Leading GHG Management Strategies and Metrics

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From NAEM's Executive Director

As a professional association of corporate environmental health and safety and sustainability (EHS&S) leaders, NAEM has been tracking the development of greenhouse gas management and reporting programs since the early 2000s. According to our research, the early programs were most commonly initiated by the EHS&S function, which made the business case for energy management as an important opportunity for cost savings.

Indeed, NAEM's research demonstrates that energy efficiency programs have succeeded in delivering tangible, bottom-line impact to those who have invested in the initiatives. It is, perhaps, for this reason that energy consumption and greenhouse gas emissions are among the top five EHS metrics that make it to the C-Suite, according to NAEM's 'Green Metrics that Matter' research.

Over time, however, the business case for tracking, managing and reporting on greenhouse gas emissions has grown beyond operations alone.

In the late 2000s, the emergence of external environmental, social and governance (ESG) reporting advocacy introduced a new business driver for corporate greenhouse gas management. Led by stakeholder groups such as CDP (formerly the Carbon Disclosure Project) and the Global Reporting Initiative, corporate EHS&S management became a public conversation and even a reputational risk for those who did not actively participate.

Not only did this demand for transparency spur a new commitment among industry leaders with well-established greenhouse gas management programs, but it also broadened the imperative to those companies deeper within supply chains and without strong consumer-facing brands.

Since that time, new regulatory requirements have created compliance obligations associated with formal GHG management, even as customer reporting requirements (specifically, from large industry leaders) now offer market-based incentives for measuring, managing and reporting on program performance.

And most recently, the conversation around greenhouse gas management has reached a new turning point in the context of the papal encyclical on Climate, the Paris Climate Accord and the unprecedented appeal from the corporate community for GHG mitigation.

Taken together, these elements suggest that greenhouse gas management has become a cornerstone of corporate EHS&S management. NAEM fielded this survey to help those who lead these efforts, our members, in their pursuit of continuous improvement in their greenhouse gas programs.

This report does not reflect the full perspective of the business community, nor the various ways that companies are deriving business value from their greenhouse gas management programs. It does, however, reflect the momentum greenhouse gas management has gained within the corporate community and the significant progress companies have made toward their goals. It's also a valuable reminder that one bold act of leadership begets another. We are proud to see that leadership reflected in the data that demonstrate the difference our members are making every day.

Sincerely,

Carol Singer Neuvelt
Executive Director, NAEM

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About NAEM

The National Association for Environmental Management (NAEM) empowers corporate leaders to advance environmental stewardship, create safe and healthy workplaces and promote global sustainability. As the largest professional community for EHS and sustainability decision-makers, we provide peer-led educational conferences, benchmarking research and an active network for sharing solutions to today's corporate EHS and sustainability management challenges. Visit NAEM online at www.naem.org.

About this Report

NAEM's *Leading GHG Management Strategies and Metrics* report is designed to be an in-depth benchmark of corporate greenhouse gas management programs for those who are interested in understanding how their peers are measuring, managing and reporting on their emissions. This comprehensive report provides detailed program descriptions by key demographic characteristics and level of maturity, as well as verbatim insights into why respondents are using the strategies they are.

This report provides EHS&S decision-makers with a unique resource they can use to:

- Evaluate how their company's programs compare to those of their peers
- Identify strategies they can introduce to advance along the maturity curve
- Make the business case for program spending or reporting initiatives
- Decide how to measure their program performance
- Communicate effectively with their leadership team
- Establish leading-edge metrics

What You'll Find Inside

This report combines quantitative and qualitative data to shed light on how corporate GHG programs are defined, the types of activities that are most common among responding companies and how those programs compare by key demographic characteristics. The analysis also reveals key program details by the level of program formality as a proxy for 'maturity.' This provides a unique tool for understanding which initiatives may be worthwhile investments for those looking to advance their strategy.

The following is a snapshot of the main content areas included within this report:

- **Overview:** This section contains a broad analysis of how and why responding companies are approaching greenhouse gas management. Subsequent sections of this report build on the results from this overview, by exploring the main activities included within these programs and how companies compare by maturity.

- **Program Maturity:** The results in this section provide a baseline benchmark for program maturity. The data reveal information such as the length of time companies have been tracking results versus reporting results, how companies self-assessed their own level of program formality and how programs compare by industry and company size.

- **Program Description:** This section provides additional dimension to the portrait of how responding companies are managing their greenhouse gas emissions. To establish a benchmark for best practices, respondents described their programs in terms of a common set of greenhouse gas reduction and mitigation practices. The analysis then compares their program scope to how they assessed their program by level of formality to create broad guidelines for what program maturity looks like at each of three stages.

- **Program Management Strategies by Scope:** The analysis in this section documents how companies are measuring and reporting on their greenhouse gas programs by the 'Scope' of those emissions. The first part of the analysis focuses on Scope 1 and 2 emissions, for which many companies require a similar set of management strategies.

Companies that have established, or plan to establish, a program for Scope 3 emissions also answered questions about this aspect of their overall greenhouse gas program. The analysis reveals the types of companies working on Scope 3 by key demographic characteristics. The results also include qualitative input on the strategies that responding companies deemed most effective in their Scope 3 management efforts.

- **Goals and Metrics:** In this final section of the report, the analysis reveals the metrics responding companies are using to measure their GHG performance, including leading-edge goals such as science-based targets and an internal price on carbon. The results also provide a synthesis of write-in responses related to the reasons why companies set certain goals and metrics.

Executive Summary

The following summarizes key highlights from the research, which NAEM has made available for public distribution to provide insight into how companies are addressing this foundational component of corporate environmental management. This benchmark reflects the perspective of the 90 program managers who contributed to this survey; the results are intended to serve program managers as they make the business case for new investments or compare their progress vis-à-vis their peers.

- **GHG management and reporting are firmly established:** 86 percent of responding companies publicly report GHG metrics on an annual basis. The data also reflect a long-term commitment to reporting, with 30 percent of respondents having tracked greenhouse gas metrics for more than 10 years; 36 percent for six to 10 years; and 32 percent for one to five years. The key external audiences are CDP (formerly the Carbon Disclosure Project), The Global Reporting Initiative and the Dow Jones Sustainability Index.

- **C-Suite interest in GHG Metrics is high:** There also seems to be strong commitment to performance against these metrics at the highest levels of responding companies. Fifty percent report GHG program results to their board of directors, and 29 percent report to their CEO.

- **Program fundamentals are well entrenched:** Top activities include reporting of metrics, facility energy audits, use of energy efficient buildings and recycling programs.

- **Scope 3 programs are emerging:** More than half (54%) of all survey respondents are tracking and publicly reporting Scope 3 emissions. Among those with programs in place, 75 percent track and publicly report their Scope 3 business travel emissions. Those companies with annual revenues greater than $10 billion have particularly robust tracking and reporting programs, underscoring the impact that greenhouse gas tracking is likely having among companies of all sizes, at all points in the supply chain.

- **Science-based goals are gaining traction:** While science-based GHG targets are not yet the norm among responding companies, about 30 percent are actively working to establish them. The main reasons, according to the write-in responses, are: to demonstrate leadership in GHG reporting and reductions, to achieve greater GHG reductions, to align with international standards, and to provide a clear and defensible goal and to comply with regulatory requirement.

List of Figures

Methodology

Background

Since 2008, NAEM has been conducting focused benchmarks on greenhouse gas management, metrics and reporting. These surveys of, and for, the association's leadership companies revealed the key program dimensions and metrics responding companies were using to measure their progress.

In the fall of 2010, the association launched its 'Green Metrics that Matter' initiative as a way to understand which metrics companies were tracking internally, and why. Energy consumption and greenhouse gas emissions were among the top five EHS&S metrics reported to the C-Suite, according to the 75 EHS&S leaders who responded to the survey.

The advent of state and international regulations, as well as the expectations set forth by the Paris Climate Accord have only bolstered the momentum for corporate GHG management. With corporate leaders now reporting on their Scope 3 emissions and establishing science-based targets, a new group of companies is now introducing GHG management programs to respond to customer and stakeholder requirements.

This research was developed to provide both a foundational benchmark for corporate GHG management as well as a snapshot of leading practices.

Research Objective

Based on continued interest from members, NAEM set the objective to identify the GHG metrics that companies are using to track, report and set goals for GHG management. This report was intended to answer these core questions:

- How are peer companies defining their GHG management program?
- What are the core components of a GHG management program?
- What are peer companies doing to manage their GHG emissions?
- Which management strategies are most effective?
- How are peer companies measuring their GHG program performance?
- How are peer companies addressing Scope 3?
- How common are leading-edge metrics such as science-based targets and internal pricing on carbon?

Survey Design

NAEM recruited a committee of 13 members from across industries to assist with identifying the core business challenges EHS&S leaders need to benchmark on GHG management, to refine survey language and to test the survey tool.

The resulting 30-question survey consisted of six sections:

- Company Demographics
- GHG Program Description
- Drivers and Goals
- Scope 1 & 2 Emissions
- Scope 3 Emissions
- Reporting

In addition to answering quantitative questions, the survey also included several open-ended questions related to: the strategies that respondents deemed most effective for reducing Scope 1 and 2 emissions, the business value of Scope 3 programs and why they set (or did not set) the selected metrics.

The online survey was fielded from March to April of 2017.

During April and May of 2017, NAEM also conducted seven qualitative interviews with survey respondents to better understand their greenhouse gas programs and add context to the survey results.

Analysis

After confirming that each company was represented only once, NAEM based its analysis on 90 responses from the EHS&S managers who completed the survey.

To analyze the survey data, NAEM first looked at the survey results by demographic cross-tabs, finding company industry, annual revenue, classification and maturity level of GHG program to be influential factors.

In order to segment respondents by their level of program maturity, the survey asked respondents to self-assess their level of program formality on a scale of 1 to 5, with 1 indicating 'no formal program' and 5 indicating 'formal program.' Based on those responses, NAEM categorized those who characterized their program maturity as a 1 or 2 to be 'Low Maturity,' those who answered 3 to be 'Medium Maturity' and those who answered 4 or 5 to be 'High Maturity.' This description of maturity level is used as a cross-tab throughout the report, so readers can track GHG program maturity at each level and identify where they most relate and have opportunities for improvement of their own GHG programs. NAEM also considered cross-tabs by EHS risk, number of suppliers and geographic presence of operations, but found that those factors did not yield any strong correlations.

Demographics

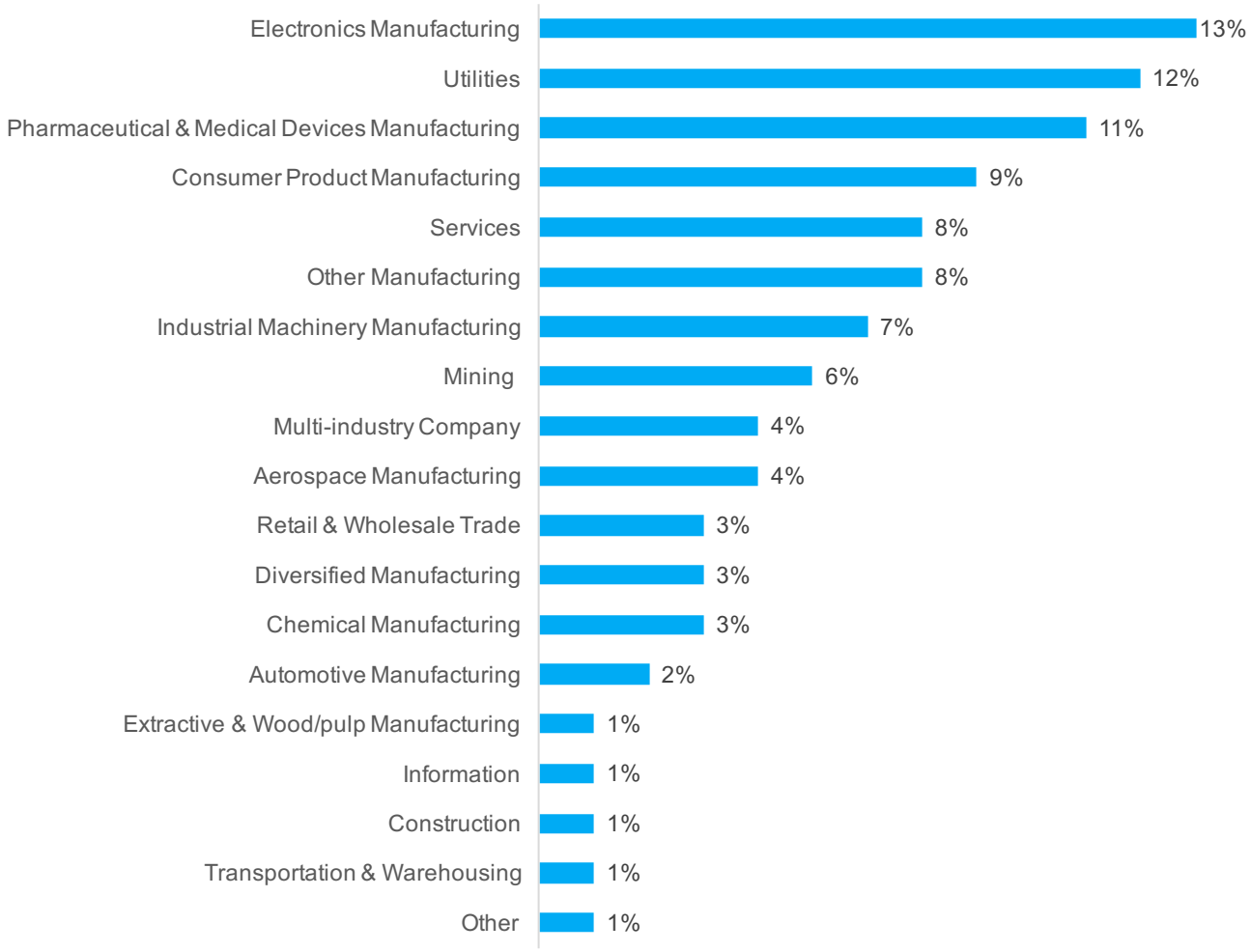
Demographics

The following section provides a demographic analysis of the 90 companies whose employees responded to this survey. In addition to looking at the information by type of company, we provide a snapshot of the job titles of respondents. This is intended to provide valuable context to the insights contained in this report, both in terms of their veracity and the perspective of respondents on greenhouse gas management programs.

These demographics represent the responding company's industry sector, annual revenue, geographic scope of operations, classification and number of suppliers. In addition, survey respondents identified their company's level of EHS risk, relative to other industries. Although this demographic did not have a strong correlation to GHG programs, 17 percent of respondents have a high level of EHS risk, 58 percent medium and 25 percent low.

Primary Industry Sector

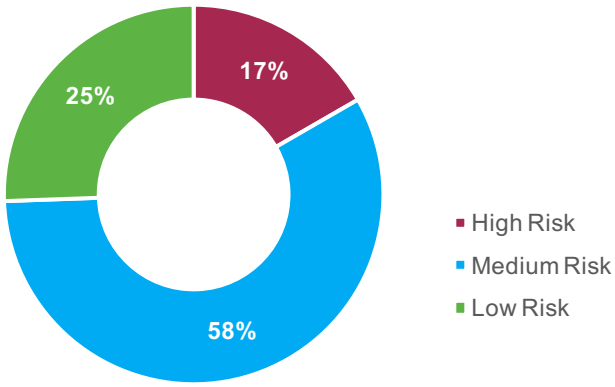
Figure 1



N=90

Degree of EHS Risk

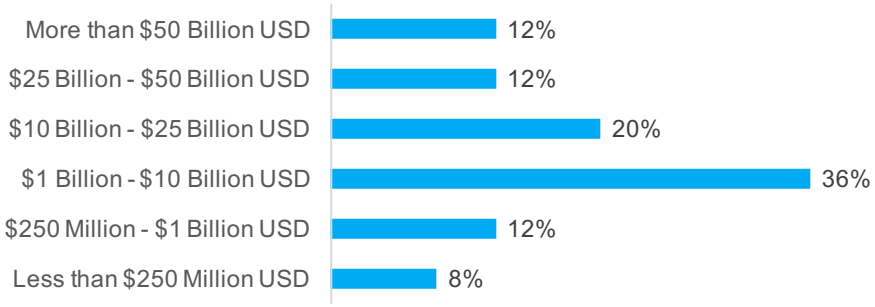
Figure 2



N=90

Annual Revenue

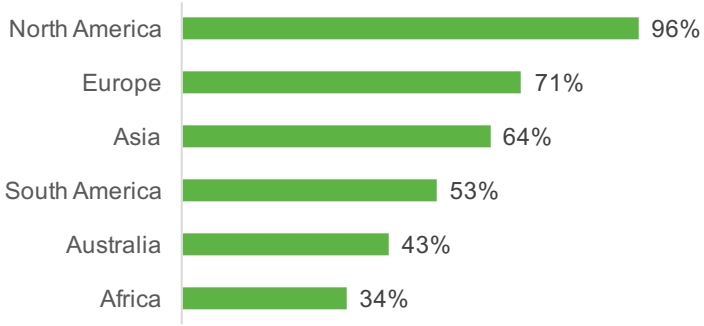
Figure 3



N=90

Geographic Scope of Operations

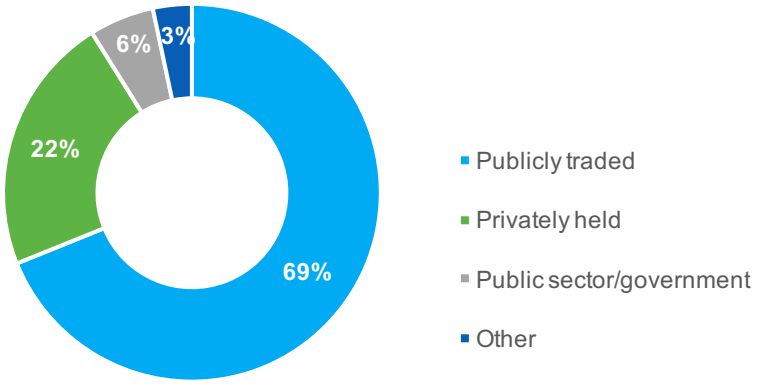
Figure 4



N=90

Company Classification

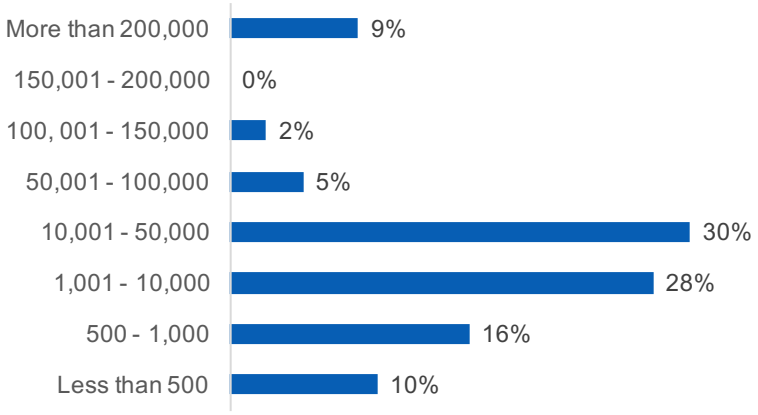
Figure 5



N=90

Number of Suppliers

Figure 6



N=82

The following is a representative list of respondents' job titles. It has been edited to reduce redundancy.

Sample of Respondents' Job Titles

Figure 7

VP-level Titles

Vice President of CSR
Vice President of Corporate Social and Environmental Responsibility
Vice President of EHS & Sustainability
Vice President of Health, Safety and Environment
Chief Sustainability Officer
Head of Climate

Director-level Titles

EHS Director
Director of Sustainability
Director of Environment, Health and Safety, and Risk Management
Director of Global Environmental & Sustainability
Director of Environmental Management
Enterprise EHS Business Leader
Executive Director, Environmental Programs
Global EHS Director
Managing Director of Corporate Sustainability
Operations Sustainability Leader
Senior Director of EHS
Senior Director of Global EHS
Senior Director – Environmental
Sustainability Director
Sustainability Lead

Manager-level Titles

Advisor, Environmental Risk & Compliance
Corporate EHS Manager
Corporate Environmental Manager
Environment Sustainability Manager
EHS Data & Risk Manager
Manager of Global Environmental Stewardship
Energy Manager
Global Environmental Manager
Global Manager of Sustainable Operations
Global Program Manager
Environment & EHS Systems Manager
Environment Advisor
Global Sustainability Manager
Global Utilities & Sustainability Manager
Group Energy & Environment Manager
Manager of Environmental Affairs
Manager of Global EHS Audit & Sustainability
Manager of Environmental & Regulatory Compliance
Manager of Environmental Programs
Manager of Environmental Sustainability
Principle Programs Manager
Program Manager, Corporate Environmental Affairs
Senior Manager of Energy & Environmental Stewardship
Manager of Product Stewardship
Sustainability Manager

Analyst/Specialist Titles

EHS Coordinator
EHS Professional
EHS Specialist
Environmental Engineer
Environmental Analyst
Environmental/Safety Specialist
Project Manager – Environmental
Senior Environmental Engineer
Senior Environmental Specialist
Senior Environmental Coordinator
Principal EHS Specialist
Sustainability Analyst
Project Specialist – Emerging Issues

Overview of GHG Reporting Practices

The following section contains a broad analysis of how and why responding companies are approaching greenhouse gas management. Subsequent sections of this report build on the results from this summary look, by exploring the main activities included within these programs and how companies compare by program maturity.

The Demand for Transparency is Driving Corporate GHG Programs

Stakeholder demand for information about how companies are managing their greenhouse gas emissions is the number one driver for greenhouse gas management programs (47%), according to survey respondents. This imperative for external reporting has become both a reputational risk (38%) as well as an opportunity for companies to engage with stakeholders around their sustainability commitments (32%).

Top Drivers of GHG Programs*

Figure 8

* Respondents selected their top three drivers

N=88

Q: Which of the following GHG regulations apply to your company?

A:

National	75%
State/Province	61%
International	46%
Local	40%
Other	6%

N=80

Cost savings (39%) and regulatory compliance (38%) are also important factors, however. The majority of responding companies (75%) are required to comply with national GHG regulations; 61 percent are required to comply with state-level GHG requirements, and about half (46%) have international GHG regulatory requirements.

In follow-up discussions with research participants, we asked why the CEO and Board of Directors weren't the ones initiating these programs. According to respondents, greenhouse gas programs are considered operational in nature and are therefore embedded within most companies' overall management strategy.

"A lot of the things that are at the top of the list are set up at the mid- and upper-level management level," one respondent said. "They don't filter up in detail to the CEO or the C-suite… They're part of doing your job 'the right way.'"

"It serves the overall strategy of the company," another respondent affirmed.

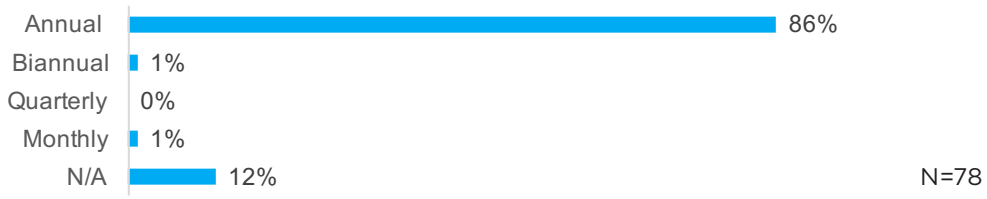
For a participant with a more mature program, the company's public commitment to greenhouse gas management fits within a broader commitment to being a corporate leader. One survey respondent explained, "One of the reasons why [our company] gets involved externally is to help share what we're doing and add our weight to the momentum to help encourage others to do as much as they can as well. Trying to leverage our work to influence others and move them along the path."

86 percent of Responding Companies Publicly Report their GHG Metrics Every Year

The vast majority of responding companies report their GHG metrics externally at least once per year. These results underscore the role of external reporting to corporate GHG programs.

Frequency of External GHG Reporting

Figure 9

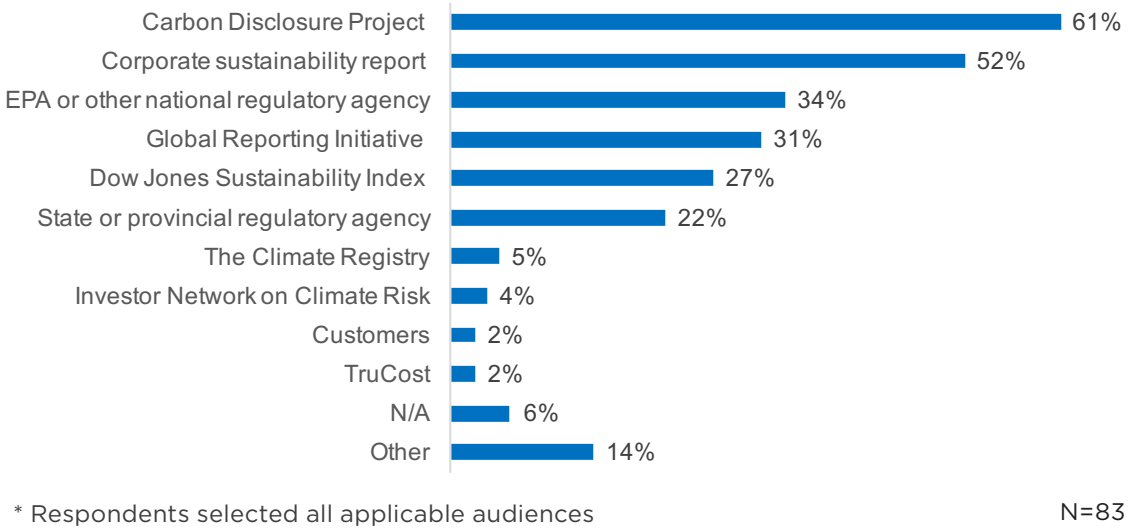


CDP is a Key Stakeholder for External GHG Reporting

Among responding companies, the key external audience for GHG metrics is CDP, formerly known as the Carbon Disclosure Project (61%). More than half (52%) are reporting their GHG metrics via an annual corporate sustainability report; about a third also report their data to regulators (34%), to the Global Reporting Initiative (31%) and to the Dow Jones Sustainability Index (27%).

Key Audience for External Reporting*

Figure 10

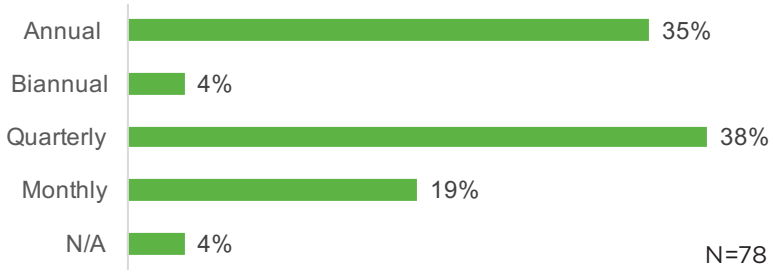


Internal GHG Reporting Often Occurs More Frequently

According to the survey results, most responding companies report frequently on GHG metrics to internal audiences, with 38 percent doing so quarterly and 19 percent doing so monthly.

Frequency of Internal GHG Reporting

Figure 11



Frequency of Internal vs. External GHG Reporting

Figure 12

EXTERNAL \ INTERNAL	Annual	Biannual	Quarterly	Monthly	N/A
Annual	31%	4%	33%	17%	1%
Biannual	0	0	1%	0	0
Quarterly	0	0	0	0	0
Monthly	0	0	0	1%	0
NA	4%	0	4%	1%	3%

N=78

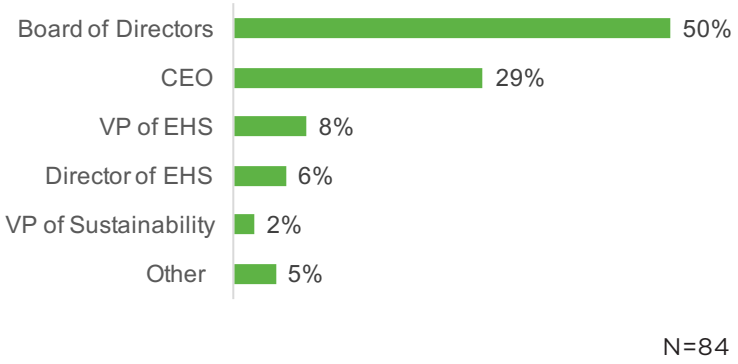
The Board of Directors Reviews GHG Metrics among Half of Responding Companies

Although external reporting is a key business driver for GHG programs, there also seems to be strong commitment to performance against these metrics at the highest levels of responding companies. Approximately 29 percent of responding companies identified the CEO as the highest level to which their GHG metrics are reported, while fully half identified the board as the highest level to which GHG metrics are reported.

While the EHS function may continue to be the internal advocate for these programs, according to research participants, the leadership engagement with these metrics suggests the successful integration of these programs throughout the organization.

Highest Level GHG Metrics are Reported Internally

Figure 13



GHG Reporting Has Internal as Well as External Business Benefits

To better understand the full range of business benefits to GHG reporting, respondents were offered the option to write in the benefits they had achieved. The following infographics provide a summary of verbatim responses, with each concept listed once. While stakeholder engagement and customer requirements were the most frequently mentioned, and are certainly key drivers, the verbatims also reveal a number of internal benefits to GHG reporting related to risk management and operational efficiency.

Benefits of GHG Reporting

Internal

"Keeps focus on direction... set annual improvement (reduction) goals"

"We look at this as sustainable business practices"

"Managing and reducing risks"

"Raises awareness among all levels in the company, especially in the higher management levels"

"Ability to control and reduce emissions and also costs"

"Prepare for the possibility of a price on carbon should the capped limit be exceeded"

"Compliance obligation - required in order to operate"

"Ensuring the strategic direction of the company, including investments in equipment other infrastructure changes"

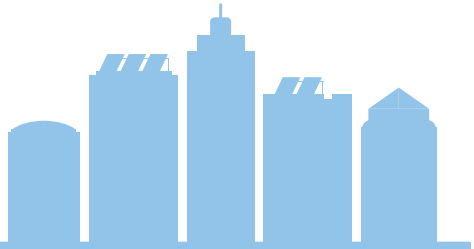
"Compliance made easy"

"Drives internal accountability to meet goals. Leads to cost out and/or revenue generation."

"Creates an imperative for more active management"

"Because a very large percentage of our GHG emissions are from energy usage - we reduce our costs when we reduce our GHG emissions."

"Provides a multi-year view of enterprise risks and provides the foundation for mitigation actions in this area"



External

"Company reputation"

"Discover competitive advantages"

"Likelihood to recommend"

"Increased opportunity to build reputation and establish market share in our industry as a preferred investment option for institutional and impact investors."

"Recognition for early voluntary action"

"Dow Jones Sustainability Index inclusion"

"Would like to remain competitive within peer group"

"Transparency as a supplier of the world's leading companies [in a particular industry]"

"Meeting customer requirements"

"Stakeholder satisfaction"

"Eco-labeling advantages"

"Responsiveness to customer preferences and investor standards are the primary business value associated with GHG measurement and reporting"

GHG Program Maturity

The purpose of this section was to establish a baseline benchmark for program maturity. To do so, respondents were first asked to provide a self-assessment of their program's maturity on a scale of 1 to 5, where 1 indicated 'no formal program' and 5 indicated 'formal program.' Based on base size and how these responses related to actual programmatic activities, these segments were combined into three main stages for the purposes of analysis.

While the maturity assessment itself is directional in nature, the following analysis combines the responses to that question with those regarding longevity to provide some boundaries around these maturity categories. The analysis also provides a breakdown by key demographic characteristics, offering more detailed benchmarking data.

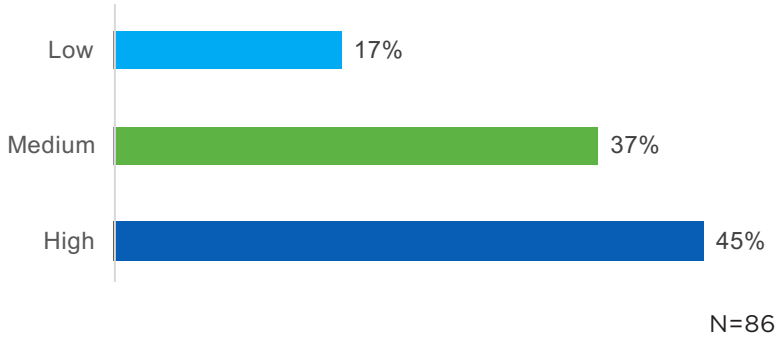
In Section 2, the analysis combines this maturity data with greater detail on specific program initiatives and mitigation tactics to strengthen the portrait of how companies are managing their programs at each stage of development.

About Half of Respondents Have a More Formal GHG Management Program in Place

When asked to assess the maturity of their GHG management program on a scale of 1 to 5, where 1 indicated 'no formal program' and 5 indicated 'formal program,' about half of respondents (45%) reported the presence of a more formal program (4 or 5). The largest individual segment of respondents (37%) evaluated their program maturity as a 3 out of 5. For the purposes of streamlining the analysis, we have organized the subsequent analysis into three main segments: Those with a 'Low Maturity,' those with 'Medium Maturity' and those with a 'High Maturity.'

Composition of Respondent Pool by Program Maturity

Figure 14



Q: Based on your best self-assessment, on a scale of 1-5, how you would best characterize the maturity of your company's current GHG management program? (1-2 = low, 3 = medium, 4-5 = high)

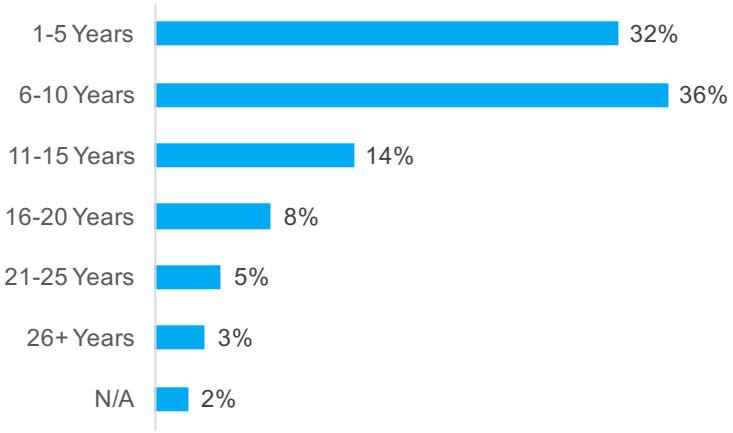
30 Percent of Respondents Have been Tracking GHG Metrics for More than a Decade

Although GHG tracking is a relatively new program for most responding companies, 30 percent have been doing so for more than 10 years. Among 36 percent of respondents, GHG tracking has been an activity for between six and 10 years; among 32 percent of respondents it has been a focus for one to five years.

One-third of all respondents reported that their company had a goal in place for between one to five years. An additional 22 percent said their company started setting goals six to 10 years ago.

Length of Time Respondents have been Tracking GHG Metrics

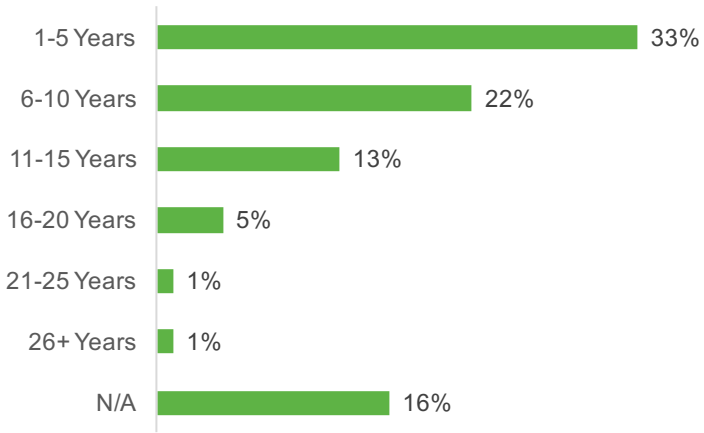
Figure 15



N=87

Length of Time Respondents have had a Corporate GHG Goal

Figure 16



N=87

22 Percent of Those Who Track their GHG Metrics do not Have a Defined GHG Goal

As is the case with many EHS&S programs, companies often begin tracking their GHG metrics long before they establish formal goals. "Not having a goal is not a sign that a company is not making progress," one respondent said. "If you don't have the proper documentation, but you're trying to be a good corporate citizen, you might not set a goal but you would continue to collect the data and make continuous improvement."

In other instances, companies may not set goals at all, despite their commitment to external reporting. "A lot of companies have internal goals that aren't publicly communicated," another respondent explained. "[They] don't set goals because they want to get the biggest reduction today that they can."

Tracking GHG Metrics vs. Presence of a Corporate Goal

Figure 17

Length of Time Tracking GHG Metrics	Length of Time with a Corporate GHG Goal						
	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26+ Years	N/A
1-5 Years	20%	0	0	0	0	0	13%
6-10 Years	9%	16%	1%	0	0	0	8%
11-15 Years	1%	5%	8%	0	0	0	0
16-20 Years	3%	0	2%	2%	0	0	0
21-25 Years	0	1%	1%	1%	1%	0	0
26+ Years	0	0	0	1%	0	1%	1%
N/A	0	0	0	0	0	0	2%

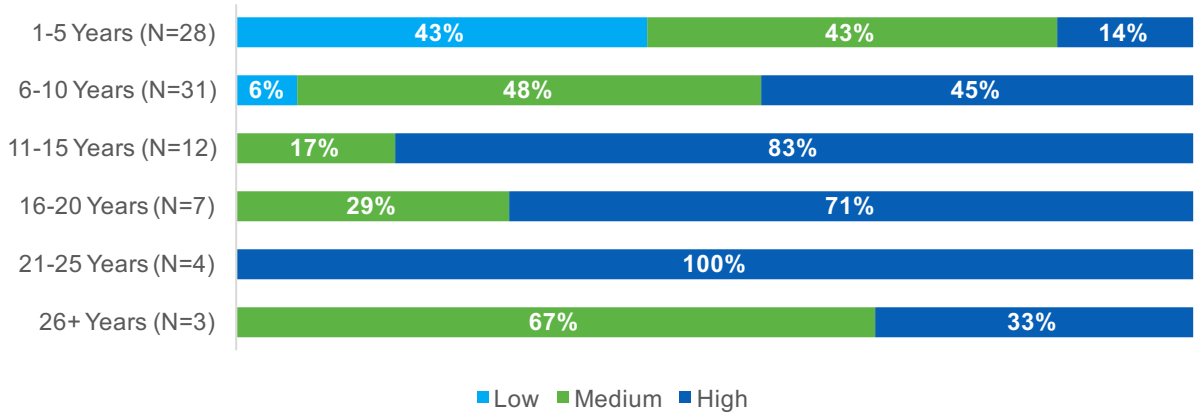
N=86

Those that Have Been Tracking the Longest Tend to Have the Most Mature Programs

If what gets measured gets managed, it's perhaps not surprising that those companies with the longest history of tracking their GHG metrics also self-identify as having mature programs. It's interesting to note however, that among those who have been tracking metrics for 26 years or more, about two-thirds (67%) fell into the 'Medium Maturity' segment. Those with 16 to 20 years of metrics tracking metrics also represented a mix of Medium and High Maturity companies.

Program Maturity by Years Tracking GHG Metrics

Figure 18

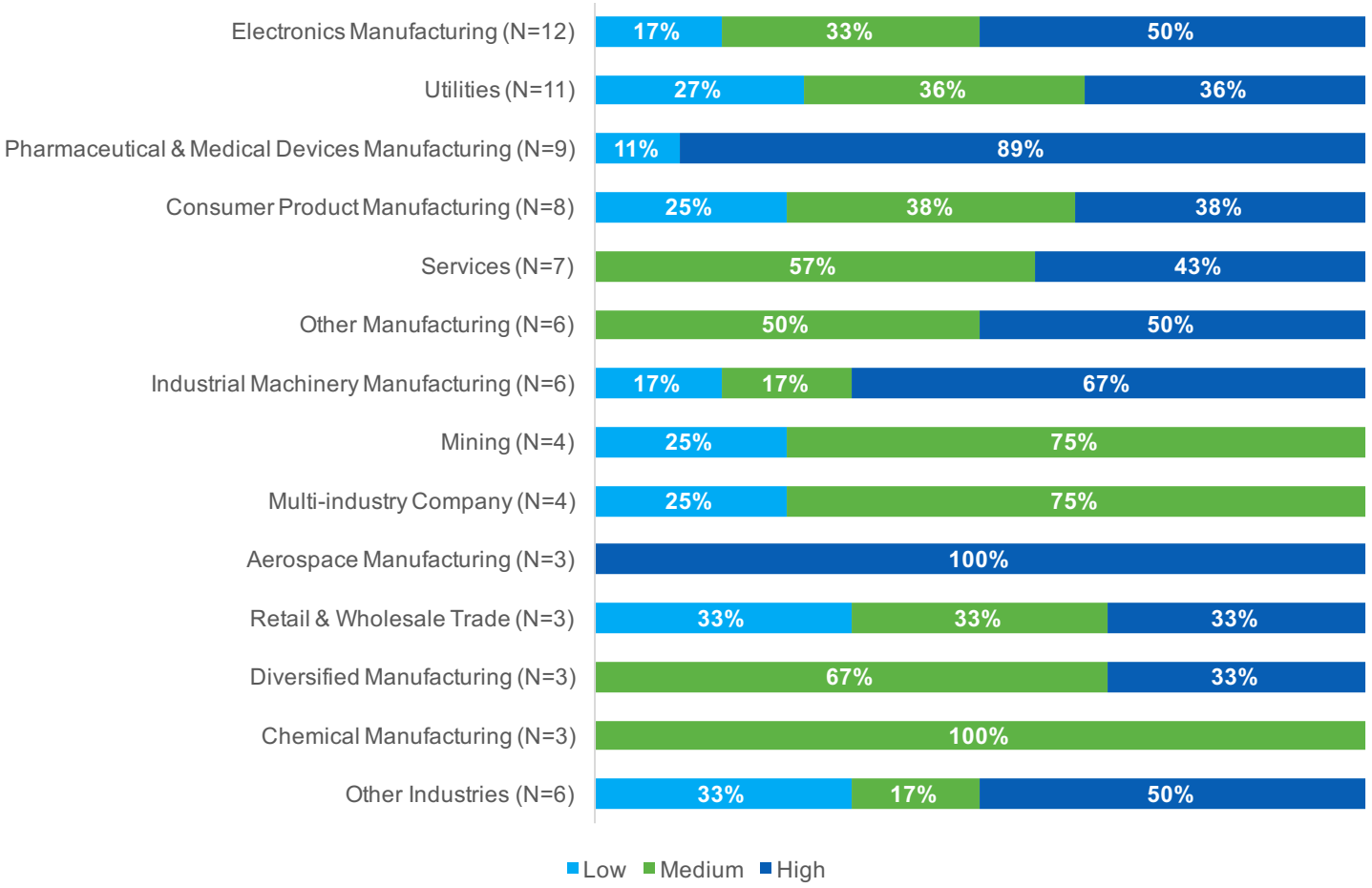


Respondents with the Most Mature Programs are in the Aerospace Manufacturing and Pharmaceutical Industries

While the results in the following chart rely on very low base sizes, there seems to be a disproportionate representation of 'High Maturity' companies within the aerospace (100% of 3 respondents) and pharmaceutical/medical devices (89% of 9 respondents) industries. The overall energy footprint of their respective industry's operations could play a contributing role, as could the leadership of the industry association in advancing these programs among members.

Program Maturity by Industry

Figure 19

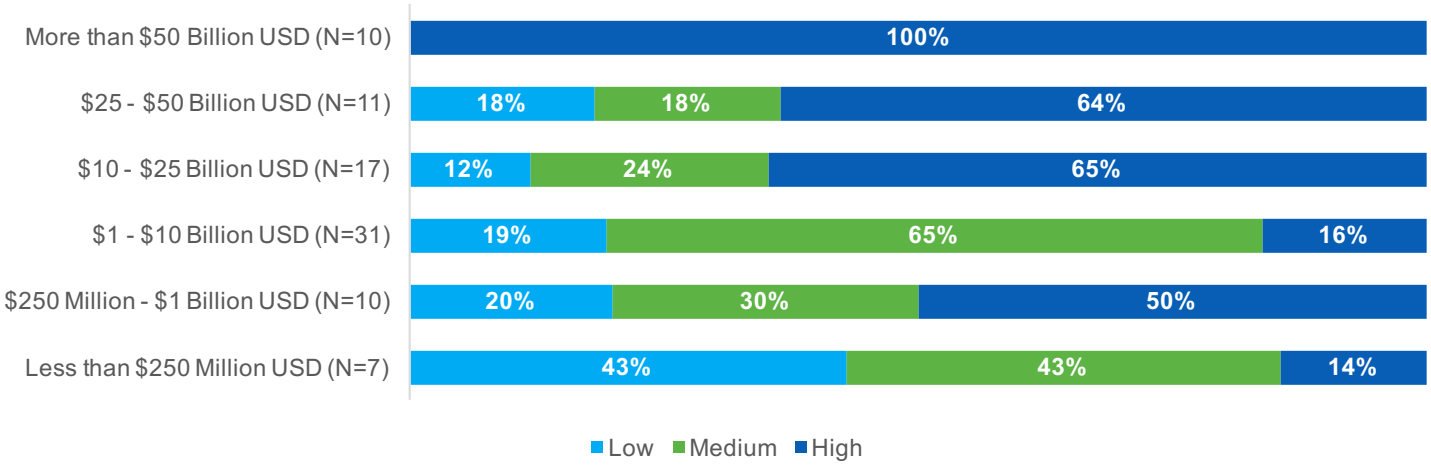


The Larger the Company, the More Mature the Program

Among companies with more than $50 billion in revenue, 100 percent of the 10 respondents in this segment described their program as mature in terms of its formality. Of those with revenues between $25 and $50 billion, 64 percent were at the higher end of the maturity spectrum. This is likely due to their influential role within the business ecosystem and the level of stakeholder interest that accompanies the role.

Program Maturity by Annual Revenue

Figure 20

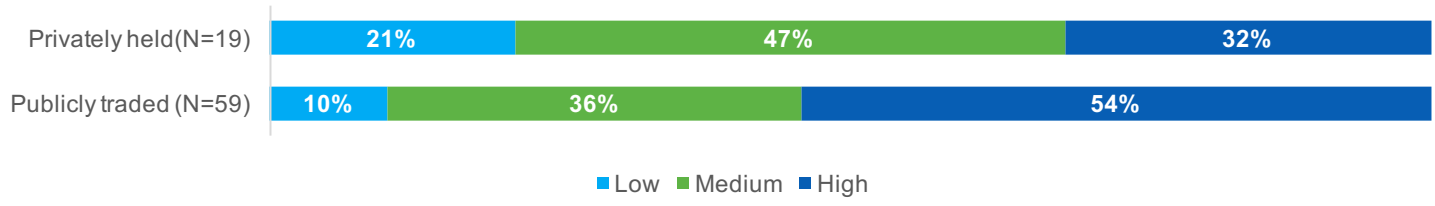


Publicly Traded Companies Tend to Have More Mature Programs

According to the data, publicly held companies tend to have more mature programs, with more than a half of respondents in this group falling into the 'High Maturity' segment. This is likely due to the importance of stakeholder inquiries (i.e., reputational risk) as a business driver for greenhouse gas management programs.

Program Maturity by Company Classification

Figure 21



External Reporting and Improved Reputation Seem to Matter More to those with Highly Mature Programs

Top Drivers of GHG Programs by Program Maturity*

Figure 22

	Low (N=14)	Medium (N=32)	High (N=28)
External reporting	50%	47%	61%
Cost savings	29%	41%	50%
Regulatory compliance	36%	47%	39%
Improved corporate reputation	14%	38%	64%
Stakeholder engagement	7%	41%	50%
Goal setting	14%	16%	46%
CEO mandate	14%	16%	18%
Program improvement	14%	19%	14%
Internal tracking	50%	6%	7%
Board of Directors directive	21%	9%	14%
Accountability	14%	3%	14%
Innovation	0%	6%	14%
The Paris Accord	0%	0%	4%
Other	0%	3%	11%

* Respondents selected their top three drivers

GHG Program Decription

The purpose of this section is to provide additional dimension to the portrait of how responding companies are managing their greenhouse gas emissions. To establish a benchmark for best practices, respondents described their programs in terms of a common set of greenhouse gas reduction and mitigation practices.

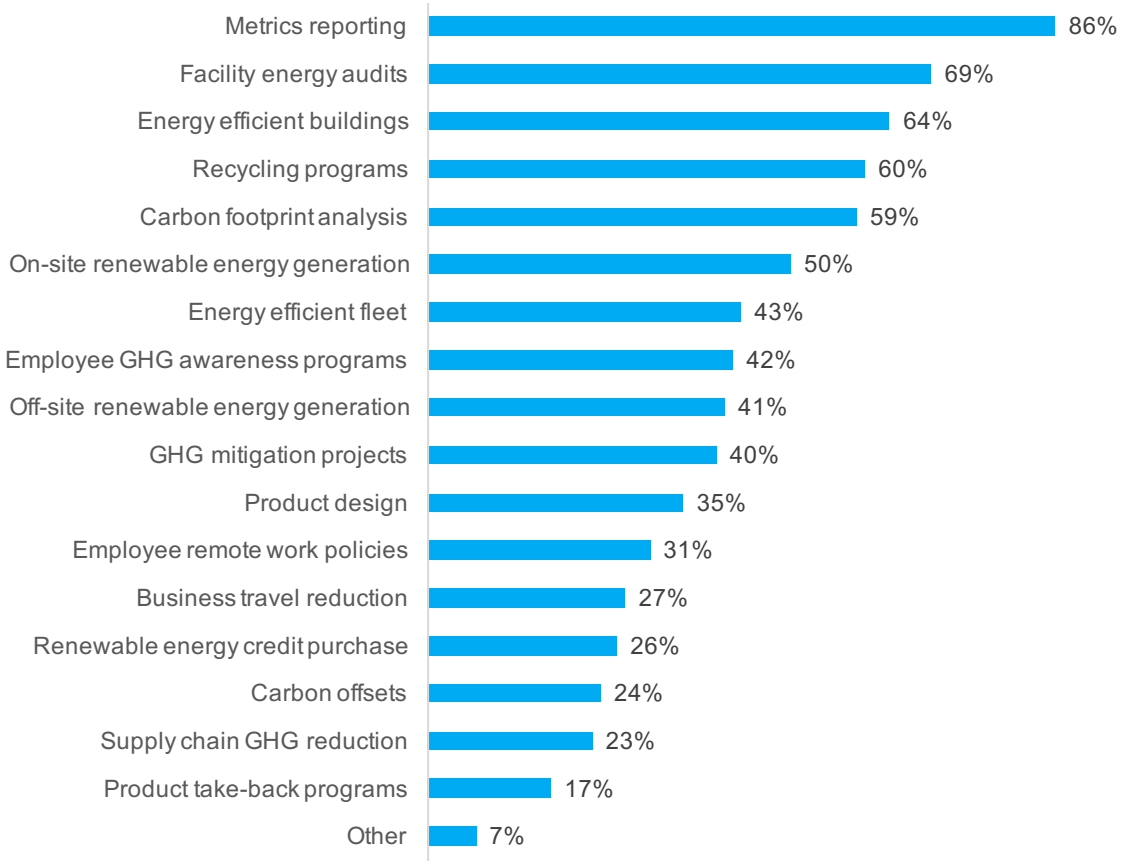
The analysis compares their program scope to how they assessed their program by level of formality to create broad guidelines for what program maturity looks like at each of five stages.

Metrics Reporting, Energy Audits and Energy Efficiency Projects Form the Basis of Most Programs

Given its importance as a driver for program development, measuring, tracking and reporting metrics on GHG metrics is a core aspect of most (86%) corporate GHG programs. Additional initiatives that focus on mitigating the energy footprint of a company's operations include: energy audits (69%), energy efficient buildings (64%), recycling programs (60%) and renewable energy generation (50%).

Activities Included in GHG Management Program*

Figure 23



* Respondents selected all applicable activities N=88

The Greater the Revenue, the More Robust the Programs

Consistent with their level of program maturity, companies with the highest annual revenues also seem to have the most initiatives to manage or reduce their greenhouse gas emissions.

While the data generally suggest that revenue is strongly related to program maturity (and perhaps spend), there's a noteworthy exception among companies in the $1 to $10 billion range. The companies in this segment have fairly mature (formal) programs, yet appear to be involved with fewer management activities than companies in the $250 million to $1 billion segment. This finding could indicate a natural pinchpoint for program spending relative to annual revenue, or it could reflect a flaw in how respondents assessed their programs.

GHG Program Composition by Annual Revenue

Figure 24

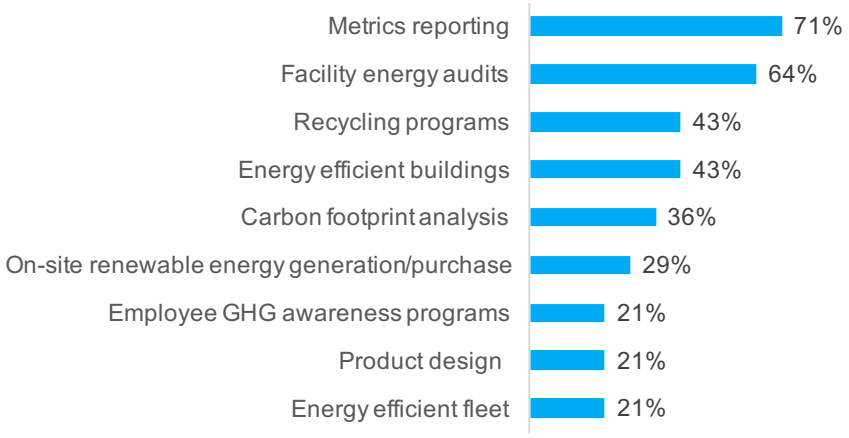
Activities	Less than $250 Million USD	$250 Million - $1 Billion USD	$1 - $10 Billion USD	$10 - $25 Billion USD	$25 - $50 Billion USD	More than $50 Billion USD
Metrics reporting	**57%**	**89%**	**84%**	**94%**	**82%**	**100%**
Facility energy audits	14%	**78%**	**66%**	**78%**	**82%**	**82%**
Energy efficient buildings	43%	**67%**	**53%**	**72%**	**82%**	**73%**
Recycling programs	**57%**	**67%**	47%	**61%**	**73%**	**82%**
Carbon footprint analysis	14%	**78%**	44%	**61%**	**82%**	**91%**
On-site renewable energy generation/purchase	29%	44%	41%	**50%**	**64%**	**82%**
Energy efficient fleet	29%	33%	31%	39%	**73%**	**73%**
Employee GHG awareness programs	14%	44%	31%	**56%**	45%	**64%**
Off-site renewable energy generation/purchase	0%	11%	41%	39%	**64%**	**73%**
GHG mitigation projects	14%	33%	28%	39%	**73%**	**64%**
Product design	0%	**56%**	22%	39%	**55%**	**55%**
Employee remote work policies	29%	33%	19%	33%	27%	**64%**
Business travel reduction	14%	44%	6%	39%	45%	45%
Renewable energy credit purchase	0%	22%	16%	22%	**55%**	**55%**
Carbon offsets	14%	11%	25%	28%	36%	18%
Supply chain GHG reduction	0%	11%	9%	39%	36%	45%
Product take-back programs	0%	0%	9%	22%	36%	36%
Other	0%	22%	3%	0%	18%	9%
N =	**7**	**9**	**32**	**18**	**11**	**11**

GHG Management Programs Usually Begin with Tracking Metrics and Conducting Energy Audits

As programs mature, the activities seem to evolve beyond energy audits to strategies that directly lead to footprint reductions. More mature programs typically include: energy efficient buildings, renewable energy generation, energy efficient fleets and supply chain GHG reductions.

Most Common Activities for Low Maturity Programs

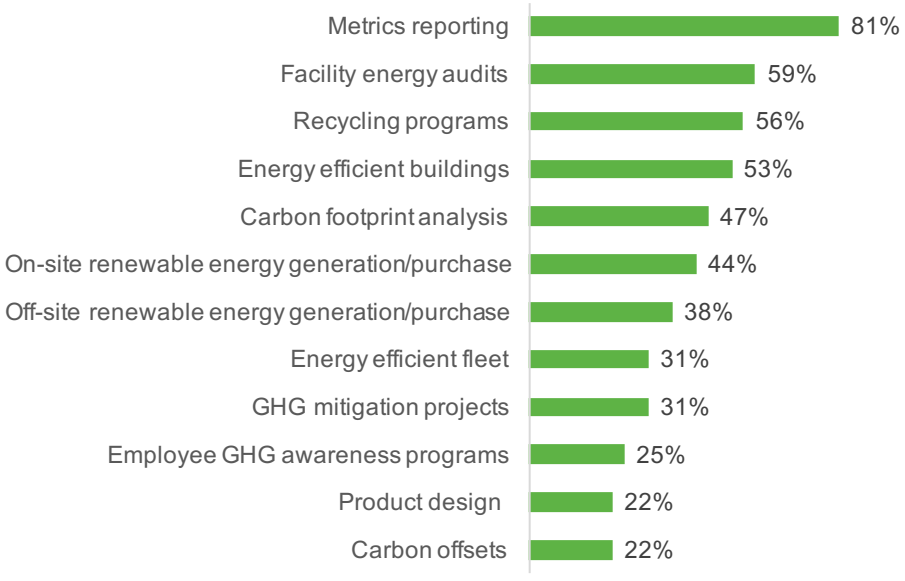
Figure 25



N=15

Most Common Activities for Medium Maturity Programs

Figure 26



N=32

Most Common Activities for High Maturity Programs

Figure 27

N=38

Tracking and Reporting Strategies

Tracking and Reporting Strategies

The purpose of this section is to document how companies are measuring and reporting on their greenhouse gas programs by the 'scope' of those emissions. The survey first asked respondents to select if they track emissions, have an established goal and report externally for their Scope 1, 2 and 3 GHG emissions.

Respondents received more in-depth questions about their tracking and reporting activities, as applicable. The first part of the analysis focuses on Scope 1 and 2 emissions.

Companies that have established, or plan to establish, a program for Scope 3 emissions also answered questions about this aspect of their overall greenhouse gas program. The questionnaire included open-ended questions to elicit insight into how respondents are addressing this emerging area. The responses have been grouped by theme, along with a selection of verbatim responses.

More than Half of Respondents Track Scope 3 Emissions

Almost all of those surveyed (98%) track their Scope 1 emissions, and a majority report on these emissions externally (75%). Scope 2 emissions tracking and reporting also seems to be well-integrated into respondents' programs, with 88 percent tracking and 65 percent reporting on them. More than half (54%) of respondents track their Scope 3 emissions as well; 38 percent report on these results externally.

It's interesting to note that while overall tracking and reporting seem to be the hallmarks of respondents' programs, fewer companies have established goals for their greenhouse gas emissions across all emissions categories. This is consistent with the earlier finding that emissions tracking and reporting are the top activities that characterize most respondents' programs. For some companies, the absence of a goal may belie the fact that the true goal is 'zero,' while for others, the absence of a goal may be a reflection of program maturity.

Extent of Tracking, Goals and Reporting by Scope

Figure 28

	N/A	Track Emissions	Established Goal	Report Externally
Scope 1	1%	98%	65%	75%
Scope 2	11%	88%	60%	65%
Scope 3	46%	54%	11%	38%

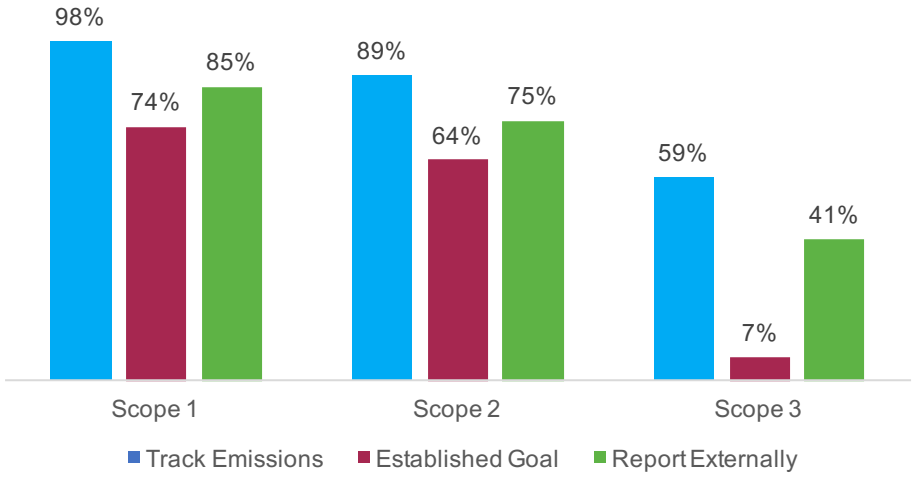
N=89

Privately Held Companies Have Established Programs for Tracking GHG Metrics, but are Less Likely to Report on Them

Privately held companies seem to have robust programs in place for tracking GHG metrics, particularly around Scopes 1 and 2; publicly traded companies tend to have more mature programs, overall. Publicly traded companies are more likely to report on their emissions, with 85 percent reporting on Scope 1 versus 60 percent of reporting among privately held companies; 75 percent report Scope 2 externally (vs. 50% of privately held companies) and 41 percent report their Scope 3 emissions externally (vs. 30% among privately held companies). Again, this is likely a reflection of the importance of stakeholder scrutiny on publicly traded companies, for whom reputational risk is a key driver for GHG management.

Extent of Tracking, Goals and Reporting for Publicly Traded Companies

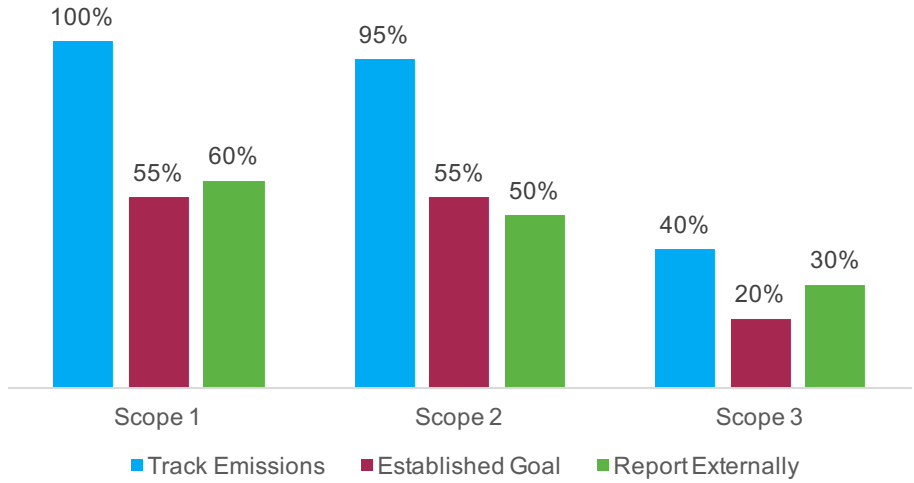
Figure 29



N=61

Extent of Tracking, Goals and Reporting for Privately Held Companies

Figure 30



N=20

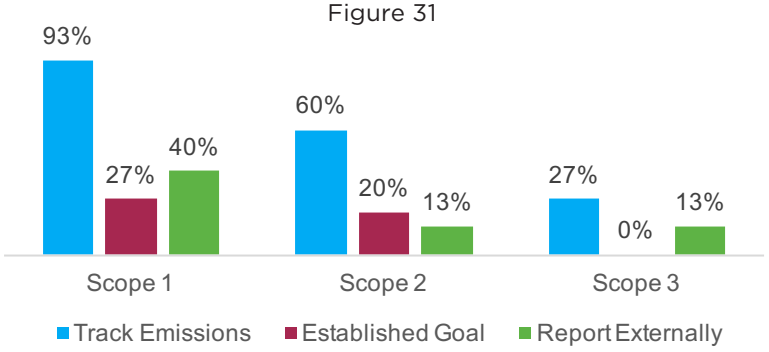
As Programs Mature, Tracking, Reporting and Goals Strengthen Accordingly

It's perhaps not surprising that companies with more established programs have higher levels of tracking metrics, establishing goals and reporting on their metrics externally. Nevertheless, the data reflect a dramatic uptick in activities at each stage of maturity: 'Medium Maturity' companies, for example, are more than twice as likely to have established goals for Scope 1 and 2 emissions than those just starting out. The presence of established goals and the pursuit of external reporting continues to trend upward among 'High Maturity' companies as well.

While some of those leaps seem to level off between companies in the 'Medium' and 'High Maturity' segments, this may reflect the qualitative nature of the assessment, the base size and the demographic composition of those companies with the greatest formality to their programs. Companies with very high revenues, for example, may have diverse operations, which could impact their ability to ensure consistent tracking and reporting across all business units.

Extent of Tracking, Goals and Reporting for Low Maturity Programs

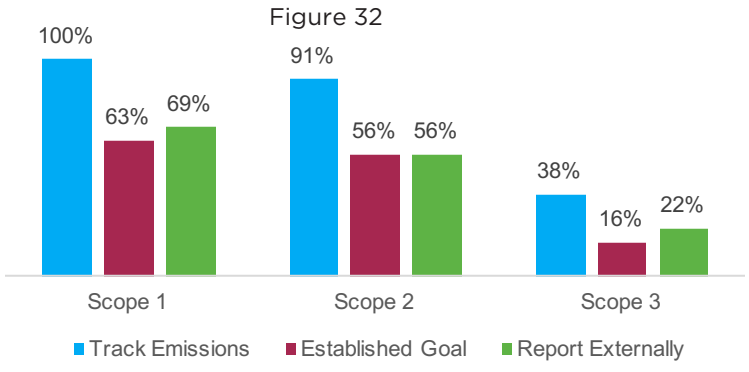
Figure 31



N=15

Extent of Tracking, Goals and Reporting for Medium Maturity Programs

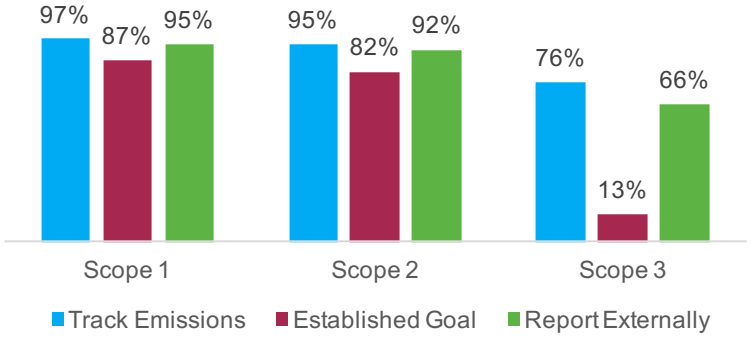
Figure 32



N=32

Extent of Tracking, Goals and Reporting for High Maturity Programs

Figure 33



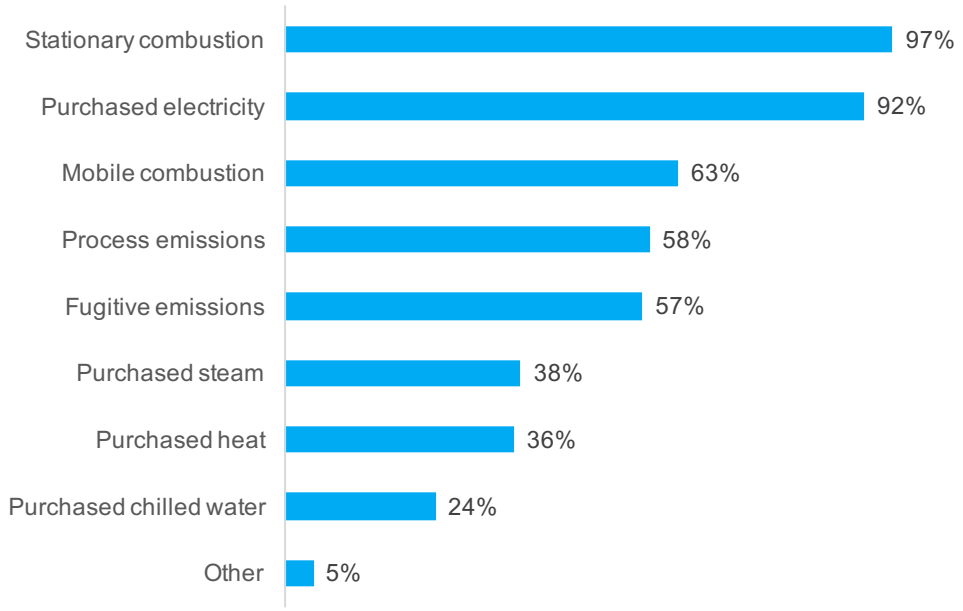
N=38

Companies are Most Commonly Tracking Metrics for Stationary Combustion and Purchased Electricity

According to respondents, most Scope 1 and Scope 2 programs seem to address greenhouse gas emissions from stationary combustion (97%) and purchased electricity (92%). Mobile combustion (63%), process emissions (58%) and fugitive emissions (57%) are also key metrics.

Scope 1 & 2 GHG Emission Metrics Tracked*

Figure 34



* Respondents selected all applicable emission metrics

N=88

Respondents are Reporting on Scope 1 and 2 Emissions Across Hundreds of Facilities

Those who are reporting on their Scope 1 and Scope 2 emissions are doing so, on average, across more than 250 facilities. The vast majority of these sites are production facilities (89%), followed by office buildings (74%), warehouses (61%) and fleets (53%).

Number of Sites Included in Scope 1 & 2 GHG Reporting

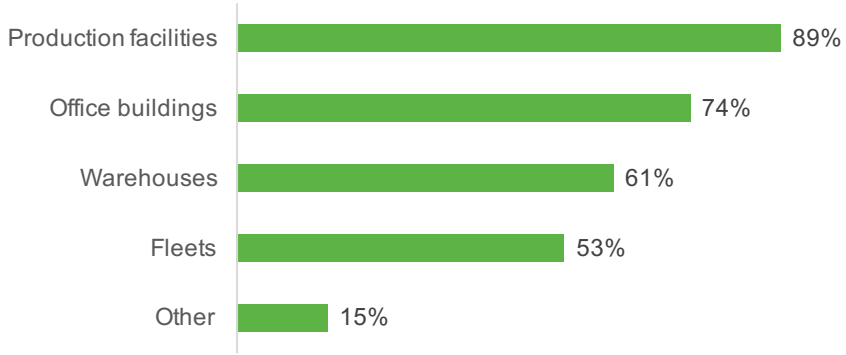
Figure 35

25th Percentile	50th Percentile	75th Percentile	100th Percentile	Average
30	84	250	4400	259

N=85

Operations Included in Scope 1 & 2 Reporting*

Figure 36



* Respondents selected all applicable facilities

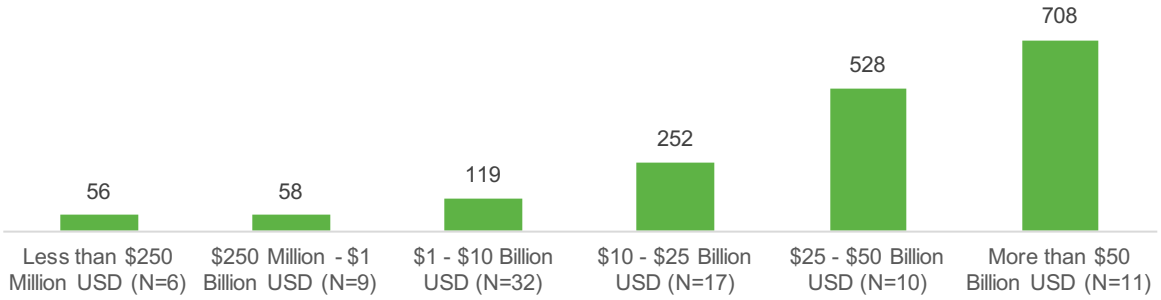
N=88

Larger Companies Report on 500+ Facilities

A look at the number of sites included in Scope 1 and Scope 2 reporting by quartile and by revenue reveals that, among the largest companies, external GHG reporting is an even bigger undertaking. While the average number of sites included in a Scope 1 and Scope 2 report is 259, the largest companies cover as many as 4,400 sites in their report. Those in the largest revenue segment are similarly compiling data from as many as 708 sites, more than twice those at the $10 to $25 billion revenue segment (252).

Average Number of Sites Included in Scope 1 & 2 GHG Reporting by Annual Revenue

Figure 37



Key Strategies for Reducing Scope 1 and Scope 2 Emissions

The survey asked respondents to share the strategies they used that have been the most effective in reducing their GHG emissions. The following is a summary of their responses.

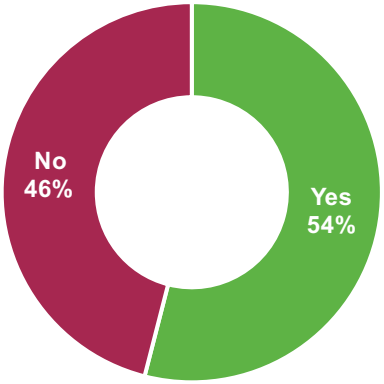
- Establishing metrics and goals
- Monitoring energy usage
- Engaging employees and facility-level leadership
- Conducting energy efficiency audits
- Incentivizing performance
- Upgrading equipment and retrofitting buildings
- Establishing a budget for GHG projects
- Switching to greener energy sources
- Investing in greener infrastructure
- Using consultants
- Involving suppliers
- Supporting employees' energy-efficient choices
- Product innovation

More than Half of Responding Companies have a Scope 3 Program

To better understand the prevalence of, and best practices for, Scope 3 programs, the survey asked the 48 respondents with established Scope 3 programs to answer a focused set of questions. The following analysis reveals the types of companies working on Scope 3, by key demographic characteristics. The results also include qualitative input on the strategies that responding companies deemed most effective in their Scope 3 management efforts.

Presence of a Scope 3 Program Among Respondents

Figure 38



N=89

Q: *What value does your company gain from tracking and/or reporting Scope 3 emissions?*

The survey asked respondents to share the business benefits they have achieved through Scope 3 tracking and reporting. The following is a summary of their verbatim responses.

Demonstrate Corporate Leadership

"Tracking Scope 3 emissions helps us to understand how and where we can reduce these emissions, meet stakeholder (customer and investor) expectations, and get recognition."

"It is one aspect of gaining improved stakeholder engagement (and resultant positive corporate recognition) in this area."

"Improved scoring in third party reporting registries."

"Hard to quantify value, but many of our customers are interested in our GHG emissions and strategies overall."

"Positive corporate reputation, meets customer requirements, and identification of future focus (note: we track more than we report)"

"Reporting our product use emissions is useful since our products are lower emitting than peers. It allows us to quantify the actual GHG reduction benefit of our products and stay clear of marketing hype."

Establishing a Baseline Measurement

"Tracking Scope 3 allows us to determine areas of material emissions in our supply chain and increase the completeness of our external emissions reporting."

"Management awareness and future supplier goal development"

"Tracking Scope 3 emissions provides us with a greater understanding of our full life-cycle impact on the environment, a measure of impact materiality by life-cycle stage and a snapshot of our environmental footprint over time by conducting semi-regular analyses."

"At this time, it provides only an order of magnitude reference."

"Improved understanding of which GHG emissions sources are most material."

"Understanding our complete footprint"

"Increased understanding of the impact our business travel habits and how they relate to our GHG emission profile."

Risk Reduction

"Managing and reducing risks and Business goals made tangible."

"In the transportation/delivery industry segment, Scope 3 emissions have a material impact. In this industry segment failing to report Scope 3 emissions would represent a version of GreenWashing."

Continuous Improvement

"The vast majority of our emissions are Scope 3, so it makes sense to understand those emissions and set target to reduce them."

"We recognize the importance of tracking Scope 3 emissions, considering the majority of our emissions are Scope 3."

"Identifying the key focus areas outside the facilities and operations boundary. Bringing together stakeholders to work on significant projects that reduce product life cycle footprint."

Other

"Reduced transportation cost for logistics"

"Employee engagement — increased awareness of impact on emissions that choice in vehicle selection plays"

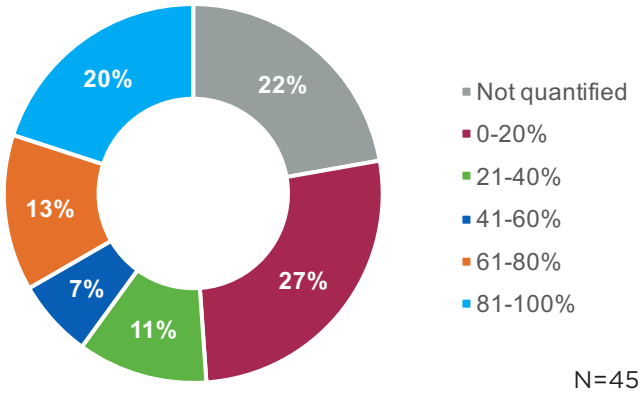
Scope 3 Represents More than 60 Percent of Emissions among One-third of those with Programs in Place

Of companies with Scope 3 programs, Scope 3 emissions are a significant contributor (60%+) to their overall GHG footprint for 33 percent of respondents.

The impact of Scope 3 on the overall footprint, however, doesn't appear to be the only driver of these programs. Indeed, 22 percent of those with Scope 3 programs have not quantified their Scope 3 emissions, and 27 percent report that Scope 3 represents less than 20 percent of their overall footprint.

Percentage of Emissions Classified as Scope 3

Figure 39



Scope 3 Footprints Increase Along with Revenue and Number of Suppliers

As the number of suppliers increases, the percentage of emissions classified as Scope 3 goes up accordingly. Among those companies with 50,000 suppliers or more, the percentage of Scope 3 emissions is more than triple (33%) the percentage at companies with 1,000 suppliers or fewer (10%).

Percentage of GHG Emissions Classified as Scope 3 by Number of Suppliers

Figure 40

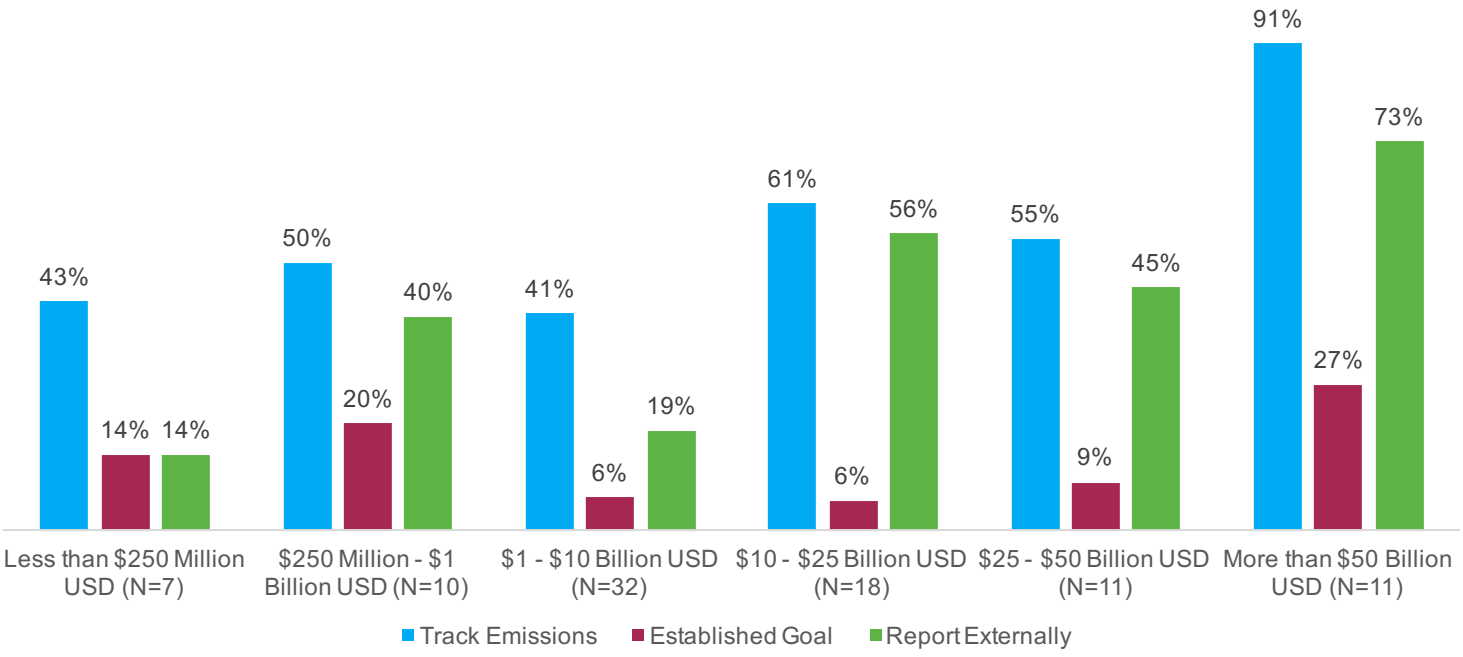
Percentage of Emissions Classified as Scope 3	Number of Suppliers: 1,000 or Less (N=10)	1,001 - 10,000 (N=7)	10,001 - 50,000 (N=19)	50,001=+ (N=6)
81-100%	20%	14%	32%	17%
61-80%	10%	14%	5%	0%
41-60%	10%	14%	11%	33%
21-40%	0%	0%	5%	0%
0-20%	30%	43%	21%	17%
Not quantified	30%	14%	26%	33%

Scope 3 Programs Focus Primarily on Tracking and Reporting Emissions

For companies with Scope 3 programs, the key activities seem to be tracking and reporting metrics externally. These initiatives are much more pronounced among the largest companies in the respondent pool (those with more than $50 billion in revenue) which also likely have the largest number of suppliers. While fewer respondents have established goals for their Scope 3 emissions, the largest companies are also most likely to have done so, an action that could ripple through the broader business ecosystem.

Extent of Tracking, Goals and Reporting for Scope 3 by Revenue

Figure 41



Goal-setting for Scope 3 Remains a Challenge

Establishing goals for Scope 3 programs may not yet be feasible for many companies; however, the write-in responses provide insight into this challenge:

"We track and report Scope 3 emissions only for completeness. Due to our overall limited ability to control the total Scope 3 emissions, we find it difficult to assign reduction targets, either qualitative or quantitative," commented one respondent. "We recognize the desirability of reducing these emissions and have quite aggressive information programs for our customers and the energy consumer, which encourage participation in available energy efficiency programs."

Based on the Results, Services and Diversified Manufacturing Rise to the Top

Unlike the program maturity results in Figure 19 (see page 26), the industries that most actively track and report their Scope 3 emissions are in diversified manufacturing, services, industrial machinery and aerospace. These results are likely shaped by the very low base sizes and the program maturity levels of responding companies, but they could also reflect the companies' role within the broader supply chain and the types of inquiries coming from customers and stakeholders.

Extent of Tracking, Goals and Reporting for Scope 3 by Industry

Figure 42

	Track Emissions	Established Goal	Report Externally
Electronics Manufacturing (N=12)	58%	17%	33%
Utilities (N=11)	55%	0%	36%
Pharmaceutical & Medical Devices Manufacturing (N=10)	60%	10%	50%
Consumer Product Manufacturing (N=8)	38%	0%	13%
Services (N=6)	83%	17%	83%
Other Manufacturing (N=7)	43%	14%	14%
Industrial Machinery Manufacturing (N=6)	83%	17%	67%
Mining (N=5)	20%	0%	20%
Multi-industry Company (N=4)	25%	25%	25%
Aerospace Manufacturing (N=4)	75%	0%	50%
Retail & Wholesale Trade (N=3)	33%	0%	0%
Diversified Manufacturing (N=3)	100%	33%	100%
Chemical Manufacturing (N=3)	33%	0%	33%
Other Industries (N=7)	43%	29%	29%

Scope 3 Programs Often Focus on Largest Suppliers

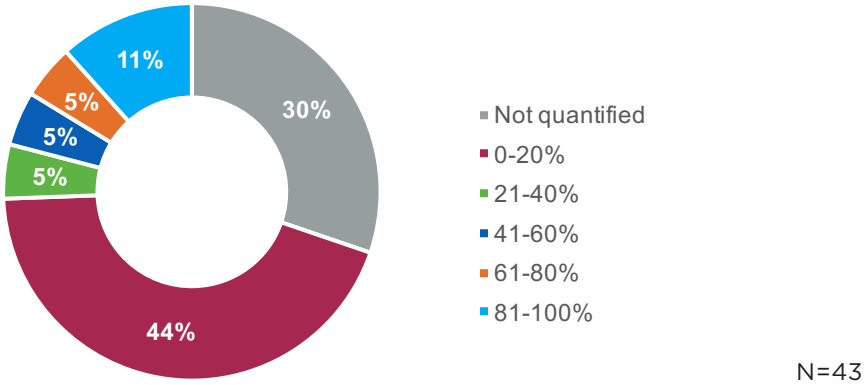
In follow-up discussions, research participants explained that many Scope 3 programs are limited to the suppliers with whom they spend the most money, who pose the biggest risk or who have the biggest potential impact on the company's footprint. This tracks with the data in the chart below, which reflects that respondents tend to focus their Scope 3 reporting efforts on a small percentage of their overall supply chain.

As with Scope 1 and Scope 2 programs, companies usually begin by tracking Scope 3 metrics internally "to get a baseline so they can set a goal," one respondent said. "You collect the data but you're going through a documentation process that's used as a proof of the data."

In the analysis, NAEM also looked at these numbers by revenue and by industry, but found the base sizes too small to indicate a clear trend.

Percentage of Suppliers Included in Scope 3 Emission Reporting

Figure 43



N=43

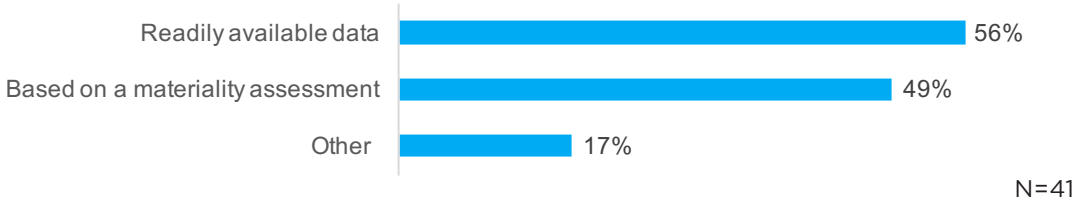
Companies Report Scope 3 Based on Available Information and What is Important to Stakeholders

When it comes to reporting on Scope 3 emissions, companies seem to share data based on two key criteria: data they easily have access to (56%) and what their stakeholders deem relevant, based on a materiality assessment (49%).

The impact of the materiality assessment in framing Scope 3 programs underscores the influential role of stakeholders and the demand for transparency in driving greenhouse gas management. (See Figure 8 on page 16.)

How Companies Decide which Scope 3 Data to Report

Figure 44

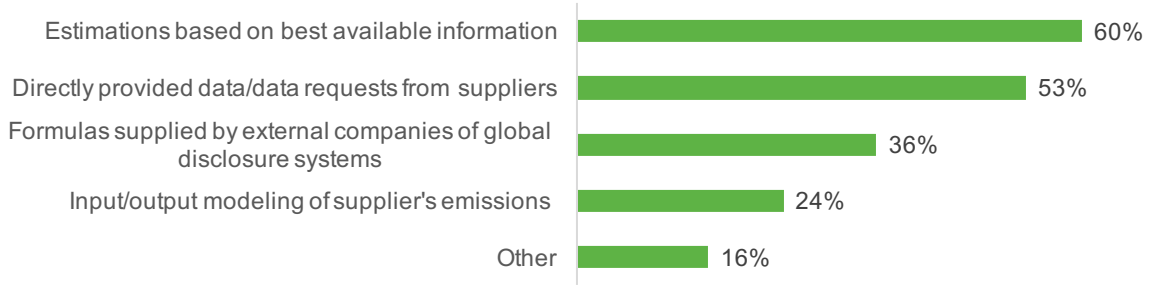


Companies are Relying on Supplier Surveys to Calculate their Scope 3 Footprints

The following results provide more dimension to the data in the previous chart by demonstrating that Scope 3 emissions data is mainly being calculated on the 'best available information' (60%) or from data provided directly by suppliers themselves (53%). This chart also hints at the ripple effect that Scope 3 reporting could be having on entire supply chains: As major customers start requesting GHG data, it could be driving tracking and reporting among their business partner companies as well.

How Companies Measure Scope 3 Emissions*

Figure 45



* Respondents selected all applicable measurements

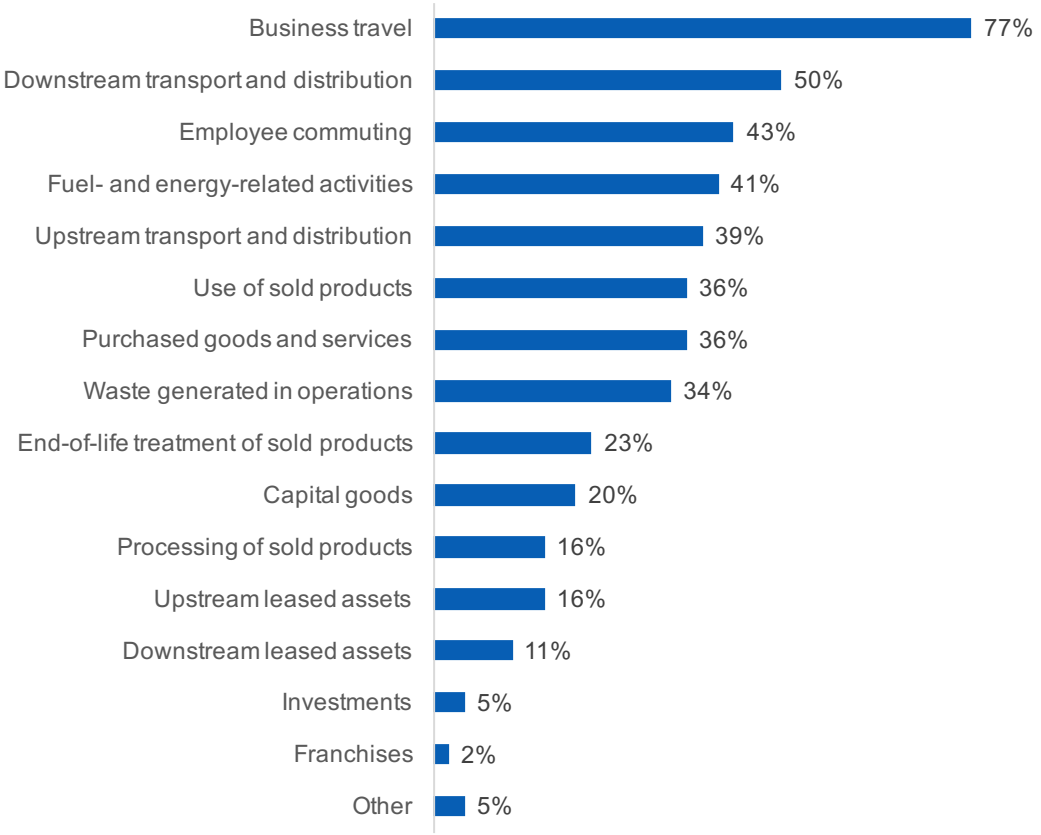
N=45

Travel is the Top Area Included in Most Scope 3 Metrics

Among responding companies, employee travel tops the Scope 3 metrics they track. Business travel is at the top of the list (77%), along with employee commuting (43%). Transportation is a key area of other aspects of Scope 3 as well, with downstream transportation and distribution representing a core metric among 50 percent of respondents and upstream transportation and distribution tracked by 39 percent.

Scope 3 GHG Emissions Tracked*

Figure 46



* Respondents selected all applicable areas

N=44

Most Effective Scope 3 Program Initiatives

The following is a summary of the most effective initiatives for Scope 3 GHG management, according to the responding companies with programs in place.

Established Goals

- "Set 2015 'market-place goals' to increase revenues from products that reduce customers' GHG footprint, and 2020 'Sustainable Innovation' goal to ensure that all new products provide a sustainability benefit, which could include energy and GHG reduction."

Product Innovation

- "Company continues to improve the performance of its server and storage products with each new product generation, enabling our clients to do more work with less energy. This increases the efficiency of their IT operations and enables applications and systems which improve the energy efficiency of their operations, achieving further GHG reductions."
- "Reduction of incoming materials by optimizing production and packaging"
- "Product energy efficiency incorporated into design"

Changes in Logistics

- "We have many initiatives to decrease the GHG emissions and increase the efficiency of product transport, such as increasing capacity utilization, using more efficient distribution networks, switching modes, like from truck to rail, and participating in EPA SmartWay. We also offset travel emissions with REDD+ offset reduction projects that also have community and biodiversity benefits."
- "Select suppliers with more efficient transportation methods"
- "Find suppliers that are closer to the facilities that they serve"

Telecommuting

- "Our travel reduction and employee telecommuting policies and virtual meeting capabilities result in reductions of our business travel and employee commuting related Scope 3 emissions"
- "Teleconferencing and other travel reduction strategies"
- "Greener commuting incentives"

Supplier Engagement and Requirements

- "Working with ground transport suppliers to utilize alternative fuel"
- "Air Transport Suppliers upgrading their fleet of aircraft"
- "Developed a 'Supplier Code of Conduct,' which states that suppliers should enact procedures to establish and track progress toward sustainability goals that address reduction of greenhouse gas emissions"
- "In 2015 we adopted a public goal that by 2020 100% of key suppliers will manage their environmental impacts through effective sustainability programs and 90% of key suppliers will institute reduction goals for greenhouse gas emissions, waste disposal and water withdrawal. We are working to engage with key suppliers to educate, establish programs and identify opportunities in order to achieve this goal."
- "Company has required its suppliers to inventory energy use and GHG emissions from their operations, set reduction goals, report on them publicly and ask their suppliers to do the same. As our suppliers implement these requirements and establish goals and objectives for their operations, it will result in real reductions in energy use and GHG emissions."

Goals and Metrics

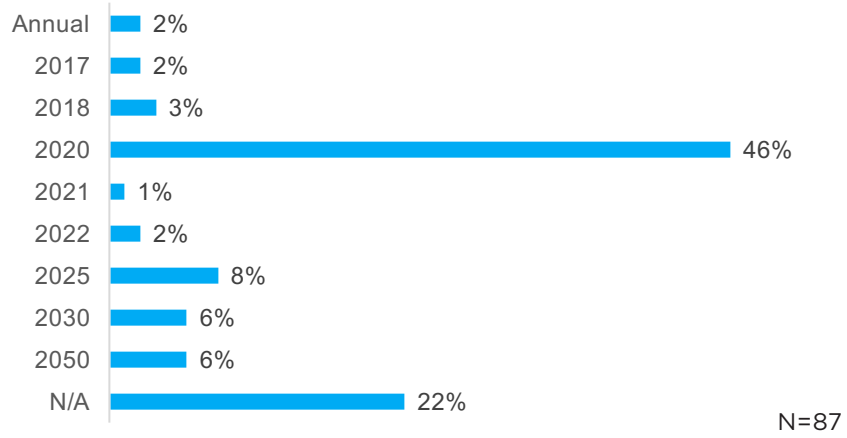
In this final section of the report, we look at the metrics companies are using to track their GHG emissions and the leading-edge goals they are setting. In addition to reporting on the survey results, the analysis includes a synthesis of write-in responses related to the reasons why companies set their selected goals and metrics.

Timeframe for GHG Goals May be Arbitrary, Except Among those Seeking Long-term ROI

About half of responding companies have set their GHG goals against a 2020 timeframe, a date that research participants said was largely arbitrary. Because many companies set five-year growth targets, it made sense to align the GHG goals with that horizon.

Timeframe for Current GHG Goals

Figure 47



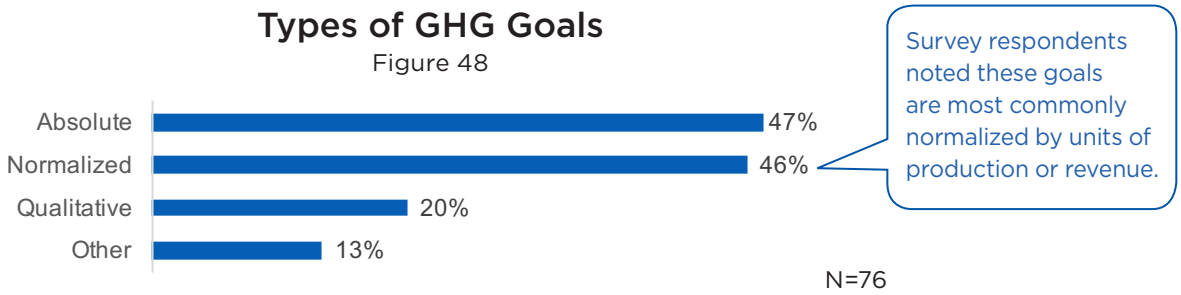
Respondents Have a Mix of Absolute and Normalized Goals

When it comes to the types of GHG goals that respondents are using, the survey results reflect an even mix of absolute (47%) and normalized (46%) metrics. Those using normalized metrics most often employ units of production or revenue, according to research participants.

Some companies may use both types, for different purposes and different audiences. At one responding company, for example, the EHS team reports absolute metrics but has normalized metrics to show progress against goals.

Types of GHG Goals

Figure 48



Science-Based GHG Targets are Not Yet the Norm, but are Gaining Traction

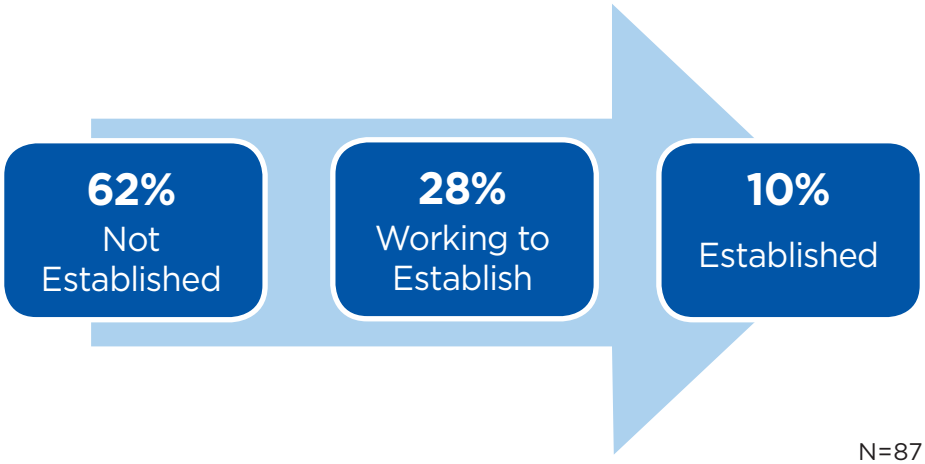
While science-based GHG targets are not yet broadly established among responding companies, about 30 percent are actively working to do so. The main reasons, according to the write-in responses, are: to demonstrate leadership in GHG reporting and reductions, to achieve greater GHG reductions, to align with International standards, to provide a clear and defensible goal and to comply with regulatory requirement. The verbatim responses (see pages 55-56) provide more detail about the momentum behind these programs.

Publicly traded companies are more likely to have established science-based targets (12% publicly traded vs. 5% privately held) or to be actively working to do so (31% publicly traded vs. 15% privately held). Per the main program drivers, the momentum among publicly traded companies likely has to do with the demand for transparency among stakeholders and the related impact that reporting has on corporate reputation.

Among those who have not established science-based GHG targets, 9 percent considered doing so but decided against it, versus 53 percent who did not yet consider it. According to the write-in responses, the reasons seem to be mainly related to program maturity or because the company had already set targets before the concept emerged. For at least one respondent, not having a science-based target is due to the "difficulty to extend across various business divisions in a standard manner."

Presence of Science-Based Targets

Figure 49



N=87

Q: *Why is your company working to establish science-based GHG targets?*

To better understand the reasons why companies are setting science-based targets, the survey asked respondents to share details about the business drivers that are motivating their programs. The following is a summary of their responses, organized by category.

To Demonstrate Leadership in GHG Reporting and Reductions

"This is what best in class companies are doing."

"Reputational risks and opportunities are driving decisions to reduce carbon."

"Increased Board buy-in and external recognition."

"To maintain best practices in the field of corporate responsibility."

"We believe that setting science-based goals at the end of our current public goal period will provide evidence to all stakeholders of the importance that we place on GHG management."

"Our company received recognition in 2015 for having established a science-based target. This goal was developed in 2012 to keep the company on track to meet the 60-80% GHG emissions reductions needed on a global scale by 2050 from a 2000 baseline as outlined in the IPCC 4th Assessment report."

"Credibility in marketplace with all stakeholders."

"The underlying sustainability principle of [our organization is that it] strives to be an exemplar in the application of sustainability principles and practices and to become [sustainable] through policies and procedures that rely on scientific analysis."

To Achieve Greater GHG Reductions

"Want to reduce carbon footprint."

"Want to identify the feasibility of meeting SBT and compare our actions and ability to meet them. We want to use as a guide for setting our next goal. May or may not be SBT goal."

"Set GHG reduction targets that lead to a collective cost-savings of $780 Billion USD between 2010 and 2020, while aligning targets with IPCC's 2-Degree Celsius pathway."

"We have evaluated our performance and goals through tools for science-based goal setting approaches [...]The outcomes projected by these tools reflect that our targets and performance for Scope 1 and 2 GHG emissions to date produce stronger results and are more aggressive than the science-based method. We are currently exploring whether setting a Scope 3 target is appropriate and viable, specifically around our product use phase."

To Align with International Standards

"To align with the direction of the international community and the Paris Accord."

"Complying with regulations that are based upon the Paris Accord"

"This work is to align targets and validate them against the global emission targets as per the climate science methodology."

"To align with Paris Agreement; still undecided if we will formally commit but we are evaluating"

"Working in collaboration with our [industry group] and in accordance with the (UN Agency that governs worldwide organizations like ours), which both utilize science-based GHG targets."

To Provide a Clear and Defensible Goal

"We feel it is the prudent approach."

"Creates a credible, defensible approach to investments required to achieve stated goals."

"Currently establishing new Environmental Performance targets after we complete our 2017 targets. Science-Based Targets provide a good frame of reference for determining the appropriate level of reductions the company should be pursuing."

To comply with regulatory requirement

"Part of state GHG (Clean Power Plan) compliance"

"Mandated by the department of environmental affairs for inventory determination."

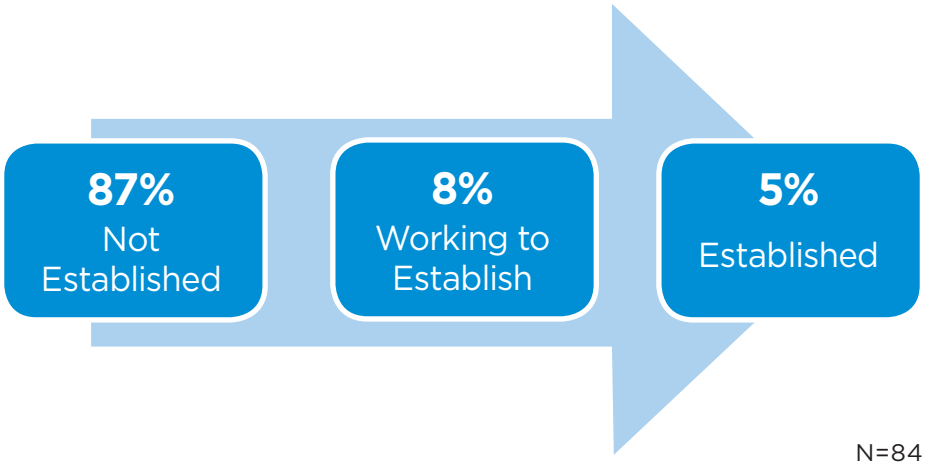
Setting an Internal Price on Carbon does Not Seem to be Gaining Momentum

Only 5 percent of respondents have established an internal price on carbon. Among those who have not established an internal price on carbon, 18 percent considered doing so but decided against it, versus 69 percent who did not consider it.

Looking at the same numbers by publicly traded companies versus privately held, it's interesting to note that a quarter (25%) of publicly traded companies considered adopting an internal price on carbon but ultimately decided not to. In the verbatim responses and in interviews with research participants, the key reasons seem to be that, due to lack of clear scope around what a reasonable price on carbon would be, it would be difficult, if not impossible, to incorporate this measurement into business plans or performance assessments.

Use of Internal Price on Carbon

Figure 50



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