



Admiral Packaging, Inc.
excellence in flexible packaging



LIFE CYCLE ANALYSIS (LCA)

CASE STUDY

Comparing the Sustainability of a Bag in Box to a Stand-Up Pouch



Bag in Box (BIB)



Stand-up Pouch (SUP)

During the height of the coronavirus pandemic, our client was working to ensure continuity of supply, but the company also had another lofty goal: to not just talk about sustainable packaging, but to lead and invest in new packaging solutions.

As a strategic partner with a shared commitment to sustainability, Admiral Packaging conducted a Life Cycle Analysis (LCA) study of our client's existing bag in box (BIB) packaging product and compared it to a stand-up pouch (SUP) packaging solution.

An LCA study can determine the most sustainable options for your company, your brand, and our planet.

The Goal: Increased Sustainability

Our client, a leading food product manufacturer, is committed to continuous evaluation of their social and environmental impact. Their commitment extends to their people, their products, and their packaging.

Working together, we established a goal to convert the packaging for a 1lb product line from a carton box with an inner bag to a more sustainable, yet practical, solution.

Sustainability goals included:

- Recyclability
- Improved Product to Package Weight
- Fossil Fuel Savings
- Greenhouse Gas Reduction
- Water Usage and Pollution Reduction
- Reduction in Harmful Emissions Known to be Toxic

The Approach: An LCA Study

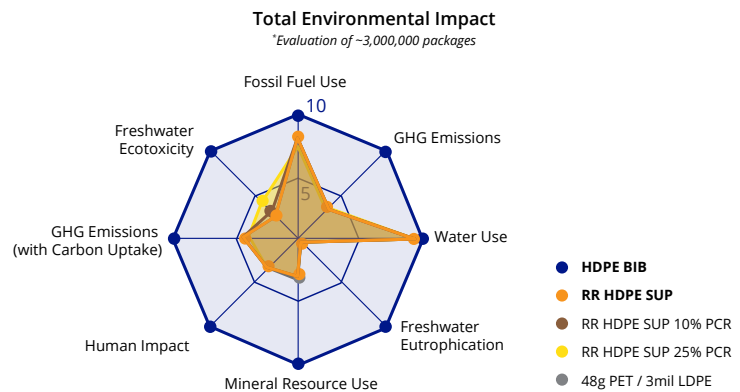
Using industry standard metrics and independent software, Admiral conducted a comprehensive study of the full life cycle of our client's current and prospective packaging options from cradle to grave. Each stage of the packages' life cycle were taken into consideration, from the time raw materials were produced (cradle) to its end-of-life through recycling and waste streams (grave). The study included both upstream and downstream impacts of materials, processes, distribution, and disposal.

We used a quantity of 3 million packages holding a base unit of 1lb for the basis of the LCA study. The study compared the high-density polyethylene bag (HDPE) and carton used in the client's bag in box package (BIB) to a conventional stand-up pouch (48g PET / 3mil LDPE) and a Recycle-Ready HDPE stand-up pouch (RR HDPE SUP), as well as to RR HDPE SUPs using 10% and 25% post-consumer recycled (PCR) materials.

Results

Admiral provided our client a custom report that quantified the environmental impact for each packaging option studied. Reductions in fossil fuel, greenhouse gas emissions, water usage, and weight of materials among others were provided for each packaging option, allowing our client to easily compare the data and select the best solution to meet their company's sustainability goals.

In this case, the LCA study clearly demonstrated that using a stand-up pouch as a packaging solution instead of a bag in box method resulted in significant environmental advantages. Ultimately, our client selected a Recycle-Ready HDPE stand-up pouch to replace their bag in box package as a step toward reducing their environmental impact and introducing a more practical packaging solution.



“Admiral expertly guided us through the LCA study process and presented data-informed options. Our study results clearly demonstrated that transitioning to a stand-up pouch would be our most sustainable choice. Thank you to the Admiral team, who were able to QA test and implement our new packaging under a tight timeline!”

– A Leading Food Product Manufacturer and Satisfied Customer

Reductions

Transitioning from a traditional BIB package to an RR HDPE SUP reduced negative environmental impacts across all categories studied.

↓ 19%



Fossil Fuel

Equivalent to 4,000 gallons of oil
(Enough to power 16 average homes annually!)

↓ 66%



Greenhouse Gas Emissions

Enough to create 227 acres of forest
(Equivalent to over 21,000 gallons of gas per year!)

↓ 5%



Water Use

983,000 gallons of water
(That's enough for 57,000 showers each year!)



Weight

Over 100 tons of weight eliminated

The Outcome: Thoughtful Stewardship

Each new packaging option had its own set of challenges and considerations, but the LCA study results demonstrated that each one provided greater environmental advantages than the traditional bag in box method. Elimination of the box provided a significant reduction in the amount of packaging material. Less material means less energy to produce, ship, and sell the product.

Our client transitioned to a recyclable single package, stand-up pouch product designed for store drop-off recycling, under the guidelines of How2Recycle© and the Sustainable Packaging Coalition (SPC). By using a recyclable format, sustainability is further enhanced.

While many companies wait and seek a perfect solution, our client decided to focus on doing what they could now to improve environmental impacts. By implementing a more environmentally friendly solution that was immediately available, our client created momentum while at the same time generating a circular plastics economy that others could join. As recycling adoption continues to increase, the environmental benefits will also continue to improve.

ADMIRAL PACKAGING

A LEADER IN DEVELOPING SUSTAINABLE PACKAGING SOLUTIONS

About Admiral

Founded in 1898 and headquartered in Providence, RI, Admiral Packaging has been a consistent leader in the packaging industry. A fourth-generation privately owned and operated company, Admiral has built on its rich legacy of customer focused service, just in time delivery, and quality.

As a BRCGS certificated company operating with a strong adherence to lean manufacturing principles, Admiral is well positioned for the future. At Admiral, you will find the most advanced technologies in prepress, printing, laminating and converting of roll stock and stand-up pouches.

Admiral GreenVantage

In 2020, Admiral proudly launched Admiral GreenVantage, its newest commitment to sustainable packaging solutions. GreenVantage is a holistic approach to finding the solutions that best suit the sustainability goals and overall requirements of the companies we partner with. It is most certainly about customers, but extends to film, ink, and equipment suppliers as well. Working with Admiral Packaging, you can expect a well-engineered solution to your packaging needs.

Sustainability Options

- Recyclable
- Bio-based
- Post-consumer (PCR) Compostable
- Source Reduction
- Short Lead Times through Vendor Managed Inventory
- Reshoring
- Smart Ordering (Just in Time)

Designed for Sustainability

Every project is different and there is no 'one size fits all' approach. Working with Admiral Packaging means you have a true partner that will ensure your goals are met.

Engineered with Expertise

We combine the science of packaging and polymer chemistry with the art of design and aesthetics. Together we create packaging solutions that are sustainable, functional, and attractive.

Learn How to Start an LCA Study

When it comes to sustainability, there are pros and cons with every decision. Admiral Packaging has a proven track record of helping clients achieve their sustainability goals. We'd like to help you do the same. Contact us to take the first step:

Admiral Packaging, Inc.

10 Admiral Street

Providence, RI 02908

www.admiralpkg.com

