



## Scope 3 Greenhouse Gas Emissions Accounting for Electric Power Companies

This Program 201 back-pocket-insight (BPI) describes how electric companies can account and report their “Scope 3” greenhouse gas (GHG) emissions as part of a corporate GHG emissions inventory.

This is the fourth BPI in a series designed to help electric companies and other entities conduct comprehensive GHG emissions accounting. It is based on recently completed<sup>1</sup> and ongoing research underway in P201.<sup>2</sup>

### GHG Emission Scopes

The [first BPI](#) introduced GHG emissions “scopes.” Direct emissions, referred to as *scope 1*, result from company activities that physically release (or remove) GHGs to the atmosphere, such as burning natural gas to generate electric power.

Indirect emissions result from company-related activities but are not directly emitted by the company. These indirect emissions can be classified either as *scope 2* or *scope 3*.

The [second BPI](#) describes how electric companies and other entities can account and report their indirect scope 2 emissions. Scope 2 emissions are associated with electricity, heat, steam, and cooling purchased by an electric company (or any other entity) to power its own operations. Scope 2 also includes electric company emissions associated with transmission and distribution (T&D) line losses. Scope 3 emissions refer to all other indirect emissions not included in scope 2.

The [third BPI](#) describes how corporate electricity customers in recent years have focused on procuring and using renewable energy and renewable energy credits (RECs) to reduce their reported scope 2 GHG emissions.

A complete entity-level GHG inventory typically includes all scope 1 emissions and – depending on the reporting purposes and the accounting protocol being used – all relevant scope 2 emissions. Scope 3 emissions are considered optional for voluntary reporting, but stakeholders increasingly are requesting information and data related to companies’ scope 3 emissions. In addition, the federal Securities and Exchange Commission (SEC) and the State of California are working on implementing new requirements to enhance public disclosure of corporate GHG emissions and “carbon risk” that may require reporting of scope 3 emissions.

### Scope 3 Emissions

Scope 3 emissions are classified into “upstream” and “downstream” activities that comprise an entity’s “value chain” (see text box on next page). Upstream activities involve a company’s supply chain and include inputs to a company’s

production. Downstream emissions relate to activities associated with selling goods and services to intermediate and end-use customers, and also may include emissions associated with a reporting company’s franchises and investments.

The *GHG Protocol Corporate Value Chain Accounting and Reporting Standard*<sup>3</sup> provides guidance to companies on how to prepare and publicly report a GHG emissions inventory that includes indirect emissions from *value chain* activities (i.e., scope 3 emissions). The Scope 3 Standard identifies 15 categories of upstream and downstream scope 3 emissions (Table 1).<sup>4</sup>

Table 1. Upstream and Downstream Scope 3 Activities

Upstream Activities	Downstream Activities
1. Purchased goods and services	9. Transportation and distribution
2. Capital goods	10. Processing of sold products
3. Fuel and energy-related activities	11. Use of Sold products
4. Transportation and distribution	12. End-of-life treatment of sold products
5. Waste generated in operations	13. Leased assets
6. Business travel	14. Franchises
7. Employee commuting	15. Investments
8. Leased assets	

Including scope 3 emissions in a corporate GHG inventory can improve understanding about the sources of emissions across an entity’s entire value chain and product portfolio. Scope 3 accounting and reporting also may help to identify potential GHG reduction opportunities, potential business risks and opportunities associated with scope 3 emissions sources, and may improve an entity’s reputation. The Scope 3 Standard is not intended to quantify GHG emissions reductions or avoided emissions caused by a specific intervention such as a GHG offsets project, or account for life-cycle emissions at a product level.

For many companies not engaged in energy production or fuel combustion, the majority of their GHG emissions often result from value chain activities and are indirect to their operations. By understanding the emission sources within a company’s value chains, companies may be able to collaborate with suppliers to reduce their GHG emissions or identify lower-emitting suppliers. Companies also can implement internal policies and changes to reduce these emission sources (e.g., promoting carpooling, encouraging use of public transit and reducing air travel).

Three scope 3 categories (employee commuting; business travel; waste generation in operations) often are reported by electric companies and other entities, and are well understood and comparatively straightforward to estimate and report.

<sup>1</sup> *Greenhouse Gas Emissions Accounting for Electric Companies: A Compendium of Technical Briefing Papers and Frequently Asked Questions*. EPRI, Palo Alto, CA: 2021. 3002022366. <https://www.epri.com/research/products/000000003002022366>.

<sup>2</sup> Supplemental Project on Scope 3 Greenhouse Gas Emissions Accounting for Electric Companies and Combined Utilities. EPRI, Palo Alto, CA: 2023. 3002025796.

<sup>3</sup>[https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf).

<sup>4</sup> Additional guidance on defining and calculating emissions from all of the 15 scope 3 categories can be found in the Scope 3 Standard supplement, Technical Guidance for Calculating Scope 3 Emissions.

[https://ghgprotocol.org/sites/default/files/standards/Scope3\\_Calculation\\_Guidance\\_0.pdf](https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf)



A **value chain** describes a series of coordinated business activities required to deliver a product or service. For example, a supply chain is the upstream value chain for a manufacturer of consumer products. Often, multiple parties including suppliers, transporters, service companies, professionals, retailers, and others are linked together to form a value chain.

From a reporting company's perspective, "supply chain" can be used to describe upstream activities, and "value chain" can be used to describe both upstream and downstream activities.

Two other scope 3 categories (fuel and energy-related activities; use of sold products) may be particularly relevant to some electric companies and combined electric-gas utilities and are more difficult to quantify and report accurately.

### Fuel and Energy-related Activities

This category covers scope 3 emissions related to upstream extraction and production of energy and energy purchased by a reporting company that is not reported as scope 1 or 2 including:

- Upstream emissions of purchased fuels (e.g., natural gas used to generate power) including extraction, production, and transportation of fuels consumed by the reporting company.
- Upstream emissions associated with purchased electricity, including extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling consumed by the reporting company.<sup>5</sup>
- Upstream T&D losses, such as electricity, steam, heating, and cooling energy lost in a T&D system.<sup>6</sup>
- Purchased electricity resold to end users and "wheeled" to intermediaries, including generation of electricity, steam, heating, and cooling.

### Use of Sold Products

For a natural gas company or combined utility, the emissions resulting from the use and combustion of natural gas by end-use customers are counted in the downstream scope 3 category 11 – Use of sold products. These include emissions resulting from combustion of natural gas by end-users and fugitive emissions (e.g., methane) occurring from customer-owned assets. Scope 3 emissions associated with the end-use natural gas consumption typically are based on the amount of gas sold to all customers.

### Double Counting and Scope 3 Emissions

When reporting a GHG inventory, it is acceptable for two entities to categorize the same emissions within different scopes. For instance, end-users of electricity would categorize the emissions from the electricity they purchase and consume as scope 2 while the electric company generating the electricity would categorize the same emissions as scope 1.

By reporting the same source of emissions under separate scopes, the electricity provider and end-use consumer can avoid making confusing and/or contradictory attributional accounting claims. In this way, scope categorization helps to prevent the double counting of emissions by multiple entities within the same emissions scope while maintaining the allocation of direct and indirect emissions attributable to each entity.

Scope 3 emissions, however, often are double counted by two or more entities in accordance with the GHG Protocol guidance. For example, both a fuel extraction company and an electric power company that combusts the extracted fuel would identify and account for fuel transport as a scope 3 emissions source.

### Scope 3 Accounting Challenges

The Scope 3 Standard is ambiguous regarding setting scope 3 accounting boundaries and boundary-setting for scope 3 is notoriously difficult. A reporting company can account for emissions as far upstream or downstream as they choose. This situation causes challenges to accounting accuracy and inventory completeness and relevance. Further, when developing a scope 3 inventory, companies face challenges related to collecting activity data and locating appropriate emissions factors for indirect emissions sources.

Another challenge for companies considering doing scope 3 accounting is how to balance undefined objectives for completeness (i.e., including more scope 3 sources relevant to the corporate GHG inventory) and accuracy (i.e., enhancing the quality of the activity data and EFs used to calculate scope 3 emission sources) given limited time and resources.

When trying to address these challenges, reporting companies need to consider data availability and their ability to collect high-quality data relevant to their business objectives. Not all scope 3 information will be relevant to a reporting company, and it may be useful to screen scope 3 emissions sources (e.g., removing sources for which data is not available) before calculating their emissions.

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<sup>5</sup> If an electric utility purchases electricity from another entity for its own use, the associated emissions are scope 2. This scope 3 emissions source relates to activities that enabled the electricity to be produced (e.g., extraction, transportation).

<sup>6</sup> If the company owns the electricity generation equipment, then these losses are included in scope 1 emissions through the quantification of fuel combustion to

produce electricity. If the company does not own the generation equipment but owns the T&D system (i.e., a "wires only" utility), then these losses are accounted for in scope 2. If a company purchases electricity from another entity and does not own the T&D system used to transport it, then the T&D losses would represent a scope 3 emission source.