



Energy Efficiency and Corporate Sustainability

Saving Money While Meeting Climate Goals
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CONCLUSIONS

- ◆ Well under half of large companies have explicit energy efficiency targets.
- ◆ Corporate sustainability reports generally include energy efficiency measures, but not usually in a comprehensive way.
- ◆ Efforts to encourage and systematize discussion of sustainability, including energy efficiency, in financial reporting are too new to judge their success.

RECOMMENDATIONS

- ◆ Companies should make energy efficiency the foundation of their commitment to addressing climate change because it can reduce both greenhouse gas (GHG) emissions and energy costs.
- ◆ To reap the potential savings from energy efficiency, companies should set specific efficiency targets; pursue efficiency opportunities throughout their facilities, transportation systems, and value chains; use strategic energy management; and report on efficiency measures and progress in reaching the targets.
- ◆ Reporting organizations and investors should improve transparency and accountability by using standardized metrics and by consolidating sustainability reporting.



Many US companies are taking steps to reduce their impact on the environment, and especially on climate change, by undertaking corporate sustainability initiatives. They are trying to address the growing focus on sustainability from investors, customers, governments, and employees. Companies are setting sustainability goals, taking steps to reduce emissions, and reporting progress in sustainability reports and financial disclosures. Energy use and its effect on GHG emissions are a major focus of these initiatives.

Energy efficiency should be the foundation for achieving corporate climate and sustainability goals. Many studies show efficiency is critical to meeting climate goals. The International Energy Agency's Sustainable Development Scenario gets 44% of its carbon reductions in 2040 from energy efficiency.¹ The American Council for an Energy-Efficient Economy (ACEEE) found that efficiency measures could cut US GHG emissions by half in 2050.² Companies should use efficiency because it saves them money on their energy bills while yielding large environmental benefits. For example, FedEx has achieved most of its carbon emissions reductions (almost 2 million tons in 2018) from more efficient aircraft and flight operations, while also saving \$394 million.³ United Technologies has found that "efficiency improvements...represent the greatest opportunity for us to reduce our GHG emissions."⁴

In addition to cutting emissions and saving money on energy bills, energy efficiency measures can often increase productivity and minimize waste by optimizing processes and equipment, and thus can strengthen competitiveness.⁵ These measures can improve lighting and air quality and comfort. Efficiency can even help meet renewable energy percentage targets cost effectively by reducing the energy use that must be met from renewable sources.

This issue brief describes some of the ways energy efficiency can improve corporate sustainability and the scale of potential savings that company efficiency measures could achieve. We discuss current corporate energy efficiency targets, mostly on the basis of a literature review. Efficiency targets are an important way to focus management attention and help efficiency projects compete for capital investments. We also examine how sustainability and financial reports are communicating the role of energy efficiency in sustainability initiatives, including an analysis of corporate sustainability reports for 30 large companies. We note key sources of information on targets and reports, with more details about sources in Appendix A. We conclude with recommendations for how companies could make better use of efficiency as a corporate sustainability measure.

Although the statistics and examples in this brief are drawn from large companies, we hope the information and recommendations are useful to smaller companies as well. Small and medium-sized companies have most of the same energy savings opportunities but may have fewer resources to devote to sustainability planning and reporting.

HOW COMPANIES CAN SAVE ENERGY AND REDUCE CARBON EMISSIONS

The GHG Protocol, developed by the World Resources Institute and the World Business Council for Sustainable Development, sets the standard for how most companies measure GHG emissions.⁶ It classifies corporate emissions into three scopes:

- Scope 1. Direct emissions from sources the company owns or controls
- Scope 2. Indirect emissions from the generation of electricity the company purchases
- Scope 3. Indirect emissions other than Scope 2 from the value chain of the company, including both upstream and downstream emissions.

Companies often start reducing energy use in their offices, warehouses, data centers, manufacturing plants, vehicle fleets, and other operations to save money. Then they expand these efforts to cut Scope 1 emissions (from burning fossil fuels directly) and Scope 2 emissions (from electricity use). Lighting and building retrofits, equipment and vehicle replacement, and industrial process changes improve the efficiency of physical facilities and equipment. Building commissioning, strategic energy management, smart buildings, and smart manufacturing optimize operations and reduce waste. For example, Allstate Corporation set and achieved their efficiency target of reducing the energy used at facilities they own 20% by installing LED lights and optimizing energy use for heating and cooling.⁷

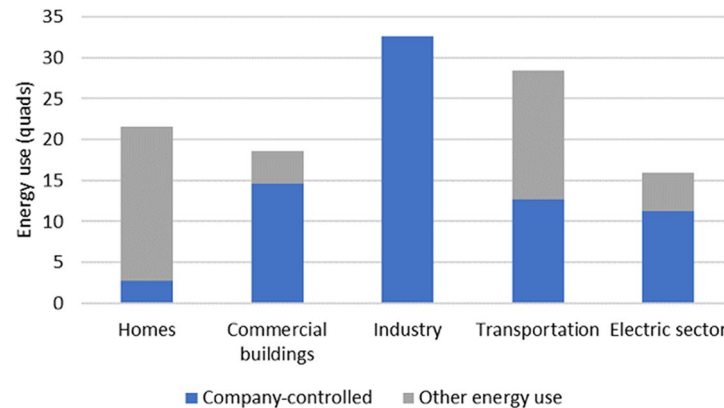
Scope 3 emissions are often the largest source of emissions for companies, but they can be harder to address. Some large companies help their suppliers and vendors improve efficiency to reduce costs as well as environmental impacts. Nike has a goal focused on reducing upstream emissions from its purchased goods and services, namely, to reduce the emissions intensity from textile dyeing and finished processes 35% from 2015 levels by 2020.⁸ Other companies reduce downstream emissions by improving the efficiency of their products. For example, they may make or sell ENERGY STAR® appliances or more-effective products that save energy (e.g., structural insulated panels). Whirlpool, an appliance manufacturer, says it has reduced "lifetime product-in-use emissions" over 50% from a 2005 baseline and is now planning to update its goal.⁹ Companies also help employees reduce commuting and travel energy use by encouraging public transit and telecommuting.

Some actions to reduce emissions extend beyond Scope 1, 2, or 3 and provide broader system benefits. Companies can advocate effective public policies that promote energy efficiency, support efficiency organizations, educate their customers on how to save energy, contribute employee time to making low-income homes more efficient, or work to strengthen broader community clean-energy efforts.

THE LARGE POTENTIAL IMPACT OF CORPORATE ENERGY SAVINGS

Companies directly control roughly three-fourths of all US energy use and consequent emissions, from apartment buildings and shopping malls to manufacturing plants, power plants, and long-haul trucks, as shown in figure 1.¹⁰ ACEEE estimates that by 2050, US companies collectively could reduce their projected energy use by roughly half and reduce resulting carbon dioxide emissions by more than half.¹¹ Globally, CDP (formerly the Carbon Disclosure Project) has estimated that fewer than 3,000 companies are responsible for one-fifth of total GHG emissions and that just 75 companies are responsible for more than half of that.¹²

Figure 1. Portion of US energy use that is under direct control of corporations



Source: ACEEE estimates

While every economic sector has opportunities to increase efficiency, some industries are inherently more energy intensive. A series of Department of Energy (DOE) “bandwidth” studies looked at the range of potential energy savings opportunities in 16 industrial sectors in the United States and found a combined total of 3.1 quadrillion Btus (quads) in available savings from implementation of current technologies (nearly 20% of the combined energy use in the examined industries) and an additional 3.7 quads potential savings from technologies under research and development. For example, they found that current technologies could save 0.77 quads in the chemicals sector, 0.34 quads in the food and beverage sector, and 0.32 quads in water desalination. These savings would represent 24%, 27%, and 20%, respectively, of energy use in these sectors.¹³

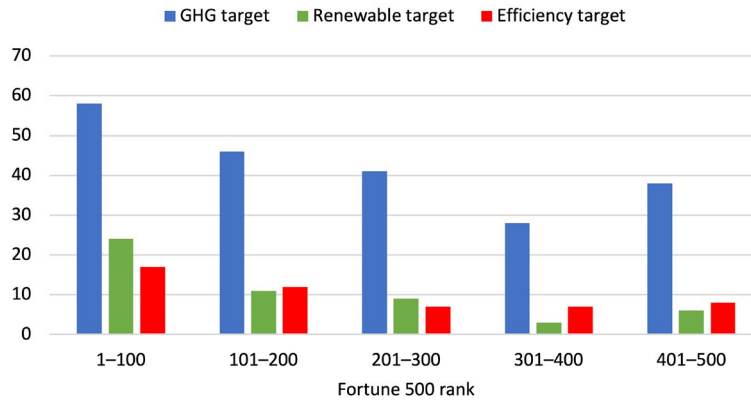
Nonindustrial companies also have substantial energy savings opportunities. DOE estimates that commercial buildings overall could save 21% of energy use with ENERGY STAR equipment and lighting and 46% with the most-efficient available technologies.¹⁴ That does not include most appliances; another DOE report estimates commercial appliances could save 22% of their energy use with current technology and 36% with emerging technology, accounting for another fifth of total commercial building energy use.¹⁵ The International Council on Clean Transportation estimates potential fuel savings of 50% for US tractor-trailer trucks and 31% for delivery trucks using existing technologies.¹⁶

SETTING TARGETS DRIVES RESULTS: ENERGY EFFICIENCY IN CORPORATE SUSTAINABILITY TARGETS

Setting specific targets is often the best way to engage corporate teams to identify and pursue energy savings opportunities, help efficiency projects compete with other opportunities for limited capital investments, ensure management visibility, and promote durable commitment. Well-formulated targets can signal support from top executives and help engineers and financial offices work together.

The most comprehensive research on corporate sustainability targets for US corporations is the series of *Power Forward* reports from World Wildlife Fund, Ceres, Calvert, and CDP.¹⁷ Using information submitted to CDP, as well as corporate sustainability reports and other sources, they looked at goals for the Fortune 500 companies, the largest US companies by total revenue. More than 200 of the Fortune 500 had GHG targets in 2018. For example, Johnson & Johnson aimed to reduce absolute emissions 80% by 2050.¹⁸ Fewer companies, just over 10%, had specific energy efficiency targets, as shown in figure 2.¹⁹ One example is Home Depot, which aimed at a 20% reduction in energy use at its stores by 2020. The company surpassed the goal in 2017.²⁰

Figure 2. Fortune 500 companies by size with energy efficiency and other sustainability targets

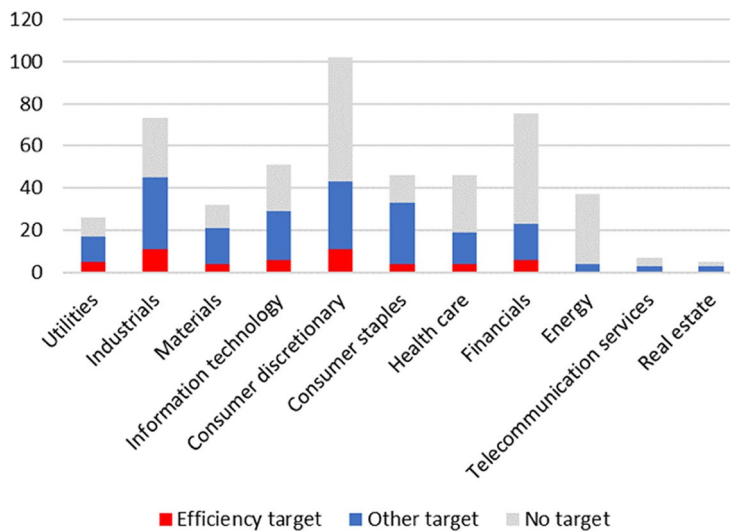


Source: Data from Power Forward 3.0

However the report likely understates the number of efficiency targets. *Power Forward* notes that because of CDP reporting protocols, some targets they record as GHG targets may be for reductions that are solely related to reduced energy use and hence are efficiency targets as well. The Alliance for Industrial Efficiency, in a review of 160 large manufacturing companies in several sectors, found that 43% had public energy efficiency targets, including in some companies for which *Power Forward* had not identified such targets (79% had GHG targets and 25% had renewables targets).²¹ But as described below, efficiency targets appear to be less common in other sectors. Overall, we can conclude that well under half of large companies have energy efficiency targets.

The number and kinds of targets identified in *Power Forward* vary by company size and sector. In general, larger companies are more likely to have GHG, renewable energy, and energy efficiency goals. Figure 3 shows the disparity across sectors.

Figure 3. Efficiency and other sustainability targets in Fortune 500 companies by sector



Source: Data from Power Forward 3.0

According to *Power Forward*, 72% of consumer staples companies in the Fortune 500 have climate or energy sustainability goals, but less than one-third of companies in both the financial and energy sectors have any

targets. Energy efficiency targets are most common in the consumer discretionary and industrials sectors, but even in those sectors Power Forward identifies such targets for less than 20% of companies. We did not find any clear correlation between the energy or carbon intensity of the sectors and the number of sustainability targets.

Companies can set energy targets after evaluating potential savings in their facilities and, depending on scope, supply chains. Strategic energy management approaches (discussed more below) can help identify major energy uses and options for greater efficiency. If the information is available in useful metrics, some companies also observe the efficiency levels their competitors are achieving. For companies that are adopting “science-based targets,”²² GHG emissions targets that are aligned with societal goals to hold global warming to less than 1.5°C or 2°C, energy targets should conform to those broader targets.

Companies set different kinds of energy efficiency goals that best reflect their business operations and have the most impact for achieving their climate goals. For example, Bank of America owns a significant amount of building space, with over 4,300 branches and many office buildings. It has set a target to reduce energy use 40% from 2010 levels and to have 20% of its real estate portfolio certified under Leadership in Energy and Environmental Design (LEED) standards by 2020. Companies that own large vehicle fleets may focus on the energy efficiency of those vehicles. FedEx aims to improve the efficiency of the FedEx Express vehicles by 50% from a 2005 baseline by 2025.³ Multiple airlines, including Delta, United, and Southwest, have set goals to improve the fuel efficiency of their aircraft. Walmart has energy efficiency goals for both its facilities and its fleet, and it has implemented goals to reduce the energy use and emissions from its supply chain, which accounts for over 90% of its total GHG.²³ Manufacturers may be more inclined to focus their targets on energy intensity (such as energy use per dollar value added) rather than absolute energy use due to the variability of demand and changes that result from mergers and acquisitions. Caterpillar has a goal to reduce its energy intensity 50% from a 2006 baseline by 2020.²⁴

Even when they do not set specific efficiency goals, companies use energy efficiency to achieve cost savings, emissions reductions, and other goals. PepsiCo does not have an efficiency target but is using efficiency, including of vending and cooler equipment, to help achieve a 20% reduction in absolute emissions from 2015 levels across its entire value chain by 2030.²⁵ In the Johnson Controls Energy Efficiency Indicator surveys of energy and facilities managers around the world, cost reduction was by far the leading driver of energy investments in 2013, but by 2018 GHG reductions and energy security had caught up as reasons, with investor, customer, employee, and government interest not far behind.²⁶ In the *2019 Corporate Energy & Sustainability Progress Report*, GreenBiz Research and Schneider Electric surveyed 309 energy and sustainability professionals at large corporations around the world.²⁷ Ninety-three percent of respondents had implemented energy efficiency projects compared to the 63% using on- or offsite renewables. Seventy-one percent of respondents said that “energy efficiency projects have delivered the greatest cost savings.” Setting energy efficiency targets would help focus these companies’ efforts to achieve even greater savings and help track their performance.

WHAT GETS MEASURED GETS MANAGED: ENERGY EFFICIENCY IN CORPORATE SUSTAINABILITY REPORTS

Although well under half of companies have energy efficiency targets, many more discuss energy efficiency in the corporate sustainability reports or broader corporate social responsibility (CSR) reports they release to show the public their commitment to sustainability and the public good. (We discuss other channels companies use to report sustainability goals and actions in the next section.) Sustainability and CSR reporting can help focus management and investor attention on energy efficiency’s key role in meeting GHG and other corporate sustainability goals.

Corporate sustainability reports (we will use the term to include the discussion of sustainability in CSR reports

as well) rarely look the same from industry to industry, business to business, and year to year. They sometimes give efficiency a sidebar or case study and sometimes an entire section.

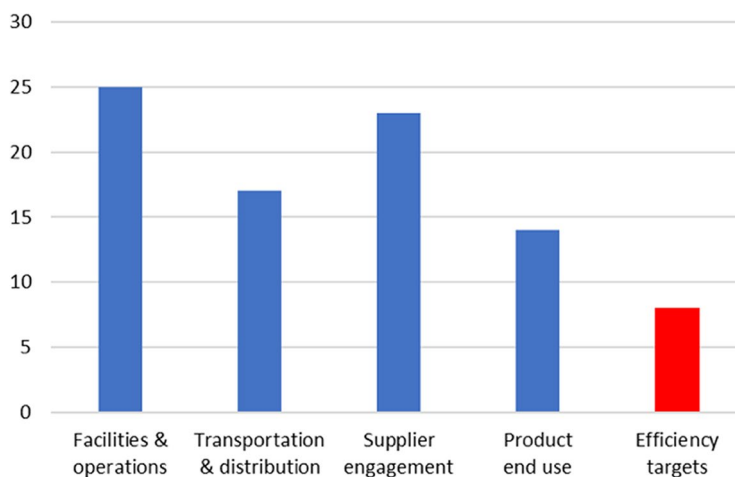
Some reporting frameworks can provide a level of consistency across reports. Global Reporting Initiative (GRI), an international organization based in Amsterdam, sets standards that are the most common framework for sustainability reporting.²⁸ Their Standard 302 on energy requires material disclosure of company energy use, outside energy use (analogous to Scope 3 emissions), energy intensity, and energy use reductions due to efficiency. Other companies structure their sustainability reports around the United Nations Sustainable Development Goals (SDGs) to highlight their attention to global themes. Several goals relate to energy efficiency, including affordable and clean energy (Goal 7), sustainable cities and communities (Goal 11), responsible consumption and production (Goal 12), and climate action (Goal 13).²⁹ But neither GRI nor the SDGs require specific metrics that would gauge progress and enable comparison between companies. Although GRI keeps a database of thousands of reports (not all of which follow its standards),³⁰ we are unaware of a comprehensive analysis or collection of corporate sustainability reports similar to what *Power Forward* has done for targets.

This brief undertakes a perhaps less systematic analysis by examining 30 sustainability reports from a variety of Fortune 500 Companies in different industries.* All 30 of the reports we reviewed describe energy efficiency actions of some kind. They discuss energy efficiency measures in four major areas:

- The company’s facilities and operations
- Transportation and distribution (by both the company’s own fleet and contractors)
- Supplier engagement
- Product end use

As shown in figure 4, the largest number of the sustainability reports we reviewed discuss the efficiency of the companies’ own facilities and operations, but each of the areas is discussed in more than a third of the reports. Only five reports discuss all four areas. Eight of the reports also discuss one or more efficiency targets and progress toward meeting them (shown in the red column in figure 4). A majority of the reports track companywide progress in some way, but they use a wide range of metrics, including total energy use, energy intensity of buildings or vehicles, efficiency investments, energy savings from initiatives, and more broadly, GHG emissions and reductions.

Figure 4. Number of sustainability reports that discussed energy efficiency measures



Note the sample was diverse but not random. *Source:* ACEEE analysis.

* A detailed table on how the 30 reports discuss energy efficiency is available on request from the authors.

Facilities and Operations

Every company can increase the energy efficiency of its operations, whether by improving the efficiency of its offices and equipment or by optimizing its manufacturing energy usage. The approach will be unique to the industry and company.

Some companies highlight specific efficiency projects that they have implemented at a facility or business unit. For example, Hewlett Packard recognizes its Palo Alto site, where it completed major efficiency upgrades. This site was able to reduce its electricity usage by 8% and save over \$150,000 with building automation system upgrades, retrocommissioning projects, and new LED lighting and controls.³¹ General Mills completed 60 energy efficiency projects in fiscal year 2018 focusing on compressed air, lighting, and steam/hot water. These projects saved over 12 million kWh, \$4.8 million, and GHG emissions equivalent to 6,000 metric tons of CO₂ (MT CO₂e).³² Alcoa specifically mentions the approaches it uses to minimize process energy consumption of its smelters and cast houses, such as the SMART manufacturing platform and oxy-fuel burners.³³

Companies also report using strategic energy management and energy management software systems to achieve operational energy savings at their facilities (and can encourage, assist, or require their suppliers to use such systems). Strategic energy management can help overcome organizational and institutional barriers to efficiency initiatives. The software solutions can not only monitor and optimize the performance and efficiency of buildings and equipment but also help companies track how their energy use changes over time. Air Products and Chemicals' 2018 sustainability report discusses the benefits of using the International Organization for Standardization (ISO) 50001 strategic energy management standard to provide a consistent approach to managing energy use. The company has implemented ISO 50001 in Spain, Germany, and most recently, France.³⁴

TRANSPORTATION AND DISTRIBUTION

Companies that have international supply chains and widespread distribution networks, and companies that provide related services as part of their business, often discuss transportation and distribution in sustainability reports. For most companies, these manifest as Scope 3 reductions. Airlines, delivery companies, and consumer-facing businesses that own large vehicle fleets address these issues to reduce Scope 1 emissions and reduce operational costs.

A common approach to increasing the efficiency of transportation and distribution is to use more efficient vehicles. The United Parcel Service (UPS) uses alternative fuels for its ground transportation fleet as one strategy to meet its absolute GHG emissions target. As of its 2017 sustainability report, UPS had over 9,000 alternative fuel vehicles that ran on renewable natural gas, biodiesel, ethanol, batteries, or fuel cells.³⁵

Another approach to increasing transportation and distribution efficiency is to optimize distribution systems. Some companies have redesigned their packaging to reduce weight. Others have altered their logistical strategy to reduce shipping. Biogen highlights an initiative it started in 2016 that optimized shipments of goods that require refrigeration. Redesigned packaging is expected to reduce the cumulative weight, energy use, and associated emissions and reduce shipping costs by 30%.³⁶

Ryder System, Inc. offers transportation and supply-chain management services and products that result in high downstream Scope 3 emissions from vehicles it leases out. Its 2017/2018 corporate sustainability report calls out its participation in the US EPA SmartWay Partnership to demonstrate its commitment to tracking and reducing these emissions.³⁷

Supplier Engagement (Codes, Pledges, and Transparency)

Companies that rely on their suppliers for energy-intensive goods and services may focus their corporate sustainability efforts upstream, engaging with suppliers. Often suppliers can apply the same energy-saving measures as the company, but suppliers may be smaller and in countries with less-stringent energy efficiency requirements than the United States. One of the unique approaches that VF Corporation, an apparel company, mentions in its 2016 sustainability report is providing funding for its strategic supplier factories to update and improve their factory equipment. VF helped 13 suppliers save 35 million kWh, 19,104 MT CO₂e, 96,650 cubic meters of water, and more than \$2.2 million during 2015–17 through their efficiency projects.³⁸ The Walmart Factory Energy Efficiency Program has served over 800 factories in China, saving more than \$440 million in operating costs and 270,000 MT CO₂e.²³

Many companies require their suppliers to adhere to a code of conduct or sign a sustainability pledge, a sign of commitment in sustainability reports. A few have specific requirements, such as implementing an energy management system or developing a plan for energy efficiency. The Microsoft Supplier Code of Conduct sets expectations for companies with which Microsoft does business, mostly self-monitored. This code requires compliance with all applicable environmental laws and regulations and encourages the reduction of waste, including energy.³⁹ Target's standards of vendor engagement go a step further and require suppliers to identify all applicable energy sources and energy consumption, periodically to set goals to improve energy efficiency, and to document progress.⁴⁰

To measure their upstream energy use and Scope 3 emissions, some companies require transparency from their suppliers. Providing quantitative examples of energy and cost savings or emissions reductions resulting from corporate engagement with suppliers also is a popular way to highlight the effectiveness of energy efficiency. Dell Technologies requires 95% of direct materials suppliers not only to set specific emissions reduction targets and report on their emissions inventory but also to publish sustainability reports according to GRI or an equivalent global framework standard.⁴¹ Walmart committed to purchasing 70% of applicable US goods from suppliers that participate in its Sustainability Index, accounting for over \$200 billion in sales.²³

PRODUCT END USE

For some products, the energy use and emissions—and potential savings—are much greater from product use than from manufacture. Discussing these features in sustainability reports allows companies to showcase their attention to their customers' wants and needs.

Vehicle manufacturers are acutely aware of this issue. John Deere highlighted its 8400R series tractors for increasing “fluid economy” and reducing GHG emissions. It also mentioned the energy savings and environmental benefits from products with improvements in extended life, reduced machine weight, and eco-modes.⁴²

Consumer technology companies know that their consumers want products with a long battery life as well as green products. By reducing the energy their products use, companies can address their consumers' needs while reducing Scope 3 emissions. Apple has continually reduced the energy consumed by its products through better displays and more efficient power supply designs, achieving a 68% reduction in average energy use since 2008.⁴³ Products that save energy will save consumers money. Home Depot set a goal to help its customers save \$2.7 billion in energy costs by 2020; in 2018, it sold 231 million ENERGY STAR products, and it estimated that those products reduced emissions by 7 million MT CO₂e and that its customers saved \$1.2 billion in energy costs.⁴⁴

Some companies make and sell products that enable energy efficiency. The environmental benefits resulting

from products can contribute to a company's "handprint," but it is difficult to quantify such benefits. In its 2017 sustainability report, Praxair, an industrial gas company, claims the use of its atmospheric and process gases to make window insulation, coatings, and other products saved twice as many GHG emissions as the company emitted from its operations.⁴⁵ While it makes sense to try to measure and increase such benefits, they should not be a substitute for more direct savings.

ACCOUNTING AND ACCOUNTABILITY: ENERGY EFFICIENCY IN OTHER CORPORATE REPORTING

Besides corporate sustainability reports, companies provide information on their sustainability goals and actions in a variety of forums. Much of the information is aimed at large investors such as state pension funds (and organizations that represent them), which have become increasingly focused on the financial risks from causing environmental damage, from the effects of climate change, and from shifting government policies. In some cases, investors also are driven by environmental values. They want companies to report on their sustainability records and related financial risks, and they seek to push companies to mitigate these risks and increase their actions on climate change. We briefly describe how energy efficiency is included in some of the reporting efforts here, with more details in Appendix A.⁴⁶

CDP collects information from thousands of companies worldwide as well as from local governments on environmental commitments and performance related to climate, water, and forests. The audience is primarily large investors, though some of the information is publicly available. Several questions in its survey include energy efficiency targets, activities, and performance, but without common metrics or specific topics.

The international Financial Stability Board set up the Task Force on Climate Related Financial Disclosures (TCFD) to create broad guidelines on how companies should disclose climate-related risks and opportunities, with themes of governance, strategy, risk management, and metrics and targets. CDP and some other reporting vehicles are trying to align their surveys with TCFD's recommendations. The broad 2017 principles only briefly mention energy efficiency, but the increased financial reporting on climate issues often includes efficiency.⁴⁷

The US-based Sustainable Accounting Standards Board (SASB) also focuses on financially material sustainability information in mandatory financial disclosures. SASB has worked with companies and other stakeholders to develop detailed and prescriptive 2018 disclosure standards for 79 industry sectors.⁴⁸ For some but not all of those sectors, the standards include energy efficiency metrics. The Chemical Industry Standard, for example, requires reporting entities to disclose electricity use and total energy use and to discuss efforts to reduce energy consumption and improve efficiency in manufacturing and production processes, including implementing one of the green chemistry principles: design for energy efficiency. The standard also requires companies to disclose revenue from products designed to increase energy and other resource efficiency during their use.⁴⁹ Companies can choose to follow the standards in required Securities and Exchange Commission 10-K or similar filings or in annual reports.

Many environmental, social, and corporate governance (referred to as ESG) ratings are available for companies, including by Sustainalytics (used by Morningstar), MSCI, and RobecoSAM (used by Dow Jones and S&P indices).⁵⁰ These ratings often focus on financial risk and materiality and often use questionnaires and other available information. Energy efficiency and green buildings may factor into the ratings, but the specific criteria usually are not transparent, and the ratings often are not public. CDP also scores companies that report to them on climate (as well as on their other reporting focuses), giving grades from A to F. The scores cover climate-related opportunities and initiatives, including those focused on energy efficiency, based on whether the companies answered survey questions (but efficiency targets are not scored).⁵¹

CONCLUSION

Companies should make energy efficiency the foundation of their commitment to addressing climate change because it can yield large reductions in GHG emissions while providing energy cost savings and other benefits. Companies control three-fourths of US energy use and related emissions, and they have vast demonstrated opportunities to save energy, reduce energy bills, and cut emissions. These energy savings form a large part of the major reductions needed to avoid catastrophic climate change.

Many large companies set goals for reducing their emissions and report on progress in doing so. While energy efficiency may not make the cover of their sustainability reports, we found that every one of a sample of reports mentioned efficiency. The reports describe a wide variety of energy efficiency measures with a wide range of ambition using a wide range of reporting approaches and metrics. Significant efforts to encourage and systematize discussion of sustainability, including energy efficiency, in financial reports are too new to judge their success. Fewer companies set explicit goals for using efficiency to achieve sustainability; our literature review and analysis of corporate sustainability reports suggest that well under half of large companies have explicit energy efficiency targets. Without a target, the companies may lack focus on potential savings and have difficulty tracking progress.

To reap the potential savings from efficiency, companies should

- Set specific energy efficiency or energy intensity targets consistent with broader sustainability goals, including science-based GHG targets; company-adopted efficiency targets can focus management attention, enable access to capital, and help overcome internal barriers
- Identify and pursue efficiency opportunities in buildings and plants, transportation systems, supplier networks, and end-use products to maximize savings
- Set up ongoing strategic energy management and energy management systems to enable continuous savings
- Report on efficiency measures, overall energy and efficiency trends, and progress in reaching the targets, as well as on how they affect the company's financial risks and opportunities from climate change; transparency and accountability will allow financial markets to value efficiency initiatives

While many companies are pursuing some of these steps, few are embracing all of them. Most companies could achieve far greater savings by creating and implementing truly comprehensive efficiency strategies.

Reporting organizations and investors should also improve transparency and accountability by requiring companies to disclose energy efficiency information using standardized metrics, which often will vary by industry. They should also compile reported information from companies by industry to put the companies' efforts in context. Organizations and investors can also help by consolidating sustainability reporting so that companies do not have to waste resources reporting in different formats and using different metrics.

With ambitious targets, clear reporting, and sustained management support, companies can make energy efficiency a central strategy for saving money and for meeting their climate commitments and the world's climate needs.

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APPENDIX A: KEY DATA SOURCES ON ENERGY EFFICIENCY IN CORPORATE SUSTAINABILITY

Databases and Websites

CDP (formerly Carbon Disclosure Project)

CDP is an international nonprofit that “runs a global disclosure system that enables cities, states, regions, and companies to report and manage their environmental impacts.” More than 7,000 companies and 620 cities worldwide have reported to CDP. The new survey highlights more sectoral information and disclosures of a company’s own approach to the low-carbon economy. Some [corporate data](#) are available to the public with a CDP registered account, but some are behind a paywall.

The [2017 US Report](#) includes sector-specific insights and case studies but has little specifically on energy efficiency. Efficiency is occasionally mentioned in company quotes and case studies.

Energy efficiency scope. Some questions ask directly about energy efficiency initiatives and activities, including energy productivity and energy usage targets (C4.2), energy efficiency initiatives (C4.3b), efficiency-based carbon credits (C11.2a), and energy efficiency policy work (C12.3a), among others. In addition, energy efficiency targets are converted into GHG emissions terms (C4.1a). The [2018 survey](#) provides insight into the type of data that CDP collects.

Companies covered. Four hundred sixty-two US companies responded to at least one of the three investor-led programs in 2017—climate change, water, and forests—and almost all included climate change information. One hundred twenty-one companies reported climate commitments.

GRI Sustainability Reporting Standards

GRI is an organization based in Amsterdam that creates [standards](#) to simplify sustainability reporting. Three universal standards must be completed to comply with the standards; three topic-specific standards, which are not required, are used to address material topics. Standard level GRI 300 contains environmental information; section 302 is on energy.

GRI also keeps a [database](#) of corporate and other sustainability reports, especially (but not only) those that adhere to its standards.

Energy efficiency scope. Section 302 includes standards for reporting on management approach to energy, company

energy use, indirect energy use, energy intensity, energy savings due to efficiency initiatives, and energy savings of the company’s products and services.

Companies covered. GRI has almost 57,000 reports from 14,000 organizations in its database, which can be sorted by size, sector, country, region, year and report type. Of those reports, 2,361 were submitted under the new GRI standards starting in 2017. Only 220 reports under the GRI standards are from 150 organizations headquartered in the United States. About two-fifths of those organizations are classified as large.

Sustainable Accounting Standards Board (SASB)

“[SASB](#)’s mission is to help businesses around the world identify, manage and report on the sustainability topics that matter most to their investors. SASB standards are developed based on extensive feedback from companies, investors, and other market participants as part of a transparent, publicly-documented process. SASB standards differ by industry, enabling investors and companies to compare performance from company to company within an industry.”

The [Field Guide](#) describes standards set in 2018 for 79 industries. While SASB does not comprehensively report data for individual companies, the [State of Disclosure Report](#) includes reporting metrics by industry and many examples for individual companies.

Energy efficiency scope. For most sectors, standards include energy use or efficiency of the company. Some sectors also include efficiency impacts of products. An example of both is in the [Chemicals Sustainability Accounting Standard](#).

Companies covered. Very few companies have reported using the new standards yet, but the [State of Disclosure Report](#) reviewed filings for up to 10 companies in each of the 79 industries and found that 73% of companies reported on at least three-quarters of the topics included in the industry standard, often with boilerplate language.

EP100

[EP100](#) is an initiative of The Climate Group in partnership with the Alliance to Save Energy in which companies commit to double their energy productivity (economic output per unit of energy used) within 25 years, to implement a smart energy management system with a productivity target, or to use net zero carbon buildings.

Energy efficiency scope. The three commitments all are based on a broad range of energy efficiency measures.

Companies covered. Thirty-five international companies are members of EP 100. A [list](#) of members includes the commitment for each.

Reports

Power Forward 3.0

This [report](#) from the World Wildlife Fund, Ceres, Calvert Research and Management, and CDP evaluates clean energy data provided publicly by Fortune 500 companies. It finds that 51 companies have set targets for energy efficiency (but see discussion in the main text).

Energy efficiency scope. Describes energy efficiency targets they found for each company.

Companies covered. All US Fortune 500 companies.

Committed to Savings: Major US Manufacturers Set Public Goals for Energy Efficiency (The Alliance for Industrial Efficiency)

This Alliance for Industrial Efficiency [report](#) reviewed 160 of the largest manufacturing companies with US facilities to explore public energy efficiency and GHG commitments.

Energy efficiency scope. Describes energy efficiency targets it found for each company.

Companies covered. Large US manufacturing companies with US facilities. "The manufacturers in our analysis include the largest companies by revenue in the manufacturing sectors of the (1) U.S. Fortune 500, (2) Global Fortune 500, and (3) the largest private companies in the U.S. Approximately 43 percent (69 of 160) of the manufacturers in the dataset established ambitious public energy efficiency targets. An even larger share (79 percent) of manufacturers have established public goals to curb their GHG emissions, which may be achieved, in part, by energy efficiency improvements."

Energy Efficiency and Corporate Sustainability (ACEEE)

This report provides a brief [overview](#) of energy efficiency in the sustainability targets and initiatives of large companies along with three case studies.

Energy efficiency scope. Energy efficiency sustainability targets and work.

Companies covered. Fortune 500 companies (based on above reports) and case studies on JP Morgan Chase, H&M, and IBM.

The State of Corporate Energy and Sustainability Programs 2018 (Greenbiz and Schneider Electric)

Research [survey](#) examines how firms currently approach and execute energy and sustainability initiatives.

Energy efficiency scope. Includes questions on energy efficiency initiatives and companies' goals and barriers.

Companies covered. Two hundred thirty-six energy and sustainability professionals representing diverse industries and companies, with \$100 million to \$10 billion or more in annual revenue. Sixty-three percent of participants are located in North America, 27% in Europe, and 10% in Asia-Pacific or other parts of the globe.

2018 Energy Efficiency Indicator Survey (Johnson Controls)

This [survey](#) of "energy and facility management leaders" tracks "current and planned investments, key drivers, and organizational barriers to improving energy efficiency in facilities," with results reported by country or region.

Energy efficiency scope. Covers top commercial building energy efficiency measure investments along with drivers and barriers.

Companies covered. "A representative mix of respondents from institutional, commercial, and industrial organizations" from 20 countries.

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