GHG Protocol and GGCS

Using Green Gas Certificates for GHG Reporting

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Ecofys at a glance

Global consulting company founded in 1984 with the vision to enable the energy and climate transition by connecting the dots – since November 2016, Ecofys is part of Navigant’s global Energy practice

Five Ecofys offices in four European countries (The Netherlands, Germany, Belgium, United Kingdom) and a strong North-American footprint with multiple Navigant offices

Over 200 experts at Ecofys, and 600 in Navigant’s global Energy practice, skilled in energy, climate, environment, economy, communication, legal, and psychology – in 2007, eleven of our experts supported the IPCC, being awarded with the Nobel Prize in 2007 together with Al Gore

30 years of experience in developing and evaluating policies, sustainability strategies, and scenarios for companies and sectors provides us with deep knowledge of markets and consumer behavior

Our strength lies in our strategic understanding of complex energy and climate transition issues: Ecofys connects the dots within the triangle between governments, energy players, and (energy-intensive) end-users
Introduction

> In 2015, Ecofys was commissioned by REAL to provide technical support on the further development of the GGCS

1. How green gas is accounted for by Member States in reporting to the European Commission
2. Basis for calculating and reporting GHG emissions of green gas at the international, EU and UK levels
3. Concept of “claims” end-users and the scheme can credibly make

> Focus of this presentation is on how green gas is treated in the Greenhouse Gas (GHG) Protocol
What is the GHG Protocol?

> GHG Protocol has been developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) in a multi-stakeholder partnership of businesses, NGOs, governments and others.

> It is the most widely used international accounting tool for governments and businesses to **understand, quantify and manage** GHG emissions.

> It serves as the foundation for nearly every GHG standard and program in the world.
  > Including Defra GHG Reporting Guidelines.
How are GHG emissions reported in the GHG Protocol?

> GHG Protocol **Corporate Accounting standards** define how GHG emissions of companies along the value chain should be reported.

> GHG Protocol divides a company’s emissions into so called, “direct” and “indirect” emissions:

- **Direct emissions** are emissions (directly emitted) from sources that are owned or controlled by the reporting company.
- **Indirect emissions** are emissions that are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another company.

> GHG emissions are further divided into 3 “scopes”.
## Short introduction to the GHG Protocol scopes

<table>
<thead>
<tr>
<th>Emissions type</th>
<th>Scope</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct emissions</strong></td>
<td>Scope 1</td>
<td>Emissions from operations owned or controlled by the reporting company</td>
<td>Emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment</td>
</tr>
<tr>
<td><strong>Indirect emissions</strong></td>
<td>Scope 2</td>
<td>Emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company</td>
<td>Use of purchased electricity, steam, heating, or cooling</td>
</tr>
<tr>
<td></td>
<td>Scope 3</td>
<td>All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions</td>
<td>Production of purchased products, transportation of purchased products, or use of sold products</td>
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</table>
Overview of GHG Protocol scopes and emissions across the value chain

Source: GHG Protocol, Corporate Value Chain (Scope 3), Accounting and Reporting Standard, September 2010
How is green gas treated in the GHG Protocol?

- **Direct** emissions related to the combustion of the green gas are included as part of **Scope 1** as long as the gas is combusted by sources that are owned or controlled by the reporting company.
  - CH\(_4\) and N\(_2\)O emissions are reported within **Scope 1**
  - **CO\(_2\)** *biogenic emissions* are reported, *but separately from the scopes in a memo item*.

- **Indirect** upstream (or life cycle emissions) associated with the gas use are reported under **Scope 3 - category 3: Fuel and energy related activities**.
  - For green gas this includes the emissions associated with the extraction or cultivation of raw materials, land use change (if relevant), processing, transport and gas distribution (including losses).
Scope 2 Quality Criteria are used to determine whether gas is treated as green gas

> Treatment of green gas in the GHG Protocol is included in the GHG Protocol Scope 2 Guidance, published in 2015

> Guidance primarily focusses on GHG emissions from purchased electricity, but a parallel is made with the reporting of Scope 1 emissions from consumed natural gas, including green gas

> If a company purchases green gas through a contractual instrument, then the company shall ensure that the instrument meets the so called “Scope 2 Quality Criteria”
  > Company should report the Scope 1 emissions for green gas using the “market-based method” using a specific (lower) emission factor

> If the instrument does not meet the criteria the gas use should be reported as Scope 1 natural gas using a standard emission factor
## GHG Protocol Scope 2 Quality Criteria

**All contractual instruments used in the market-based method for scope 2 accounting shall:**

1. Convey the direct GHG emission rate attribute associated with the unit of electricity produced.
2. Be the only instruments that carry the GHG emission rate attribute claim associated with that quantity of electricity generation.
3. Be tracked and redeemed, retired, or canceled by or on behalf of the reporting entity.
4. Be issued and redeemed as close as possible to the period of energy consumption to which the instrument is applied.
5. Be sourced from the same market in which the reporting entity’s electricity-consuming operations are located and to which the instrument is applied.

**In addition, utility-specific emission factors shall:**

6. Be calculated based on delivered electricity, incorporating certificates sourced and retired on behalf of its customers. Electricity from renewable facilities for which the attributes have been sold off (via contracts or certificates) shall be characterized as having the GHG attributes of the residual mix in the utility or supplier-specific emission factor.

**In addition, companies purchasing electricity directly from generators or consuming on-site generation shall:**

7. Ensure all contractual instruments conveying emissions claims be transferred to the reporting entity only. No other instruments that convey this claim to another end user shall be issued for the contracted electricity. The electricity from the facility shall not carry the GHG emission rate claim for use by a utility, for example, for the purpose of delivery and use claims.

**Finally, to use any contractual instrument in the market-based method requires that:**

8. An adjusted, residual mix characterizing the GHG intensity of unclaimed or publicly shared electricity shall be made available for consumer scope 2 calculations, or its absence shall be disclosed by the reporting entity.

Ecofys’ assessment of whether the GGCS meets the Scope 2 Quality Criteria

> **1. Convey the direct GHG emission rate attribute (claim) associated with the unit of electricity produced.**
  > Proposed action for GGCS: GGCS certificates should also specify the attributed emission rate
  > **Scope 1:** Clarify that Scope 1 emissions for CH\(_4\) and N\(_2\)O are accounted and biogenic emissions are reported as a memo line
  > **Scope 3:** Recommended to align with RHI (max. 34.8 g CO\(_2\)/MJ)

> **2. Be the only instruments that carry the GHG emission rate attribute claim associated with that quantity of electricity generation.**
  > GGCS terms and conditions clearly state that producers should **not** register their gas under both the GGCS and any other scheme
Ecofys’ assessment of how the GGCS meets the Scope 2 Quality Criteria

3. Be tracked and redeemed, retired, or cancelled by or on behalf of the reporting entity.
   - Green gas producers are required to be accredited to the RHI as a pre-condition for participating in the GGCS scheme
   - GGCS system labels electronically each kWh of green gas with a unique identifier known (RGGO), rounded to the nearest kWh
   - Certificates associated with the RGGOs are passed on to the consumer
   - Associated RGGOs are retired out of the system
4. Be issued and redeemed as close as possible to the period of energy consumption to which the instrument is applied. (The GHG Protocol is not explicit about the definition of “close”.)

> The certificate already includes the date (month and year) which it was produced

> It is up to the reporting company and ultimately the auditor of the company’s footprint to decide what is considered “close enough”

> We consider it acceptable if the green gas is produced during the current, or previous reporting year
Ecofys’ assessment of how the GGCS meets the Scope 2 Quality Criteria

> 5. Be sourced from the same market in which the reporting entity’s electricity-consuming operations are located and to which the instrument is applied. (The GHG Protocol is not explicit about the definition of “market”.)

> Green gas producers are required to be accredited to the RHI as a pre-condition for participating in the GGCS scheme

> RHI is applicable to the UK only

> GGCS certificates already include the country of origin (England, Wales, Scotland, N. Ireland)
Ecofys conclusions

Our assessment shows that the GGCS certificates meet the Scope 2 Quality Criteria – if GHG intensity included on certificates

Scope 1
> Companies can use GGCS certificates to report almost zero GHG Scope 1 emissions for green gas use
> CH₄ and N₂O are still accounted for

Scope 3
> Upstream life cycle emissions are reported – based on RHI

Biogenic emissions
> Reported as a memo line separately from the scopes

This automatically means that GGCS certificates can be part of an (e.g. Science Based Targets) aligned climate strategy
Please get in touch!

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