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The New Resolution: A framework to collect the most important supply chain data to maximize sustainability impact

A scientific approach to help you prioritize data collection so you can take purposeful action

Executive Summary

Mitigating Scope 3 emissions is critical for any apparel or retail company, but reducing impacts hinges on collecting the right data. To get the insights needed to identify opportunities and demonstrate meaningful progress, sustainability practitioners have two options:

1. **Perform a detailed lifecycle assessment on every product sold, or.**
2. **Prioritize and justify their data collection efforts.**

74%

improvement in scope 3 GHG emissions accuracy when brands focus on targeted data

This report is about making this second path practical. We show which data matters most, and when you can confidently stop collecting and start acting.

And therein lies the problem. Performing a detailed life cycle assessment of every product is impractical, but prioritizing and justifying data collection efforts is notoriously difficult. The result? Sustainability teams end up in a never-ending cycle of unfocused data collection.

That cycle stops today.

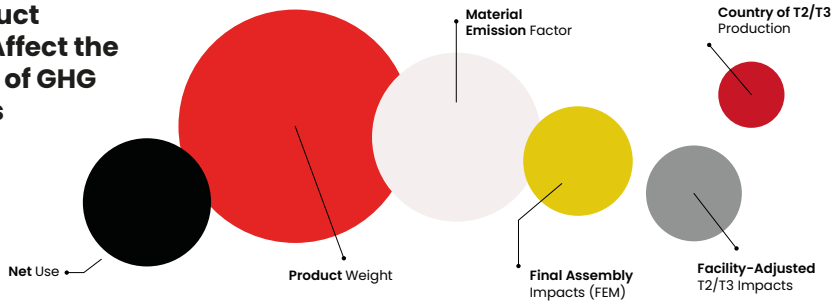
Using this framework, we show that measuring a handful of parameters for a subset of products can **capture up to 74% of the accuracy gains you'd get from collecting full primary data on everything.**

What we need is an accurate enough Scope 3 estimate from which to track progress over time that comes from real business changes–not measurement enhancements or updates.

By 'accurate enough,' we mean an emissions estimate that captures the majority of accuracy gains you'd get from full primary data (70–80% of the potential improvement), while staying practical in terms of cost and effort.

To move the industry towards this goal, Worldly developed a data-backed model to determine which types of data are most important for accurately measuring Scope 3 emissions. While some of our results might not be surprising—yes, accurate product weights are critical to good impact estimates—the difference is we can now quantify it: **Measuring product weight for all 87 of our sample brand's products delivers a 54% increase in the accuracy of our Scope 3 emissions reporting compared to relying on industry average product data.**

How Product Impacts Affect the Accuracy of GHG Emissions



*Circle sizes represent the relative importance of each parameter, scaled proportionally based on their contribution to overall accuracy improvement

Our hope is that sustainability practitioners can refer to this report to explain what data they chose to collect and use (and why), and, more importantly, to confidently shift gears to focusing on impact reduction instead of endless data collection.

Break the Cycle of Data Collection Burnout

Corporate carbon emissions disclosures are the lynchpin of corporate sustainability. They:

1. **Provide stakeholders with an accurate representation of current emissions;**
2. **Allow these stakeholdwers to compare those emissions to the company's industry peers, past performance, and stated goals.**

While these are clear objectives, we need primary data to deliver on the intention behind them. However, given difficulty and expense—Scope 3 emissions are 47x higher than Scope 1 and 2 for apparel companies, and supply chains are always-evolving to manufacture products that change with the season and trend[1]—it's impossible to collect all of the primary data for an apparel company.

Instead of seeking data completeness, sustainability teams try to follow the Greenhouse Gas Protocol Scope 3 guidance to "prioritize data collection efforts on the [S]cope 3 activities that are expected to have the most significant GHG emissions, offer the most significant GHG reduction opportunities, and are most relevant to the company's business goals."[2]

Although this guidance is useful in principle, it does not help companies determine what data is most significant and relevant to collect and integrate into their Scope 3 calculations.

This report is Worldly's initial contribution to developing a data-backed model and methodology that can give sustainability teams permission to focus on collecting the data that matters—and then moving on to taking action. Our goal? We do the math and show our work so that you can trust our results and use them.

Let's go.

[1] According to Scope 3 Upstream: Big Challenges, Simple Remedies, a June 2024 report by CDP and BCG, Scope 3 accounts for 92 times more emissions than Scope 1 and Scope 2 for retail companies, and 47 times more emissions for apparel companies https://cdn.cdp.net/cdp-production/cms/reports/documents/000/007/834/original/Scope-3-Upstream-Report.pdf

[2] https://ghgprotocol.org/sites/default/files/ghgp/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

Shift Your Focus and Move from Anxiety to Action

While industry average impact data can be used to establish a baseline, it only shifts as the industry shifts—not as your business evolves. Without primary data, you're flying blind, unable to meet the accuracy and comparability objectives behind carbon reporting requirements.

We built a product-centric mathematical model to determine which types of primary data are most important for improving Scope 3 calculations and reporting accuracy, which products should be prioritized for data collection, and how to know when brands and retailers have enough data to take action and track progress. The model:

1. **Meets the requirements of the Greenhouse Gas Protocol; and**
2. **Can scale across a brand's full product assortment while handling different levels of primary data for each product.**

Achieving goal 1 was easy, as the GHG Protocol Scope 3 guidance is very flexible. Goal 2 was more challenging because it requires a model that can integrate differing levels of primary data while continuing to meet goal 1.

We solved this challenge by building on Worldly's Product Impact Calculator[3] (PIC), which meets the requirements for both of these goals across a wide variety of product categories (t-shirts, pants, button-down shirts, casual dresses, etc.).

Our Flexible and Realistic GHG Data Model Delivers Answers

We began with a set of representative product models available in PIC that seek to approximate category mid-points (e.g. an "average t-shirt made from the most common materials"). To keep with goal 2, these product models can be enriched with primary data. Because apparel products and supply chains are complex, there is an almost endless set of primary data points to choose from. To simplify and focus on the most impactful types of primary data, we aligned the editable parameters of our model (and PIC) to the industry decarbonization levers included in the *Roadmap to Net Zero: Delivering Science-Based Targets in the Apparel Sector*[4]. The mapping from our model to the *Roadmap to Zero* isn't a clean one-to-one mapping. For example, two *Roadmap to Zero* levers, accelerating innovative materials and scaling sustainable materials, can both be integrated into a material that is modeled in the Higg Materials Sustainability Index (MSI) and made available in PIC and our model.

[3] https://worldly.io/tools/product-impacts/pic/
[4] https://apparelimpact.org/wp-content/uploads/2021/11/21_WorkingPaper_RoadmapNetZero_.pdf
Full disclosure: Worldly and Cascale contributed to the initial report and the subsequent Taking Stock reports that are released by aii.

How Our Model Parameters Influence the Roadmap to Net Zero Levers

The Roadmap to Zero levers represent the strategic actions a company can take to decarbonize its value chain — from improving material and energy efficiency to eliminating coal and scaling renewable electricity. The model parameters in Worldly's fake brand model translate those actions into measurable data points — such as product weight, material emission factors, and facility energy profiles — that quantify their impact on greenhouse gas (GHG) emissions. By aligning the levers with these parameters, companies can identify where interventions (like switching to low-impact materials or improving factory energy efficiency) deliver the most significant emissions reductions across their supply chain.

Roadmap to Zero Decarbonization Levers

Maximizing material efficiency

- Net use of a product

Maximizing energy efficiency

- Net use of a product
- Final assembly impacts (Higg FEM)
- Facility-adjusted tier 2 and tier 3 impacts (Higg FEM)

Scaling sustainable materials and practices

- Final assembly impacts (Higg FEM)
- Custom Material Emission Factor (Higg MSI)
- Facility-adjusted tier 2 and tier 3 impacts (Higg FEM)

Eliminating coal in manufacturing

- Final assembly impacts (Higg FEM)
- Facility-adjusted tier 2 and tier 3 impacts (Higg FEM)
- Country of tier 2 and tier 3 production

Accelerating the development of innovative materials

- Custom material emission factor (Higg MSI)

Shifting to 100 percent renewable electricity

- Final assembly impacts (Higg FEM)
- Facility-adjusted tier 2 and tier 3 impacts (Higg FEM)
- Country of tier 2 and tier 3 production

[5] https://trove.com/decarbonizing-fashion/

Having developed a flexible product model, we built a fictitious yet realistic mid-tier brand, EveryWear, based on previous industry research we did with Trove[5], to use as the basis for our analysis. Like most apparel brands, our brand is diverse, producing 87 products that span 11 categories, from jackets to dresses to tank tops, ranging in sizes from youth to adult. Each product category contributes a different share of overall brand sales.

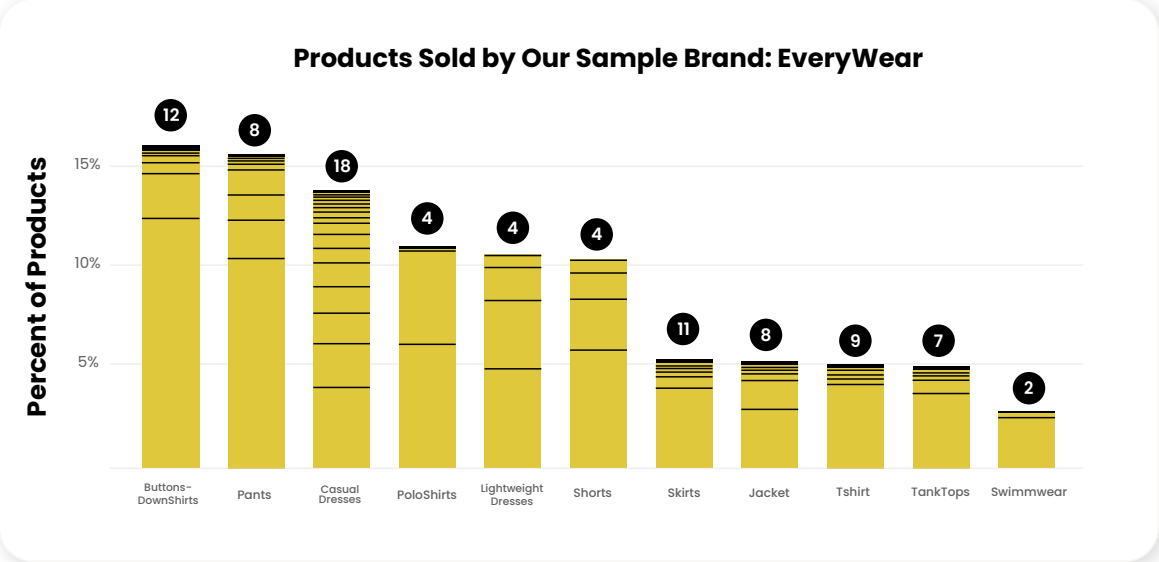


Figure 2: The hash marks represent what percentage of sales each product contributes to EveryWear. In our case, button-down shirts and pants together account for more than 30% of sales.

Within each product category, we used aggregated and anonymized customer data from PIC to model product assortments that reflected common product size and material distributions. This level of detail ensures that the overall model for EveryWear mirrors a realistic mix of different styles and sizes that real brands actually sell.

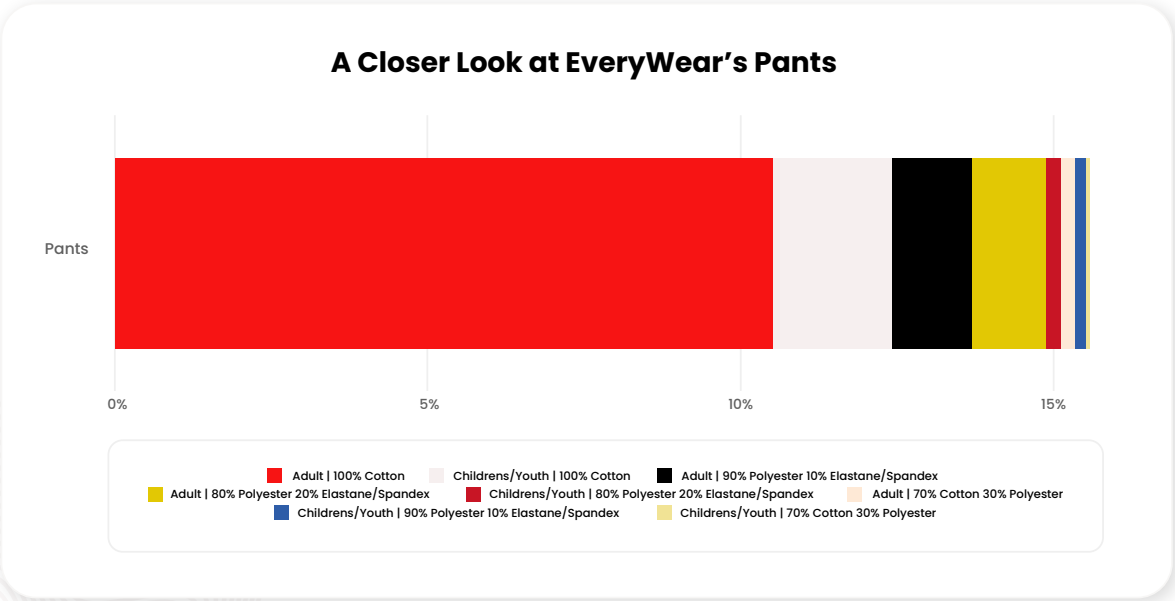


Figure 3: The pants category includes eight modeled products that cover the most prevalent size and material combinations.

Once EveryWear was ready, we put our model to work.

Focus on Key Parameters to Make the Most of Your Data

Now the math. We measured the likely change in emissions values when primary data replaces industry average "default values." First, we defined the upper and lower limits for each parameter. The wider the range, the greater the chance that real-world data would differ from the default values used in PIC.

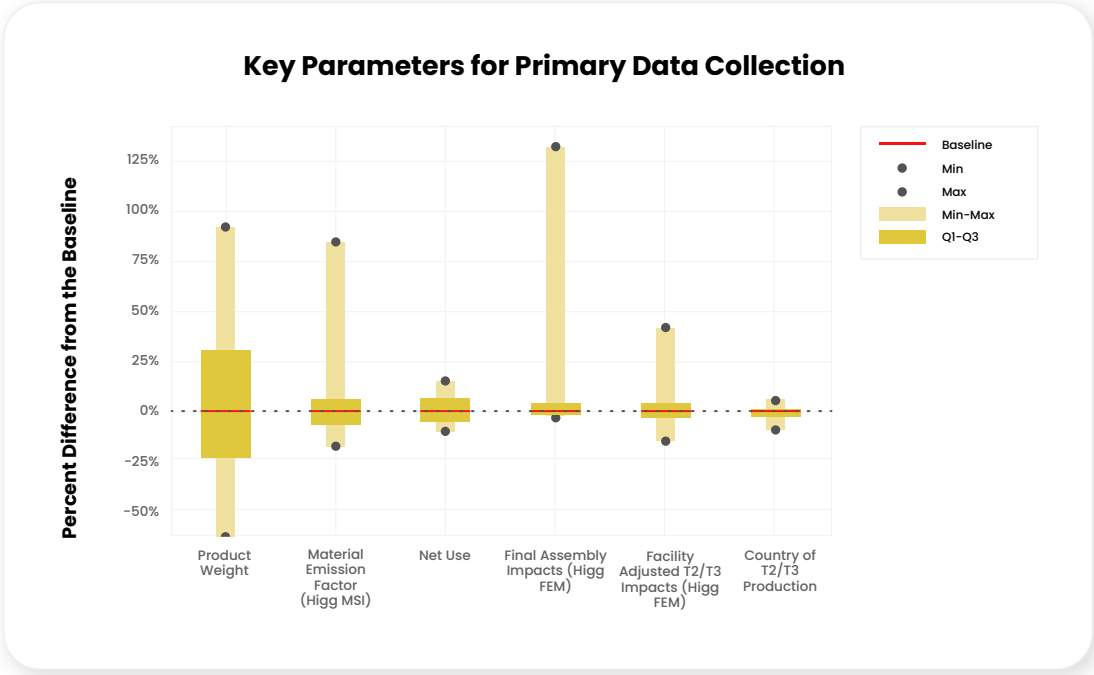


Figure 4: The most important parameters for primary data collection in order from left to right. The baseline represents the industry averages, or default values used in the PIC, and the bar graphs show the upper and lower ranges for each of our six parameters.

Here are the results:

According to our model's calculations, Product Weight is more than twice as influential as Material Emissions Factor in improving reporting accuracy, and Material Emissions Factor is nearly twice as influential as Net Use (see Figure 5).The remaining four parameters are successively less important in smaller steps. Across the whole range of parameters, measuring Product Weight is more than 15 times as important as measuring Country of T2/T3 Production.

Here's how that translates to our brand: measuring Product Weight across all 87

products captures 54% of EveryWear's sales-weighted impact.
In other words, replacing default Product Weight data with primary data delivers 54% of the total possible accuracy improvement associated with moving from all default data to full primary data across all parameters.

The situation illustrated in Figure 5 also highlights the inefficiency of pursuing complete data collection just for the sake of completeness. For example, collecting Product Weight for the top 30 products delivers 50% of the total 54% of possible accuracy improvement – getting that last 4% improvement would require gathering weight data for another 57 products, almost tripling the amount of data already collected for a very small gain in accuracy!

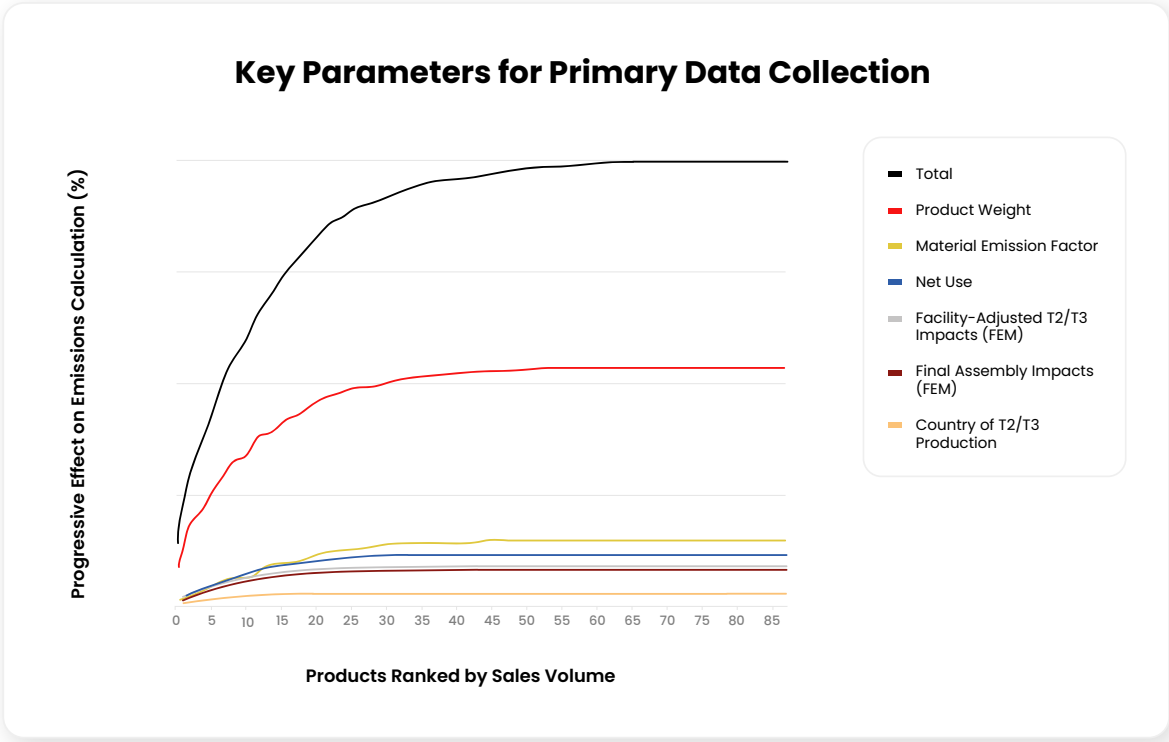


Figure 5: This chart shows how much we can increase our reporting accuracy by capturing primary data instead of industry averages for the model parameters over a cumulative selection of products from highest (1) to lowest (87) sales volume.

But why is product weight so important?

Every physical product has a weight, and every unit of product weight has an associated environmental impact. When the weight goes up or down, carbon impacts also increase or decrease linearly, even if nothing else about the product changes.

Improving Emissions Reporting Accuracy at EveryWear

While isolating the impacts of each parameter is helpful, the real world isn't quite so linear. That's why we put on our sustainability analyst's hat for EveryWear to model what happens when we integrate multiple types of primary data at once.

At EveryWear, we already engage a subset of our Tier 1 suppliers and strategic materials suppliers. Now, we want to start adding primary data from these suppliers and others to our Scope 3 calculations. We have three data collection strategies in mind that all involve collecting about the same amount of data, but focus on gathering different types data for different selections of our products:

- **Strategy 1:** Gather Product Weight for all 87 of our products. This is the "deep but narrow" strategy.
- **Strategy 2:** Gather Product Weight and Material Emission Factor for our top 40 products by sales volume. This is the "moderate depth" strategy.
- **Strategy 3:** Gather Product Weight, Material Emission Factor, and Net Use for our top 30 products by sales volume. This is the "shallow but wide" strategy.

We can use our model to estimate which of these strategies will capture the greatest impact of using primary data instead of industry averages (see Figure 6).

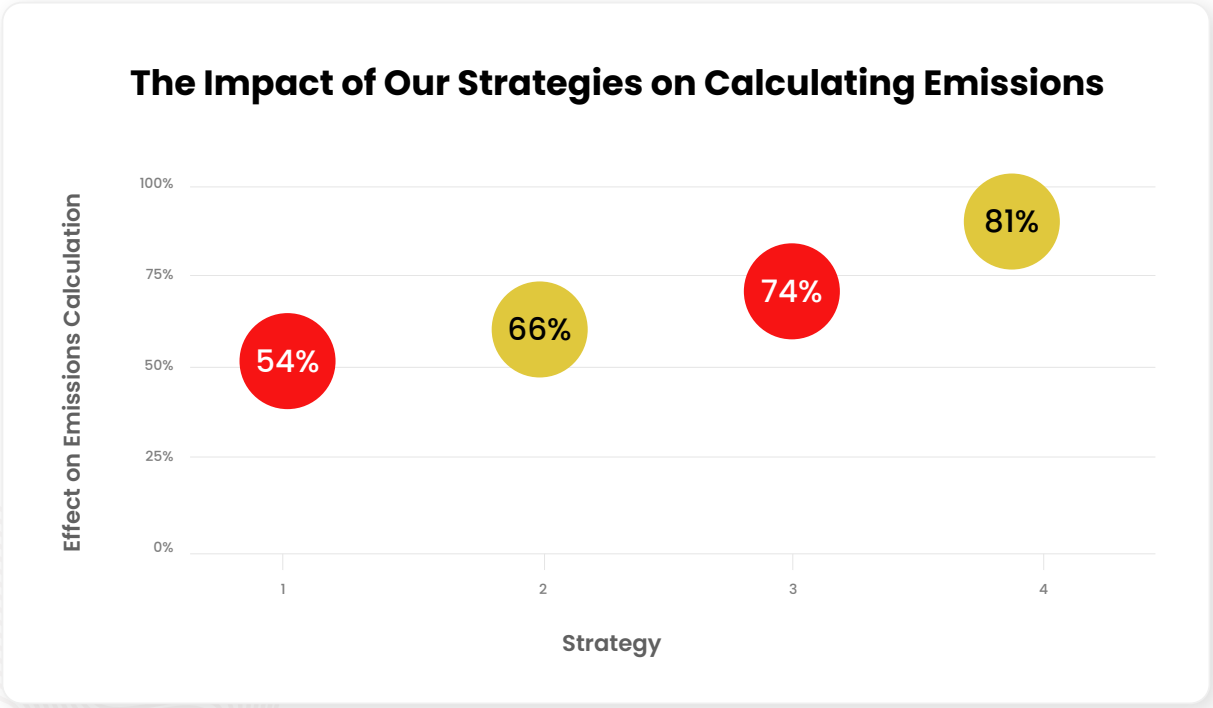


Figure 6: Effect on the emissions calculations for the data collection strategies described in the text. The vertical axis shows the accuracy increase achievable by moving from all industry-average default data (0%) to all primary data for every parameter and product (100%).

The result?

By following Strategy 3, which focuses Everywear's primary data collection efforts on the three most important parameters for the top 30 selling products, we can capture an increase of 74% in the accuracy of our Scope 3 emissions reporting compared to using industry average data.

Having decided on and actioned Strategy 3, the question is: where do we go from here? We could, in principle, collect these same three parameters of primary data for the rest of our slower selling products (Strategy 4a), or we could add the fourth parameter of primary data, Final Assembly Impacts, for our top 30 products (Strategy 4b).

As it turns out, both of these strategies have the same outcome for EveryWear's product line! When added atop Strategy 3, they both increase the emissions calculation accuracy to 81% (see Figure 6). However, Strategy 4a involves collecting an additional 141 unique pieces of primary data, whereas Strategy 4b only requires an additional 30 data points.

In short:

We can make a modest incremental investment to measure 30 new data points for the top 30 EveryWear products, OR put in the work to measure almost five times more unique parameter values across the rest of EveryWear's products, though the latter investment of time and effort gains nothing in accuracy! To say it's not worth it is an understatement—our model makes the choice of strategy clear.

The bottom line is, prioritize measuring the parameters that matter most for your top selling products. While you may want to collect more data along the way, don't let those efforts hinder you from moving on and taking action to reduce impacts related to the hot spots your primary data enriched analysis generates. Your intuition likely told you this already, but we've done the math and shown our work so you can back up your sustainability strategy with data-backed evidence.

Conclusion

Building a Practical Data Collection Strategy

Just like any other company, yours doesn't have the time, money, or resources to collect primary data for every supply chain step that each product takes throughout its lifecycle. Instead, focus your efforts on identifying and collecting the impactful types of primary data and then integrating it into your Scope 3 calculations. This will deliver a clear picture of the biggest impact reduction opportunities and an accurate emissions baseline from which to measure changes in carbon emissions over time. In other words, get your Scope 3 calculations accurate enough to shift the focus to the ultimate goal of reducing carbon emissions.

Wrapping up, here are three things to remember. The analysis we have described here helps explain why each is critical, and how it can guide where and how you collect and integrate primary data. They are:

1. **Integrate the primary data you already have into your Scope 3 calculations. Product weight is often the most accessible starting point.**
2. **Expand collection efforts in areas where your organization already has programmatic support and momentum—whether that's innovative materials programs, supplier decarbonization initiatives, or other focus areas. In short, collect data where the action is happening.**
3. **Don't "boil the ocean." This paper demonstrates how you can focus your primary data acquisition on the products and parameters that contribute most to increasing the accuracy of your emissions inventory while minimizing cost and complexity.**

Our hope is that you can now spend more time analyzing and actioning the data than collecting additional information that won't move the needle.

If you're stuck, Worldly can help you with all three.

Ultimately, data collection is a marathon, not a sprint. By steadily capturing a consistent set of information over time, you can track your progress, set ambitious new goals, and credibly report results. Equipped with this intelligence, your company can take decisive action to transform how products are made and reduce your overall footprint. The best part? You can now prove why you did it.

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About Worldly

Worldly is the leading sustainability and supply chain intelligence platform for the consumer goods industry, empowering brands, retailers, and manufacturers to turn primary data into strategic action. Trusted by a network of over 40,000 companies across apparel, footwear, home furnishings, and sporting goods, Worldly provides deep visibility into environmental and social impact — from carbon and water to chemicals and labor — at the product, facility, and value-chain levels.

Built on the industry's leading standards, including Cascale's Higg Index tools, Worldly transforms raw data into actionable intelligence that helps businesses reduce risk, meet evolving regulations, and accelerate measurable impact.

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