Scope 1, 2 and 3 emissions: What to address first in your ghg reduction journey.

Roadmap to Sustainability Series: A Blog Series to provide the framework on how to develop and achieve long-term sustainability goals

More businesses are taking inventory of their greenhouse gas (GHG) emissions sources, either onsite or offsite, to find areas of improvement in order to comply with disclosure rules, such as the recently proposed SEC rule change on GHG disclosure, and to meet environmental, social and governance goals to attract investors.

Some companies are also implementing their own aggressive business-wide sustainability goals to be seen as a leader in sustainability. To ensure they make great strides, many businesses are creating target dates (e.g., 50% or 100% emissions-free by year 2030 or 2040, etc.) to reach their emissions reduction goals.

To start the process, it's important to get acquainted with the various sources of emissions associated with businesses.

Greenhouse gases emit from many sources and are often classified as either Scope 1, 2 or 3 emissions. They are each defined as:

- **Scope 1** emissions from onsite generation and fleet fuel consumption
- **Scope 2** emissions from fossil fuel consumption for power, such as power plants providing purchased electricity
- **Scope 3** emissions from indirect sources, such as company travel and supply chain management

Starting with Scope 1 Emissions

Scope 1 emissions are one area that businesses tend to focus on as they comprise of sources from a business' owned or controlled assets, and upgrades to these areas are typically easiest to manage. More than 7,000 facilities are required to report these emissions in their business' GHG report on an annual basis, according to the Environmental Protection Agency (EPA).[1]

Since Scope 1 emissions involve direct emissions created at customer sites or in their owned equipment (e.g., natural gas burned in a boiler or gasoline/diesel/fuel oil used in vehicles or equipment), then the following energy solutions may be helpful:

Energy efficiency projects

According to the American Council for an Energy Efficient Economy, new homes and commercial buildings could cut their GHG emissions by 70% with efficient design and use of cleaner electricity [e.g., through energy-efficient upgrades, smart control technologies, and electrification of heating and cooling].[2] In addition, old, inefficient devices can silently eat away at budgets. For businesses looking to implement efficiency measures, Constellation offers energy efficiency options to help customers meet their sustainability goals.

Incorporating electric vehicles (EVs) into your company's fleet

The value that electric vehicles (EVs) offer, such as their ability to reduce environmental impact, meet sustainability goals and reduce total cost of ownership, will be contributing factors that will ultimately alter the landscape of personal and public transportation over the next 20 to 30 years. There is a growing consensus that the electrification of transportation is an important step in meeting aggressive GHG emissions reduction goals because transportation comprises approximately 30% of total GHG emissions.[3]

Renewable natural gas (biogas)

Although biogas, like natural gas, produces carbon dioxide (CO2), a greenhouse gas, the carbon in biogas comes from plant matter, making biogas production carbon-neutral and not adding to greenhouse gas emissions.[4] Ultimately, fossil fuels replaced by biogas will lower CO2 emissions. When compared with natural gas, carbon emissions are 40 percent lower in biogas engines.[5] In addition, when used to power vehicles, biogas reduces greenhouse gas emissions by up to 91% relative to gasoline.[6]

These strategies may lead to a profound reduction in a business' carbon emissions, but for companies who hope to go above and beyond these changes, looking at reducing Scope 2 and 3 emissions are also influential.

Exploring Scope 2 and 3 Emissions

Scope 2 emissions represent indirect emissions from energy purchased from power plants that would power a business' own facilities and equipment. "Although Scope 2 emissions physically occur at the facility where they are generated, they are [also] accounted for in an organization's GHG inventory because they are a result of the organization's energy use," according to the EPA.[7]

To reduce Scope 2 emissions, voluntarily matching electricity supply requirements with a carbon-free power generation source supports the use of emission-free fuels and demonstrates a commitment to the environment.

Many customers looking to take that next step to reach true zero emissions are seeking electricity supply that is sourced one hundred percent from carbon free power, hour by hour, from the local grid. Currently, most net zero clean energy supplies are achieved by offsetting energy use with renewable energy credits, or RECs, on an annual basis without considering where or when that renewable energy was produced. This transition from annual to hourly matching is growing and Constellation is at the forefront of emerging standards in carbon accounting and hourly energy matching.

Some of the ways to match electricity supply with carbon-free power generation include:

- **The purchase of renewable Energy Certificates (RECs)**
- **The purchase of Emission-Free Energy Certificates (EFECs)**
- **The use of energy from an offsite renewable source, such as through Constellation Offsite Renewables (CORe)**

Finally, Scope 3 emissions relate to upstream and downstream supply chain operations and business travel.

Steps to reduce Scope 3 emissions are often complex and require mindful and strategic action. They involve choosing more sustainable vendors (or encouraging existing ones to engage in more sustainable acts) who assist with the following:

- **Purchased goods and services**
- **Business travel**
- **Employee commuting**
- **Waste disposal**
- **Use of sold products**
- **Transportation and distribution (up- and downstream)**
- **Investments**

- **Leased assets and franchises**

Depending on the aggressiveness of your sustainability goals, reducing either Scope 1, 2, or 3 emissions, or all of the above, should be a part of your GHG reduction strategy. To help measure the impact on energy usage and carbon emissions, a utility expense management program, such as the Pear.ai platformoffered by Constellation, can help you generate energy insights, such as baseline energy usage data and how this data changes over time with your energy efficiency upgrades.

Sources

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