

Reporting greenhouse gas emissions caused by purchased electricity

A summary of the Greenhouse Gas Protocol Scope 2 Guidance

Drafted by the EKOenergy Secretariat, January 2015

This summary exists in many languages: see www.ekoenergy.org > ecolabel > other standards

For more information, see www.ghgprotocol.org > Scope 2 Guidance and www.ekoenergy.org

Introduction

Most - if not all - companies need to buy electricity which has been produced by others. How do they have to account for the carbon emissions* resulting from the production of that electricity? Or in 'carbon footprinting terminology': How do companies have to calculate their scope 2 emissions?

In January 2015, the Greenhouse Gas Protocol (GHG Protocol) published advice on this topic, called Scope 2 Guidance. Its publication was preceded by four years of discussion and public consultation. In this summary, we list some of the main recommendations of the Guidance.

General requirement: 'dual reporting'

The Guidance requires that companies operating in liberalised electricity markets report two numbers:

1) Companies have to give a **location-based** number. This number is based on the greenhouse gas emissions caused by the electricity production in the area where the consumption takes place. In practice, these numbers are easiest to calculate on a country by country basis. For instance, the location-based number can be calculated by multiplying

a) the electricity consumption of the company within the borders of a specific country (consumption expressed in kWh) and

b) the average greenhouse gas emissions of 1 kWh in that country. Information about the average greenhouse gas emissions of the electricity on the national grid can be found with the grid operators or in reports of the International Energy Agency.

2) Companies operating in liberalised markets as the EU also have to report a market-based number. To calculate this number, the reporting company has to use the carbon emissions produced by the energy installations from which it gets its electricity. The origin of the electricity has to be proven by so called "contractual instruments which fulfil minimum quality criteria". In Europe, the only way to prove the origin of electricity is with Guarantees of Origin.

*All underlined words are further explained in the glossary at the end of the text.

If (European) companies use electricity whose origin is not proven by Guarantees of Origin, they have to calculate their market-based emissions by using the greenhouse gas emissions of the residual mix.

Companies usually don't report the scope 2 emissions alone, but their 'total emissions'. This total is the sum of the scope 1 and the scope 2 emissions. Companies may either report two totals (one based on the location-based scope 2 number and one based on the market-based number), or they may choose to report one total. In the latter case, they have to explain what scope 2 number they have used. The Guidance recommends that companies use the same calculation method for the calculation of this total as the method they use to calculate their targets. As explained in the chapter about target setting, this means that companies on liberalised markets are recommended to use the market-based number.

Emissions

Scope 2 refers to the emissions produced at the point of energy generation. The scope 2 emission factors do not include grid losses nor life-cycle emissions.

For the market-based number, the Guarantee of Origin is the carrier of greenhouse gas emissions. If a company purchases renewable energy, it can therefore claim the 0 emissions related to the renewable energy. The emissions based on Life Cycle Assessment can be added, but as a part of the scope 3 calculation, not under scope 2.

Note 1: There is a special rule for energy generated from bioenergy: *any CH₄ or N₂O emissions from bioenergy use shall still be reported in scope 2 while the CO₂ portion of the bioenergy shall be reported outside the scopes. (I.e. separately from the scopes)*. See chapter 6.12 of the Guidance.

Note 2: Although not explicitly mentioned in the Guidance, also other forms of renewable energy can cause greenhouse gases at the place of electricity production. E.g. most geothermal plants emit a considerable amount of greenhouse gases and in some cases methane escapes from hydropower reservoirs. If such emissions occur, these emissions should be included in the scope 2 number.

Which consumption has to be included in the accounting?

Scope 2 is about purchases of electricity, heat and cooling. The reporting company can choose to report either purchases for the operations it owns, or for the operations it controls. Control can be defined in either financial or operational terms. For more information, see p. 17 of the *Corporate Standard* (www.ghgprotocol.org>Corporate Standard).

Target setting

When setting a target, companies have to specify which method is used for the goal calculation and progress tracking, including the method used for the base year calculation. The Guidance recommends the use of market-based numbers for companies active in liberalised markets (as explained in chapter 9.3).

Companies are encouraged to do even more

At the same time, the GHG Protocol recommends companies to go one step further “to spur an increase in new, low-carbon energy generation facilities”. In chapter 11.4, the Guidance lists some examples of how this can happen. These include for instance:

- ← Long-term power purchase agreements or other contracts with producers of renewable electricity.
- ← Additional criteria for the purchased electricity, such as criteria about the age of the production installation, or about the type of production. A company could use EKOenergy to prove that the electricity it purchases fulfils additional criteria.
- ← Making sure that a part of the price (a green premium) is reinvested in new production capacity. At this point, the Guidance explicitly refers to **EKOenergy’s Climate Fund**.

Other recommendations










Other recommended reporting includes (see chapter 8 of the Guidance):

- ← Annual electricity consumption;
- ← Related CH₄ and N₂O emissions;
- ← “Instrument features” (key features of the purchased Guarantees of Origin, such as the type of green energy or an ecolabel);
- ← Role of corporate procurement in driving new projects. With regard to the last item, the Guidance explains: “Where relevant, companies should elaborate in narrative disclosure how any of the contractual instruments claimed in the market-based method reflect a substantive contribution by the company in helping implement new low-carbon projects.” In other words, companies should tell how and to what extent their purchase contributes to the development of new renewable energy installations.

EKOenergy can be mentioned under the “Instrument features” (see table 8.1 of the Guidance). On top of this, the contributions to EKOenergy’s Climate fund (at least 10 eurocent per MWh) also fit under the narrative disclosure on new low-carbon projects. Contact the EKOenergy Secretariat for more information.

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GLOSSARY

-  **Carbon accounting:** measuring the amounts of greenhouse gas emissions of a particular entity.
-  **Dual reporting:** the obligation to report two carbon numbers, one based on the emissions of the regional or national electricity production units, and one based on the own electricity contract of the electricity buyer.
-  **EKOenergy:** the only Europe-wide ecolabel for electricity. See www.ekoenergy.org.
- Greenhouse Gas Protocol:** the GHG Protocol is the most widely used international carbon accounting tool. It is the result of a partnership between the World Resources Institute and the World Business Council for Sustainable Development.
-  **Guarantee of Origin:** the Guarantee of Origin is like an 'identity card' for the electricity. Electricity cannot be tracked along the electricity grid. This means consumers cannot have the guarantee that they really get their power ('electrons') from the company or the production plant that they prefer. However, it is possible to set up an accountancy system to record which company has put how much power from which source on the grid. In Europe, the tracking of electricity works through certificates called "Guarantees of Origin". The state issues one Guarantee of Origin per Mwh produced. When a consumer claims the consumption of a specific type of electricity, the corresponding Guarantee of Origin has to be cancelled.
-  **Life-cycle emissions:** all emissions produced during the whole 'life cycle of a product'. For example, for wind energy, life cycle numbers include the emissions caused by the production of the wind turbine as well as by the removal of the turbine at the end of its lifetime.
-  **Residual mix:** refers to the electricity on the grid that is not allocated to a specific end-consumer. If a consumer buys electricity of which the origin is not proven by a Guarantee of Origin, this consumer gets 'the residual mix'. The residual mix is calculated by the same state entities as those issuing the Guarantees of Origin.
-  **Scope 1 emissions:** greenhouse gas emissions produced at the premises of the accounting company or by company owned vehicles.
-  **Scope 2 emissions:** greenhouse gas emissions related to the consumption of electricity, heat and cooling produced by others and bought by the accounting company.
-  **Scope 3 emissions:** scope 3 emissions cover all indirect emissions caused by the activities of a company (except for those included in scope 2). This includes "upstream" as well as "downstream" emissions. Upstream emissions for instance are the emissions caused by the production of goods which a company needs in its own production process. Downstream emissions are the emissions caused by the goods the company has produced. E.g. if a company produces televisions, these televisions will consume energy once they are sold. And at the end of their lifetime, these televisions have to be somehow dismantled or disposed of. See www.ghgprotocol.org > Scope 3 Calculation Guidance.