

A Green Gas Registry for Ireland

Why a green gas registry?

Ireland has set national targets in order to prevent climate change. In order to achieve this overall goal, measures for greenhouse gas (GHG) emission reductions and replacement of fossil fuels by green gases are in force, and new ones are discussed. Ireland's high agricultural potential and its existing gas infrastructure make biomethane feed-in an important option. A green gas registry can help to establish a green gas market and to handle biomethane movements inside the fossil-dominated national gas grid. IERC's GreenGasCert Project has developed a blueprint for a green gas registry for Ireland. This pamphlet gives an overview of the advantages and the functionality of a green gas registry for Ireland.

Key properties

This registry blueprint includes various tasks, among them the attribution of properties to a specific amount of green gas, the enabling of trade of green gas certificates and the mitigation of fraud. The future green gas registry for Ireland will allow verifying and trading green gases by offering a platform which is robust, reliable and services the involved market participants and government authorities. Furthermore, requirements from the EU Renewable Energies Directive (RED) can be met by means of the registry.

Key properties of a green gas registry blueprint have been worked out in the GreenGasCert-project. Among these are:

- Compliance with legal requirements, e.g. RED II (the Renewable Energy Directive recast)
- Registration of existing green gas amounts only
- Enabling of back tracing of green gas amounts
- Easy and safe trade of green gas certificates
- Outlook for connection to international registries
- Prevention of fraud, i.e.
 - to prevent double marketing by its users
 - to prevent double counting
 - to help prevent double compensation or subsidies by government authorities for the same green gas amount

The registry can also provide a very good data base for monitoring production and use of green gas.

Green gas registries in other countries

Several European countries already have green gas support schemes in force and use green gas registries to establish a market for green gas certificates. Experience with registries from Austria, Denmark, France, Germany and UK is presented, evaluated and included into the green gas registry blueprint. Registries exist in Europe since 2011 and have since contributed to an efficient and effective use of green gases. Ireland will be able to build on this experience and quickly establish a green gas registry.

What are the legal boundary conditions for a green gas registry?

One important law containing requirements for green gas registries is the EU Renewable Energies Directive (RED), which is currently under revision. One aim of the RED is the reduction of green house gases while respecting sustainability criteria. The derived criteria, if the current recast of the RED is implemented as foreseen, will also be applied to renewable gases. In order to fulfil these criteria, sustainability will be fundamental for all green gas production plants in the European Union. For green gases like biomethane, the most important sustainability criteria are the overall GHG emissions of the biomethane. These vary significantly depending on the substrate which is used for the production of biomethane. Waste and residues have generally lower GHG emissions than energy crops and therefore have a bigger impact on GHG savings.

The RED defines for electronic “Guarantees of Origin” (GoO) a minimal data set which is described in the following section.

Further legal requirements could derive from support schemes which could be established in Ireland. The registry blueprint is flexible enough to include such future changes into the setup.

What data does the registry collect?

The registry collects relevant information in order to create a reliable Guarantee of Origin which in compliance with necessary legal requirements. The most important information relates to the identification of the production plant and the green gas amounts produced. Necessary data is e.g. company name, address, grid access point and period of injection. The necessary data is collected e.g. from plant operators, auditors and Gas Networks Ireland.

Furthermore, information from the green gas certification in regard to sustainability criteria is registered. The certificate contains GHG emissions of the green gas until grid injection. Once the end use of the green gas is definite the final GHG emissions of the gas can be calculated. This is due to the fact that the efficiency of the end use has further impact on the overall GHG emissions of the green gas (e.g. CHP plants have better efficiency values and thus higher GHG savings than vehicle motors).

The information transfer is illustrated in Figure 1.

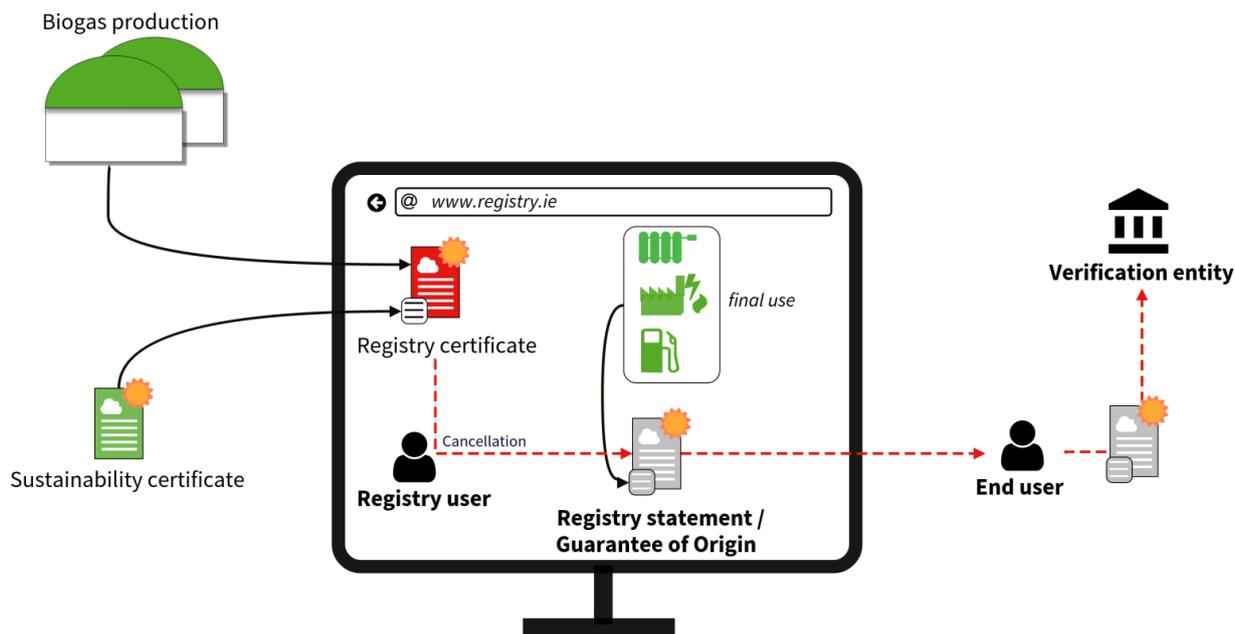


Figure 1: Data transfer to and from the registry

Data verification in the registry

The GoO's reliability depends on the processes and data it sources from. For the registry blueprint, methods and options for data verification are presented. In some cases, auditors play an important role as they can independently verify complex data. When processing this data inside the registry, the data quality has already been guaranteed by the auditor. For the registration of green gas amounts, automatic meter readings are provided by the gas grid operator GNI (Gas Networks Ireland). Based on this data, the registry can create reliable proofs of amount.

Read more

More Information regarding the green gas registry can be found in the final report of the GreenGasCert project which can be found in the project's final report ([Link](#)) or on the project's website (www.greengascert.ie).