



ADVANCING SUSTAINABILITY EFFORTS THROUGH INNOVATIVE SOLUTIONS FOR HARD-TO-RECYCLE PLASTICS

2022 LIFE CYCLE ASSESSMENT FACT SHEET

INTRODUCTION

The Hefty ReNew™ program was developed to help advance a circular plastics economy by diverting hard-to-recycle plastics from landfills and giving them new life. We applaud household efforts to reduce, reuse and recycle hard-to-recycle plastics, while recognizing the ongoing consumer need for these materials. This is where the fourth "R" of good waste management comes into play — recovery (see [EPA hierarchy](#)).

The Hefty ReNew™ team has identified and investigated multiple alternative end-of-life (EOL) solutions to better understand the environmental impacts of this program. This life cycle assessment (LCA) was conducted in 2021 by Sustainable Solutions Corporation (SSC)¹. It was designed to measure the environmental impact of the program – from sourcing of raw materials and production processes to its use of five alternative EOL solutions – compared to sending hard-to-recycle plastics to landfills. This fact sheet summarizes the results of the assessment. For complete findings, [see the full LCA report](#).

COMMITMENT TO SUSTAINABILITY

The Hefty ReNew™ program takes its commitment to sustainability seriously by frequently testing new solutions for optimum environmental results. Because not every EOL solution will be favorable, it is important to continue trialing alternatives to meet the growing challenge of reducing environmental impact while keeping hard-to-recycle plastics out of landfills. The Hefty ReNew™ program is committed to transparency – with these assessment results, the team hopes to enable sound environmental decisions for the use of these materials.



Plastic waste is diverted from landfills every year through the Hefty ReNew™ program.

ENVIRONMENTAL FACTORS CONSIDERED

This LCA evaluated the impact of the Hefty ReNew™ program on nine environmental indicators related to air (ozone depletion, global warming potential and smog), water (acidification and eutrophication), human health (carcinogenics, non-carcinogenics and respiratory effects), ecotoxicity and fossil fuel depletion to determine whether certain end-of-life alternatives are preferable to landfilling the materials, and by how much. This approach ensured that the sustainability benefits of the program could be evaluated holistically.

¹ Sustainable Solutions Corporation, Hefty ReNew™ Program Life Cycle Assessment, July 2022. For more information, see the report available at [HeftyReNew.com](#)

This LCA studied five alternative options to landfilling:

- **Concrete Aggregate:** Processes Hefty ReNew™ contents into material used to make concrete blocks.
- **Cement Kiln Fuel:** Uses Hefty ReNew™ contents to replace coal as fuel to produce the heat energy re-quired to make cement.
- **Roofing Cover Board:** Uses Hefty ReNew™ contents to make roofing material, which could replace gyp-sum board, one of the most prevalent building materials in residential and commercial buildings.
- **Construction Blocks:** Replaces ready mix concrete with material made from Hefty ReNew™ contents in construction.
- **Drainage Material:** Uses Hefty ReNew™ contents to create drainage material similar to a French drain, which drains water for agriculture and stormwater infrastructure needs.

The LCA Scope constraints limited the assessment of pyrolysis, or Advanced Recycling. Additional assessment of pyrolysis relative to other end markets is now posted on HeftyReNew.com.

KEY FINDINGS

The use of Hefty ReNew™ contents as drainage material yields significant environmental benefits in all measured categories with comparatively high advantages in air emission categories.

- This EOL solution utilizes less energy than the other end-of-life options, with negligible environmental impacts associated with processing.

A new EOL solution using Hefty® ReNew™ contents as roofing cover board reduces global warming by 326% compared to the landfill baseline.

- Using hard-to-recycle plastics as roofing cover board can replace energy-intensive gypsum board.
- This EOL solution yields a substantial reduction in fossil fuel depletion and a substantial reduction in ozone depletion compared to the landfill baseline.

The use of Hefty® ReNew™ contents as cement kiln fuel drives a significant reduction in emissions.

- Replacing coal decreases fossil fuel depletion and simultaneously diverts waste from landfills.
- Across all environmental factors assessed, the use of Hefty ReNew™ contents as cement kiln fuel yields greater environmental benefits than the landfill baseline.

SUMMARY TABLE

The chart below provides an overview of the net environmental impact of each EOL solution trialed or currently in use by the Hefty ReNew™ program. Green represents areas where the EOL option yields environmental benefits compared to the landfill baseline. Gray represents indicators where the landfill baseline is preferable to the EOL solution. This chart shares select results; more detailed findings are available in the [full LCA](#).

		Drainage Material	Roofing Cover Board	Cement Kiln Fuel	Construction Blocks	Concrete Aggregate
Air Pollution	GLOBAL WARMING	Green	Green	Green	Green	Gray
	OZONE DEPLETION	Green	Green	Green	Green	Gray
	SMOG	Green	Green	Green	Green	Gray
Water Pollution	ACIDIFICATION	Green	Green	Green	Gray	Gray
	EUTROPHICATION	Green	Green	Green	Green	Green
FOSSIL FUEL DEPLETION		Green	Green	Green	Green	Gray

CONCLUSION

A key goal of this study was to better understand the cradle-to-grave impact of the Hefty® EnergyBag® program compared to the baseline of landfilling and determine the environmental impacts of six alternative scenarios. The program demonstrates a more circular use of hard-to-recycle plastics to create a sustainable future, converting the materials into a valued resource rather than sending them to landfills.