

# Reporting greenhouse gas emissions caused by purchased electricity

*A summary of the Greenhouse Gas Protocol Scope 2 Guidance  
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For the full report, see the [GHG Protocol Scope 2 Guidance](#) by World Resources Institute (2015).

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## Introduction

Most - if not all - companies need to buy electricity that 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. In this summary, we list the main recommendations of the Guidance.

## General requirement: 'dual reporting'

1. All 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' (usually the country) where the consumption takes place. 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 on markets where "reliable tracking systems" are available, 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 "reliably tracked". To do this, companies need to use **tracking certificates** such as Guarantees of Origin in Europe, Renewable Energy Certificates in the USA, I-REC-certificates in some other countries. When companies, which are operating on markets where a reliable tracking system is available, decide not to use that system, then they have to calculate their market-based emissions by using the greenhouse gas emissions of the **residual mix**.

## Emissions

Scope 2 refers to the emissions produced at the point of energy generation. The scope 2 emission factors do not include grid losses or **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 such as wind or solar, it can therefore claim the 0 emissions related to this wind and solar energy. The emissions based on Life Cycle Assessment can be added, but as a part of the **scope 3** calculation, not under scope 2.

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



### 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.

### 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 Scope 2 Guidance recommends the use of market-based numbers whenever possible.

### 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 a third-party certification body like **EKOenergy**, to prove that the electricity it purchases fulfils additional sustainability criteria
- Making sure that a part of the price (green premium) is reinvested in new production capacity. At this point, the Guidance explicitly refers to *EKOenergy's Climate Fund*.

## GLOSSARY

**Carbon accounting:** measuring the amounts of greenhouse gas emissions of a particular entity.

**EKOenergy:** the international not-for-profit ecolabel for energy. The ecolabel is an initiative of 45 environmental NGOs from over 30 countries. Energy sold with the EKOenergy label is always tracked in a reliable way (there is no double counting), it fulfils additional sustainability criteria and raises money for new renewable energy projects. EKOenergy certified energy is available worldwide. See [www.ekoenergy.org](http://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.

**Life-cycle emissions:** all emissions produced during the whole life span 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 and that is "left over" for the other users. If a consumer buys electricity of which the origin is not proven by reliable tracking certificates, this consumer gets the residual mix. The residual mix is calculated by the same state entities as those issuing the tracking certificates.

**Tracking certificate:** Tracking certificates are 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 physically 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. Usually there is 1 tracking certificate per MWh. In Europe, the



tracking of electricity works through certificates called Guarantees of Origin. In the USA, the system is called REC (Renewable Energy Certificates). Other systems are available in other countries. When a consumer claims the consumption of a specific type of electricity, the corresponding Tracking Certificate has to be cancelled.

**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. At the end of their lifetime, these televisions have to be somehow dismantled or disposed of.



EKOenergy is a non-profit organisation providing the only international ecolabel for electricity and gas. In addition to being 100% renewable, the energy sold with the EKOenergy label fulfills strict environmental criteria and raises funds for new renewable energy projects. EKOenergy is a non- governmental organisation partner of Green Key.

