

Accounting for energy purchases and related instruments in a corporate GHG inventory: a summary of global scoping workshops and technical consultations by the GHG Protocol

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Introduction

Governments and companies increasingly seek ways to reduce GHG emissions associated with electricity consumption while supporting the growth of renewable energy (RE) markets. State/local jurisdictions, policy programs and individual corporate strategies have explored a variety of ways to accomplish these goals, including most commonly in the US: hosting RE projects on-site; establishing power purchase agreements (PPAs) with specific generators or utilities; purchasing Renewable Energy Credits (RECs); participating in utility green pricing programs; and emissions offsets. These differentiated energy products and instruments vary in several significant but subtle ways, including: their function in a particular market and policy; their intended purchasers; which characteristics (or attributes) of the underlying energy they represent; and crucially, how the purchaser is expected to record the product, if at all, in their corporate GHG inventory.

The GHG Protocol Initiative at World Resources Institute created the internationally-consistent framework for corporate GHG emissions disclosure, called the *Corporate Standard*, which broadly identifies how companies should account for emissions from electricity consumption. However, the Standard does not provide guidance on how these various instruments should be reflected, as the market for these products has grown significantly since the second edition of the Standard (in 2004). The lack of clarity regarding the nature of these instruments and how they should be accounted for has led to international inconsistency in how corporate electricity consumption emissions are disclosed, leaving stakeholders and corporate decision-makers without a clear basis to evaluate RE and GHG-reduction strategies and exposing companies to reputational risks. Importantly for the sector, this ambiguity has constrained and delayed corporate investment in renewables and prevented the optimization of RE growth.

Therefore, the GHG Protocol has sought to provide a set of internationally-accepted accounting guidelines, called the *Power Accounting Guidelines*, which would offer a framework for analyzing, accounting and reporting power purchases and projects, based on the principles of the *Corporate Standard*. Like all GHG Protocol publications, the *Guidelines* will be developed through a global, inclusive, and multi-sector stakeholder process. To date, this process has included three market-specific scoping workshops over the past nine months in Washington DC, London (UK) and Mexico City (Mexico), and

has engaged over 175 companies, reporting programs, consulting firms, industry associations, NGOs and government policy-makers across 25 countries.

Many stakeholders have made accounting and reporting recommendations based on the instruments, experiences and goals of their particular market: but global companies following the *Corporate Standard* have struggled to identify an internationally consistent approach, methodology and rationale. The *Guidelines* will provide an international framework that distills the key attributes and accounting requirements necessary for corporate reporting and offers a basis from which country or program-specific recommendations can be developed (mirroring how the *Corporate Standard* is currently used by corporate GHG reporting initiatives such as CDP, The Climate Registry, Defra corporate reporting guidance, and programs in Mexico, Brazil, Indonesia and elsewhere).

To provide an analytical framework to assess RE instruments, the *Guidelines* seek to include a description and examples of GHG accounting approaches and practices from relevant GHG Protocol publications; survey of RE-related instruments; case-study analysis of how these instrument attributes apply to RE installations in emissions-capped power sectors and other specific policy scenarios with potentially overlapping attribute claims; and draft recommendations on criteria and practices for accounting and reporting. This paper outlines interim results of this project, including the overview of GHG accounting approaches and the survey of RE-related instruments, as well as a list of draft criteria for recording RE instruments in inventories.

Accounting Approaches and Scope 2

The GHG Protocol has identified two basic accounting approaches that are relevant for both direct and indirect emissions accounting: attributional and consequential accounting. Consequential accounting is associated with offset credits as described in the GHG Protocol's *Project Protocol* and requires a comparison to a "business as usual" reference case, which is by definition hypothetical. In contrast, attributional accounting relates to dividing up real emissions that have occurred amongst a variety of indirect users in a supply chain. Both approaches have been used to evaluate electricity generation projects and their related instruments in various energy markets.

The Corporate Standard and attributional accounting

The *Corporate Standard* uses an attributional accounting approach as the standard for corporate-level GHG accounting. It serves to track and reflect real emissions that have occurred for which a company has responsibility. A company's inventory boundary (established by the consolidation approach it chooses) determines whether an emissions source is direct (scope 1) or indirect (scope 2 or 3). Some companies may be both the owner/operator of facilities that generate electricity as well as the consumer of that electricity. In these cases, any emissions associated with electricity generation are already reflected in the company's scope 1. (In the case of renewable energy, these generation emissions would generally be "zero"). On the other hand, companies may generate electricity that is then transmitted to a grid where any number of end-users will consume it. In order that these end-users can account for the generation emissions in scope 2 and scope 3 requires a means of attributing the emissions amongst the end-users. A variety of methods can be employed to execute this attribution.

Currently, most companies estimate electricity emissions based on grid average emission factors.¹ This method implicitly attributes total regional generation emissions across end-users in proportion to their consumption, and the regional boundaries of these factors means that this attribution will approximate physical consumption or production, depending on how the boundary is drawn. This attribution method treats every consumer “equally” within the defined region, regardless of use-pattern or contractual arrangement with their supplier. However, this estimation method hardly represents the nature of electricity purchasing for commercial and industrial consumers, whose contracts and instrument purchases provide indication of specific generation sources rather than an average mix. In other words, this same goal of indirect electricity emissions attribution could be executed in a way that reflects differentiation between consumers and the electricity purchases they make, with end-users *choosing* the emissions profile associated with their consumption, even if this differs from the average physical emissions likely associated with their region. For this approach to work, a clear understanding of the GHG attributes conveyed by various RE instruments is required.

Survey of Instruments and Their Attributes

The project has undertaken a comprehensive survey of the instruments and products prominent in energy markets with active corporate consumers and investors (namely, the US, UK, continental Europe, and select emerging economies which fund RE projects through CDM offset credits). These instruments include the following categories: on-site projects that both produce electricity for internal consumption and excess generation which may be sent back to the grid; explicit tracking mechanisms and “differentiated energy products” such as REGOs, RECs and LECs; utility-differentiated energy products or labels; power purchase contracts; allowances in emissions-capped power sectors; and offset credits. Each of these instruments has been studied in terms of the attributes it conveys, and whether those attributes can be linked to attributional or consequential accounting.

Basic Draft Accounting and Reporting Criteria

The GHG Protocol has proposed the following list as criteria for reporting a differentiated product, and this list will be reviewed by Technical Working Groups convened by the project:

1. Are the attributes clear?
 - a. *Can they be substantiated?*
 - b. *Are they defined by regulatory or voluntary bodies?*
 - c. *Are there other related policies or conditions which have restricted the claiming of the attributes associated with the instrument or project?*
2. Is the ownership clear?
 - a. *Is there a registry to track the transactions?*

¹ *Transmission and Distribution losses*

The *Corporate Standard* notes that emissions associated with the electricity that is effectively “consumed” (or “lost”) in transmission and distribution lines should be reflected in the scope 2 inventory of the company that owns/operates the T&D equipment, and separately in the end-user company’s scope 3 category. Accounting for T&D losses separately in scope 3 requires grid loss factors or rates for various grids, which may be listed in the same publications or sources that track generation emission factors.

- b. *Is your instrument retired once a claim is made?*
- c. *Are there other instruments associated with this project?*
- d. *Do any other instruments associated with that project convey those same attributes and rights directly?*
- e. *Are the instruments' attributes indirectly represented in other forms? (e.g., emission factors)*

Summary

The framework for power accounting being currently developed by the GHG Protocol is based on stakeholder scoping workshops and the application of GHG Protocol accounting principles, and seeks to provide critical clarity in the methodology and reporting procedures for a variety of differentiated energy products and other instruments. Technical Working Groups have begun to review the draft guidelines and reporting criteria described here, as well as further inquiry into harmonizing calculation and reporting practices for utility-specific emission factors and the important implications of government or market policies that restrict reporting on purchases based on a variety of eligibility criteria (often unrelated to the technical accounting requirements) in order to fulfill other policy goals. The final *Guidelines* will be available for public comment in February 2012.

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