

The use of GOs and carbon credits in relation to CO₂ and additionality

Extra Board meeting Vienna, 17 September 2008

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Note to the reader:

At the moment of sending out this memo, the WG Demand Side still has one conference call about the final version on 16 September 2008.

1. Summary

In this memo we discuss the use of the Guarantee of Origin (GO) for disclosure within the framework of carbon neutral entrepreneurship. Point of departure is the 'trias energetica': (1) energy saving is priority number one, (2) if you still need energy, the energy must be from renewable sources and (3) if that is not possible you can use fossil (preferably high efficient and/or compensated) energy. The use of the GO needs to be considered in step two of the trias energetica where the GO is used to proof that renewable electricity has been produced and/or consumed (as a tracking instrument for make and buy options). Emission reduction units (like JI, CDM and VER's) are used in step 3. From this point of view the tradable GOs are principally different from tradable emission reduction units.

Another crucial aspect in carbon neutral approaches is the difference between direct emissions and indirect emissions (plus possible emissions from others that can be influenced by the company). Further detailing of these aspects is too much asked for this memo. Here we conclude with the fact that direct emissions can be distinguished from indirect emissions, that buying GOs reduces indirect emissions (unless the company is the owner of the renewable energy source) and that offsetting can be used for both.

The production of renewable energy can lead to (tradable) emission reductions. In that case there might be an overlap with the tradable GOs. In this memo the interactions between the two are discussed.

Apart from the issue of possible double claiming or using the benefits of renewable energy, we have the issue of additionality on the table. Consumption of renewable energy (or better redemption of emission reduction units and GOs) must lead to additional environmental value.

The memo concludes with the statement that further elaboration of the principle of redemption of GOs is needed. The claims that can be made after buying GOs or emission reduction units need to be better defined.

2. Introduction

In this memo the relation/overlap between the use and possible claims within the use of the Guarantees of Origin (GO) and carbon credits are discussed as well the relation/overlap between the use and possible claims on additionality with GOs and carbon credits.

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Within certificate trading there is confusion about the interpretation of the CO₂ aspects in relation to renewable energy certificate (or GOs) trading and trading of carbon credits. This is for RECS International the reason to go into the matter and to publish this memo. The memo first of all provides an outline of the current situation. Renewable sources produce electricity and this renewable electricity is sold on the market.

Apart from the overlaps in the use of especially GOs and carbon credits, the memo also focuses on the definition of additionality. After detailing the different aspects some conclusions are drawn. RECS International is looking for open debates with stakeholders to discuss these conclusions, with the aim to create transparency towards end-users and consumers of renewable electricity.

3. Guarantees of Origin and carbon credits

In this chapter we give a short description of the GO and carbon credit. For both the CO₂ claim and the additionality claim are detailed.

In general a producer of renewable electricity "produces" in fact three products:

- (1) the physical electricity to be sold on the electricity market,
- (2) GOs and
- (3) carbon credits.

In practice two types of certificates can be issued for the electricity generated by renewable sources (1) the GO and (2) carbon credits. The GO as well as the carbon credit are virtual, most of the time electronically tradable and related to climate change.

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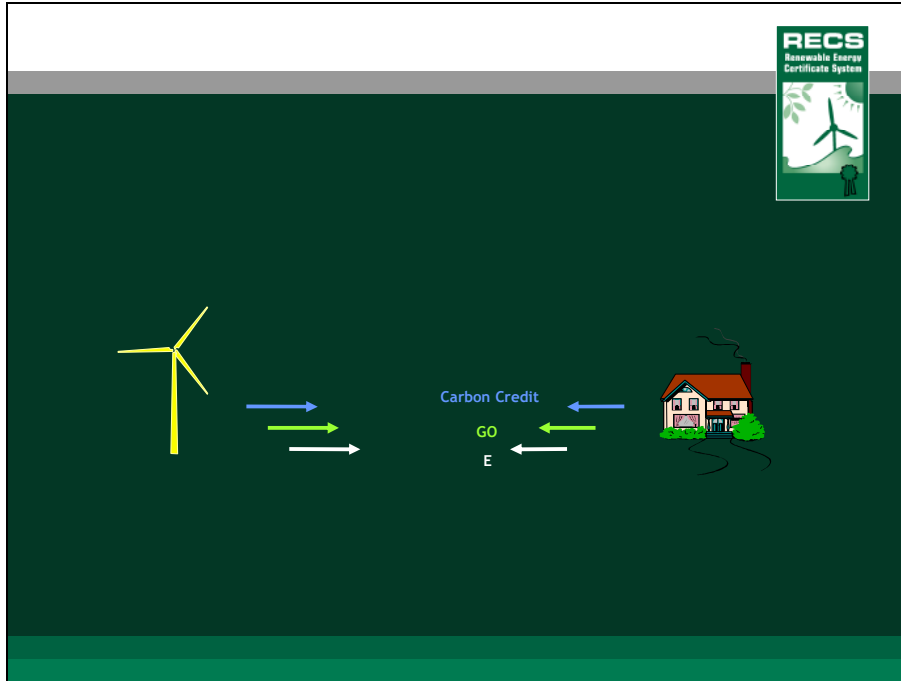


Diagram 1. Illustration of three 'products' which can all be 'consumed' by an end-user.

3.1. Guarantees of Origin

We prefer to speak about the GO only. The GO is a tradable green certificate and refers to the definition in the RES directive (2001/77).

3.1.1. GO-system as book and claim system

The GO-system as described in the RES directive 2001/77 is interpreted by RECS International as a "book and claim" system.

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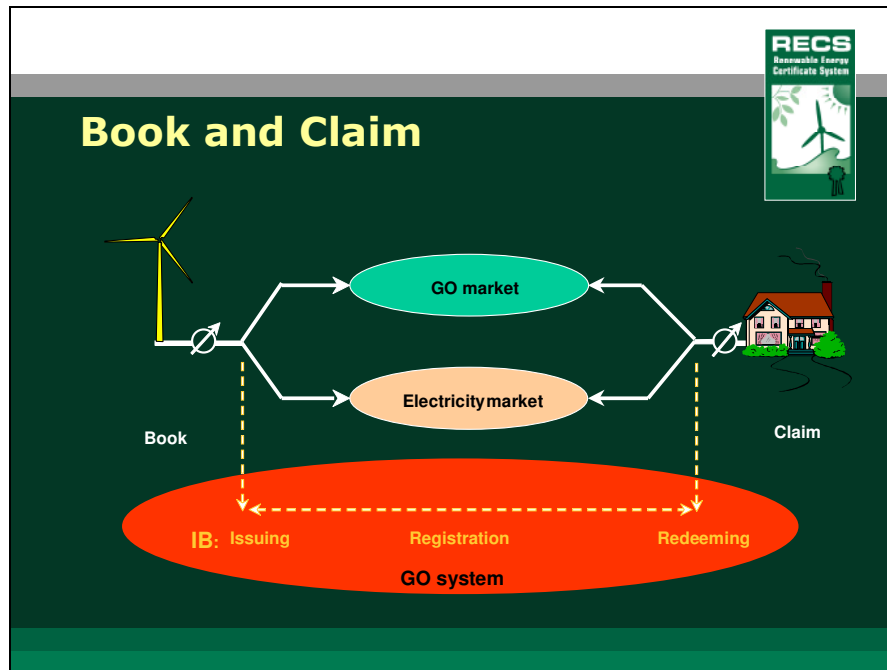


Diagram 2. Illustration of the GO-system as a book and claim system.

In a book and claim system the lifecycle of the GO is split in three phases (1) the issue, (2) the transfer/trade and (3) the redemption phase. Only after the electricity has been produced and fed in the grid a GO is issued. You could say that on that moment the electricity is "booked in".

The GO is a tradable electronic record. This means that the GO can be transferred to another owner as much as desired by market players. But at a certain moment in time the owner decides to use or "redeem" the GO. In fact one could say that at that moment, electricity is taken out of the grid and is used by an end-user. The supplier can now "claim" that the electricity supplied was produced and originated from a renewable source. Only someone who in fact has redeemed the GO can make that claim and therefore double claiming is avoided.

Note that the wording of the claim is important. In case a supplier has redeemed the GO, the supplier can claim to have supplied renewable electricity (and therefore the consumer can claim to have consumed renewable electricity). Or the consumer can redeem the GO and in that case only the consumer can make the claim to have consumed renewable electricity.

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The principle of "book and claim" is in practice used in a number of situations:

1. In the voluntary markets

Suppliers offer renewable electricity to end-users. If so, the supplier is supposed to redeem the GO. To assure this, RECS International introduced the Quality Standard enabling a third party to audit the actual redemption. In some countries legislation has been introduced to make redemption obligatory (NL, FL, AU).

2. Disclosure markets

Suppliers are obliged to inform their costumers about the fuel mix of the electricity supplied. For the renewables part the GO can be used. Note that in some countries this is regulated in the electricity law (among other in NL, FL, and AU)

3. Cross border trade

Electricity is traded between countries in big volumes¹. In case the origin of the electricity has to be proven the GO has to be traded alongside the electricity. For this reason the national GO-systems need to be harmonised, preferably according to the existing EECS system from the Association of Issuing Bodies (AIB).

3.1.2. The CO₂ claim within the GO-system

The CO₂ claim can only be made after redemption. Just ownership of a GO is not good enough because otherwise the CO₂-claim can be made each time the Go is sold to another person. So, only after redemption the CO₂ claim is possible.

As explained above the redemption of the GO is related to the supply and/or consumption of renewable electricity. In fact the GO discloses the origin of the electricity. Coupled with the fact that renewable sources are producing electricity without CO₂ emissions, the supplier (or consumer) of the renewable electricity can claim to have supplied or consumed zero carbon emission electricity.

RECS International would like to stress that it would be incorrect to state that the supplier or the consumer of renewable electricity reduced CO₂ emissions.

This approach has consequences for the non renewable electricity consumers. For consumers that use fossil electricity the emission factor must be calculated. Normally this factor is calculated without taking in account that part of the electricity is sold and consumed as renewable and must therefore excluded from the calculations. It is interesting to know when and where these corrections are made.

One could conclude that renewable electricity consumers/producers are making the correct claims but the non renewable consumers probably work with a too low emission factor per kWh.

The working Group Demand Side of RECS International worked on the phrasing of possible claims to make after redemption of GO's. An overview is given in a annex 1 of this memo.

¹ In 2007 in total 137 TWh was certified. This volume seems to double every year.

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3.1.3. The Additionality claim within the GO-system

Additionality means that redemption of the GO must lead to added (environmental) value. The redemption of the GO as such does not lead to added value (without redemption of the GO the electricity was produced anyway and thus the added value is there: the redemption does not change that fact). The created environmental value of renewable energy is always there regardless of redemption of the GO or not. In both cases the electricity has been produced and thus the environmental value has been created, since compared to fossil energy renewable energy avoids CO₂ emissions.

In Europe however there is a special situation in which all Member States have a target for renewable energy in place. One could argue that the production of extra renewable energy on top of the target is added value. This would mean that GO redemption above or not counting for a national target, is additional. There are no rules in place yet in any Member State that regulates this idea.

Other definitions of additionality are possible. In the case of EUGENE for example additionality can be created if additional carbon credits are purchased and cancelled in the rightful registries.

The debate about additionality in Europe is on a very low level and no general criteria are accepted. Therefore consumers of renewable electricity are not informed about additionality. It is advisable to inform the consumer about the status of the renewable electricity including the definition that is used.

3.2. Carbon credits

Production of renewable energy reduces CO₂ emissions in comparison to fossil electricity sources. For this characteristic a carbon credit can be issued. There are a number of regimes that issue carbon credits, of which the most important are:

- JI and CDM under the Kyoto protocol
- ETS and the linking directive
- Voluntary systems (e.g. Gold Standard)

For the schemes mentioned registries are in place or are under construction. Just like this is the case of the GO it is possible to get carbon credits issued, transferred and cancelled. The rules for these activities are not standardised though.

The principle of "redemption" is also introduced in carbon trading. Usually the carbon credits need to be 'handed over' to the authorities and are registered in official registries. For voluntary schemes like the Gold Standard registries are introduced and the carbon credits can be cancelled or taken out of the market.

A carbon credit is not a information or tracking instrument like the GO. The cancellation of a carbon credit is so far never used for disclosure purposes and the system is not designed for that purpose.

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3.2.1. The CO₂ claim within carbon credit systems

It is pretty clear that CO₂ reductions can be claimed for offsetting carbon emissions after buying and cancelation of carbon credits. In fact that is the reason why these credits are issued sold and cancelled for!

A person or company that cancels a carbon credit can state that he did reduce CO₂ emissions. He can not say that his consumed electricity is produced without CO₂ emissions (like is the case with the GO).

A consumer of electricity (non-renewable) is emitting CO₂. These emissions can be compensated by cancelling CO₂ reduction units (offsetting). In case these reduction units are 'produced' by a renewable source, this consumer still cannot claim to have consumed renewable electricity (the carbon credit system is not designed for that purposes and is simply not a tracking system).

3.2.2. The Additionality claim within carbon credit systems

For all regimes issuing carbon credits the additionality criterion is essential. The bottom line for all definitions of additionality is the feasibility of the project. If the project is not financially feasible without the selling of carbon credits the project is additional. Or in other words additionality is created when a project and subsequently its emission reduction would not have occurred in a business as usual scenario.

4. Discussion

4.1. Unique identification

Within the GO-system it must be avoided that more than one GO is issued for the same electricity. The RECS system excludes this, but other systems (e.g. TÜV) do not exclude double issuing. This can easily be avoided by for example inserting the coordinates of a project so that, without full disclosure of all information in the registry, issuers can check a possible double issue of green certificates or carbon credits.

In case the coordinates of the project are included in the registry this information must be made publically in order to increase the transparency for market players as well as governments and authorities.

4.2. Combination GOs and carbon credits

Looking at the GOs and carbon credits it is important to distinguish the geographical area and the scheme (what type of certificate can the producer apply for) the renewable plants are operating in.

In the diagram below the situation is considered from the consumers' point of view and in this diagram the consumer is always situated in the EU. In that case, the production is either situated within or outside the EU.

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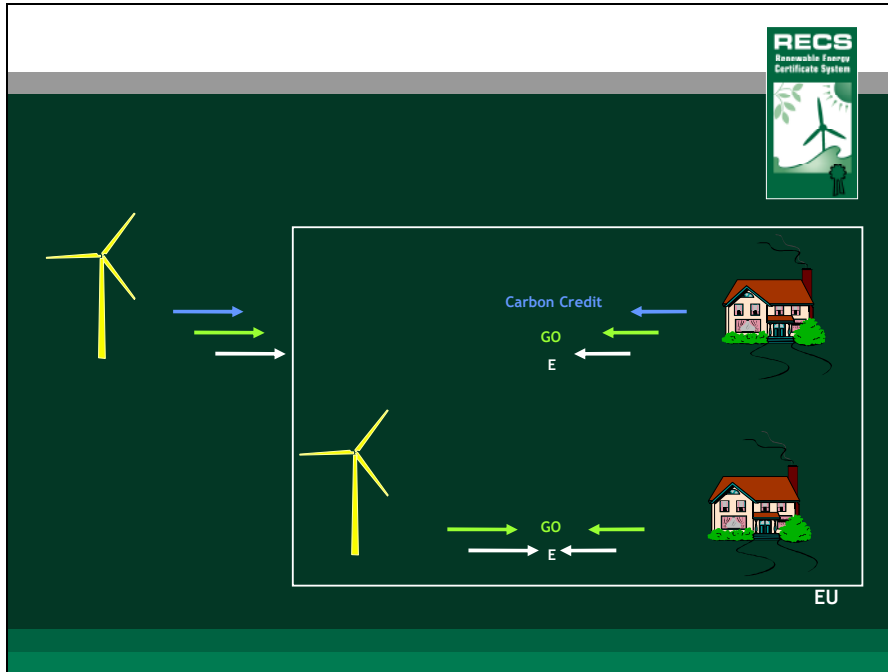


Diagram 3: Combination GO & carbon credit

4.2.1. Production plant in EU

In case we only consider production and consumption in the EU the situation is quite simple. Within the EU no carbon credits are issued for renewable energy sources. Within ETS, emission reduction units (JI) for renewable energy are not considered as additional per definition. The reason behind this is that for renewable energy in the EU separate targets are formulated. Governments stimulate renewable energy in order to reach the RES targets rather than to reach ETS targets.

So, no double claiming is possible since no emission reduction units are issued.

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4.2.2. Production outside EU

In case the production unit is located outside the EU, carbon credits might be issued and sold to end-users in the EU.

The Gold Standard excludes projects that already receive renewable energy certificates. It is seen as an extra financial income that might make the project financially feasible and thus not additional anymore within the criteria of Gold Standard.

RECS International will probably not exclude the issue of a GO in case carbon credits are issued as well. The green certificate is after all a tracking tool with or without additionality.

5. Conclusions

Analysing the GO-systems and the carbon credit systems, and after discussing the interactions between the two systems we can draw the following conclusions.

Renewable production within EU

Within the EU there are no interactions between the GO and carbon credits, since only GOs are issued. And the other way around, since no GO's is issued outside the EU.

The GO-system discloses the origin of the electricity and if the electricity is of a renewable source, the consumption of the electricity is without CO₂ emissions and the consumer's footprint is zero for that part of the electricity consumption.

The emission factor for fossil energy users and producers needs adjustments, based on the fact that renewable electricity is claimed to be zero emissive.

The consumption of renewable electricity (redemption of the GO) does not automatically lead to additionality:

- Additionality is not always wanted/desired
- Communication about additionality is poor and needs to be improved.
- There is no general definition for additionality available, but this is desirable.
- GO is basically issued to guarantee the production of a certain source

Production outside EU

The situation is not clear because it depends on the type of scheme for carbon credits.

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Unique identification

It might be an idea to introduce an extra information field on the GO stating if a carbon credit has been issued and if so, what type of credit.

Another solution is to include the coordinates of the project and make these public, so that other issuers can check if double issue occurs.

Transparency about issuing bodies is needed. Who is issuing what kind of certificate and in what geographical area? And does the one exclude the other?

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Annex 1: Possible claims after redemption of GOs

RECS International distinguishes carbon neutral products from carbon neutral compensated products.

Renewable electricity as a carbon neutral product

The supplier as well as the consumer of renewable electricity can make a claim on the carbon neutrality of the product.

RECS International recommends to use the following phrases when claiming carbon neutrality of renewable electricity, based on EECS² certificates.

- "The renewable electricity³, based on EECS-certificates, is carbon neutral and did not cause any CO₂ emissions during its production".
- "The renewable electricity can be compared with non-specified electricity. The production of grey electricity causes CO₂ emissions. In country X the average emission of grey electricity is according to country X's disclosure regulation xx CO₂ per kWh".
- "In 200y Company Z reduced its **indirect** CO₂ emissions [at x %] (at x tonne CO₂ eq.) by purchasing renewable source electricity."⁴

Certain statements cannot be made:

- "By using renewable electricity the consumer has avoided or reduced xx CO₂ emissions per kWh"
- "As consumer of renewable electricity I claim the CO₂ reduction"

² The reference to EECS must explicitly be made. EECS is the only way to proof that renewable electricity has been supplied without double counting or double selling. Note that the Guarantee of Origin as well as RECS certificates form part of EECS.

³ Here is referred to the product as such. The product can be supplied or consumed.

⁴ Only if the company, compared to a reference year, increased its share of renewable source electricity with constant consumption.