

# QUICK INSIGHTS



## Program on Technology Innovation: Key Challenges in Electric Company Greenhouse Gas Emissions Accounting

This Technology Innovation (TI) program Quick Insight (QI) highlights key elements and challenges associated with voluntary corporate greenhouse gas (GHG) emissions accounting and reporting by electric companies and combined utilities in the United States.<sup>1</sup> It is intended to provide a quick overview and point to additional technical resources for senior executives and managers of electric companies responsible for GHG emissions accounting, sustainability reporting, and corporate decarbonization strategy.

### KEY POINTS

- A GHG emissions inventory accounts for the GHG emissions and removals attributed to a company's operations over a calendar year. In addition to mandated GHG reporting requirements in some jurisdictions,<sup>2</sup> several voluntary standards provide guidance on data inputs and calculation methods for voluntary reporting.
- A GHG emissions inventory typically includes emissions of carbon-dioxide (CO<sub>2</sub>) and several other GHGs, and includes a company's direct "scope 1" emissions (e.g., emissions from combusting fossil fuels to generate electricity) and indirect "scope 2" emissions (e.g., emissions associated with company purchases of electricity, heat, steam, and cooling for its own use).
- "Scope 3" emissions are indirect and include 15 categories of *upstream* and *downstream* emissions. For example, Scope 3 emissions for a natural gas supplier would include emissions from combustion of the natural gas by their customers. Scope 3 emissions typically are considered optional for voluntary reporting, but stakeholders increasingly are requesting this information.
- In 2023, California enacted new laws that require companies that exceed \$1 billion in annual revenue and that do business in California to begin publicly disclosing their scope 1, 2 and 3 GHG emissions to state regulators and disclose their "climate risk." The U.S. Securities and Exchange Commission (SEC) is considering taking similar action.
- An important methodological challenge for completing GHG inventories is accounting for the GHG emissions related to purchased electricity (either retail or wholesale). Average grid-based emission factors (EFs) often are used to estimate CO<sub>2</sub> emissions associated with power purchases in electric company GHG inventories while *marginal* EFs can be used to estimate the potential GHG emissions impact of an "intervention," such as a GHG offsets project designed to reduced emissions. *Load-based* EFs estimate the GHG emissions associated with delivered electricity.

<sup>1</sup> For more information about GHG accounting concepts and methods, see *Greenhouse Gas Emissions Accounting for Electric Companies: A Compendium of Technical Briefing Papers and Frequently Asked Questions*. EPRI, Palo Alto, CA: 2021. [3002022366](#).

<sup>2</sup> For example, the mandatory CO<sub>2</sub> Cap-and-Trade programs in California and Washington, and the Regional Greenhouse Gas Initiative in the Northeast.

## KEY CHALLENGES FACING ELECTRIC COMPANIES

1. Balancing purpose, cost, and time objectives to enhance the “completeness” of a company’s GHG inventory (e.g., including more scope 3 sources) while also improving the “accuracy” of its GHG accounting and reporting (e.g., enhancing the quality of EFs used).
2. Determining how to calculate a load-based EF that electricity end-use customers can use to report their scope 2 emissions associated with their power purchases.<sup>3</sup>
3. Deciding which GHG emission accounting scopes to include in a company’s GHG inventory and voluntary emissions reduction commitments or goals (e.g., net-zero by 2050).
4. Developing an inventory management plan and curating key corporate data and industry-specific information, acquiring and training staff and/or managing

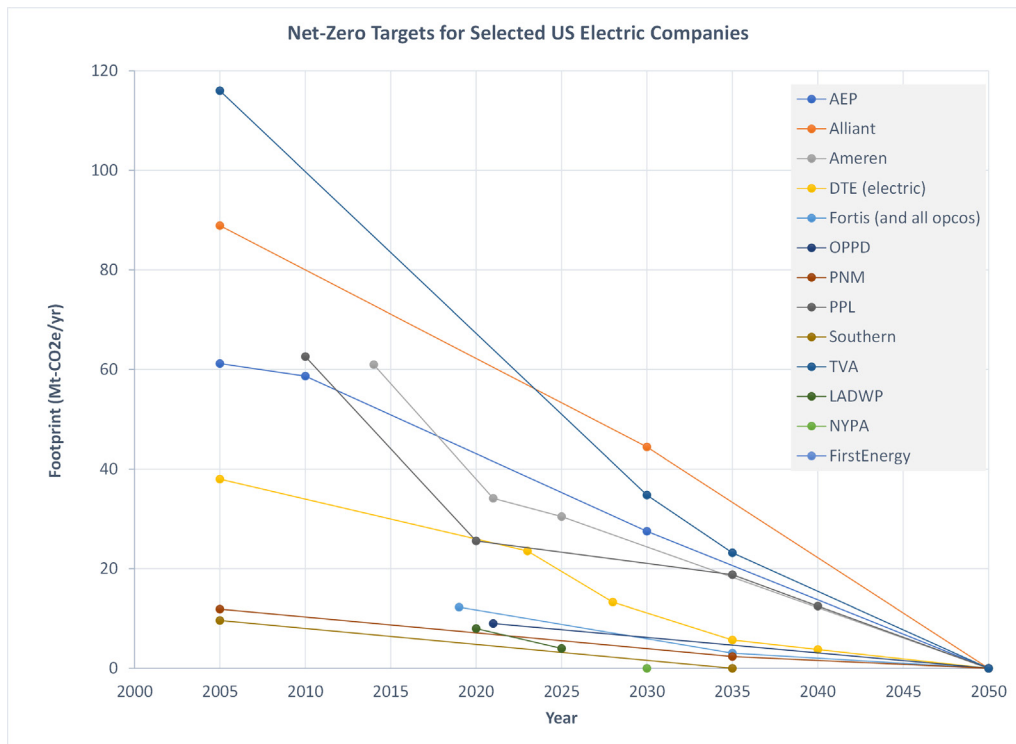
outside contractors, and developing needed information technology infrastructure to account and report accurate entity-wide GHG emissions.

EPRI has extensive GHG accounting experience and has created numerous resources to support EPI members in their efforts to conduct GHG accounting and reporting.<sup>4</sup>

## DEMAND FOR ELECTRIC COMPANY GHG DATA IS GROWING

Three key drivers of increasing demand for GHG emission inventories include:

- **Voluntary emission reductions.** In recent years, many electric companies and combined electric and natural gas utilities in the United States have adopted aggressive corporate decarbonization and “net-zero” goals (Figure 1). GHG accounting is needed to provide consistent tracking of emissions and progress towards commitments over time periods spanning decades.



**Figure 1.** Example of Electric Company Net-zero Targets.  
Source: EPRI 2023. Based on free publicly available information and data.

<sup>3</sup> Understanding Source-based and Load-based Greenhouse Gas Emissions Accounting. EPRI, Palo Alto, CA: 2022 [3002024037](https://www.epri.com/3002024037).

<sup>4</sup> See <https://esca.epri.com/GHG-Accounting-Markets-and-Offsets.html#GHG-Accounting> for a bibliography of EPRI research on GHG emissions accounting and reporting.

- **Stakeholder requests.** Requests from external stakeholders including investors, customers, non-governmental organizations (NGOs) to provide comprehensive GHG accounting information have become more frequent and detailed in recent years.
- **Government requirements.** Comprehensive GHG emissions reporting already is required in some states, and the federal government has proposed new regulations that could compel most electric and natural gas utilities to report their GHG emissions, including scopes 1, 2 and 3.

For example, in September 2023 California enacted two laws (SB-253<sup>5</sup> and SB-261<sup>6</sup>) that require companies that exceed \$1 billion in annual revenue and that do business in California to begin publicly disclosing their scope 1, 2 and 3 GHG emissions to state regulators and disclose their “climate risk.”

In April 2023, the United States Security and Exchange Commission (SEC) published a proposed regulation that would require virtually all publicly-traded entities and those that float debt in markets regulated by the SEC – including many electric and natural gas utilities – to disclose their scope 1, 2 and 3 emissions publicly on an annual basis.<sup>7</sup> A final rule is anticipated later this year.

## GHG EMISSIONS ACCOUNTING AND INVENTORIES

There are two types of GHG emissions accounting which are used for different purposes. *Attributional* accounting seeks to allocate responsibility for direct and/or indirect GHG emissions from particular activities to specific organizations. It includes emissions from the three different GHG emissions “scopes” described below. *Consequential* accounting can be used to estimate the potential impact of public policies, emissions offset projects and other mitigation activities designed to reduce GHG emissions.

<sup>5</sup> See [Bill Text - SB-253 Climate Corporate Data Accountability Act. \(ca.gov\)](#).

<sup>6</sup> See [Bill Text - SB-261 Greenhouse gases: climate-related financial risk. \(ca.gov\)](#).

<sup>7</sup> United States Security and Exchange Commission, Notice of Proposed Rulemaking on The Enhancement and Standardization of Climate-Related Disclosures for Investors, April 11, 2023. <https://www.govinfo.gov/content/pkg/FR-2022-04-11/pdf/2022-06342.pdf>.

A GHG emissions inventory is an assessment of the direct and indirect GHG emissions and removals attributed to a company’s operations over a calendar year. Entity-level accounting frameworks provide standardized methods to estimate GHG emissions for an entire entity, corporation, or organization.

The most widely used standard in the United States and internationally is the [GHG Protocol Corporate Standard](#).<sup>8</sup> Many electric companies also use The [Climate Registry’s Electric Power Sector Reporting Protocol](#)<sup>9</sup> to guide their GHG accounting and reporting.

Frameworks that account for emissions from specific sources (i.e., “source-based” accounting),<sup>10</sup> such as an industrial facility or an electricity generating unit (EGU), are the most well-developed. Typically they are used to support government regulatory programs that include legal compliance obligations, such as performance standards or “cap-and-trade” emission control programs.<sup>11</sup> Using this approach, an electric company accounts only for the direct “scope 1” emissions from its generating assets and other facilities it owns or “controls.”<sup>12</sup> In contrast, an entity-wide, corporate GHG emissions inventory includes not only a company’s direct “scope 1” emissions, but also often includes indirect scope 2 and scope 3 emissions (described below). Reporting scope 3 emissions often is optional for voluntary reporting, but stakeholders increasingly are requesting information and data related to companies’ scope 3 emissions.

While it is acceptable for two different entities to categorize the same GHG emissions within *different* emission scopes,

<sup>8</sup> <https://ghgprotocol.org/corporate-standard>.

<sup>9</sup> <https://theclimateregistry.org/registries-resources/protocols/>.

<sup>10</sup> Source-based emissions accounting often is used to assure compliance with government-mandated regulatory programs, such as local air pollutant permitting and compliance programs, hazardous air pollutant programs, and cap-and-trade programs. It is used by the federal government to ensure electric company compliance with the Clean Air Act, Title IV Acid Rain Program that regulates SO<sub>2</sub> and NO<sub>x</sub> emissions and, for reporting to the EPA under the Greenhouse Gas Reporting Program (GHGRP) (40 CFR Part 98).

<sup>11</sup> Examples include the European Union’s GHG Emissions Trading System (EU ETS), the Regional Greenhouse Gas Initiative (RGGI) in the Northeast, and California’s mandatory GHG emissions cap-and-trade program.

<sup>12</sup> Examples include fugitive SF<sub>6</sub> emissions from transmission system transformers and fugitive natural gas from company-owned natural gas pipelines and distribution infrastructure.

scope categorization helps prevent double counting of emissions by multiple entities within the same emissions scope. For instance, end-use electricity customers would categorize emissions associated with the electricity they buy and consume as scope 2 emissions, while the electric company generating the electricity would categorize the same emissions as scope 1. By reporting the same emission source under different scopes, the electricity provider and end-use consumer can avoid double-counting and making confusing and/or contradictory attributional claims. Scope 3 emissions, however, often are double counted by two or more entities. For example, both a fuel extraction company and a utility that combusts the extracted fuel would identify fuel transport as a scope 3 emissions source.

Corporate GHG inventories typically include accounting and reporting of carbon dioxide (CO<sub>2</sub>) and other GHG emissions (e.g., methane, nitrous oxide and others).<sup>13,14</sup> Typically, companies report their annual GHG emissions in terms of metric tonnes of “carbon dioxide equivalent (tCO<sub>2</sub>e)” emissions. This metric accounts for the different global warming impacts of each of the individual GHGs being emitted.<sup>15</sup>

## Scope 1 Emissions

Corporate activities may cause *direct* and *indirect* GHG emissions which can be categorized under different “scopes.” Direct emissions, referred to as “scope 1,” are emissions from equipment and facilities owned or controlled by a reporting company and operational activities that physically release (or remove) GHGs into (from) the atmosphere. For example, an electric company’s scope 1

emissions would include emissions associated with combusting natural gas to generate electricity, fugitive SF<sub>6</sub> emissions from transmission system transformers, and mobile emissions from its vehicle fleet.

## Scope 2 Emissions

Indirect emissions are classified either as scope 2 or scope 3, and result from sources that are not owned or operated by the company but are essential to its operations. Scope 2 emissions refers specifically to emissions associated with *electricity, heating, cooling, and steam* purchased by an entity for its own use.

A large component of many electricity customers’ total GHG emissions is scope 2 emissions associated with buying and using electricity to operate their businesses. Scope 2 also includes GHG emissions associated with electricity transmission and distribution systems (T&D) line losses associated with transmitting electricity from where it is generated to load-serving entities (LSEs) and end-use customers.

## Scope 3 Emissions

Scope 3 emissions refer to all other indirect emissions not included in scope 2. For many corporations not engaged in energy production or fossil fuel combustion, the majority of their GHG emissions are likely to be indirect to their operations and be associated with their “value chain” activities. The GHG Protocol Scope 3 Standard guides companies on how to prepare and report 15 categories of “*upstream*” and “*downstream*” scope 3 emissions resulting from value chain activities (Table 1).<sup>16,17</sup>

<sup>13</sup> Other GHGs typically included in emissions inventories are methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and nitrogen trifluoride (NF<sub>3</sub>). Other GHGs (e.g., other ozone depleting substances) also may be included.

<sup>14</sup> Greenhouse Gas Protocol, 2013. Required Greenhouse Gases in Inventories: Accounting and Reporting Standard Amendment. [https://ghgprotocol.org/sites/default/files/standards\\_supporting/Required%20gases%20and%20GWP%20values\\_0.pdf](https://ghgprotocol.org/sites/default/files/standards_supporting/Required%20gases%20and%20GWP%20values_0.pdf).

<sup>15</sup> The United Nations Intergovernmental Panel on Climate Change (IPCC) assesses the global warming potential (GWP) values of each GHG, accounting for their different atmospheric lifespan and warming effect. By definition, CO<sub>2</sub> has a GWP equal to 1. According to the IPCC Assessment Report 5: CH<sub>4</sub> has a GWP of 28 and N<sub>2</sub>O has a GWP of 265. These GWPs can be used to convert emissions of each GHG into universal units called “carbon dioxide equivalents (CO<sub>2</sub>e).” For example, 1 metric ton (“tonne”) of CH<sub>4</sub> emissions has an equivalent warming effect of 28 tonnes CO<sub>2</sub>e.

<sup>16</sup> Additional guidance on defining and calculating emissions from 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).

<sup>17</sup> The Scope 3 Standard is not intended to quantify GHG emissions reductions or avoided emissions caused by a specific project interventions (e.g., GHG emissions offsets projects), or account for life-cycle emissions at a product level. *The Product Life Cycle Accounting and Reporting Standard* (2011) provides guidance on how to quantify and publicly report an inventory of GHG emissions and removals associated with a specific product. [https://ghgprotocol.org/sites/default/files/standards/Product-Life-Cycle-Accounting-Reporting-Standard\\_041613.pdf](https://ghgprotocol.org/sites/default/files/standards/Product-Life-Cycle-Accounting-Reporting-Standard_041613.pdf).

**Table 1.** Upstream and Downstream Scope 3 Activities

SCOPE 3 UPSTREAM ACTIVITIES	SCOPE 3 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	

Two scope 3 categories — *Fuel and Energy-related Activities* and *Use of Sold Products* — are particularly relevant to electric companies and combined utilities.

### Fuel and Energy-Related Activities

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

- Upstream emissions of purchased fuels such as natural gas and coal, 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>18</sup>
- Upstream T&D losses, such as electricity, steam, heating, and cooling energy lost in a T&D system.<sup>19</sup>

<sup>18</sup> If an electric utility purchases electricity from another entity for its own use, the associated emissions would be categorized as scope 2. This scope 3 emissions relate to the activities that enabled the electricity to be produced (e.g., extraction, transportation).

<sup>19</sup> If the company owns the power generating 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 generating 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, T&D losses would represent a scope 3 emission source.

- Purchased electricity sold to end users or “wheeled” to third parties, including generation of electricity, steam, heating, and cooling purchased by a reporting company and resold to end users.

### Use of Sold Products

For a natural gas company or combined electric and gas utility, the emissions resulting from the use and combustion of natural gas by end-use customers are included in the downstream scope 3 category “Use of Sold Products.” Scope 3 emissions from the use of natural gas are based on the amount of gas sold to all customers. These emissions include those resulting from the combustion of gas by end-use customers and any fugitive (e.g., methane) emissions occurring from customer-owned assets.

### GHG Emissions Factors

Each GHG source included in a GHG inventory needs to be quantified by direct measurement or estimated using accurate and credible methods. For example, CO<sub>2</sub> emissions from EGUs can be measured directly using continuous emissions monitors (CEMs). This kind of scope 1 GHG emission source also can be estimated by multiplying activity data (AD), such as mass or volume of fuel combusted (e.g., MCF of natural gas combusted), by an appropriate emissions factor (EF) such as tCO<sub>2</sub>e /MCF.

Electricity can be generated from different primary energy sources (e.g., coal, natural gas, renewables). Many end-use electricity customers, particularly consumer-oriented large C&I customers, want to know the GHG emissions intensity (tCO<sub>2</sub>e/MWh) of the electricity they purchase from their local electric utility – referred to as a **load-based EF** -- so they can account and report their scope 2 GHG emissions and potentially take action to reduce these emissions.

Unfortunately, it is impossible to track the electricity generated by specific power plants through the electric power grid and delivered to specific end-use customers. In limited cases, it may be possible to identify specific power plants that supply electricity to end-use customers (e.g., “island” power systems and microgrids), but in most cases the electricity delivered to consumers is undifferentiated “grid power.” Because of this, a methodology is needed to attribute power system GHG emissions to end-users. While several different approaches have been developed in recent

years – and a variety of start-up companies<sup>20</sup> – are focused on this issue, there currently is no widely-agreed upon approach for developing load-based EFs.<sup>21</sup>

Given this, electricity customers often use an **annual grid average EF**<sup>22</sup> to estimate their scope 2 emissions associated with purchased electricity. Typically, this is a generation-weighted EF averaging all GHG emissions (or CO<sub>2</sub> only) associated with all power generation resources operating in a defined grid region for a specified period of time (e.g., calendar year). Annual grid average EFs for the entire U.S. disaggregated into 25 sub-regions are available in the Emissions & Generation Resource Integrated Database (eGRID) maintained by the U.S. Environmental Protection Agency.<sup>23</sup> Electric companies also use annual grid average EFs to estimate and report scope 2 emissions associated with electricity they may purchase from others to power their own operations, as well as for other GHG accounting purposes.

In 2022, EPRI published a white paper<sup>24</sup> exploring the how some large commercial and industrial customers (e.g., Google) have started to procure “24/7 Carbon-free energy” to better match their actual hourly load to hourly generation of renewables and other carbon-free resources (e.g., geothermal, hydropower, nuclear). This shift in corporate “green power” procurement is driven in part by corporate sustainability goals to reduce scope 2 GHG emissions associated with buying electricity. In 2023, EPRI created an interest group on 24x7 CFE to continue to explore this topic with the EPRI members.<sup>25</sup>

A **marginal EF** represents the emission rate of the marginal power generating resource dispatched to meet real-time electric demand. Marginal EFs are instantaneous and change continuously as the marginal source of power changes moment to moment depending on load and grid conditions. Marginal EFs are used in consequential GHG accounting to estimate *changes in emissions or removals* that may be caused by a specific project or program intervention, such as implementing a GHG offsets project. However, marginal EFs are not appropriate to use for attributional accounting in part because emissions from marginal generation units cannot be allocated and claimed by multiple companies simultaneously.

Recently, several ISOs, including the California ISO (CAISO), the PJM Interconnection (PJM) and the Midcontinent ISO (MISO), and the U.S. Energy Information Agency (EIA) have started to publish data and information on hourly power generation and GHG emissions by individual Balancing Areas (BAs) and grid “nodes.” Access to this data may be helpful to electric companies, their customers and other entities trying to do GHG accounting and reporting, but these values also have critical shortcomings that make them challenging to use to develop accurate LEFs.

## NEXT STEPS

EPRI has been engaged in GHG emissions accounting issues for more than 20 years. During this time, EPRI has assisted member electric companies to develop and report comprehensive GHG emissions inventories, and has participated in expert working groups focused on improving GHG accounting and reporting for electric companies and combined utilities.

Currently, EPRI Program 201 (*Energy, Environmental, and Climate Policy Analysis*) leads an ongoing EPRI supplemental project focused on *Scope 3 GHG Emissions Accounting for Electric Companies and Combined Utilities*.<sup>26</sup> This project builds upon two previous EPRI supplemental projects completed in 2021<sup>27</sup> and 2022.<sup>28</sup>

<sup>20</sup> For example, FlexiDAO, Granular Energy, Kevala, Singularity, and Watt-Time.

<sup>21</sup> For a summary of load-based accounting approaches, see *Methods to Account for Greenhouse Gas Emissions Embedded in Wholesale Power Purchases*. EPRI, Palo Alto, CA: 2019. [3002015044](https://www.epri.com/research/products/00000003002015044).

<sup>22</sup> Some RTOs and ISOs publish GHG intensity data for their operating footprint. The US EPA’s eGRID program also publishes emission intensities for grid sub-regions of the U.S. One challenge using eGRID and other EF databases is that publishing typically lags one or more years behind the current reporting period.

<sup>23</sup> <https://www.epa.gov/egrid>.

<sup>24</sup> *24/7 Carbon-free Energy: Matching Carbon-free Energy Procurement to Hourly Electric Load*. EPRI, Palo Alto, CA: 2022. [3002025290](https://www.epri.com/research/products/00000003002025290).

<sup>25</sup> Interest Group On 24/7 Carbon-Free Energy (CFE), <https://www.epri.com/research/products/00000003002027730>.

<sup>26</sup> For more information about this EPRI supplemental project, see <https://www.epri.com/research/products/00000003002025796>.

<sup>27</sup> *GHG Emissions Accounting for Electric Companies* (2020-21).

<sup>28</sup> *Exploring the Role of GHG Emissions Offsets to Achieve Corporate Decarbonization Goals* (2022).

To address the challenges described in this QI, EPRI plans to expand our current GHG emissions accounting research activities in 2024 and beyond to assist EPRI members with navigating this complex and rapidly evolving area. In 2024, Program 201 plans to launch a new EPRI supplemental project to continue our research on scope 3 and related GHG accounting issues. In 2024, we also plan to launch a new *GHG Accounting Supplemental Program* to be included in EPRI's 2025 Annual Research Portfolio. Program 201 also is collaborating with Program 246 (*Electricity Market Design and Operation*) to explore GHG accounting issues related to electricity that is supplied and delivered via wholesale power markets.

In 2022, the GHG Protocol began a comprehensive review of its Corporate Standard, Scope 2 Guidance, Scope 3 Standard, and Market-based accounting approaches.<sup>29</sup> This review is expected to take three years and result in publication of new and revised accounting guidance by the end of 2025. To date, EPRI has responded to requests for information from the GHG Protocol, and the Institute plans to be engaged more deeply in this review once the GHG Protocol publishes its updated draft standards and guidelines in 2024.

## EPRI RESOURCES

EPRI P201 has developed a variety of valuable GHG accounting resources<sup>30</sup> available at no cost to EPRI members and the public including:

- *Greenhouse Gas Emissions Accounting for Electric Companies: A Compendium of Technical Briefing Papers and Frequently Asked Questions*, EPRI, Palo Alto, CA: 2021. [3002022366](#).
- *Methods to Account for Greenhouse Gas Emissions Embedded in Wholesale Power Purchases*. EPRI, Palo Alto, CA: 2019. [3002015044](#).
- *24/7 Carbon-free Energy: Matching Carbon-free Energy Procurement to Hourly Electric Load*. EPRI, Palo Alto, CA: 2022. [3002025290](#).
- *Understanding Source-based and Load-based Greenhouse Gas Emissions Accounting*. EPRI, Palo Alto, CA: 2022. [3002024037](#).
- *Overview of GHG Emissions Accounting*. EPRI, Palo Alto, CA: 2022. <https://publicdownload.epri.com/PublicAttachmentDownload.svc/AttachmentId=78315>.
- *Scope 2 GHG Emissions Accounting for Electric Power Companies*. EPRI, Palo Alto, CA: 2022. <https://publicdownload.epri.com/PublicAttachmentDownload.svc/AttachmentId=79139>.
- *RECs and GHG Accounting*. EPRI, Palo Alto, CA: 2022. [https://esca.epri.com/pdf/Back-Pocket-Insights/BPI\\_Scope-2-RECS\\_GHG-Accounting.pdf](https://esca.epri.com/pdf/Back-Pocket-Insights/BPI_Scope-2-RECS_GHG-Accounting.pdf).
- *Scope 3 Greenhouse Gas Emissions Accounting for Electric Power Companies*. EPRI, Palo Alto, CA: 2022. <https://publicdownload.epri.com/PublicAttachmentDownload.svc/AttachmentId=85780>.

<sup>29</sup> See <https://ghgprotocol.org/ghg-protocol-standards-and-guidance-update-process-0> for information about the GHG Protocol review.

<sup>30</sup> See <https://esca.epri.com/GHG-Accounting-Markets-and-Offsets.html#GHG-Accounting> for a bibliography of EPRI research on GHG emissions accounting and reporting.

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