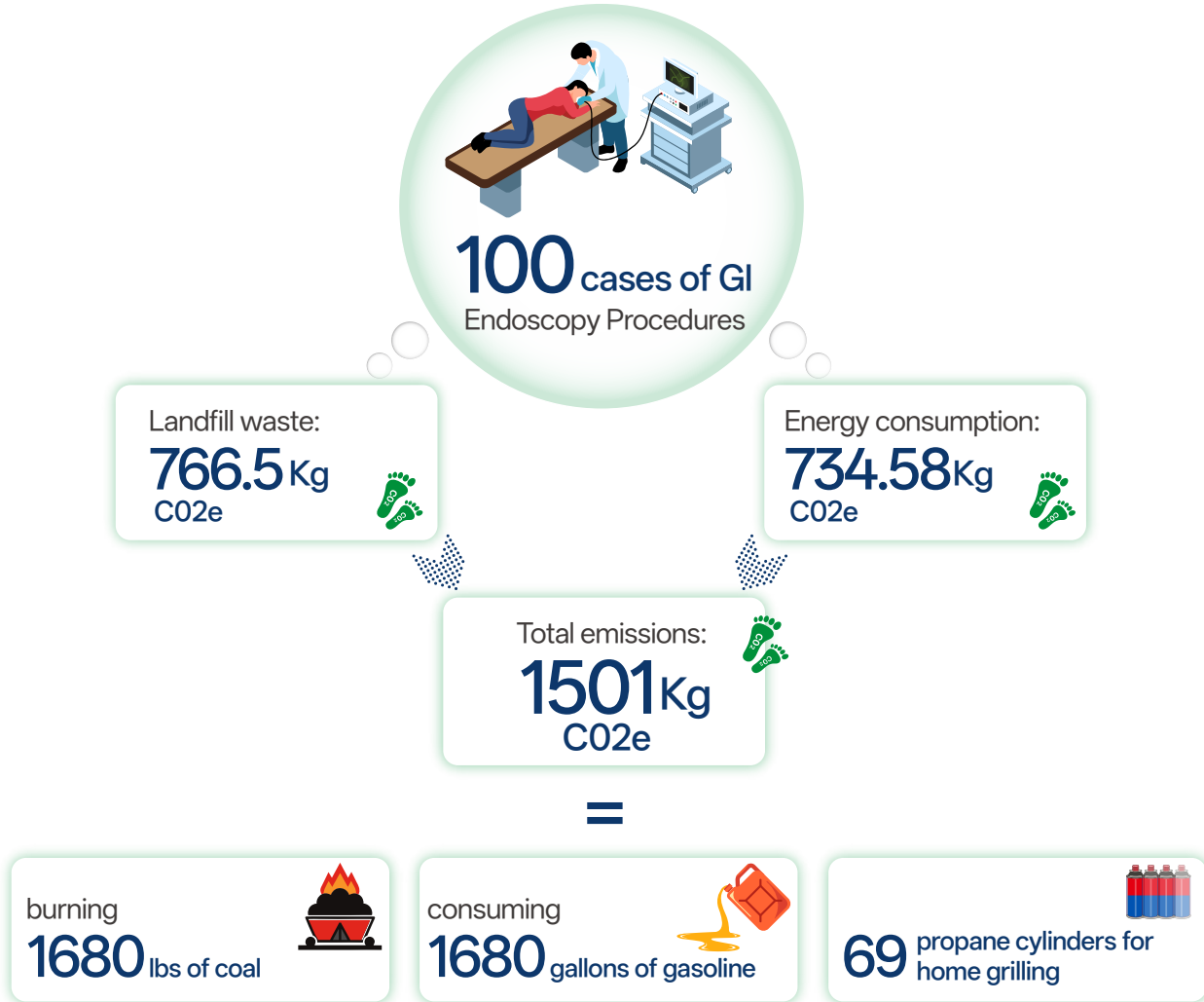


# Environmental Benefits vs. Traditional Endoscopes



## (三) Carbon Footprint

According to U.S. Environmental Protection Agency statistics<sup>[4]</sup>:



A peer-reviewed life cycle assessment also found that using single-use cystoscopes can reduce the environmental footprint of flexible cystoscopy compared to reusable cystoscopes<sup>[5]</sup>.

EndoFresh is expanding the use of bioplastic materials in its endoscope products to minimize its carbon footprint.





## EndoFresh remains firmly committed to environmental sustainability with long-term development strategy:

Over the next five years, no less than 15% of annual sales revenue will be invested in three core areas: R&D of eco-friendly materials, ecological product design, and recycling technology innovation.

### Eco-Material Transition : Three-Phase Strategy for Bio-Based Material Adoption

2025

Pioneered the adoption of bio-based materials for endoscopic handpiece components, achieving a **35%** overall sustainable material upgrade for the product.



2026

Achieved a breakthrough in bio-based material application for insertion sections, advancing the product's bio-based material content to **50%** across the product portfolio.



2028

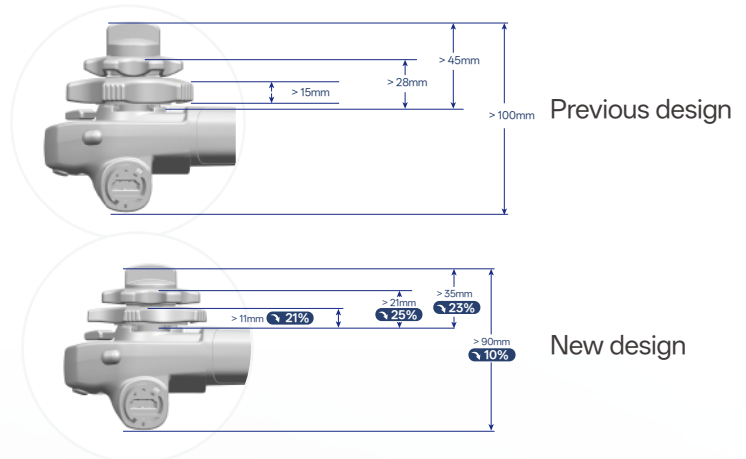
Successfully upgraded materials for complex components including multi-lumen tubes, achieving **80%** bio-based material coverage across the full product line.



The company plans to progressively incorporate bio-based materials into more critical components across its full endoscope product series, advancing green transformation initiatives.

### Enhanced Handling, Renewed Experience: Ergonomic Handle Redesign for Superior Operation

The newly designed handle improves comfort and ease of operation while reducing overall product thickness by **10%** and material usage by approximately **5%**. This enhancement not only lowers production costs and improves the clinical experience but also strengthens environmental performance, achieving both functional refinement and sustainability.



### Eco-Material Transition: Three-Phase Strategy for Bio-Based Material Adoption

EndoFresh is exploring in-depth collaboration with global medical waste management partners to establish a closed-loop system, from professional recycling to low-carbon regeneration, advancing green lifecycle management of single-use medical products.

Meanwhile, environmental sustainability is deeply integrated into corporate culture. Through internal training and activities, employee eco-awareness is heightened, fostering a company-wide practice of environmental responsibility. EndoFresh is currently seeking partners worldwide who are passionate about environmental initiatives. We welcome interested parties to contact us.



EndoFresh single-use GI endoscopes embody environmental responsibility throughout the entire lifecycle, demonstrating our commitment through systematic initiatives. We hope this official response effectively addresses customer concerns regarding the environmental impact of single-use endoscopes and reinforces market confidence in our products.

We sincerely appreciate the attention and support from our customers. For any questions or suggestions, please contact us at :

 +86-755-89668350  [info@endofresh.com](mailto:info@endofresh.com)



## Reference

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