

Model Paper for Rules for Biomethane Certificates in Denmark

Version 1.2
1 January 2017

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1. Introduction

Energinet.dk has established the model for handling Biomethane Certificates in response to demand in the gas market for a scheme that documents Biomethane supplied to the natural gas grid. The model is described in this document which forms the basis for the Rules for Biomethane Certificates, version 1.2, which set out the legal framework for the certification scheme.

The model is designed to handle RE Gas, but as certificates may not yet be issued for all types of RE Gas, certificates are issued for Biomethane only. Certificates for other types of RE Gas will be taken into consideration based on assumptions of market demand.

Compared to version 1.2 of the Rules for Biomethane Certificates, the changes are as follows:

- As per 1 January 2017 the it-system cmo.grexel.com is the electronic certificate register used for registration, issue, transfer and cancellation of Biomethane Certificates;
- The time limit for submitting a request for the issue of Biomethane Certificates has been specified;
- Fixed transfers of Biomethane Certificates are allowed under a transitional scheme so that all fixed transfers established in December 2016 will continue unchanged on cmo.grexel.com in 2017. From January 2017, automatic transfers will require log-in on cmo.grexel.com.
- Energinet.dk has prepared a set of audit instructions for the Biomass.
- Minor language changes and clarifications.

The certificate scheme for Biomethane makes it possible to document the origin of the gas to the buyers. Each MWh of Biomethane supplied to the natural gas grid replaces a corresponding MWh of conventional natural gas. The Biomethane Certificates are not directly linked to the physical gas flow.

Energinet.dk administers the Certificate Register and is the issuing body of the certificates. Each MWh of Biomethane is electronically earmarked with a unique identification number.

In its current form, the certificate does not contain information about:

- The raw materials from which the Biogas (and thereby also the Biomethane) is produced
- The CO₂ replacement associated with the Biomethane

Biomethane is mixed with conventional natural gas in the natural gas grid and the only way to withdraw Biomethane from the Danish natural gas grid is through cancellation and purchase of certificates associated with the gas.

The purpose of the Biomethane Certificates is to give gas consumers the option of buying Biomethane by purchasing documentation for the origin of the gas in conjunction with the purchase of the natural gas. This certifies that the volume of energy represented by the Biomethane Certificates has not been sold to other consumers.

When a consumer purchases certificates, the certificates must be cancelled in the Certificate Register. Certificates can be cancelled in two ways:

1. Either by cancelling the certificate in Denmark which means that renewable energy value has been consumed in Denmark
2. Or by cancelling the certificate for export after which the Biomethane Certificate will show that the original value has not been supplied for consumption in Denmark.

The certificates may be cancelled for export, but a model for trade/exchange of certificates with Certificate Registers in other European countries has not yet been developed, which would be prerequisite for establishing a European Biomethane market.

Energinet.dk neither controls nor assumes any responsibility for ensuring that cancelled Biomethane Certificates follow corresponding sales of gas in Denmark or for export. Here, external auditors should be consulted. Similarly, Energinet.dk is not liable for the information provided by the Certificate Account Holder and associated with the Biomethane Certificates at the moment of cancellation, such as name and address of recipient and use of the Biomethane Certificates.

To ensure proper auditing, Energinet.dk has prepared audit instructions for Certificate Account Holders. This ensures the necessary credibility of the certification scheme and contributes to independent authentication of the amount of cancelled certificates and biomass statement.

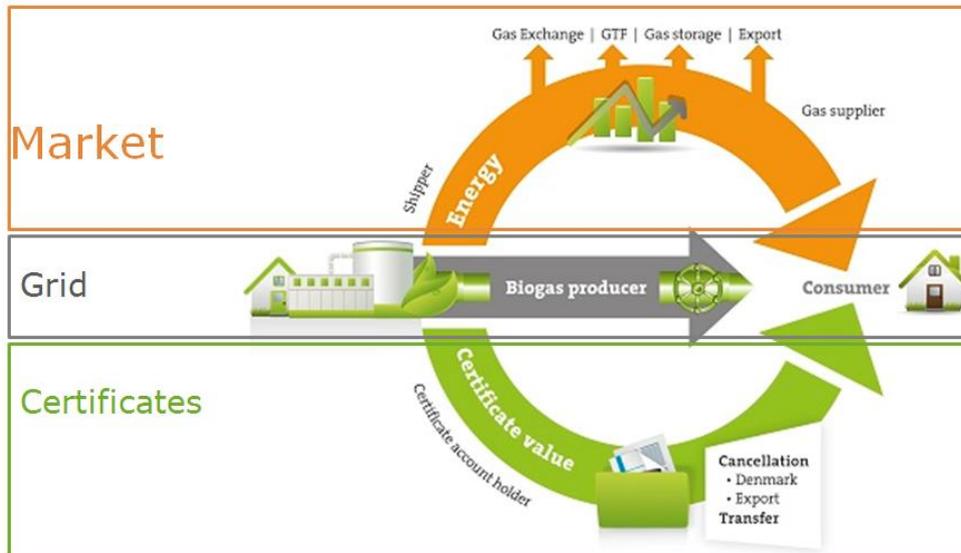
1. Certificate Account Holders that have been issued or assigned Biomethane Certificates during the previous calendar year must once a year declare that the Certificate Account Holder's Biomethane Certificate account is accurate in terms of the volume and cancellations of Biomethane Certificates.
2. Certificate Account Holders with associated Biogas Facilities that are issued Biomethane Certificates must once a year report to Energinet.dk the type and weight of the biomass used for production of Biomethane at the particular Biogas Facility during the previous year.

The audit is performed through the IT system by the Certificate Account Holder granting access to an auditor who verifies and approves the account statement. The auditor's opinion must be submitted to Energinet.dk on or before 1 July of each year.

The certificates may be transferred and cancelled before the expiry date, which is 12 months after the production month. As a consequence of the 12 months lifetime of the Biomethane Certificates, any requests for issue must be received no later than the 10th Working Day 12 months after the calendar month in

which production took place. Example: A request for issue of Biomethane Certificates for production in May 2016 must be received no later than by the 10th Working Day of May 2017.

The transfer of certificates takes place independently of the trade in energy:



Example: A biogas producer gets the Biogas upgraded to Biomethane at an Upgrading Facility Owner. The Upgrading Facility Owner is connected and delivers the Biomethane to the gas grid. The grid companies are responsible for the physical distribution and handling of the gas. The energy content in the Biomethane is traded on the gas market as conventional natural gas. The original value and CO₂ reduction are traded through the certificate model. The certificates are issued to the biogas producer and traded between the Certificate Account Holders. When the end consumer purchases Biomethane Certificates corresponding to the gas consumption, it is guaranteed that the consumer has purchased the added Biomethane and thus the related CO₂ reduction.

The Biomethane certification scheme is based on an electronic, paper-free registration system. Energinet.dk does not issue physical certificates, but the Certificate Account Holder may print a cancellation confirmation from cmo.grexel.com, which may be used as physical proof of cancelled certificates and thus the virtual sale of certificates from the Certificate Account Holder to the end user.

All certificates, Certificate Account Holders and Biogas Facilities are registered uniformly using a standard registration form. Energinet.dk issues the certificates independently of subsidies, taxes or duties, and thus the certificates cannot be used as documentation for subsidies, tax advantages or other types of tax relief.

The biogas producer must not in any other way sell the renewable energy value of the produced biomethane.

Energinet.dk may require documentation for the accuracy of the information that a Certificate Account Holder submits to the Certificate Register.

Registration of the history of the origin and transfer of certificates can be traced through all transfers and changes of master data. If, for example, a Biogas Facility changes owner, the original registered owner can still be traced in the Certificate Register. The Certificate Account Holder is responsible for transfers and cancellations of certificates on cmo.grexel.com.

1.1 Biomethane use

Emission Trading Scheme

The certificates are recognised under the emission trading scheme. This means that enterprises covered by the emission trading scheme may use Biomethane Certificates to offset CO₂ emissions in their emission trading scheme balance as described on www.ens.dk (for example: Standard factors for calorific values and CO₂ emissions – reporting of CO₂ emissions for 2015).

Transport Sector

Biomethane can replace petrol and diesel and comply with the requirements in the RE Directive.

In order for a fuel to be recognised in relation to the mixing requirement, it must be documented that the Biomethane lives up to the traceability, sustainability, CO₂ reduction and mass balance criteria of the RE Directive. There are currently three Voluntary Certification Schemes that can guarantee this. The three Voluntary Certification Schemes are:

1. ISCC
2. RED-Cert
3. NTA8080.

Biogas which is upgraded and supplied to the natural gas grid and then pulled out and sold for transport at a petrol station may be recognised in accordance with the mixing requirement, if it is certified under one of the voluntary schemes. In this context, the Gas System is to be considered as a carrier of the Biomethane.

Voluntary Climate Commitments

Biomethane Certificates may also be used to achieve voluntary climate objectives of for instance municipalities, enterprises, or climate conscious gas consumers. Currently, particularly municipalities are gaining new experience with biomethane by using gas-driven renovation vehicles and busses.

2. Definitions and abbreviations

Working Day means any day from Monday to Friday, excluding public holidays and closing days, as specified in Energinet.dk's calendar which can be found on Energinet.dk's website: www.energinet.dk.

Cancellation Confirmation is a document specifying when, how many and which certificates a Certificate Account Holder has cancelled.

Biomass is the biodegradable part of products, waste and residue of biological origin from agriculture (including vegetable and animal substances), forestry and related industries, including fisheries and aquaculture, and the biodegradable part of industrial waste and municipal waste.

Biogas is gas produced by anaerobic fermentation of biomass.

Biogas Facility is the facility producing Biogas.

Biomethane is Biogas that has been upgraded to meet the quality requirements for natural gas in Denmark and is supplied to the Danish Gas System.

Biomethane Certificate is an electronic certificate for a given volume of Biomethane produced from Biogas.

Sustainability Certification is required in order for biogas to be used in the transport sector according to the following EU directives: The RE Directive (2009/28/EC) and the Fuel Quality Directive (2009/30/EC).

Certificate Agreement is an agreement between Energinet.dk and the Certificate Account Holder, which contains the terms and conditions that physical or legal persons must comply with to act as Certificate Account Holder in the Certificate Register.

Certificate Account is an electronic statement of the number of Biomethane Certificates.

Certificate Account Holder is any natural or legal entity that is registered in the Certificate Register and can act in conformity with the Rules for Biomethane Certificates.

Certificate Transfer is a transfer of Biomethane Certificates between two Certificate Account Holders.

Certificate Register is an IT system that is used for e.g. registration, issue, transfer and cancellation of Biomethane Certificates.

The Danish Gas System is the transmission system, the distribution grid and the storage facilities in Denmark.

Voluntary Certification Schemes are independent bodies that perform inspections of the production of biogas at least once a year. In Denmark, we have identified three such bodies that are used for inspections and certification of biogas production, i.e. ISCC, REDcert and NTA 8080.

GSRN is a Global Service Relation Number which each metering point must have in order to identify the point where the gas is metered.

Metering Point for Price Supplement is the metering point (GSRN) where the volume of Biomethane forming the basis for the number of Biomethane Certificates to be issued per month are metered.

Grid Owner is the owner of the infrastructure company that connects the upgrading facility to the Danish Gas System. The Grid Owner may be a distribution company or Energinet.dk (the transmission company).

Upgrading Facility Owner is the physical or legal person that owns the Upgrading Facility.

Rules for Biomethane Certificates is the overall legal document including appendices, which provides the framework for the certification scheme.

Expired Biomethane Certificate is a Biomethane Certificate which is more than 12 months old and therefore is no longer valid.

Issuing Body is Energinet.dk, which issues the Biomethane Certificates on the basis of metering data from Metering Point for Price Supplement supplied by Grid Owner.

RE Gas is non-fossil fuel gas produced by means of energy from renewable energy sources as defined in EU Directive 2009/28/EC, such as Biogas, methanised hydrogen, thermal gasification gas from Biomass and hydrogen.

3. Admission into the certificate scheme

In addition to Energinet.dk as issuing body, another role is associated with the certificate scheme: Certificate Account Holder. A Certificate Account Holder may choose to assign one or more biogas facilities to his account. This requires submitting a power of attorney from the owner of the Biogas Facility.

The requirement to be admitted as Certificate Account holder is, among other things, that Energinet.dk in the Certificate Register must be able to identify the Certificate Account holder using a CVR number.

At www.Energinet.dk and cmo.grexel.com, Energinet.dk publishes a list of all registered Certificate Account holders and Biogas Facilities.

3.1 Registration of Certificate Account Holder

All enterprises with a CVR number may be registered as a Certificate Account Holder.

A request for registration as Certificate Account Holder is made by filling out a request form found on Energinet.dk's website. It is Appendix 1 in the set of rules which should be submitted by email to gascertifikat@energinet.dk.

The following information about the Certificate Account Holder must be provided:

- Name, address, postcode, city and country
- CVR number
- Contact information (name, telephone number and email address of contact)
- User and person responsible for the administration of the Certificate Account Holder's account in the IT system.

3.2 Associated Biogas Facility in the Certificate Register

Biogas producers must be identified as biogas producer in the Upgrading Facility's connection agreement with a Grid Owner. The Grid Owner has created and assigned to the producer in question an identification number in the form of a GSRN number for the Metering Point for Price Supplement. This number determines the point of connection for the gas to the natural gas grid. GSRN must be provided together with other master data at the time of registration in the Certificate Register (see below).

When the Biogas Facility is registered in the Certificate Register, the Certificate Account Holder can have certificates issued from the registered Biogas Facility and initiate transfers or cancellations.

The form to request the assignment of a Biogas Facility to a Biomethane Certificate Account may be downloaded from www.energinet.dk. Complete the form and submit it to Energinet.dk by email to gascertifikat@energinet.dk.

In the form, the Certificate Account Holder must list the Biogas Facility(ies) which the Certificate Account Holder wants to assign to the Certificate Account.

The following master data about the Biogas Facility must be stated:

- Address, postcode, city, country and CVR number
- Capacity of the Biogas Facility in kWh/year
- Start-up date of the Biogas Facility
- Which type of Biogas Facility is used to produce the Biomethane
 - 0 Unspecified
 - 1 Landfill
 - 2 Waste water-based
 - 3 Agriculture-based
 - 4 Organic waste-based
 - 5 Process/Industrial

In addition, GSRN in Metering Point for Price Supplement must be stated and the owner of the Biogas facility(ies) as the Certificate Account Holder of record, must obtain the Upgrading Facility Owner's consent in order to receive certificates corresponding to the metered data in question.

Energinet.dk creates the Certificate Account Holder with the assigned Biogas facility(ies) so that the Certificate Account Holder receives certificates issued from the assigned Biogas facility(ies).

The issue of Biomethane Certificates is made on the basis of metered data from the Metering Point for Price Supplement, which takes place after the upgrade of the Biogas. In order to receive certificates from a Biogas Facility, the Certificate Account Holder must sign a statement of consent between the Certificate Account Holder and the Upgrading Facility Owner. The declaration gives Energinet.dk the right to obtain information from the Grid Owner about metered data from the upgrading facility which is responsible for the upgrade of the Biogas in question.

The process for the creation of a Certificate Account Holder and assignment of Biogas facilities in the Certificate Register is described below.

- Request for registration as Certificate Account Holder is made by filling in a form which can be found on Energinet.dk's website (Appendix 1 in the rules) and submitting it by email to gascertifikat@energinet.dk.
- Energinet.dk and the Certificate Account Holder then enter into a Certificate Agreement (Appendix 2). The signed Certificate Agreement must be received by Energinet.dk five (5) Working Days before a change of month at the latest to enable the Certificate Account Holder to be registered in the Certificate Register for the subsequent month. The signed Certificate Agreement in PDF format is sent by email to gascertifikat@energinet.dk.

- Energinet.dk opens an account for the Certificate Account Holder and provides access to the self-service system for transfers and cancellations on the portal: cmo.grexel.com.
- A Certificate Account Holder may request to assign one or several biogas facilities to his account by completing a form and signing a statement of consent (Appendix 3 and 4) and submitting this in PDF format by email to gascertifikat@energinet.dk.

3.2.1 Discontinuation of a production facility

If a biogas production facility stops supplying Biomethane to the natural gas grid, it is the Certificate Account Holder associated with the facility, which is responsible for submitting a written notification to Energinet.dk. Deregistration of a production facility must be made no later than the end of the month in which production has ceased. The last certificates for the production facility will be issued in the month following the discontinuation of production.

Example: At the end of production on 30 April 2016, certificates valid from 1 May 2016 and 12 months ahead (until the end of April 2017) are issued.

Energinet.dk may also deregister a Biogas Facility at the request of the Grid Owner where the production facility is connected to the natural gas grid.

3.2.2 Closing of Certificate Account

A Certificate Account Holder can always close an account with ten (10) Working Days' notice.

Before the account is closed, all certificates must be transferred to another Certificate Account Holder or be cancelled or have expired.

The Certificate Account can be made inactive when the account no longer contains active certificates. In order to preserve the account history, inactive Certificate Accounts are not deleted.

3.3 Updating of master data

Certificate account holders are obliged to update information about their own business, such as relevant master data and change of contact.

The Certificate Account Holder with associated production facilities is obliged to update the information about the production facility and the production if changes are made to the production method etc.

Updated master data information for production facilities must be submitted to gascertifikat@energinet.dk.

4. Certificates

4.1 Value expressed in energy content

A certificate certifies that an amount of gas with an energy content of 1 MWh has been produced and supplied to the natural gas grid.

4.2 Identification of certificates

Certificates are numbered by using a number series that is automatically generated by cmo.grexel.com.

The Certificate Register contains the following information about the Biogas Facility associated with the Certificate:

- **The CVR number of the Biogas Facility**
- **The physical and legal location of the Biogas Facility** [Name of enterprise, address, postcode, city, country]
- **Capacity of the production facility in kWh/year**
- **Start-up date of the production facility**
- **Type of facility**
- **Metering point for price supplement, GSRN**
- **Issuing body**
- **Date of issue**
- **Country of issue**
- **Identification number of certificate**
- **Unit used in the certificate (the unit is always 1 MWh)**
- **Production period**
- **Date of expiry**

4.3 Issue of certificates

In order for Energinet.dk to issue certificates for a Biogas Facility, the Biogas Facility must be registered in the Certificate Register. To register a Biogas Facility, the Certificate Accountholder must submit Appendix 4, including a statement of consent.

4.3.1 Calculation example for the issue of certificates

Example: If the output is 125.5 MWh, 125 certificates are issued, and the remainder (0.5 MWh) is transferred and added to the next production period. Certificates are thus not issued in halves or quarters.

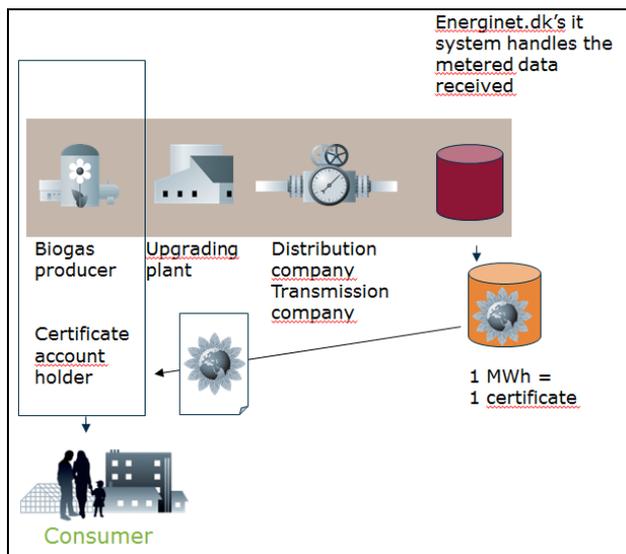
Energinet.dk receives metered data from Grid Owners in Denmark. Energinet.dk uses these metered data to determine the number of certificates to be issued for the production facility in the month in question. The number of whole MWh determines the number of certificates.

4.4 Account

Certificates are issued on a monthly basis.

The quantity for a month is attributed to the Certificate Account no later than on the 10th Working Day of the following month.

Timeline for issue of certificates



Example of account:

Account Statement							Close
Account Statement							
Default Account - 643002406722100344							
Name of Account Holder:	Gasfirmaet Grøn						
Address of Account Holder:	1234, Byen, Denmark						
Member code of Account Holder:	00XD35PF2T						
Account Status:	Active - Public account						
Certificates							
Opening balance as at 2016-12-04:	0						
Closing balance as at 2017-01-04:	3413						
Difference	3413						
Transaction Date	Transaction Type	Transaction Number	Account From	Account To	Volume		
2017-01-03 14:08:13	Cancel	2017010300005	Default Account-643002406722100344	Default Account-643002406722100344	-1000	-	
2017-01-03 13:13:59	Transfer	2017010300004	Default Account-643002406722100344	DB-Certifikatkompagniet-643002406722100351	-400	-	
2017-01-03 12:57:22	Issue	2017010300003	Energinet.dk - Biogas	Default Account-643002406722100344	1357		Select Certificates
2017-01-03 12:56:02	Issue	2017010300002	Energinet.dk - Biogas	Default Account-643002406722100344	3456		Select Certificates
Total					3413		

Example of certificate specifications per batch:

Certificate Number (From - To) ↕	Volume ↕	Domain ↕	Fuel, Technology ↕	S/T ↕	Issuing Date ↕	Production Period ↕	Production Plant (GSRN, Estimated Annual Production, name) ↕	Trading Schemes ↕	Support Schemes
643002406555910010000000003457 To 643002406555910010000000004813	1357	Denmark - Biogas	F01030300, T070000	S	2017-01-03	2016-12-01 To 2016-12-30	643002406722000019 30000 MW Biogasanlæg test1	Biomethane- GO	No support

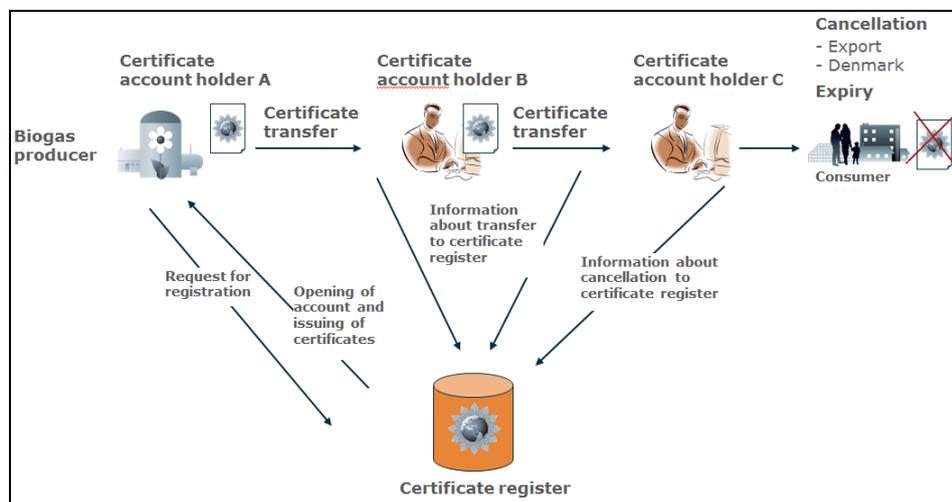
Production Plant public information

Production Plant Name:	Biogasanlæg test1
Production Plant GSRN:	643002406722000019
Domain of Production Plant:	Denmark - Biogas
Estimated Annual Production, MW:	30000
Date of Commissioning:	2016-11-01
Location of Production Plant:	9999 Byen, DK
Technology:	T070000 - Other
Fuel:	F01030300 - Renewable/Gaseous/Agricultural gas
Investment support:	-
Production support:	-

5. Procedures in connection with certificates

By logging on to cmo.grexe.com, Certificate Account Holders may transfer certificates among themselves and cancel own certificates when selling the certificates to a consumer.

Additional information may be found in the user guide for cmo.grexel.com.



5.1 Cancellation of certificates

A Certificate Account Holder cancels a number of certificates when selling the certificates to a consumer. This is typically done in connection with the sale of a corresponding volume of energy. A cancelled certificate is no longer in circulation and consequently cannot be transferred to other Certificate Account Holders.

When cancelling a certificate, the Certificate Account Holder must state the number of certificates, and:

- Country of consumption
- Name of recipient
- Place of use
- Which consumption sectors the certificate cancellations apply to: Private households, commercial & public sectors or transport.
- Start and end dates for use
- Type of recipient: End consumer or supplier
- Purpose

Certificate account holders may indicate that the cancellation is made for the purpose of export, but Energinet.dk does not control and is not responsible for ensuring that the cancelled certificates follow the volume of natural gas which is allocated to the relevant transit point in Ellund or Dragør. Even though Bio-methane Certificates are cancelled for export, the certificates can only be used as documentation for consumption in Denmark.

Only active certificates can be cancelled. Cancelled certificates cannot be transferred or change status.

5.1.1 Physical documentation of cancellation

The Certificate Account Holder may request a Cancellation Confirmation in a pdf format as documentation for the cancelled certificates, which can be used as physical proof documenting the sale of a number of certificates to an end consumer.

5.2 Expiry of certificates

Certificates that have not been cancelled expire 12 months after the last day of the production month.

Expired certificates cannot be transferred or change status.

The Certificate Register automatically ensures that the certificates expire.

The account summary shows how many certificates are due to expire in the near future:

Account Number	Account Name	Status	Public	Volume of Certificates	Expiring Certificates	Operations
643002406722100344	Default Account		Yes	3413	0	

5.3 Updating of Certificate Accounts

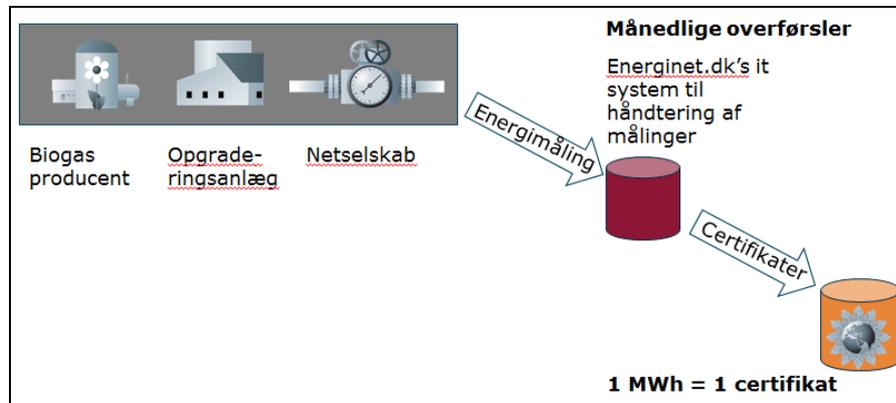
Cmo.grexel.com registers transfers and cancellations immediately. Energinet.dk issues new biomethane certificates to the account every month.

A Certificate Transfer reduces the number of certificates in the initiating Certificate Account Holder's account and similarly increases the number of certificates in the receiving Certificate Account Holder's account.

After each transfer of certificates, the IT system updates the status of the volume of Certificates in both accounts.

6. Energy basis for certificates

Metered data received from the grid companies after the end of the gas month in the Metering Point for Price Supplement are used to issue certificates on a monthly basis.



Data to be used to create certificates are obtained by the grid company continuously measuring the energy in the Biomethane, which the Biogas Facility supplies to the Grid Owner's area after having upgraded the biogas. Energinet.dk receives the metered data which forms the basis for generating the number of certificates per month.

The Certificate Register retrieves the metered data for the previous month from Energinet.dk's IT system and processes the data received no later than on the 10th Working Day of the month.

The Certificate Register saves data retrieved from Energinet.dk's IT system, registering the time of retrieval and the volume in kWh.

At production facilities where another gas (eg propane) is added to adjust the calorific value of the gas, this addition of energy must be measured in kWh and calculated on a monthly basis. Energinet.dk must receive such data no later than on the sixth Working Day after the month of production. At such production facilities, the Biomethane for the issue of certificates constitutes the difference between the energy added to the natural gas grid and the energy added to adjust the calorific value.

6.1 Corrections

After the gas day, Energinet.dk receives metered data from the Grid Owner on an ongoing basis. The number of certificates issued is adjusted monthly retroactively on the basis of the relevant Grid Owner's reported, corrected metered data.

The issue of certificates for a given month retroactively is not a right, but an option which may be applied for. Energinet.dk will examine the content of such inquiries, among other things, through contact with Grid Owners.

When a correction is performed, the amount remaining after the production facility's most recent issue of certificates (see 4.3 Issue of certificates) is increased

or decreased. The size of the increase or decrease depends on the size of the correction. If the correction is of such a magnitude that the remaining amount becomes negative, the deficit must be covered first when the production data for the following month are available.

If the production facility is no longer engaged in production and has closed down, correction does not result in the issue of more or fewer certificates.

Corrections are available from Energinet.dk on the 10th Working Day of the month. As such, corrections are not implemented in the statement for the Certificate Account until the following month.