The Climate Program Maturity Curve

Actionable tactics and examples to inspire your organization to advance in its climate journey — no matter where you're starting.

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FOREWORD

Advancing maturity one step at a time

For today's corporations, pressure is mounting from investors, customers, employees, boards, and regulators to quantify, report, and manage their climate impact, particularly their greenhouse gas emissions.

There are three key reasons why:

1 ILLUMINATING RISK AND OPPORTUNITY

As the world responds to climate change and makes the transition to a low- or no-carbon economy, businesses face new transition risks. To thrive in this new economy, corporations need to take a deep look at their ways of doing business to evaluate where the biggest changes are needed and where the largest opportunities for innovation lie.

2 HOLDING COMPANIES ACCOUNTABLE

It's not enough to simply track emissions. Regulators, boards, investors, customers, and other third parties need visibility into a company's emissions footprint and plans, so they make their own decisions about which companies to invest in, partner with, and purchase from.

3 DRIVING DECARBONIZATION PROGRESS

As the old saying goes, you can't manage what you don't measure. Beyond annual reporting, ongoing emissions management is critical for companies to set the right goals and track their progress in reaching those goals.

To address all three of these motivations, corporate climate programs must have accurate, timely, and actionable data to work from. And this can feel much easier said than done. Depending on where your program is today — and where you'd like it to be tomorrow — different next steps will have the greatest impact on your progress.

That's where this framework comes in. By identifying the maturity of your emissions management program today, you can better grasp the next immediate steps to take to continue on your journey. We'll help you pinpoint where you land on the maturity curve, with tips and real stories about companies that have been there.

You'll notice that this maturity curve considers elements of both data maturity and decarbonization program maturity. There's a misguided notion in carbon management that reporting and compliance is a completely separate workstream from decarbonization. The truth is that effective programs must balance both objectives. For each maturity level, we'll share guidance on how best to balance your efforts and resources between data completeness and driving reductions. Both must be pursued to effectively reach our goals.

No matter where you're starting, you can still progress. Some of you may have no climate program to speak of — that's ok, this guide can help start your journey. Others may be ahead of the curve — for you, we'll share ideas for how to raise up your peers and partners to widen your impact on your own footprint and your industry at large.

Tim Weiss
CEO and Co-Founder
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INTRODUCTION

The Climate Program Maturity Curve

While no two programs are exactly alike, we've worked with enough businesses to recognize patterns in maturity. By analyzing our customer base alongside market research and public disclosures, we've identified five key levels of maturity in corporate climate programs: Newcomers, Builders, Accelerators, Leaders, and Trailblazers.

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The Climate Program Maturity Curve

Newcomers are the easiest to identify — they're corporations that have no emissions data collected or estimated yet. In a 2023 study of North American corporate sustainability professionals, 13 percent of respondents had not yet gone through an emissions inventory process, and an additional 16 percent were calculating their emissions for the first time this year. So if you fall in this category, you're not alone — and there are some simple next steps to start building your program from scratch.

For all other categories, three key variables determine your maturity stage:

1 BREADTH & QUALITY OF DATA:

- How much of your operations and value chain is accounted for in your emissions data?
- How reliable is that data in helping you make decisions?

2 EMISSIONS REPORTING

- What is the key output of your emissions reporting?
- Are you sharing the data externally?
- Is your reporting verified by a third-party assurance provider?
- Are you using the data throughout the year to inform ongoing business decisions?

3 TAKING ACTION

- How far have you come in using emissions data to drive decarbonization?
- Have you set a reduction target, and are you on track to achieve it?
- Are you driving decarbonization outside of your operations, across the most strategic parts of your value chain?

Where do you fall? Take this quick assessment to place your program on the maturity curve.

SELF-ASSESSMENT

Climate Program Maturity quiz

Answer questions 1-6. Then, find your maturity score by adding up the points associated with each of your answers (shown in the white boxes).

1. How many years have you been measuring your scope 1 and 2 emissions?

A. None yet [0]
B. 1 year only [1]
C. 2+ years [2]

2. Which of the following best describes the emissions categories you calculate?

A. None yet [0]
B. Scope 1 and 2 (location-based accounting) [1]
C. Scope 1 and 2 (market-based accounting) [2]
D. Scope 1, 2, and certain scope 3 categories like business travel or employee commute [2]
E. Scope 1, 2, and most material scope 3 categories — though much of scope 3 is estimated [3]
F. Scope 1, 2, and all material scope 3 categories, using primary data wherever possible [4]

3. Which of the following best describes your emissions reporting program?

A. We haven't shared our emissions data externally yet [1]

B. We report our emissions annually to key customers/regulators, but not publicly [1]

C. We publicly report our emissions annually, through ESG reports and/or to industry bodies like CDP [3]

D. We publicly report our emissions on an annual basis, and we also use emissions data throughout the year to track performance of decarbonization initiatives [4]

4. Are your reported emissions verified by a third party?

A. Not yet [1]

B. Yes, scope 1 and 2 emissions [2]

C. Yes, all scopes (1, 2, and 3) [4]

5. Have you set a science-based (or SBT-aligned) decarbonization target?

A. Not yet [1]

B. Yes, for scope 1 and 2 [2]

C. Yes, for scope 1, 2, and large scope 3 categories [3]

6. What steps have you taken to decarbonize your business so far? Count up the points for all that apply.

A. None yet — we're still working on understanding our baseline [0]

B. We've tackled some efficiency improvements, like more efficient equipment or lighting [1]

C. We've made a plan based on our biggest emissions hotspots [1]

D. We've procured renewable energy to address scope 2 emissions across our operations [1]

E. We're actively working across our value chain (suppliers, partners, portfolio companies, etc.) to set environmental standards and help them decarbonize their operations [1]

Maturity scores

NEWCOMERS
Scores between 0–4

LEADERS
Scores between 13–18

BUILDERS
Scores between 5–9

TRAILBLAZERS
Scores between 19–21

ACCELERATORS
Scores between 10–12

OVERVIEW

Key characteristics of each level

LEVEL 1 | NEWCOMERS

Breadth & quality of data

You have not yet begun collecting or estimating your organization's emissions data — you're starting from scratch.

Reporting

You have never shared emissions data before.

Taking action

No action yet.

LEVEL 2 | BUILDERS

Breadth & quality of data

Scope 1 and 2 data is collected or estimated for some portion of your emissions.

You're typically using location-based methodology to calculate scope 2 emissions.

No scope 3 data has been considered.

Reporting

Your emissions calculations are typically run as one-off projects, usually as an exercise to establish an emissions baseline.

While you may be working towards sharing data externally, especially with key customers, the primary goal in this stage is getting internal stakeholders comfortable with baseline data.

It's unlikely that any third-party verification is done at this stage.

Taking action

You likely have not identified any data-driven decarbonization actions just yet.

You may be thinking about straightforward efficiency upgrades to old equipment, but primarily due to cost savings rather than emissions impact.

LEVEL 3 | ACCELERATORS

Breadth & quality of data

Scope 1 and 2 data is collected or estimated for some portion of your emissions.

You may be moving to a market-based methodology to calculate scope 2 emissions.

You have started calculating or estimating a small portion of scope 3 categories, like employee commuting or business travel.

Emissions factors and methodologies are clearly documented.

Reporting

Reporting is done on an annual basis, and you can start to see year-over-year trends.

Emissions data is most likely shared externally in an annual ESG report, in response to regulations, and in customer inquiries. You may also be working towards annual CDP data submission or other similar voluntary disclosure programs.

Scope 1 and 2 emissions data are verified by a third party.

Taking action

With more robust data (and multiple years of calculations), you've started to identify emissions hotspots within your organization. This can help you prioritize obvious first opportunities for decarbonization work.

You may also be thinking about setting an emissions reduction target, particularly for your scope 1 and 2 emissions.

You are investing in energy efficiency technology with strong ROIs, and may be considering or purchasing some "quick win" renewable energy instruments, like Energy Attribute Certificates (EACs), for example Renewable Energy Certificates (RECs).

LEVEL 4 | LEADERS

Breadth & quality of data

Full coverage of scope 1 and 2 data is calculated, most of it using primary data.

Location-based and market-based methodologies are used for scope 2 calculation.

There's a greater focus on your most material scope 3 categories. You're likely using a mix of primary and modeled data to calculate scope 3 emissions, with more modeled than primary data.

Methodology for all categories is documented for third-party assurance purposes.

Reporting

Reporting is still done on an annual (or semi-annual) basis.

You have clear tools and processes for pulling annual data, making it more repeatable and easier.

Emissions data is shared regularly in annual ESG reports, in response to regulations, in customer inquiries, and possibly in voluntary reporting cycles.

A third party verifies external emissions reporting for all scope 1, 2, and 3 data shared.

Emissions data is not yet used as a real-time business indicator to manage programs throughout the year.

Taking action

Science-based targets are set for scopes 1, 2, and potentially 3.

Emissions data is used to forecast the impact of potential reduction programs.

You have teams and processes for identifying and implementing energy-saving and decarbonization opportunities across your operations.

You have likely developed a renewable energy strategy to address scope 2 emissions across your operations, considering various instruments by location, utility provider, and operational constraints.

You are beginning to work with your largest suppliers/portfolio companies/partners to inform their decarbonization plans.

In areas of high climate risk, other departments are aware of your climate goals and are helping to work towards achieving them.

LEVEL 5 | TRAILBLAZERS

Breadth & quality of data

Full coverage (close to or above 100 percent) of scope 1, 2, and material scope 3 categories are accounted for, mostly using primary data.

Scope 3 data includes full upstream accounting (cradle-to-gate).

Scope 3 allocations are calculated at the supplier, product, or facility level wherever possible.

Reporting

You're fully compliant with regulations and most likely to be ready for any new regulations.

A third-party assurance provider verifies all external emissions reporting.

Consumption and emissions data is refreshed monthly or quarterly to track real-time decarbonization progress and manage towards targets. This is shared across business units.

Taking action

You're actively investing in clear emissions reduction activities and tracking the results, using granular data and clear trends to inform prioritization across scopes 1, 2, and 3. You have a clear strategy for transitioning to the low carbon economy across your operations, products/services, investments, and supply chain.

You're partnering with suppliers, network partners, and/or peers to drive reductions and best practices across the industry. Suppliers must adhere to environmental standards, and you're helping them achieve those goals.

The full business is aware of your organization's climate goals and understands their department's role in achieving them. Departments are considering climate risk and climate scenario planning in their strategies.

You're making bold, long-term financial commitments and investments in emerging green technology to advance the industry.

TIPS & STORIES

Getting to the next level

No matter where you're starting, there's room to level up. In this section, we'll explore stories of companies that were in each phase of maturity, with best practices to help you make progress toward the next maturity phase.

In all cases, it's important to balance your program's focus on emissions data quality and completeness with your decarbonization efforts. If you jump to action without actionable and accurate data, you may be missing the most impactful opportunities, and you won't be able to measure your progress. But if you focus too much on obtaining "perfect" data, you'll fall short of your (and the world's) decarbonization goals. Look for the "rule of thumb" in each section to advise on how to split your program's efforts across these sometimes competing priorities.

LEVEL 1

Newcomers

You have to start somewhere, and that somewhere begins with data collection. To build a reduction plan, you need to know where you're starting — and you can't do that without at least a ballpark sense of where your emissions come from. That said, there are some simple initiatives, like swapping in more energy-efficient equipment in your office, that can be completed without emissions data to guide the decision.

RULE OF THUMB

98% of time is spent on emissions data, 2% of time is spent on reduction action.

SIGNS YOU MAY BE IN THIS STAGE

- You have never calculated your emissions before.
- You may not have any full-time ESG/emissions management people on your team.

Newcomers

CONTINUED

BEST IMMEDIATE NEXT STEPS

Account

Set a plan to account for your current scope 1 and 2 emissions — emissions that come from the direct fuel and energy consumption from your operations. This involves translating a wide range of business activities — like electricity usage, burning fuel for heating or cooling, and fleet vehicle gas consumption — to a carbon dioxide equivalent (CO_2e). You can try to calculate this manually in spreadsheets, by researching the appropriate emissions factors and gathering relevant company data. You may also choose to hire a knowledgeable consultant or software provider who can help you walk through the process for the first time.

Align

Align with stakeholders to determine data ownership across your organization. Begin to socialize with these stakeholders the importance, process, and output of calculating carbon emissions, including the fidelity and location of the required data. Ideally, you'll want to set up a team and a framework to carry this work forward into future years.

Scope

If this seems overwhelming, think about how you can reduce the scope of your first inventory. Are there certain business units or geographies that are more pressing to evaluate first? Be sure to clearly define the scope of your inventory so that other stakeholders understand the bounds.

PEER STORIES | NEWCOMER › BUILDER

Private equity firm measures GHG emissions for first time

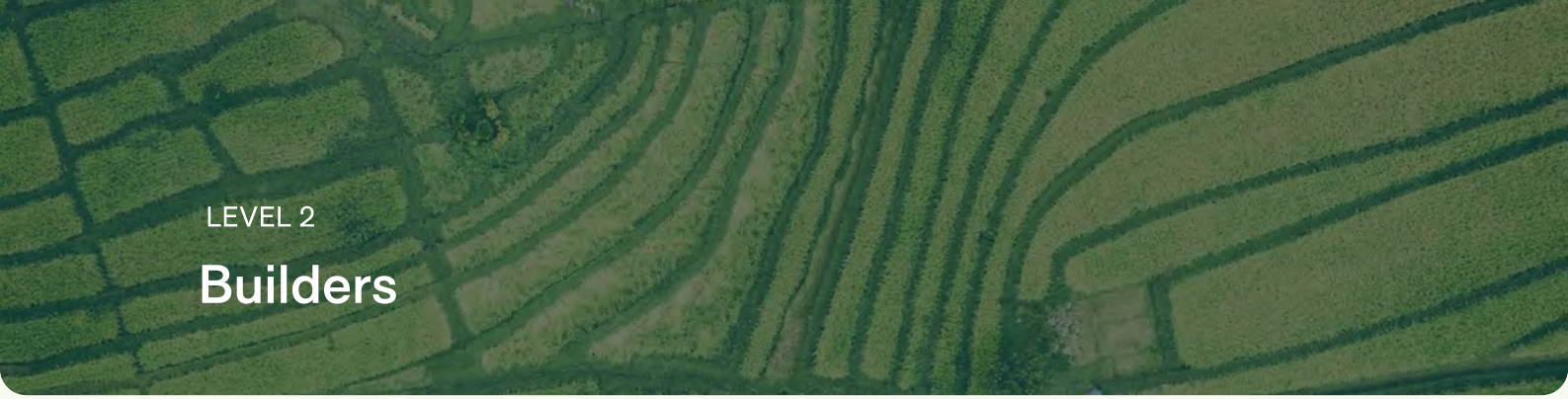
A private equity firm took its first step to measure its operational GHG emissions in 2023. For their first inventory, they chose to focus on scope 1, 2, and upstream scope 3 categories.

As a smaller company, their scope 1 and 2 inventory is relatively straightforward to calculate, but the insights they gained from this first exercise provided a baseline to reference as their operations change and grow in the future.

Sports nutrition company establishes baseline inventory

A sports nutrition company wanted to account for its environmental impact, an initiative driven by a few passionate employees.

They started by developing a baseline emissions inventory for two years, then took the learnings to their leadership team to prove the value of the program and gain alignment on the best ways to reduce their emissions impact.



LEVEL 2

Builders

In the first year of a program, the focus typically lies in building an emissions baseline so that you can understand where the biggest reduction opportunities lie. That requires over-indexing on data collection and analysis to identify trends and then build a plan. That said, you may uncover some simple reduction initiatives you can tackle while completing your first emissions inventory.

RULE OF THUMB

90% of time is spent on emissions data, 10% of time is spent on reduction action.

SIGNS YOU MAY BE IN THIS STAGE

- You're in your first or second year of emissions data collection or reporting.
- You're focused on your scope 1 and 2 emissions data, not scope 3.
- You may be operating as a team of one.
- Your primary goal of emissions calculation is for tracking and reporting — understanding where you stand today, so that you can communicate your status with customers, investors, and other stakeholders.

BEST IMMEDIATE NEXT STEPS

Streamline

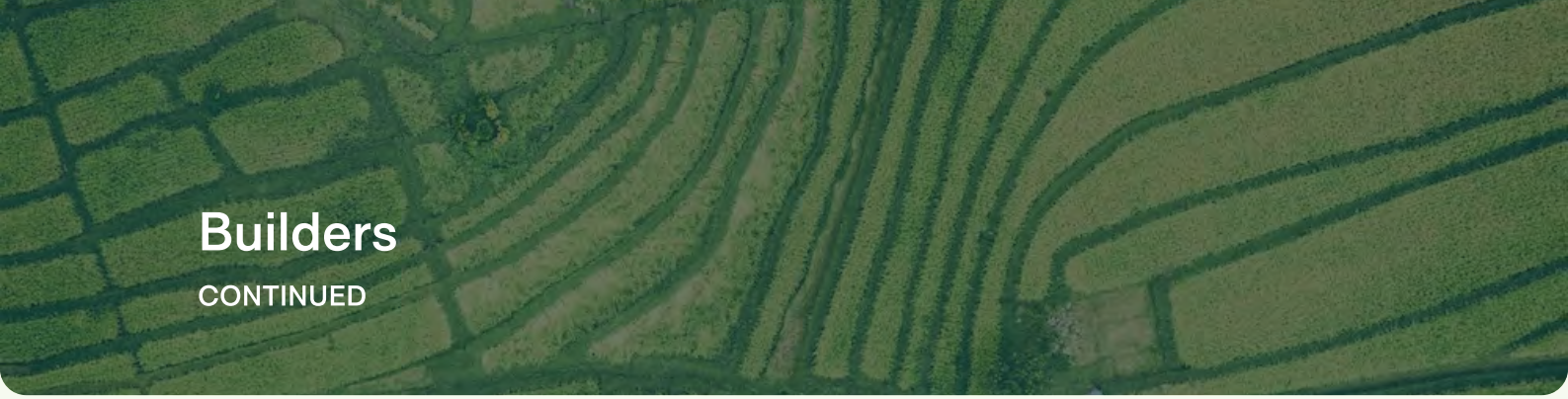
Now that you've been through the data collection and calculation process, look for methods and tools to streamline and improve your ways of working. The more you go through this process, the more comfortable those involved with data collection and decision-making will be.

Set targets

Consider working towards setting a science-based or SBT-aligned decarbonization target, starting with your scope 1 and 2 emissions.

Scope 3

Start identifying your most material scope 3 categories to incorporate into your next emissions inventory. Use estimates, industry benchmarks, and/or a materiality assessment to predict the largest categories to focus on.



Builders

CONTINUED

PEER STORIES | BUILDER > ACCELERATOR

Pet-care organization understands emissions baseline

A global leading pet-care organization conducted its first-ever GHG inventory for the calendar year 2022. They had a sustainability team of one person, and many of the internal stakeholders responsible for collecting the data didn't have experience with the process, so they needed significant education about its importance and how to pull the right data.

After completing their first inventory, the sustainability team and broader stakeholders not only understood their emissions baseline for the first time, but also gained a better understanding of what's required to produce an inventory, making the following year's process much smoother.

BSR estimates data & sets SBT-aligned target

The non-profit BSR wanted to set a net zero target that aligned with SBTi's Net Zero Standard. As a global, service-based organization that works with an extensive list of companies and contractors, BSR expected that beyond their operational emissions, a bulk of their footprint would come from scope 3 categories 1 (emissions from their contractors) and 6 (business travel).

In the first year, BSR relied on spend-based estimates to account for their contractor-based emissions, which helped them set a scope 3 baseline to use to set ambitious but achievable net-zero targets.

Learn more about BSR's program.

LEVEL 3

Accelerators

Typically, companies in this stage have a stronger sense of where their scope 1 and 2 emissions come from and are beginning to think about how to take action on reducing those emissions. You still will likely spend more of your time on data collection and analysis, particularly as you begin to tackle your biggest scope 3 categories.

RULE OF THUMB

80% of time is spent on emissions data, 20% of time is spent on reduction action.

SIGNS YOU MAY BE IN THIS STAGE

- You're in at least your second year of emissions reporting.
- You have a good handle on your scope 1 and 2 emissions data, and are thinking about setting a target and implementing reduction initiatives.
- You've analyzed your data to understand where the biggest hotspots in scope 1 and 2 reporting sit in your operations.
- You're beginning to tackle calculating some easier scope 3 categories, like employee commuting or business travel, but you haven't yet put energy towards your more material scope 3 categories.

BEST IMMEDIATE NEXT STEPS

Report

You have a few years under your belt and feel comfortable with how your emissions are calculated, so it's time to report publicly. CDP is a great place to start, as well as adding a sustainability section or report to your website.

Targets

If you haven't yet, set a science-based or SBT-aligned reduction target and build a decarbonization plan that addresses the biggest emissions hotspots in your operations.

Scope 3

With operational emissions more under control, turn your attention to the most material scope 3 categories for your business. Begin estimating the emissions associated with your supply chain, downstream product usage, and/or key investments where applicable.

Accelerators

CONTINUED

PEER STORIES | ACCELERATOR > LEADER

Telecom company sets baseline scope 3 inventory

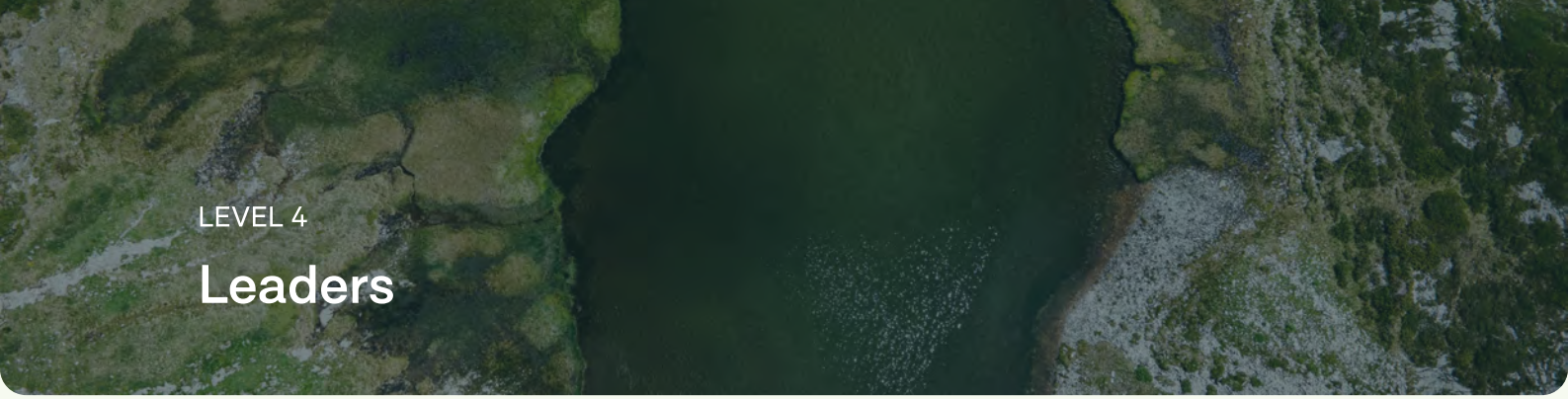
A telecommunications company had been calculating their scope 1 and 2 emissions for a few years, but knew they needed to dive deeper into their larger scope 3 categories (specifically downstream leased assets).

To begin the process, they worked with Optera to familiarize the ESG team and key internal stakeholders with the data needed to calculate the emissions and set a baseline emissions figure for the category. With another year of analysis, they'll be able to report these emissions externally and engage with their customers to reduce the emissions over time.

Infosec company collects primary data for select scope 3 categories

A public information security company had previously reported their scope 1 and 2 emissions, but wanted to include some of their most relevant scope 3 categories in 2022.

While many of the scope 3 categories were estimated in the first year, for two categories — employee commuting and use of sold products — they were determined to calculate emissions using primary data, collected via an employee commuting survey and internal product usage metrics. Knowing the complexity of these calculations, they chose to focus on the other scope 3 categories in the first year, with the plan to add in the remaining scope 3 categories (using their primary data) and focus on setting a reduction target next year.



LEVEL 4

Leaders

This is typically where time spent starts to even out. You have a decent process for collecting your scope 1, 2, and some 3 data and analyzing it to inform reduction plans. While data standards and requirements are always evolving, ideally your program is in a stage where you can focus more of your energy on meeting your targets.

RULE OF THUMB

60% of time is spent on emissions data, 40% of time is spent on reduction action.

SIGNS YOU MAY BE IN THIS STAGE:

- You're focused on calculating your most material scope 3 categories, starting to include primary data in addition to estimates.
- You've built internal alignment to have other departments more involved in your emissions management practice — both for data gathering and for prioritizing investments in reduction initiatives.
- You're still oriented around an annual (or semi-annual) data collection and analysis cadence, rather than a more real-time approach

BEST IMMEDIATE NEXT STEPS

Scope 3 target

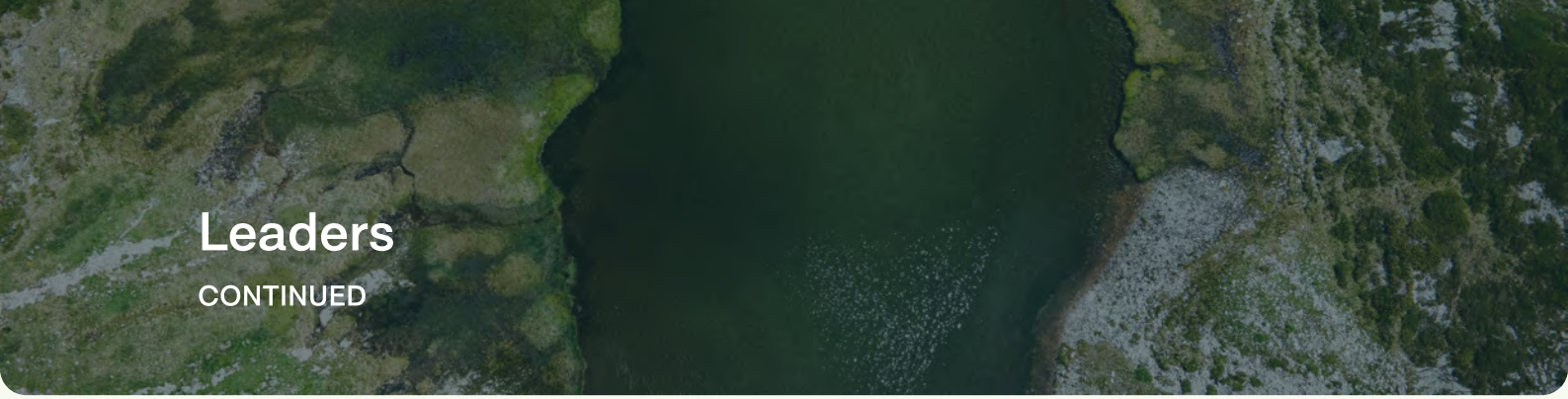
If you haven't already, commit to an SBT-aligned target for reducing your scope 1, 2, and 3 emissions — and publicly communicate your plans for reaching these goals.

Continual data

Work to calculate and use your emissions data on an ongoing basis, not just as an annual exercise. This will allow you to track progress and leading indicators towards your goals throughout the year, rather than waiting to assess performance when the year is done. This level of data is needed for emissions data to drive ongoing business decisions.

Collaborate

Now that you've built internal alignment, look for opportunities to broaden your impact to the rest of your value chain. How can you incentivize and assist your suppliers, partners, and portfolio companies to set and meet their own reduction targets? How can you invest in new technologies and programs that will move the full industry forward?



Leaders

CONTINUED

PEER STORIES | LEADER › TRAILBLAZER

Semiconductor manufacturer sets reduction strategy

A leading semiconductor manufacturer focused their 2023 efforts on calculating and modeling a pathway for an industry-leading 2040 Net Zero Science-Based Target.

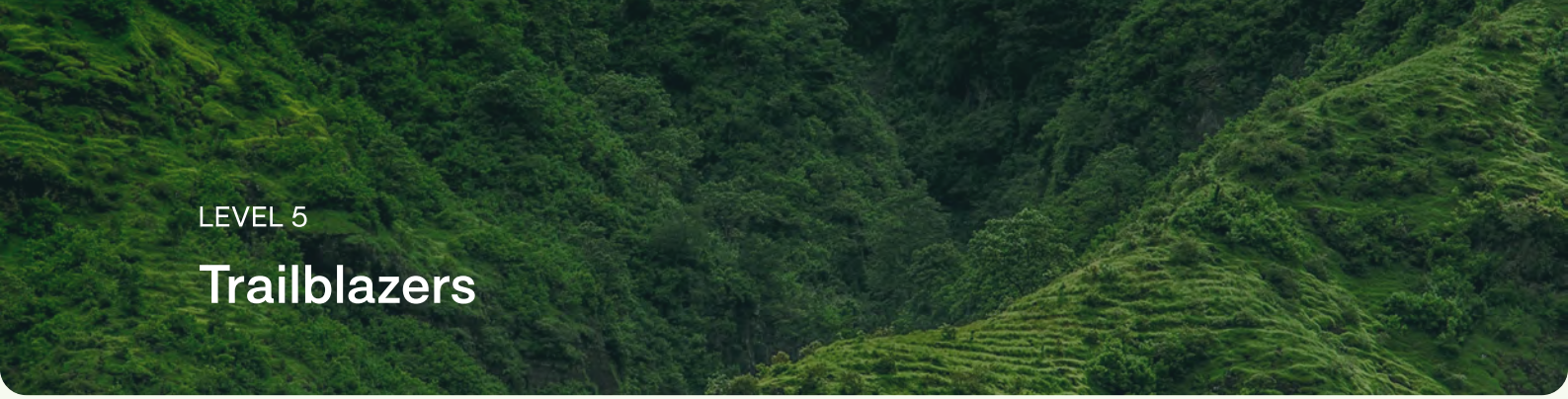
Using past emissions performance, they set an ambitious scope 1, 2, and 3 emissions reduction strategy to meet that target. They also focused on getting their leadership team's buy-in, resulting in the leadership team setting personal KPIs associated with completing their roadmap as planned.

Dell gathers primary emissions data from suppliers

Dell Technologies determined that nearly half of their overall emissions came from their supply chain (scope 3, category 1). They gathered primary emissions and targets data from more than 90 percent of their suppliers to determine their category emissions and identify the biggest opportunities for supply chain decarbonization.

Crucially, they also worked with third-party auditors to validate their scope 3 emissions, a process made much smoother by clear methodology documentation and an easily auditable software platform.

Learn more about Dell's supply chain program.



LEVEL 5

Trailblazers

Your data collection and analysis processes are repeatable and actionable. While you may always need to evolve to align with changing standards or re-baseline from business changes, the bulk of your energy in this phase should be on carrying out reduction action — not just for your operations, but across your value chain.

RULE OF THUMB

30% of time is spent on emissions data, 70% of time is spent on reduction action.

SIGNS YOU MAY BE IN THIS STAGE:

- You're using primary data for the bulk of your emissions calculations, even in scope 3.
- You're actively investing in clear emissions reduction activities and tracking the results, using granular data and clear trends to inform prioritization.
- You're engaging with suppliers and partners to help them meet clear decarbonization goals that align with your scope 3 targets.

BEST IMMEDIATE NEXT STEPS

Ownership

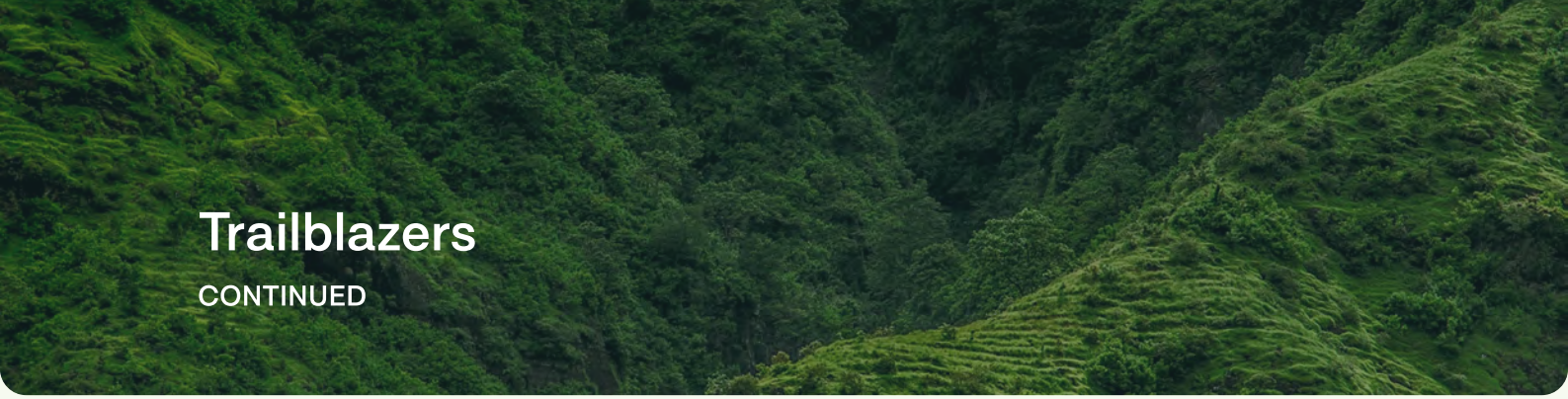
Work with your leadership team — both C-level and department heads — to bake decarbonization into the entire company's business plans. Distributing ownership across teams can help you accelerate action and ensure the entire company is working in the same direction.

Product-level

If you haven't yet, integrate the direct data across your scope 1, 2, and 3 emissions into product-level accounting. This is often the last piece of the puzzle required to move away from industry averages and into fully actionable and strategically valuable emissions data.

Lead

You're ahead of the curve with your climate program, which means you can take the lead in corporate decarbonization. Look for ways to share your learnings and drive forward standardization across your industry to help accelerate action beyond your own company's influence. Consider investing in emerging green technologies that will accelerate your transition to the low-carbon economy.



Trailblazers

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PEER STORIES | TRAILBLAZER

HPE collaborates with suppliers to reduce scope 3 emissions

HPE recognized that supply chain emissions made up a significant portion of their environmental footprint and that they'd need to engage with their suppliers to drive down emissions together.

They set up 80 percent of their manufacturing suppliers on Optera's Supply Chain Manager to access their own emissions data, visualize reduction targets, and track progress against their peers. Focusing on a collaborative, rather than punitive, supplier engagement program has enabled HPE to accelerate their scope 3 net zero goals.

Learn more about HPE's program.

No matter your starting point, pressure is increasing on corporate sustainability leaders to do it all. Practitioners are tasked with measuring emissions, reporting audit-grade metrics, engaging and educating suppliers, driving internal buy-in, educating stakeholders on changing regulatory and market forces, informing business decisions, and, of course, decarbonizing their businesses.

At Optera, we've worked with corporate programs at all levels of maturity since 2006. We've seen programs evolve along the entire maturity curve, all the way from Newcomer to Trailblazer. It's possible and attainable — you just need to take it one step at a time.

The opportunity to make an impact is huge, but the resources are limited. While there is no one playbook, understanding where you're starting can help you balance urgency and ambition with pragmatic next steps. Keep talking with peers and partners to trade notes on how they are tackling similar challenges, especially if they're at similar levels of maturity.

Learn more about Optera at www.opteraclimate.com.

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