guide to corporate sustainability:

how to get started

Constellation

Today, business success depends on more than offering a quality service or product. Companies face growing expectations to operate their businesses without negatively impacting the environment, community, and society.

Fortunately, research has shown that sustainability has a positive impact on the environment and business success. Companies that prioritize sustainability experience reduced costs, increased profits, improved public image, and greater employee satisfaction[i].

For companies just starting out on the path to sustainability, the journey can seem complex and intimidating. However, by understanding and working toward sustainability goals, you can meet evolving customer expectations and make tangible progress toward combatting climate change.

This guide provides a comprehensive look into what you need to know to get started on the path to a more sustainable future, from understanding the three scopes of emissions to how to combine emissions reduction tactics to build a sustainability plan.

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What Is Sustainability?

Sustainability is a growing concern for individuals and businesses worldwide. Sustainability focuses on the principle that our survival and well-being depend on the natural environment. For businesses in particular, sustainability measures aim to protect the planet, halt climate change and use resources with consideration for future generations.

While there are many components to sustainability, a large portion of climate change and global warming can be connected to greenhouse gases. As a result, companies must work to understand the greenhouse gas emissions they produce and consider how to reduce their carbon footprint.

What Are Greenhouse Gases?

Greenhouse gases are chemical compounds in the earth's atmosphere that trap heat. During the day, sunlight streams into the earth's atmosphere and warms the earth's surface. At night, when the earth cools, some of that heat is released back into the air, which is then trapped by greenhouse gases. This creates a greenhouse effect, keeping the earth's average temperature warm enough to sustain life.

> As a result of a variety of human and business activities, including facility operations, transportation and manufacturing processes, companies release greenhouse gases.

Over many years, increased emissions have had a dramatic impact on the greenhouse effect, resulting in global warming and climate change.

There are several types of greenhouse gases:

1. **Carbon dioxide** makes up about 80% of greenhouse gases. In part, carbon is emitted through natural processes, such as human and animal respiration and volcanic eruptions. However, carbon emissions are also created by burning fossil fuels, solid waste and trees, as well as some chemical reactions.

2. **Methane** also occurs through natural processes, such as decomposition. However, human activity, including cattle farming, agricultural processes and the transportation of coal, natural gas and oil, has increased the generation of this greenhouse gas.

3. **Nitrous oxide** emissions are primarily a result of farming practices with synthetic fertilizers and cattle ranching. This greenhouse gas is also emitted during fossil fuel combustion and wastewater treatment.

4. **Fluorinated gases** are potent gases typically emitted in smaller quantities than other greenhouse gases. Generally, these gases are generated through the use of a range of products, including refrigerants, aerosol propellants, solvents and fire retardants.

Carbon Emissions vs. Greenhouse Gas Emissions

The term "greenhouse gas emissions" encompasses any and all of the gases mentioned above. However, you will also commonly hear the term "carbon emissions," which refers only to the emissions of carbon dioxide. This tends to be an area of focus because carbon dioxide makes up the majority of greenhouse gas emissions and it is a major contributor to climate change.

Carbon dioxide is also the easiest greenhouse gas for businesses to manage through efficiency measures and purchased credits. That's why it often becomes a focus in companies' sustainability goals.

The Three Scopes of Emissions

Your company's greenhouse gas emissions can be categorized into three scopes defined by the Greenhouse Gas Protocol[ii]. These accounting standards outline who owns or influences the emissions, as well as how much control your company has over them. With an understanding of these scopes, businesses are able to more effectively measure their emissions, understand where they currently stand and plan for how to progress toward reduced emissions.

Scope 1 emissions are a direct result of a company's activities. This includes onsite generation, natural gas use and fleet fuel consumption. Scope 1 emissions can be further broken down into four categories: stationary combustion, mobile combustion, fugitive emissions, and process emissions.

Scope 2 emissions are indirect emissions generated from a company's purchase of electricity, steam, heating, or cooling. While it is the generation of these forms of energy that produces greenhouse gases, the company is considered responsible for the emissions because it created the demand for and purchased the energy.

Scope 3 emissions are indirect emissions from other sources, such as transportation, distribution, employee commuting, and supply chain management. These emissions aren't produced directly by the company, but they occur somewhere within the company's value chain as a result of its operations.

*Based on current World Resources Institute (WRI) guidance. Scope 2 reporting claims of this product may be affected by future changes.

The Path to Reduce Carbon and GHG Emissions

To help prevent the devastating effects of climate change, a growing number of companies are committing to reduce greenhouse gas emissions. This journey looks different for every business, but it generally starts by reducing emissions, then moving to net-zero emissions and, finally, achieving zero emissions.

Reduced Emissions

The first step to making a positive change is to implement measures that reduce a company's emissions, which simply means the company releases less carbon dioxide into the air than it previously did.

Net-Zero Carbon Emissions

To truly stop climate change, it's not enough to simply reduce emissions; companies must achieve net-zero. Net-zero carbon emissions, also known as carbon neutrality, occurs when a company removes the same amount of carbon from the atmosphere as it emits.

Zero Emissions

For a company to achieve zero emissions, it must not produce any greenhouse gas emissions at all. To meet this standard, all greenhouse gas emissions must decline to zero.

With an end goal in mind, the first step a company can take in reducing emissions is to understand where it currently stands. Often, the best place to begin is to assess your company's current energy data, which can provide insight into areas for improvement. This data can come from several sources, including:

Energy bills: Each month, your energy bill can reveal information about your utility usage, including energy, water and sewer. By reviewing this information on a regular basis, you will be able to identify anomalies such as billing errors, operational issues or sudden increases in usage. This will provide valuable insight into where you are using the most energy and how you might be able to improve.

While you can do this review manually, a tool like our Utility Bill Management platform can automate the process of identifying potential problems, so you can address any issues as quickly as possible.

Machinery and equipment: As equipment ages, it may begin to use more energy, resulting in higher usage and increased emissions. By inspecting the systems in your facilities, you can pinpoint existing or potential issues, such as an aging HVAC system, appliances or lighting systems. Replacing these outdated systems with newer, more energy efficient options will allow you to use less energy and reduce emissions.

Facility data: In addition to evaluating individual systems, appliances and pieces of equipment, look at data for each of your buildings as a whole. You may find that your facility uses more energy during a particular time of the year or see how size and occupancy rates can affect a building's energy usage. If you have multiple facilities, also compare individual locations. You may find that one uses disproportionately more energy than another, which could be raising overall energy usage and emissions. With this information, you can identify issues and make adjustments where needed.

7 Strategies to Reduce Emissions and Meet Sustainability Goals

Based on the data you gather about your current usage and emissions, you can begin to craft a plan that outlines the steps your company will take to reduce emissions and meet sustainability goals. There are several strategies you can combine to progress toward the goal of zero emissions.

1 Implement Efficiency Upgrades

Aging and inefficient equipment, such as light bulbs that burn out frequently or outdated machinery components, can be a significant source of energy usage and carbon emissions. So, it can be beneficial to assess your facilities for aging systems and replace them with updated equipment. With energy efficient alternatives, you can use less energy while providing the same amount of power to your systems.

2 Credit Emissions with RECs and EFECs

As an indirect way to reduce emissions, companies can purchase environmental attributes to match with your grid electricity use on an annual basis. Attributes are typically available as certificates that represent the benefits of different forms of electricity generation.

Renewable energy certificates (RECs) represent the emission-free attributes of one megawatt hour (MWh) of electricity generated by a renewable energy source, such as wind or solar power. Emission-free energy certificates (EFECs) represent the emission-free attributes of generating sources that do not emit greenhouse gases, such as nuclear power.

By purchasing RECs and EFECs, you can match your annual electricity use with the environmental attributes of a renewable or emission-free source. This allows you to substantiate renewable or emission-free electricity use claims when it is otherwise difficult to track where or how that energy was generated, especially on a shared utility grid.

3 Consider Sustainable Gas

Compared to non-renewable natural gas, renewable natural gas (RNG) supports reduced carbon emissions. RNG is pipeline-quality natural gas derived from the decomposition of organic matter, which comes from sources including landfills, wastewater treatment plants and agricultural waste digesters.

RNG can be used like standard natural gas. However, companies also have the option to purchase RNG attributes to match natural gas consumption onsite. By doing this, companies can claim that they are using natural gas that is generated from 100% renewable sources.

4 Purchase Carbon Offsets

Companies have the option to purchase carbon offsets to reduce or negate a company's onsite greenhouse gas emissions. Carbon offsets fund emissions reduction projects including forestry preservation, certain types of agriculture, water and waste management, methane capture, and carbon sequestration. This option doesn't require any facility or equipment modifications but allows companies to support projects that result in real, verifiable greenhouse gas reductions. By purchasing carbon offsets, companies indirectly reduce both onsite emissions (scope 1) and emissions made elsewhere in their operations (scope 3).

5 Onsite Renewable Energy Generation

To directly reduce emissions, companies can replace fossil fuel usage with sustainable energy sources, such as solar, hydro or wind power. By installing renewable energy generation projects onsite, such as solar panels, you can generate your own carbon-free energy and reduce emissions.

6 Offsite Renewables

Not all companies want to carry the risk or manage the implementation challenges of onsite renewable energy generation projects. Alternatively, you can take advantage of offsite renewables. These solutions allow you to integrate renewable energy purchases from existing or new-build solar, wind or other renewable generation facilities, into a load-following energy supply. In some ways, this is similar to purchasing RECs and EFECs, as it involves annual matching of your electricity, but sources the energy from a specific existing or new-build facility.

7 Hourly Carbon-Free Energy Matching

Using hour-by-hour regional tracking, hourly carbon-free energy matching allows companies to match electricity use with a clean energy source located in the same regional grid in real time. This provides a carbon-free energy source 24 hours a day, seven days a week, 365 days a year, so you can fully achieve zero-emission goals.

Companies may combine one or many of these solutions into their sustainability roadmap based on their current emissions and usage, as well as their goals for the future.

The path to sustainability is complex and looks different for every company. At Constellation, we are committed to helping your company build a customized roadmap that is right for your unique business. To learn more about our clean, carbon-free energy solutions or for assistance building your sustainability roadmap, reach out to our knowledgeable energy representatives. Together, we can move toward a cleaner future.

[i] https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Profits%20with%20purpose/Profits%20with%20Purpose.ashx

[ii] https://ghgprotocol.org/