Accelerating Value Chain Decarbonization by Integrating Supplier Carbon Data

Executive Summary

The climate crisis is one of the most pressing issues of our time and Salesforce is committed to taking bold, meaningful, and measurable action across our full value chain. We've made progress on reducing our scope 1 and 2 emissions by meeting our 50% Science Based Target in 2022, 9 years ahead of schedule. However, like so many others, there is much more work to be done when it comes to understanding, measuring, and reducing our scope 3 emissions. Scope 3 emissions make up 80% of Salesforce's total emissions, with suppliers accounting for 74% of that. Our climate success is tied to global progress and the success of our suppliers, which is why we've been hyper-focused on supplier decarbonization.

In 2021, we launched the Supplier Sustainability Exhibit to ensure mutual alignment with suppliers on climate action by embedding sustainability into our contracts. Additionally, we know enabling suppliers and meeting them on their journey is critical to the success of the Exhibit and overall decarbonization progress. This is why we released the Supplier Net Zero Toolkit, a one-stop shop for suppliers looking to advance their own decarbonization journeys. While these initiatives have been incredibly valuable and we've seen tremendous progress on supplier climate action, one fundamental obstacle prevents us from fully realizing this progress: **data**.

As we have come to understand, getting accurate and actionable data on scope 3 value chain emissions is a major roadblock to achieving and accurately recognizing emissions reductions. Currently, common practice for measuring supplier emissions relies on an average emissions factor for that industry type multiplied by spend, also referred to as Environmentally Extended Input-Output (EEIO). For a growing company like Salesforce, that means that as long as spend continues to increase, we would never be able to realize the tangible efforts our suppliers are making to decarbonize. Additionally, without more specific supplier data, it's difficult to pinpoint decarbonization opportunities with the products and services we purchase. To solve these issues, we had to find an accurate way to capture supplier carbon emissions while recognizing the decarbonization efforts many of them are focusing on.

To tackle this, Salesforce collaborated with Anthesis Group to forge a path forward on integrating supplier actual emissions data into our scope 3 footprint in the form of allocated supplier-provided emissions. During our FY24 reporting year, we moved from a largely spend-based EEIO footprint to one that employs several calculation methodologies outlined by the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions. The below approach was used in the following order to capture the best data available:

1. Supplier-Specific Methodology

In this methodology, supplier-specific product-level data is provided by the supplier for use in corporate footprinting. We use this methodology for leasehold improvements (office space fitouts) as well as our public cloud services providers (i.e., Amazon Web Service and Google Cloud).

2. Hybrid Methodology

Next, we leverage the hybrid methodology, including a mix of supplier-specific and industry-average data, subject to robust data quality checks.

3. Spend-Based Methodology

For the remaining suppliers, we revert to the spend-based methodology, using US Supply Chain Emission Factors derived from the US Environmentally-Extended Input-Output (EEIO) model to convert our spend with suppliers into emissions estimates.

We recognize that while we have seen some early success with this methodology, its implementation is a journey requiring additional refinement and data availability from a wide array of suppliers and partners. We invite our partners and peers to collaborate on improving this process.

Read on to learn about the key processes we followed as we integrated high-quality, supplier-provided emissions data into our upstream scope 3 greenhouse gas (GHG) inventory.

5 Key Steps for Integrating Supplier Data

The process we followed for integrating supplier-specific data into a scope 3 inventory can be broken down into five key steps:

1. Collect Data

Request supplier-specific emissions data through CDP Supply Chain. Suppliers provide this data in at least one of three forms: product-level emissions, supplier-allocated emissions, and revenue intensity emissions data. We also manually collect data for suppliers who are material but have not completed the CDP Climate Change questionnaire or Supply Chain Module.

2. Allocate Emissions

If product-level data is unavailable, the supplier allocates emissions using appropriate methodologies and reports these allocated emissions to Salesforce. When suppliers are unable to provide allocated emissions, we conduct allocation by calculating revenue intensity using reported revenue, reported emissions data, and annual spend with the supplier.

3. Review Data Quality

Simply having the data is not enough.
We review the data to ensure it is of sufficient quality to use in place of existing methods. This is completed using quality tests, scores, and gates. A final manual check is performed to ensure supplier data is truly ready for integration into the carbon footprint.

4. Incorporate Supplier-Specific Emissions

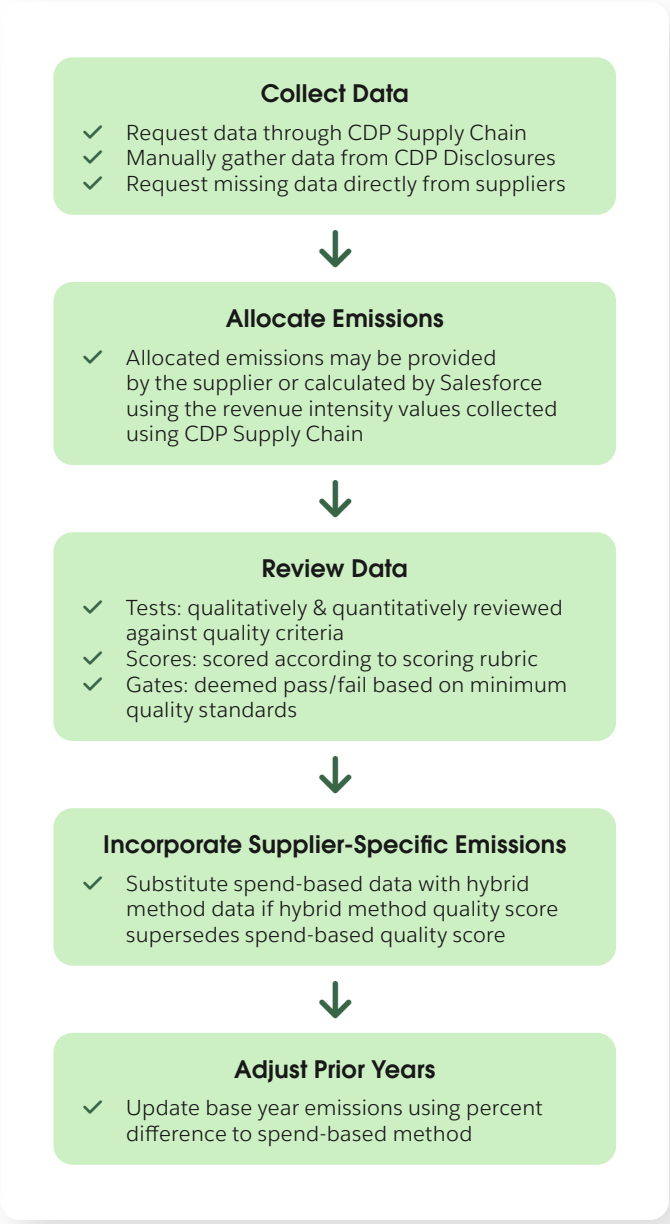
For data that scores higher in quality than the spend-based emissions data (see Table 1), we incorporate hybrid methodology emissions data into our annual carbon inventory, replacing the existing spend based numbers.

5. Adjust Prior Years

To ensure comparability, we adjust our inventories from previous years, including the base year (FY19) and intervening years, for suppliers that are affected by changes in methodology during the current reporting year.

Let's review each step in detail.

Figure 1. Supplier-specific data integration process



Location-Based and Market-Based Accounting

We quantify our GHG emissions using two different methodologies: market-based and location-based.

- ✓ Market-based is largely based on the contracts we have in place for electricity (including those for our 100% renewable energy* commitment).
- ✓ Location-based measures the actual (physical) carbon intensity and energy mix of the electric grids powering our operations.

Both metrics are important indicators, but they represent very different views of a company's and society's progress towards a decarbonized electricity grid. We believe it is critically important for businesses to transparently disclose location-based emissions and work towards a decarbonized electricity grid for all.

*100% renewable energy means utilizing renewable energy or renewable energy certificates equivalent to the electricity we use globally on an annual basis.

1 Collect Data

Before collecting data, it is essential to establish the appropriate data infrastructure to efficiently request and gather supplier data at scale. We utilize CDP Supply Chain, a platform enabling suppliers to report emissions data directly to us, thereby reducing their reporting burden and ensuring data consistency across suppliers. Furthermore, this platform provides access to sectoral averages for comparison and integration into our data quality testing processes.

Our suppliers are asked to provide data in each of the following forms through the CDP platform:

Product-Level Emissions

Emissions allocated by the supplier to its particular products or services provided to Salesforce (e.g., a product carbon footprint for a specific data center server).

Supplier-Allocated Emissions

Emissions allocated at either the corporate, business unit, or facility level by the supplier. These emissions are determined based on physical or economic relationships (e.g., emissions directly attributed to Salesforce by a supplier based on the number of units sold from the supplier to Salesforce).

Revenue Intensity Emissions Data

Emission intensity data consisted of corporate-level emission data for scope 1, 2, and all up-stream scope 3 divided by corporate revenue (e.g., corporate level emissions divided by revenue provided by the supplier through CDP Supply Chain).

In addition to collecting data through CDP, we engage directly with key suppliers to obtain product-specific data to validate CDP responses and request data from suppliers who haven't responded to CDP. As an ever-evolving process, we continue to work with our suppliers to increase the quality of data in future reporting years.

2 Allocate Emissions

Allocation is the process of determining the customer's share of a supplier's emissions within the scope 3 inventory. There are two types of allocations we used in our methodology: supplier-provided allocations and revenue intensity allocations.

Supplier-Provided Allocations

Suppliers may choose to provide allocated emissions data as part of their response through the CDP Supply Chain questions. This data does not need additional steps in order to be allocated to Salesforce.

For companies that do not provide allocated emissions through CDP, the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Chapter 8) offers two primary methods for supplier-provided allocation:

Physical Allocation
Allocating the emissions of an activity based on an underlying physical relationship between the multiple inputs/outputs and the quantity of emissions generated.

Economic Allocation
Allocating the emissions of an activity based on the market value of each output/product.

Suppliers can pursue the most actionable emissions allocation approach for their business. For instance, a public cloud supplier that can provide emissions data based on the amount of computing capacity purchased may choose to allocate its corporate emissions based on a ratio of Salesforce's purchased computing capacity to the supplier's total computing capacity. On the other hand, a different public cloud supplier may choose to allocate its corporate emissions to Salesforce based on the ratio of revenue from Salesforce to total revenue.

Revenue Intensity Allocations

Another method of allocation we employed is revenue intensity allocation. This method involves using our spend with suppliers to allocate the emissions to Salesforce. The spend with each supplier is captured through our procurement spend report, which is also used to complete our spend-based calculations. After calculating the spend for each reporting entity, we multiply the revenue intensity value by the spend to obtain the allocated emissions.

3 Review Data

High-quality supplier data serves as the keystone of this methodology. Thus, we developed data quality criteria that all data must meet in order to be included in our scope 3 inventory.

Data Quality

Our approach is based on the GHG Protocol's data quality indicators, which include technological representativeness, temporal representativeness, geographical representativeness, completeness, and reliability. To assess and score supplier data on these indicators, we perform a series of data quality tests, such as the 1.5 IQR test to identify outliers.

We use the following quality scoring rubric to evaluate supplier-provided data and the existing spend-based approach against each quality indicator.

Table 1. Quality scoring rubric

	Technology	Temporal	Geography	Completeness	Reliability
3 Very Good	Data represents the same or highly similar products/ technologies as the goods/services provided based on physical factors (e.g, quantities, volumes, or mass)	Supplier Accounting Year start is within 18 months	Data represents the same countries as the goods/services provided	S1,2: <5% exclusions S3: Includes all minimum attributional categories	Data is third-party assured and passed 1.5IQR outlier testing
2 Good	Data represents similar or approximate products/ technologies as the goods/services provided based on physical or economic factors	Supplier Accounting Year Start is within 18 and 30 months	Data represents similar countries as the goods/services provided	N/A	Data is third-party assured but does not pass 1.5IQR outlier testing
1 Fair	Data represents generalized or dissimilar products/ technologies based on physical or economic factors	Supplier Accounting Year Start is within 30 and 42 months	Data represents dissimilar countries as the goods/ services provided	N/A	Data is not third-party assured but passes 1.5IQR outlier testing
0 Poor	Data represents unknown products/ technologies	Supplier Accounting Year Start is greater than 42 months	Data geography is unknown	S1,2: >5% exclusion S3: Does not include minimum attributable categories	Data is not third-party assured and does not pass 1.5IQR outlier testing

After reviewing the data against each quality indicator, we calculate the total score by averaging the scores of the five indicators.

Data Quality Gates

We believe that while the scoring mechanism is robust, incomplete or unreliable data should not be included, even if other quality indicators score highly. As such, we have established gates for Completeness and Reliability. We require a minimum score of 2 for Completeness and a minimum score of 1 for Reliability to pass the respective data quality gates. If the data does not pass both gates, it is discarded.

Manual Data Checks

Following the automated data checks, we perform an additional manual review of the supplier data identified as having sufficient quality for substitution. Manual checks are used to determine if there are any exclusions or other concerns within the supplier's qualitative responses describing their corporate boundaries and emissions methodologies.

Deep Dive: Scope 3 Minimum Expected Categories

To accurately represent the emissions attributable to Salesforce, it is crucial to identify scope 3 categories within a supplier's GHG inventory that encompass the upstream emissions relevant to the goods or services sold to Salesforce. The goal is to incorporate all emissions reasonably expected to be associated with the goods or services we purchase, including those occurring throughout their lifecycle, up to the point of receipt by Salesforce.

To ensure consistency in applying the hybrid approach, we have developed a framework based on the GHG Protocol Scope 3 Calculation Guidance to identify the minimum scope 3 categories that should be included. These categories serve as the basis for evaluating the completeness of our suppliers' scope 3 inventory and allocated emissions. When analyzing revenue intensity data, we check for these minimum categories and also include all upstream emissions provided by the supplier. For supplier-allocated emissions, the choice of which scope 3 categories to include, beyond the minimum expected categories, is left to the discretion of our suppliers.

Table 2 outlines our logic for classifying each scope 3 category. In instances where a supplier provides a combination of goods and services to Salesforce – such as an electronics manufacturer that also provides consulting services – the minimum expected scope 3 categories will include the combined relevant scope 3 categories for both goods and services.

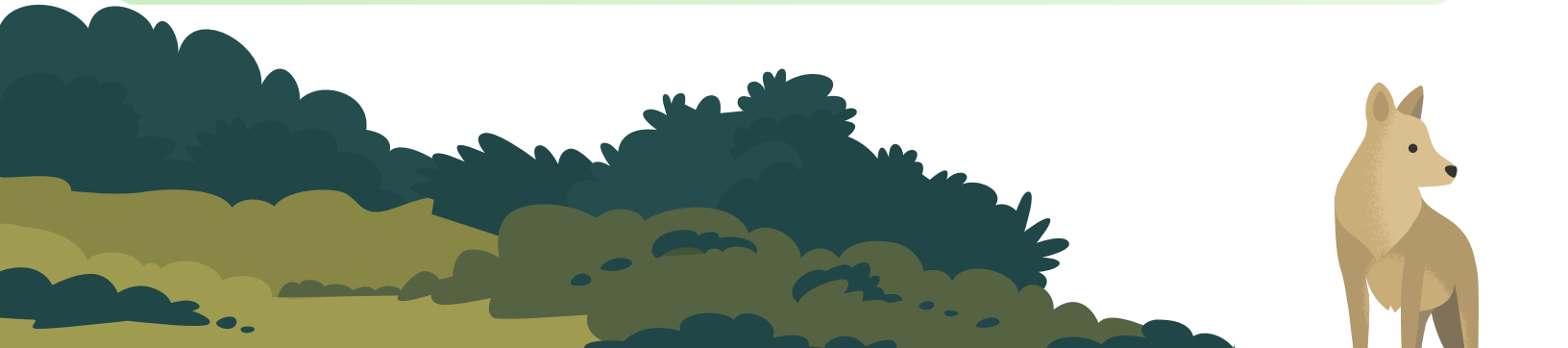


Table 2. Minimum expected scope 3 categories, by supplier type

	Product Type Being Supplied	
Scope 3 Categories	**Physical Good**	**Service**
Purchased Goods & Services	**Expected, if related to "direct spend" (purchases of goods and services directly involved in the production of a product or service). All other spend would be non-attributable, as it relates to overhead or corporate activities and services which are defined as non-attributable.**	
Capital Goods	Discretionary. Capital goods are generally defined as non-attributable.	
Fuel- & Energy-Related Activities (FERA)	**Expected, if fuel & energy is used to manufacture the physical goods.**	Discretionary. We consider FERA to be related to overhead operations for services, which are defined as non-attributable.
Upstream Transportation & Distribution	**Expected. Represents emissions associated with carrying the physical good.**	Not relevant to provision of services.
Waste Generated in Operations	**Expected, if waste generated is related to the goods sold to Salesforce.**	Not relevant to provision of services.
Business Travel	Discretionary. Does not carry the physical good.	**Expected, if business travel carries the service product.**
Employee Commute	Discretionary. Transport of employees to and from work is explicitly defined as non-attributable.	
Leased Assets	Discretionary. We consider these overhead operations, which are defined as non-attributable.	
Downstream Transportation & Distribution	Non-attributable. Activity occurs downstream of "cradle-to-gate" for Salesforce.	Not relevant to provision of services.
Processing of Sold Products	Non-attributable. Activity occurs downstream of "cradle-to-gate" for Salesforce.	
Use of Sold Products	Non-attributable. Activity occurs downstream of "cradle-to-gate" for Salesforce.	
End-of-Life Treatment of Sold Products	Non-attributable. Activity occurs downstream of "cradle-to-gate" for Salesforce.	
Downstream Leased Assets	Non-attributable. Activity occurs downstream of "cradle-to-gate" for Salesforce.	
Franchises	Non-attributable. We consider franchises to be a corporate activity, which are defined as non-attributable.	
Investments	Non-attributable. We consider investments to be a corporate activity, which are defined as non-attributable.	

4 Incorporating Supplier-Specific Emissions

After reviewing all data against the quality criteria, it is categorized into one of the following determinations:

Allocation
The supplier-provided allocation passed the tests and gates and should be used in place of the spend-based methodology.

Revenue Intensity
The revenue intensity values, multiplied by our spend with the supplier, should be used in place of the spend-based methodology.

Use Alternative Methodology
The supplier-provided data was not usable, so we revert to the spend-based methodology for the supplier.

The determinations and outputs are mapped into a summary table along with the spend-based emissions values, categorized into two sections: scope 1 and 2, and scope 3, such that partial substitutions may be made. To separate our spend-based emissions, we utilize a methodology developed by Anthesis, which utilizes the underlying EEIO direct impact and indirect impact matrices. The final emission values are generated based on the determination for the emission scope.

Mapping to Scope 3 Categories

We follow the GHG Protocol to allocate emissions to Salesforce's scope 3 categories. In cases where suppliers provide goods and services that fall under multiple scope 3 categories, we assign the supplier's emissions to the category with the highest percent of spend.

Example
Supplier A is a provider of goods and services to Salesforce. While the supplier responded to the CDP request, no emissions allocation was provided.

Scope 1 and 2
Supplier A utilizes corporate-level data with no stated exclusions and successfully passes all reliability tests, resulting in a quality score of 2.6. Comparatively, the spend-based emissions for a US-based company yields an average score of 2.0. Therefore, the revenue intensity data for scope 1 and 2 is deemed accepted for inclusion.

Scope 3
Supplier A utilizes corporate-level data with no stated exclusions but fails the third-party verification test, resulting in a quality score of 2.1, surpassing the score of 2.0 for spend-based emissions. As such, the revenue intensity data for scope 3 was preliminarily accepted. However, manual checks revealed that a material category does not cover all of the required emission sources, resulting in a rejection of Supplier A's scope 3 data and reverting to the spend-based approach for scope 3.

5 Adjust Prior Years

According to the GHG Protocol Corporate Standard, base year emissions should be adjusted in the event of a change in calculation methodologies, which among other reasons, triggers a significant cumulative change in emissions, commonly defined as a >5% change. This significance threshold, relative to scope 1, 2, and 3 location-based emissions in the reporting year, determines when the Base Year emissions inventory requires recalculation to align with the updated methodology (hybrid methodology).

To assess whether the 5% threshold has been met, we compare the delta between the spend-based emissions and the hybrid methodology emissions for the Reporting Year (Percentage Change) and track the cumulative percent difference expected in the base year.

Once the cumulative difference in emissions exceeds 5%, the following steps are to be completed:

- ✓ Collect prior data for suppliers with hybrid methodology substitutions in the Reporting Year.
- ✓ Multiply the prior year intensity by the spend in that year to estimate the emissions for that period.
- ✓ For years lacking data, perform a linear extrapolation or interpolation to estimate the emissions.

Example

If in FY24, a 3% difference arises from the methodological change, and in FY25, there is another 3% difference, totaling 6% change, then the FY19 base year would require recalculation.

Results

After years of development and pilot testing, the integration of supplier provided data, at scale, can be considered a success. Please find our Schedules of Selected Environmental and Social Metrics here.

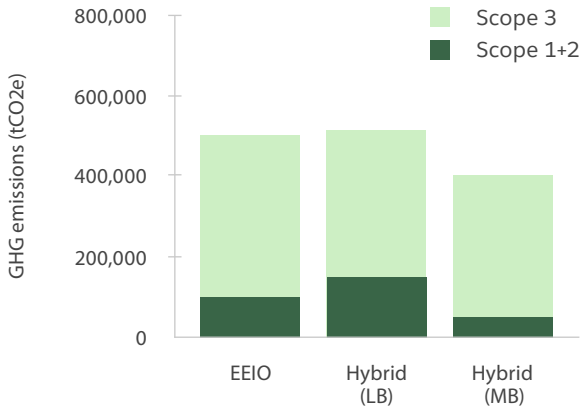
In the first year of implementation, Salesforce achieved robust results, including high supplier response rates and a substantial volume of usable supplier data that passed all quality checks.

We requested data from 132 of our top suppliers:

- 117 (89%) provided data
- 79 (60%) of primary data was accepted for scope 1, 2, and 3
- 88 (67%) of scope 1 and 2 (location-based) was accepted
- 89 (67%) of scope 1 and 2 (market-based) was accepted
- 82 (62%) of scope 3 data was accepted.

The implementation of this approach yielded a **location-based increase of 8,000 tCO2e (2%)** and a **market-based reduction of 119,000 tCO2e (23%)** compared to the spend-based approach for those suppliers. The total impact to the scope 1, 2, and 3 footprint was a **2% increase for location-based** and a **8% reduction for market-based.**

Chart 1. FY24 GHG emissions for suppliers captured with hybrid methodology



Prior year values were also updated for those supplier's whose data was included in this Reporting Year. We saw a decrease in our FY19 base year emissions through updating to supplier-specific emissions for both **location-based (1%)** and **market-based (1%).**

Chart 2. Annual change in total GHG emissions by integrating supplier-provided data

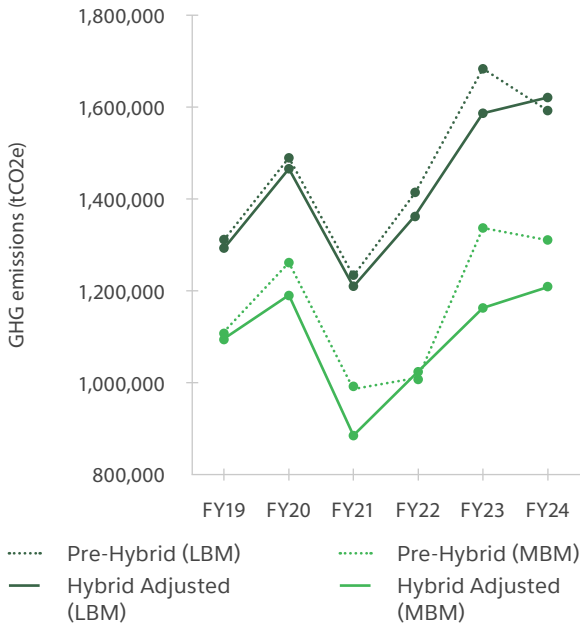


Table 4. Percent change in total GHG emissions by integrating supplier-provided emissions data

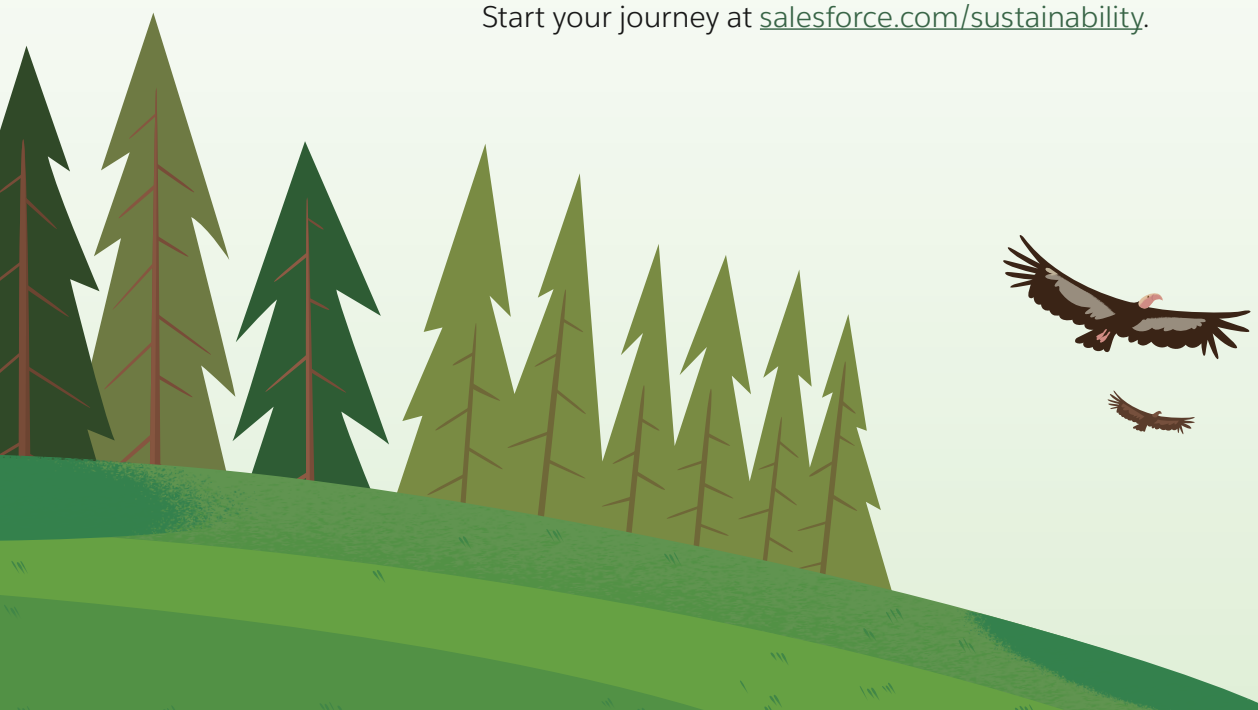
	FY19	FY20	FY21	FY22	FY23	FY24
LBM % Change	-1%	-1%	-1%	-3%	-7%	2%
MBM % Change	-1%	-5%	-8%	1%	-13%	-8%

Transitioning from the predominantly spend-based approach to integrating supplier-provided data enabled us to realize progress toward our climate targets. Had we continued to use the spend-based methodology, our location-based emissions would have increased by 24% and our market-based by 17% relative to our FY19 base year due to the coupling of spend and emissions. While our location-based emissions increased by 27% with the integration of supplier-provided data, our market-based emissions increase fell to 9%, reflecting the decarbonization efforts made by our suppliers.

Further work is needed to increase the number of suppliers providing data and the quality of the data received. We will continue collaborating with our suppliers to decarbonize while collecting and integrating their emissions data to demonstrate this tangible progress. We invite others to join us on this critical data journey!

Let's get to net zero faster, together.

Start your journey at salesforce.com/sustainability.



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