GGCS & REA position on grid delivery of biomethane

1. Summary

- **Current Guarantees of Origin systems in place in the UK represent a robust documentation system for tracking grid delivery of biomethane to consumers**
- **Recognition for grid delivery of biomethane in UK policy landscape lacks consistency**
- **Clear recognition in the Renewable Transport Fuel Obligation (RTFO) and the Green Gas Levy (GGL) is not matched in other areas e.g. EU/UK ETS, heat network policy, Climate Change Levy**
- **Recognition within voluntary reporting schemes e.g. GHG Protocol, is also important and overlaps with government policy e.g. Streamlined Carbon and Energy Reporting**
- **Opportunities to engage consumers and drive demand for biomethane are being missed**

Currently most biomethane in the UK is sourced from the gas grid (referred to in this document as "grid delivery of biomethane") and used to fuel gas boilers, gas-fired combined heat and power systems – whether in homes, commercial buildings or within communal heat networks or district heat networks[1]. It can also be used as a feedstock in industrial process and as a vehicle fuel.

There are different levels of recognition for if and how consumers are able to source biomethane via the gas grid within different schemes, some of which are voluntary e.g. the Greenhouse Gas Protocol (GHGP) and some of which are not e.g. EU/UK Emission Trading System (EU ETS/UK ETS).

For example, a large corporate reporting their carbon emissions using the GHGP is able to use Guarantees of Origin (GoO) to evidence their sourcing of biomethane, but this is not recognised within their EU/UK ETS reporting.

The Association for Renewable Energy and Clean Technology (REA) and the Green Gas Certification Scheme (GGCS) believe that, provided the chain of custody between producer and consumer is tracked with a robust documentation system, such as Guarantees or Origin (GoO), grid delivery of biomethane should be recognised by policy makers and others as a route for decarbonising gas consumption in both the voluntary and regulated sectors.

Section 2 of this paper describes the two main documentation systems for grid delivery of biomethane, GoO and Proofs of Sustainability (PoS), and how they relate to two types of grid delivery, Mass Balance and Book and Claim.

[1] See difference between communal and district networks here.

Section 3 highlights examples of the policy and regulatory instruments where grid delivery of biomethane could be used, and the current level of recognition.

Please note that similar principles and approaches would be applicable to other renewable gases such as renewable hydrogen.

2. Grid delivery types and documentation systems

2.1 Types of grid delivery: Mass Balance and Book and Claim

There are currently two main types of grid delivery of biomethane, which are recognised by certain voluntary and regulatory systems: "Book and Claim" and "Mass Balance".

We have summarised in the table below the key requirements of the two different approaches.

Summary of requirements of Mass Balance and Book and Claim – from biomethane injection to withdrawal.[2]		
	Mass Balance	**Book and Claim**
Physical connection between production and consumption	Yes – requirement to evidence transaction of physical product alongside transfer of Energy Attribute Certificates	Not required - however GoO registries may impose specific requirements e.g. that producer and consumer are in Europe
Time between production and consumption	3 month maximum – with positive balances able to be carried forward into following 3 month period	No restrictions – GoO registries have set range of expiry dates and EN 16325 will require 18 month expiry
Accounting for transportation losses	Yes – must recognise leakage of gas from grid and any other form of transport	No – one GoO issued per kWh/MWh and one GoO used per kWh/MWh gas consumed
Evidence of Withdrawal	Yes – must provide evidence of gas withdrawn	No – gas withdrawal is assumed but no evidence is required to cancel a GoO

[2] Mass Balance methodology is also used to track the use of feedstocks in a biomethane production process. This is not considered in this paper which only covers the chain of custody from injection to withdrawal from the grid.

Evidence that requirements have been met	Clear documentation that above criteria have been met. When mass balancing sustainable biomethane a PoS (see section 2.5) is used and parties involved are usually Certified under a Voluntary Scheme, as recognised by the European Commission.	Cancellation of a GoO with allocation to a supplier/consumer

Mass Balance places more requirements on the chain of custody, and the transfer of the Energy Attribute Certificate (GoO or PoS) must be done in the context of several other requirements and a broader management system implemented along the supply chain. Exact requirements for evidencing a Mass Balance must be checked against the specific schemes as details can vary between countries and schemes.

As Renewable Energy Directive (RED) and REDII state that GoO are only for consumer disclosure, they cannot currently be used as evidence of mass balance on their own.

Book and Claim allows for a greater separation of the physical unit of gas from the Energy Attribute Certificate (GoO or PoS), which can be used without any other supporting evidence. It should be noted that in a "pure" Book and Claim system no physical connection is needed between injection and withdrawal points however all existing GoO registries for biomethane (which are generally considered as Book and Claim systems) have requirements on geographic scope and some on physical connection. This can be viewed as Book and Claim "Plus" approach. For example, a requirement could be made that grid delivered biomethane can be used with a Book and Claim approach but the biomethane must have been injected in the UK. The GoO would be capable of evidencing this kind of delivery.

It should also be noted the Mass Balance method is often linked to biomethane being proved to be sustainable according to the provision of RED/RED II, as implemented in the UK via the RTFO, and that the Directives effectively rule out the use of a Book and Claim approach for delivering biofuels. However, different combinations of delivery type and sustainably criteria can be used and may be appropriate within different polices and schemes.

For example, the UK Emissions Trading Scheme could require that 'RED sustainable' biomethane is delivered according to a Book and Claim delivery type, or a theoretical future Government incentive for a specific policy could require that biomethane is mass balanced and has met another set of sustainability criteria not aligned to RED.

2.2 RED and RED II

The original Renewable Energy Directive (2009/28/EC), also known as RED, established an overall policy for the production and promotion of energy from renewable sources in the EU, including the concept of GoO as a method of "providing proof to a final

customer that a given share or quantity of energy was produced from renewable sources".

The Recast Renewable Energy Directive (RED II), which Member States must implement in national legislation by 30th June 2021, moves the legal framework to 2030. It also expands the concept of GoO, from renewable electricity only, to all kinds of renewable energy, including gas.

2.3 What is a GoO?

A GoO is a data package that is created when a unit of renewable energy is produced. RED II (article 19) specifies that it should contain at least the following types of information:

a. the energy source from which the energy was produced and the start and end dates of production;
b. whether it relates to: (i) electricity; (ii) gas, including hydrogen; or (iii) heating or cooling;
c. the identity, location, type and capacity of the installation where the energy was produced;
d. whether the installation has benefited from investment support and whether the unit of energy has benefited in any other way from a national support scheme, and the type of support scheme;
e. the date on which the installation became operational; and
f. the date and country of issue and a unique identification number.

Note that in clause *d* above it is clear that a GoO must record any type of government support that the plant has received either towards its construction or related to the biomethane it had produced.

There are often calls for a "new" type of "Certificate" to be given to renewables that have not been subsidised, however this is not necessary. It would only add complexity and create confusion. GoO are already designed to record if a unit of biomethane has not received a subsidy and any requirement within a government policy, voluntary scheme or by a consumer to by delivered unsubsidised biomethane can be met within the current GoO systems.

GoOs are "issued" to the generator of that renewable energy and can then be transferred to other account holders within a GoO registry. They are then cancelled when allocated to a consumer or group of consumers, so that no more than one consumer can claim to have used that unit of renewable energy. Supplier/consumers receive a "cancellation statement" that they use to evidence their supply/consumption of renewable energy.

RED II also specifies that GoO should conform with the EN 16325 standard which is currently being revised (publication due in Summer 2021). This standard expands on the requirements mentioned above and provides further detail on how GoO registries should operate.

To date GoO for renewable gas across the EU/UK have operated outside the scope of RED which, as mentioned above, only required GoO for electricity. While RED II expands the

scope of GoO to gas, as the UK is no longer a member of the EU it is unclear if REDII and EN 16325 will be adopted here.

2.4 Current use of Guarantees of Origin (GoO)

GoO for electricity are recognised within various UK government schemes such as the Streamlined Energy and Carbon Reporting (SECR), Fuel Mix Disclosure by licensed suppliers and exemptions from Contract for Difference (CfD) contributions. As previously mentioned, GoOs are also allowed in industry-standard voluntary reporting schemes such as the GHGP.

Systems for the issuing of GoO for biomethane have been developed by non-governmental bodies, such as GGCS and Green Gas Trading (GGT), and are currently recognised in the UK for the following purposes:

1) Companies and organisations' Emission Reporting when using the GHGP
2) Emission Reporting within voluntary emission disclosure schemes e.g. Carbon Disclosure Project (CDP) and Global Reporting Initiative (GRI)
3) The UK government's SECR
4) Bus Operator Service Grant administered by DfT
5) Energy Price Cap – exemptions for green tariffs administered by Ofgem[3].
6) BEIS Green Gas Levy exemption for 95-100% green gas suppliers, as set out in BEIS response to the Green Gas Levy consultation (see section 3.4 below). .

All of the above fall into the category of "consumer disclosure", which is the terminology used within the RED related to showing if renewable energy has been supplied to a consumer and that consumer "disclosing" or reporting their use of that energy. GoO are generally considered to represent a book and claim approach to grid delivery of biomethane although restrictions around geography, time period between production and consumption, feedstock types and sustainability criteria are all possible within a GoO documentation system, particularly as the UK is not bound by the definitions and use cases for GoO within RED II.

2.5 What is a Proof of Sustainability (PoS)

RED/RED II requires that a particular set of sustainability criteria for biofuels (liquids and gases for transport) and bioliquids (liquids in power and heat) are met. In the transport sector, these were implemented in the UK under the RTFO and require proof that biomethane supplied in transport (including its production, transport and use) meets the following requirements. These are:

- a minimum GHG saving requirement, with reference to a fossil-fuel comparator, calculated according to a standardised life cycle assessment methodology and reported in g CO_2eq/MJ
- land use criteria

[3] https://www.ofgem.gov.uk/energy-price-caps/consumers

- information on the type of feedstock used and its classification as a waste or not.

The RED/RED II sets out that "voluntary schemes" can be used to provide "reliable evidence and data" that these sustainability requirements have been met by creating Proof of Sustainability. Producers and traders must be certified within these voluntary schemes[4] to be able to create these "Proofs of Sustainability". PoS may be in PDF or Excel form and can be emailed between counterparties. Alternatively, a PoS can be in created in a database (see an example here). They record all the sustainability characteristics of the biomethane required by RED/REDII/RTFO.

2.5.1 Current use of PoS

PoS are recognised by the Department for Transport within the RTFO, as proving that ownership of a sustainable biofuel has been transferred between counterparties and delivered to a transport use. It does not in itself prove that biomethane has been delivered via the grid as a mass balance, but is the key document used within a wider management system to provide that evidence.

In some cases PoS may be used when biomethane is delivered via the grid using a book and claim approach. This occurs where there is a demand by a consumer to be shown the actual GHG factor from biomethane production, which is not conveyed in the current GoO documentation systems.

2.5 Complementary use of GoO and PoS systems and new types documentation for grid delivery

Both GoO and PoS are types of documentation systems, using physical or computer based systems, that record information about the characteristics of units of biomethane injected into the grid, allow a chain of custody to be created between injection and consumption and for that biomethane to be "delivered" to a consumer.

To date they have largely been developed to fulfil requirements in RED/RED II, which have led to particular structures and formats being used. At the same time different uses have been set out in RED which have influenced their recognition with government polices and voluntary reporting schemes.

We believe that the current GoO systems in place in the UK represent a robust documentation system for grid delivery of biomethane and are suitable for a wide range of policy areas as set out in section 3.

However, we recognise that GoO systems may be adapted in the future to fulfil new requirements coming from regulators and consumers.

As renewable gas GoO in the UK have been developed outside the scope of RED there is already a slight deviation with RED's rules and requirements and as the UK government

[4] There are currently three voluntary schemes and cover biomethane withing their scopes - ISCC, Better Biomass and REDCert

does not intend to implement the provisions of RED II around GoO this seems likely to continue in the future. Even within the framework of REDII/EN 16325 standard there are ongoing discussions about a GoO "Plus" approach where more information can be added to GoO which may make them eligible for new purposes.

One possibility is that the distinction between GoO being a book and claim system only used for consumer disclosure, and PoS being part of mass balanced delivery of biofuel, becomes blurred with single documents being issued that represent both a GoO and PoS being recognized in a range of policy areas.

3. Recognition of grid delivery of biomethane in regulatory and voluntary schemes

The table below shows the range of policies in place in the UK and the EU where grid delivery of biomethane could be relevant and where there is currently recognition or not, highlighting the inconsistencies that currently exist.

This paper does not explore the specific benefits for each policy of recognising grid delivery of biomethane or the topic of if the biomethane being delivered can be subsidised at the point of production.

The REA and GGCS believe that there is a value in recognising principle of grid delivery across all policy areas as the initial step. If it is then decided that subsidised production cannot be used then the market can determine if there are viable business cases, now or in the future, for using unsubsidised production.

Recognition of grid delivery of biomethane in regulatory or voluntary schemes

Policy	Administered by?	Recognition of grid delivered biomethane	Use of GoO	Use of PoS
RTFO	DfT / RTFO Unit	Yes – must be unsubsidized	No	Yes – within a Mass Balance system
Green Gas Levy	BEIS / Ofgem	Yes – exemption from Levy if 95-100% supply to households is biomethane	Yes	No
UK ETS	BEIS	No	Unknown	Unknown
EU ETS (in UK)	EC/BEIS Environment Agency/Scottish Environment Agency	No - no assessment of GoO registries has been conducted	No	No
EU ETS (in EU)	National authorities in Members States	Yes in principle but only a few countries allow in practice (Germany, Denmark, Finland)	Yes – but as often as part of wider package of documentation to show a mass balance	No
Energy Price Cap	BEIS/Ofgem	Yes – subject to agreement with Ofgem	Yes	No

ND RHI and GGSS	BEIS/Ofgem	Not applicable but GGSS modelling included value from GoO sale by producers	No – but GGCS keep BEIS informed of market developments	No
Climate Change Levy	BEIS / HMRC	No	No	No
Climate Change Agreements	BEIS / Environment Agency	No	No	No
Planning Regulations	MGCLG	No	No	No
Building Regulations	BEIS	No	No	No
Heat Networks	BEIS	No	No	No
Bus Service Operators Grant	DfT	Yes	Yes	No
Streamlined Energy and Carbon Reporting (SECR)	DEFRA	Yes – via reference to the GHGP	Yes	No
Green House Gas Protocol (GHGP)	World Resource Institution (WRI) and World Business Council for Sustainable Development	Yes – subject to publication of new guidance	Yes	No
CDP	CDP	Yes - via reference to the GHGP	Yes	No