



Business Requirements for

Measure

for

renewable energy

certificates

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A. About this document

This document is a business requirements specification for exchange of information related to measured data for renewable energy certificates (also called green certificates) for electricity. This document was earlier called BRS for Measure for Labelling.

As a general introduction ebIX® has published a separate document “Introduction to ebIX® Business Requirements and Business Information Models” [4]. The introduction also includes the generic model elements that are not specific for a particular business process.

In line with UN/CEFACT Modelling Methodology version 2 (UMM-2) ebIX® defines the business requirements as the first step in modelling energy market processes. This document specifies an UMM Business Requirements View, which consist of the three sub views: Business Domain View, Business Partner View and Business Entity View.

The Business Information Model is in turn the basis for the creation of XML schema’s and is the basis for the specification of web services. The Business Information Model and the syntax specific structures are specified by the “ebIX® Technical Committee” (ETC).

Since the ebIX® model is open for national customisation, some attributes are added as optional for usage for regional/national customisation. If used, these attributes must be specified nationally.

A.1. Comments to the ebIX® model

If you have comments or suggestions to the requirements, please contact the ebIX® secretary (secretary@ebix.org).

A.2. References

A.2.1. Standards

- [1] UML Profile for UN/CEFACT’s Modelling Methodology (UMM), Base Module, 2.0. ([UN/CEFACT Modelling Methodology \(UMM\)](#))
- [2] UML Profile for UN/CEFACT’s Modelling Methodology (UMM), Foundation Module, 2.0. ([UN/CEFACT Modelling Methodology \(UMM\)](#))
- [3] The Harmonized Role Model (for the Electricity Market) by ebIX®, ENTSO-E, and EFET (https://www.ebix.org/artikel/role_model)

A.2.2. ebIX® Documents

- [4] Introduction to ebIX® Business Requirements and Business Information Models (<https://www.ebix.org/artikel/documents>)

- [5] Recommended Identification Schemes for the European Energy Market (<https://www.ebix.org/artikel/documents>)
- [6] ebIX® code lists (<https://www.ebi.x.org/artikel/documents>)
- [7] ebIX® BRs for the measuring and structuring phase (<https://www.ebix.org/artikel/documents>)

A.2.3. External references

- [8] AIB (Association of Issuing Bodies) (<https://www.aib-net.org/>)

A.3. Main changes since last version

Old	New	Clarification	Date
Draft for version 1.0.A			
v1r0B	v2r0A	Complete recast of the document, hence changes have not been tracked.	20220221
v2r0A	v2r0B	<ul style="list-style-type: none"> • Moved Resolution to the Product, “unit cluster” in all class diagrams. • Updated Appendix A. • Update of layout to be in line with other ebIX® BRs. 	20230815

1. Overview of Measure for renewable energy certificates

These business requirements specify the exchange of validated measured data for the purpose of the creation or verification of renewable energy certificates. Hence, these requirements describe the exchange of validated measurement data from the Metered Data Administrator to the Certificate Issuer, to be used when preparing certificates to be sent to AIB [8] for storage, publication and finally redemption. We therefore assume:

- That collected measured data, resulting in validated measured data, may be obtained from (Registers of) Energy Meters either directly linked to a production Resource or linked to an Accounting Point.
- The validated measured data are always exchanged per Accounting Point, but the specification of the origin of the data has two options, either a generated quantity measured at the production Resource, or a quantity delivered to the grid (as established at the Accounting Point).

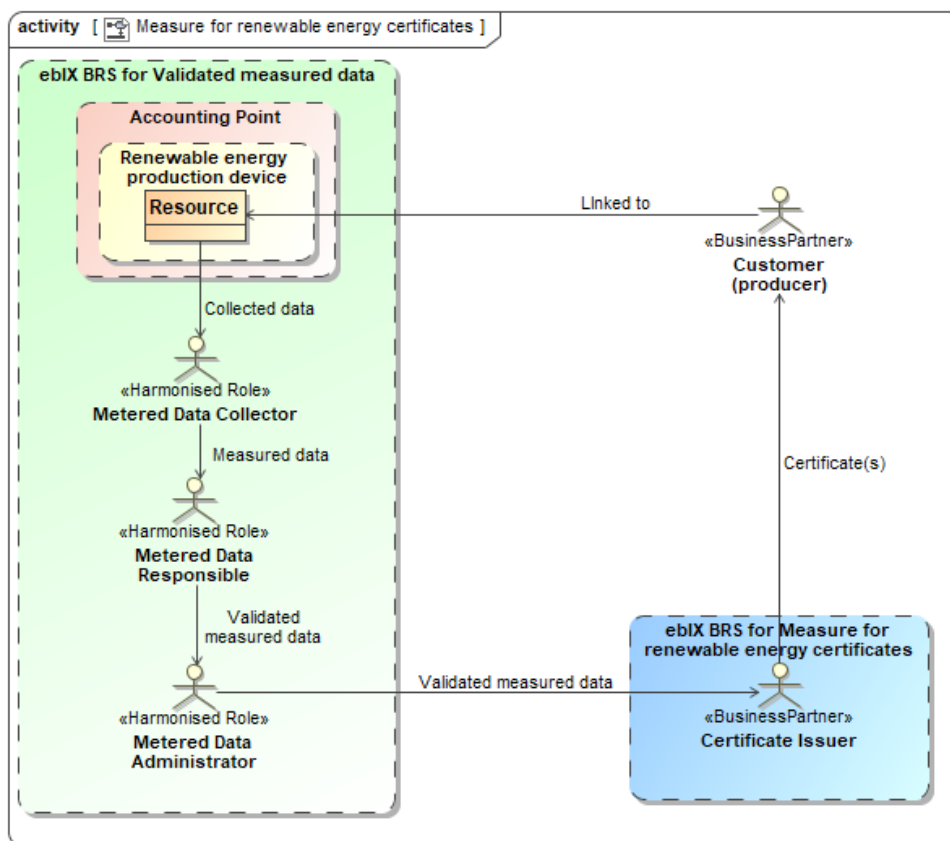


Figure 1 Activity diagram: Overview of Measure for renewable energy certificates

2. Business Domain View: Measure for renewable energy certificates (Business Process UseCase)

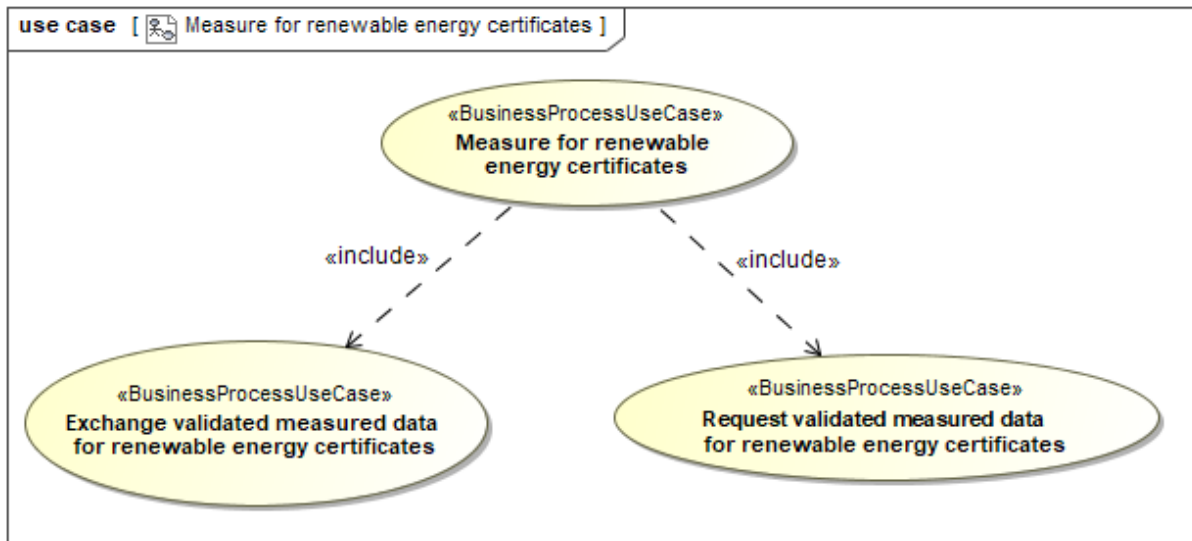


Figure 2 Business Process UseCase: Measure for renewable energy certificates

2.1. Description

UseCase description: Measure for renewable energy certificates	
definition	<p>In this process the Metered Data Administrator provides validated measured data for use in the renewable energy certificate process to the Certificate Issuer.</p> <p>If the Certificate Issuer needs to, validated measured data for renewable energy certificates can be requested from the Metered Data Administrator.</p>
beginsWhen	The timing of the exchange process is typically guided by a time schedule (nationally defined, normally monthly).
preCondition	<p>The Certificate Issuer is consented by the Customer.</p> <p>The Metered Data Administrator has Validated measured data available.</p> <p>Both the Metered Data Administrator and the Certificate Issuer have access to relevant master data.</p> <p>The Resource is qualified for receiving renewable energy certificates.</p>
endsWhen	The Certificate Issuer receives the validated measured data.

postCondition	The Certificate Issuer has the validated measured data needed to verify and issue Certificates for the Customer of the Resource(s) at the Accounting Point.
Exceptions	None.
actions	Not applicable at this level.

2.2. Exchange validated measured data for renewable energy certificates (Business Process UseCase)

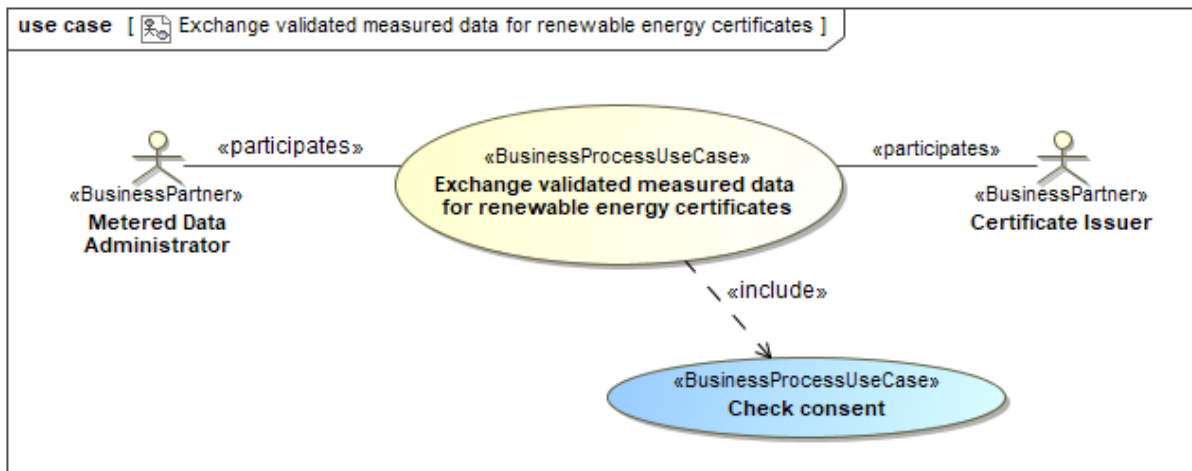


Figure 3 Business Process UseCase: Exchange validated measured data for renewable energy certificates

2.2.1. Description

UseCase description: Exchange validated measured data for renewable energy certificates	
definition	In this process the Metered Data Administrator sends validated measured data for renewable energy certificate for a Resource and/or an Accounting Point to the Certificate Issuer.
beginsWhen	When the Metered Data Administrator has received new validated measured data for renewable energy certificates for the Resource or the Accounting Point. or When the Metered Data Administrator is scheduled to distribute renewable energy certificates for the Resource or the Accounting Point.
preCondition	The Certificate Issuer is consented by the Customer. The Metered Data Administrator has available validated measured data for renewable energy certificate for the Resource and/or the Accounting Point. The Metered Data Administrator knows the Certificate Issuer.
endsWhen	When the Certificate Issuer has received the validated measured data for renewable energy certificates for the Resource or the Accounting Point.
postCondition	Validated measured data for renewable energy certificates for the Resource and/or the Accounting Point are available at the Certificate Issuer.

exceptions	None.
actions	See 2.2.2

2.2.2. Business Process

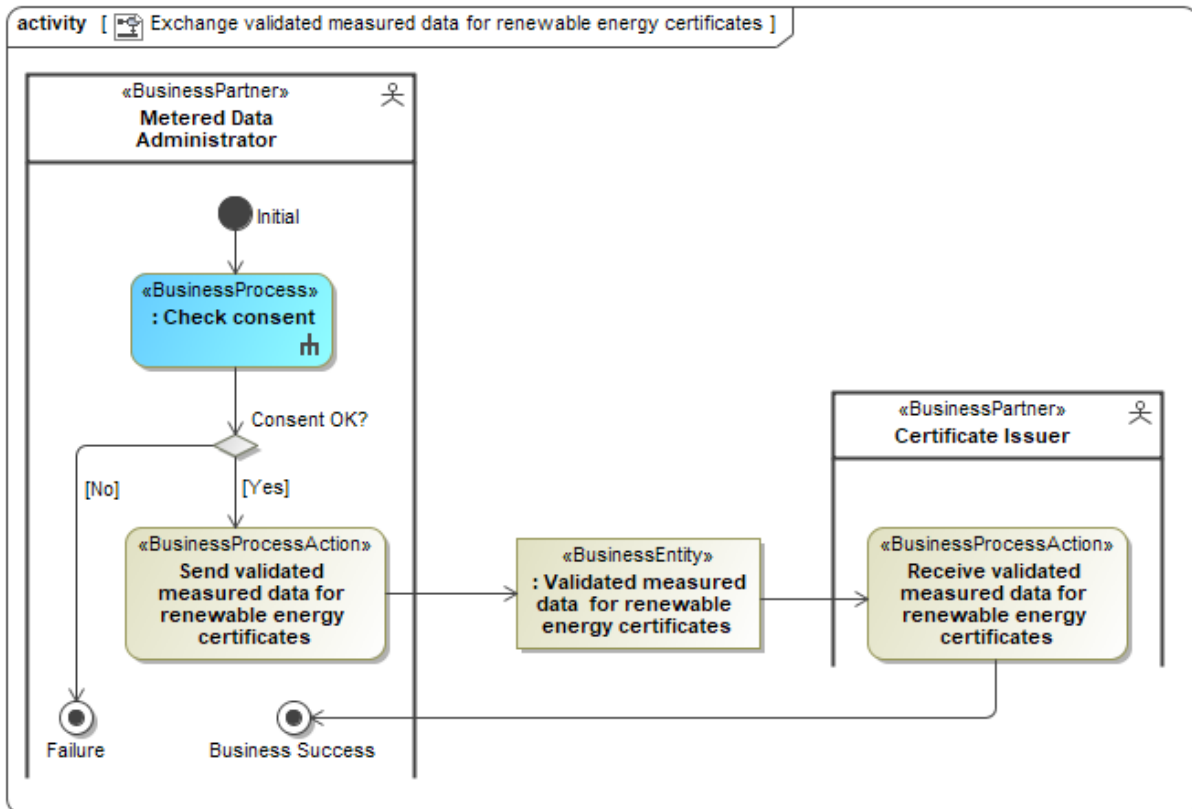


Figure 4 Business Process: Exchange validated measured data for renewable energy certificates

2.3. Request validated measured data for renewable energy certificates (Business Process UseCase)

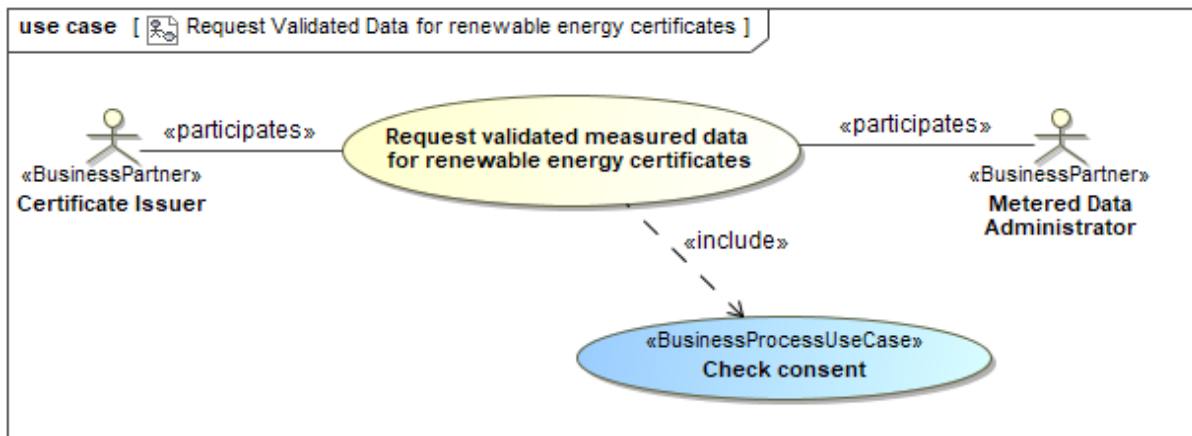


Figure 1 Business Process UseCase: Request validated measured data renewable energy certificates

2.3.1. Description

UseCase description: Request validated measured data for renewable energy certificates	
definition	<p>The Certificate Issuer requests validated measured data for renewable energy certificates for a Resource and/or an Accounting Point from the Metered Data Administrator.</p> <p>Before the Metered Data Administrator returns the validated measured data for renewable energy certificates, the consent must be checked by the Metered Data Administrator.</p>
beginsWhen	The Certificate Issuer has a need for the validated measured data for renewable energy certificates for the Resource and/or the Accounting Point.
preCondition	The Certificate Issuer is properly consented.
endsWhen	The Metered Data Administrator has sent the validated measured data for renewable energy certificates for the Resource and/or the Accounting Point to the Certificate Issuer.
postCondition	The Certificate Issuer has the requested validated measured data for renewable energy certificates for the Resource and/or the Accounting Point.
exceptions	The request has been rejected (no data available).
actions	See 2.3.2

2.3.2. Business Process

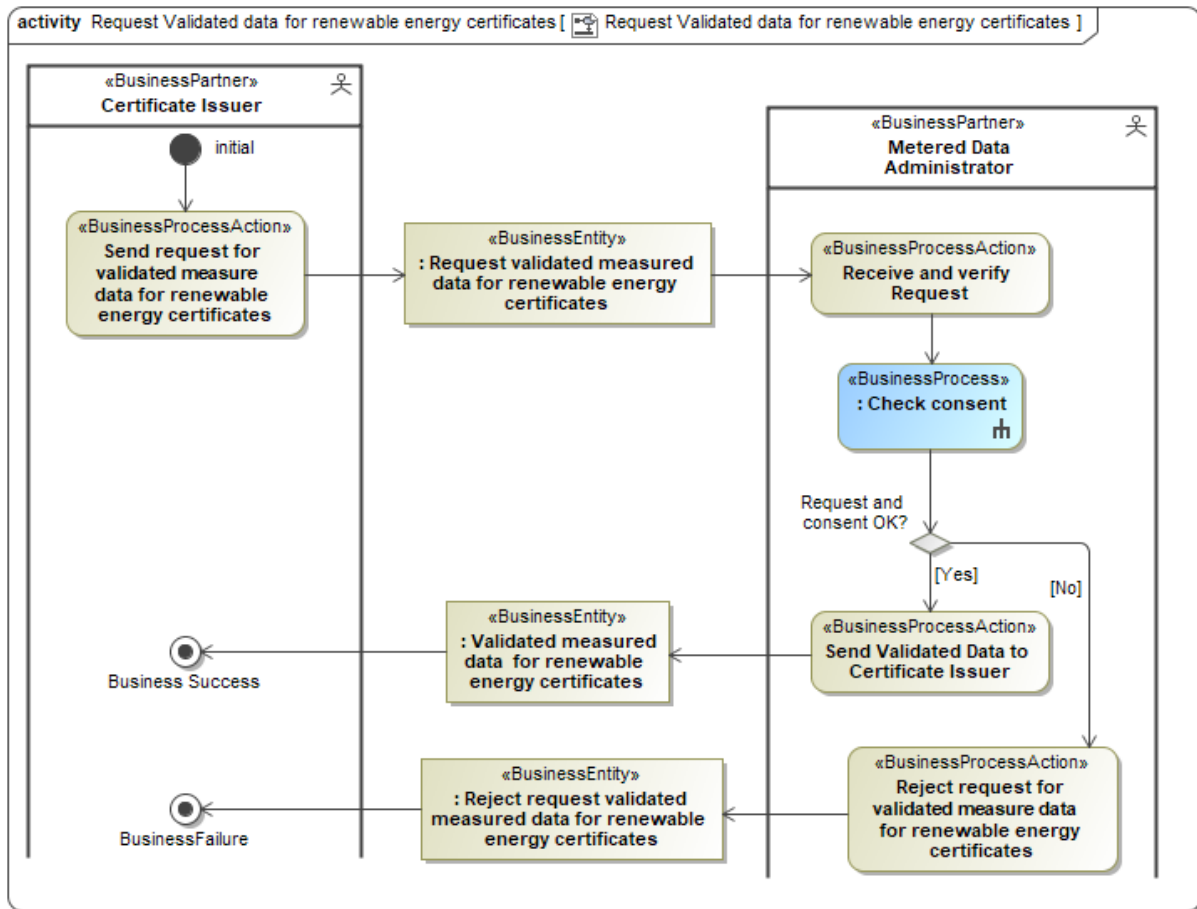


Figure 2 Business Process: Request validated measured data for renewable energy certificates

3. Business Partner View: Measure for renewable energy certificates

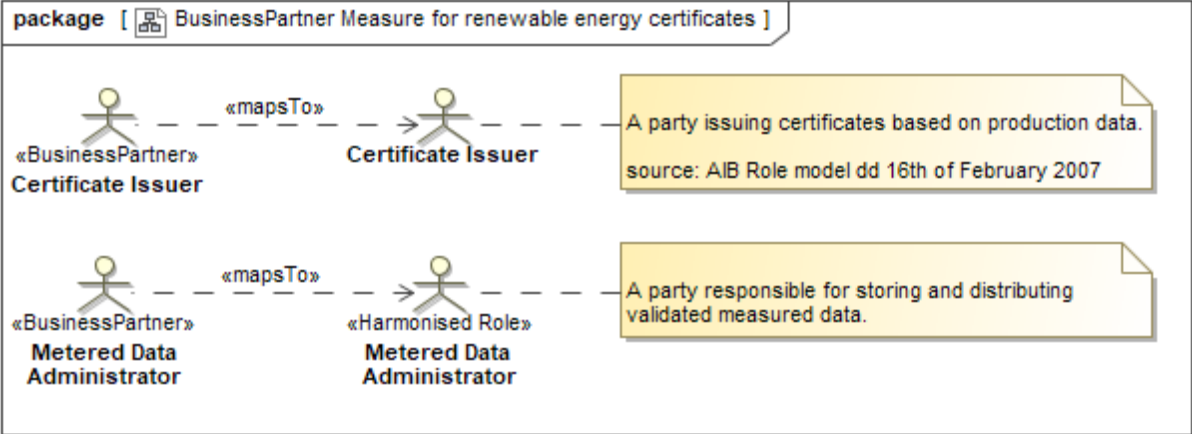


Figure 5 Business Partner View: Measure for renewable energy certificates

4. Business Entity View: Measure for renewable energy certificates

A general introduction to the Business Entity View can be found in Introduction to ebIX® Business Requirements and Business Information Models (<https://www.ebix.org/artikel/documents>), [4].

4.1. Validated measured data for renewable energy certificates (Class Diagram)

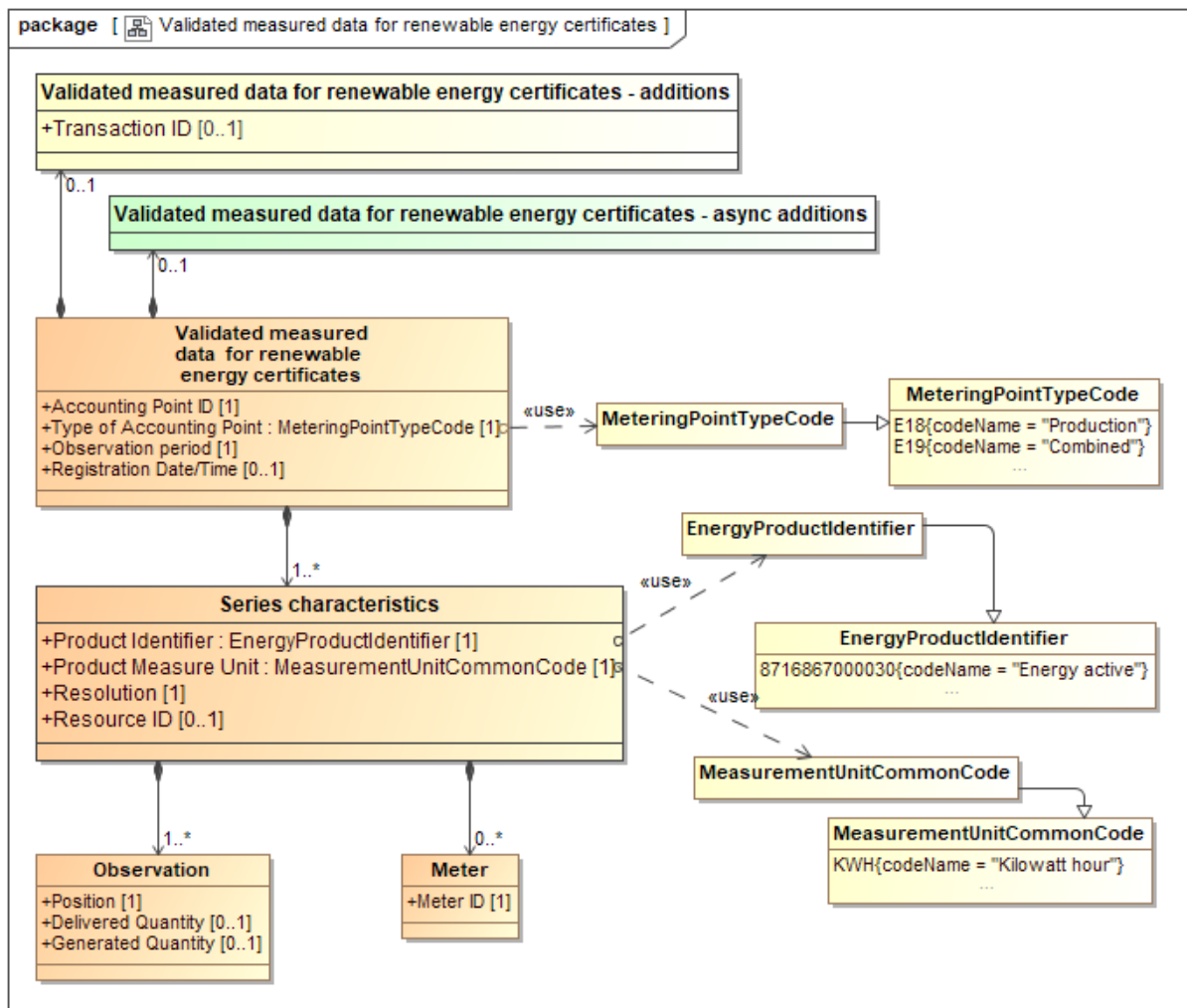


Figure 6 Class diagram: Validated measured data for renewable energy certificates

4.1.1. Element definitions: Validated measured data for renewable energy certificates

<p>«Business entity» Validated measured data for renewable energy certificates</p>	<p>The information set sent by a Metered Data Administrator to enable the issuance of certificates specifying the origin of the generated power.</p>
<p>Accounting Point ID</p>	<p>The unique identification of the Accounting Point to which the validated measured data are assigned.</p>
<p>Type of Accounting Point</p>	<p>A code specifying the direction of the active energy flow in this Accounting Point, such as <i>production</i> or <i>combined production and consumption</i>.</p>
<p>Observation Period</p>	<p>The specific period of time the validated measured data for renewable energy certificates have been measured, calculated or estimated for.</p>

Registration Date/Time	The date and time of the validation and registration of this set of validated measured data for renewable energy certificates.
Series characteristics	The characteristics of this set of validated measured data, i.e. the product and flow direction.
Product Identifier	A code specifying the energy product for the quantity in this time series.
Product Measure Unit	The unit of measure used for the quantity in this set of validated measured data.
Resolution	<p>The resolution for this validated measured data.</p> <p>The resolution is the time between two observations, leading to the number of observations in this timeseries (calculated from the Observation Period divided by the Resolution).</p> <p>The Observation Period must contain a whole number of observations as derived from the resolution.</p> <p>The resolution is expressed in compliance with ISO 8601 in the following format:</p> <p style="text-align: center;">PnYnMnDTnHnMnS.</p> <p>For example PT15M for 15 minutes resolution.</p>
Resource ID	The unique identification of the Resource, linked to the Accounting Point, to which the validated measured data are assigned.
Observation	One (combination of) validated values. The value(s) may be a part of a set of validated measured data.
Position	The ordinal position of this observation in this set of validated measured data.
Delivered quantity	The validated quantity of energy for this observation as delivered from the Accounting Point into the grid.
Generated Quantity	The validated quantity of energy for this observation as generated by the Resource.
Meter	A physical device containing one or more registers.
Identifier	<p>The unique identification of the Meter from which a register has been read for this Resource and/or Accounting Point.</p> <p>Meter is dependent: only used when proper identification of the Resource is not available</p>

Validated measured data for renewable energy certificates Additions	Additional information, related to validated measured data for renewable energy certificates, the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Transaction ID	The unique identification of this set of information as given by the Validator.
Validated measured data for renewable energy certificates Async Additions	Additional information, related to validated measured data for renewable energy certificates, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model but is used when specifying the document in the ebIX® model.

4.2. Request validated measured data for renewable energy certificates (Class Diagram)

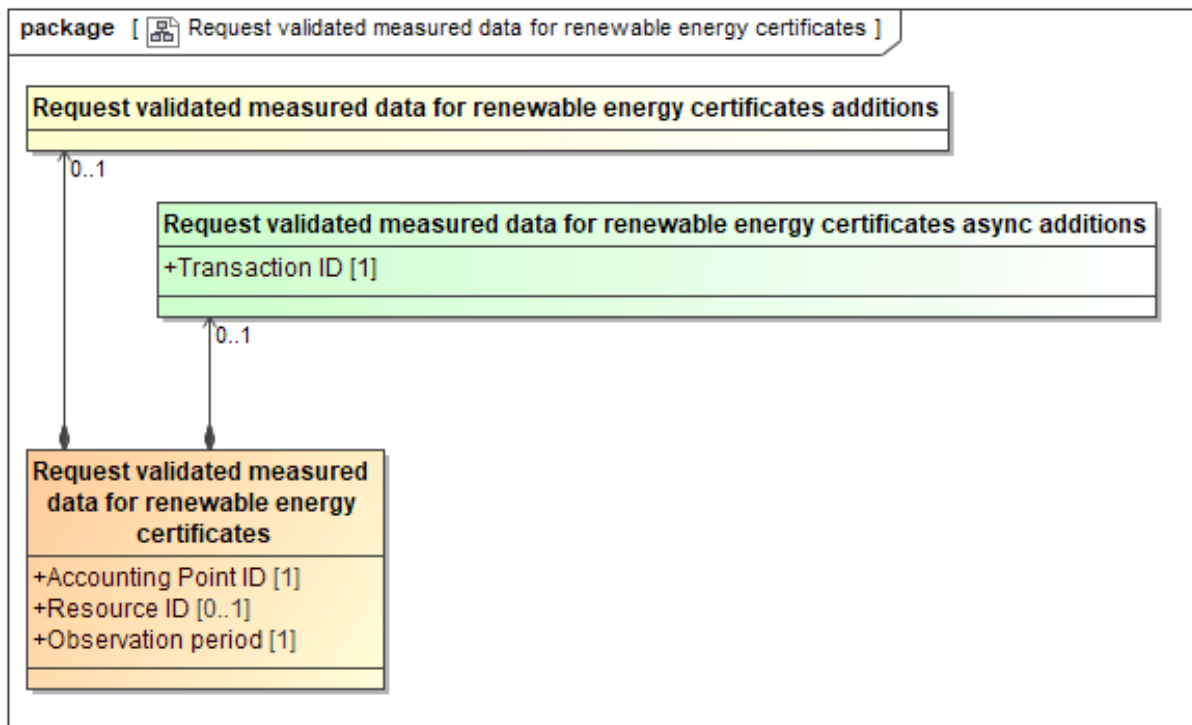


Figure 3 Class diagram: Request validated measured data for renewable energy certificates

4.2.1. Element definitions: Request validated measured data for renewable energy certificates

Attribute	Sector ¹	Definition
Request validated measured data for renewable energy certificates		The information set to be sent when requesting validated measured data for renewable energy certificates.
Accounting Point ID		The unique identification of the Accounting Point for which the validated measured data for renewable energy certificates is requested.
Resource ID		The unique identification of the Resource for which the validated measured data for renewable energy certificates is requested.

¹ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Observation period		A specific period of time describing the duration of the requested set of validated measured data for renewable energy certificates.
Request validated measured data for renewable energy certificates additions		Additional information related to Request validated measured data for renewable energy certificates, the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Request validated measured data for renewable energy certificates async additions		Additional information, related to Request validated measured data for renewable energy certificates, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model but is used when specifying the document in the ebIX® model.
Transaction ID		The unique identification of this set of information as given by the Certificate Issuer.

4.3. Reject request validated measured data for renewable energy certificates (Class Diagram)

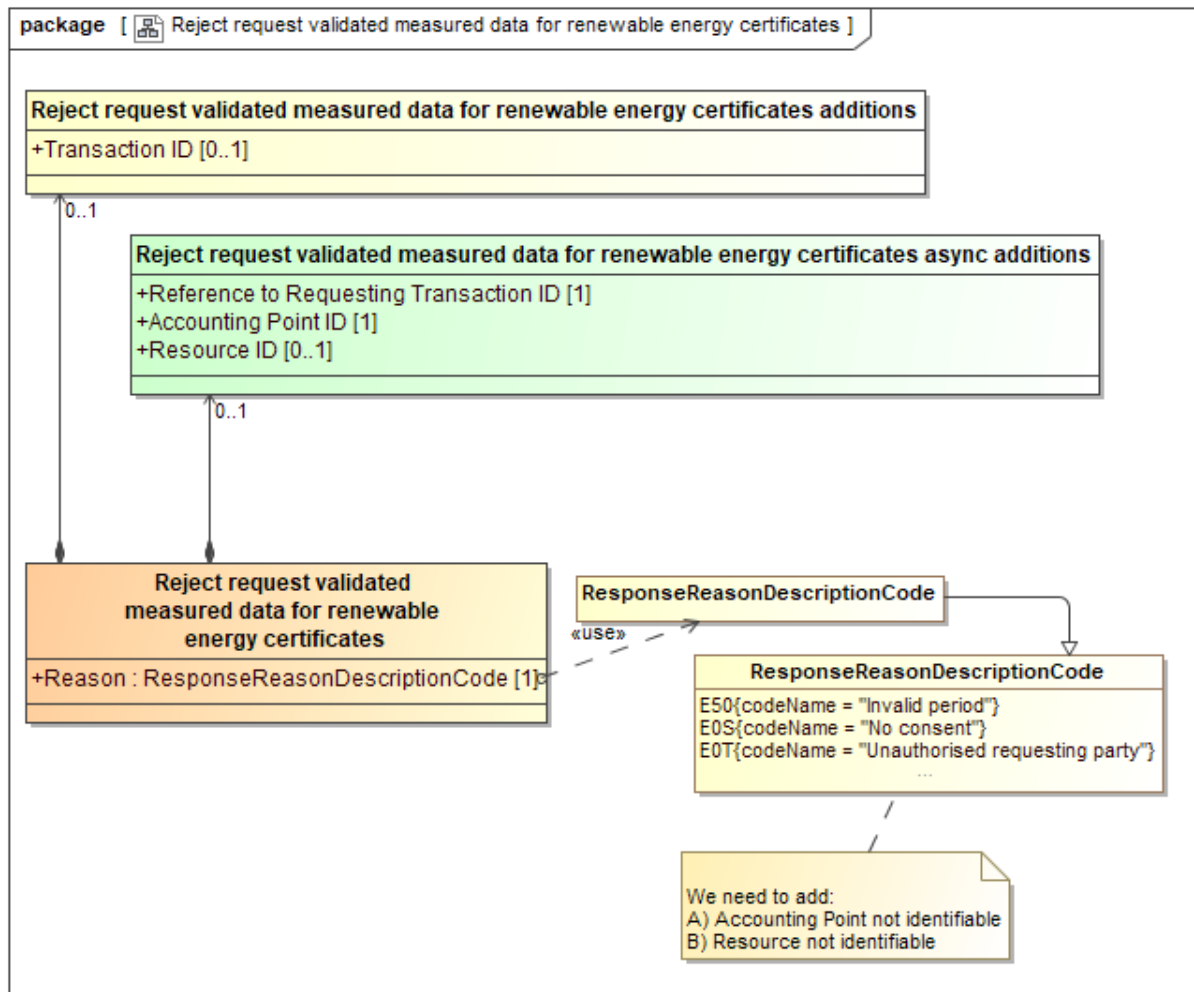


Figure 4 Class diagram: Reject request validated measured data for renewable energy certificates

4.3.1. Element definitions: Reject request validated measured data for renewable energy certificates

Attribute	Sector ²	Definition
<p>«Business entity» Reject request validated measured data for renewable energy certificates</p>		The information set to be sent by the Metered Data Administrator when rejecting a request for validated measured data for renewable energy certificates from the Certificate Issuer.

² It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sector ²	Definition
Reason		A code specifying the reason for the rejection of the request for validated measured data for renewable energy certificates.
Reject request validated measured data for renewable energy certificates additions		Additional information related to the request for validated measured data for renewable energy certificates, the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Transaction ID		The unique identification of this rejection of request for validated measured data for renewable energy certificates.
Reject request validated measured data for renewable energy certificates async additions		Additional information, related to the rejection of the request for validated measured data for renewable energy certificates, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model but is used when specifying the document in the ebIX® model.
Reference to Requesting Transaction ID		The unique identification of the rejected request for validated measured data for renewable energy certificates as given by the Certificate Issuer.
Accounting Point ID		The unique identification of the Accounting Point for which the validated measured data for renewable energy certificates was requested.
Resource ID		The unique identification of the Resource for which the validated measured data for renewable energy certificates was requested.

Appendix A. Header and Context information for the class diagrams

A.1. Header and Context Information attributes definitions

Class/attribute	Sector ³	Description
Header and Context Information		The set of information specifying the information to be added to this payload to enable the exchange as a document.
Document Type		A code representing the document type used for the exchange of this set of information.
Business Reason		A code representing the business reason for the exchange of this set of information.
Ancillary Business Process Role		A code representing the market role taking part in this exchange together with the Responsible Role, responsible for the process/this exchange.

A.2. Validated measured data for renewable energy certificates

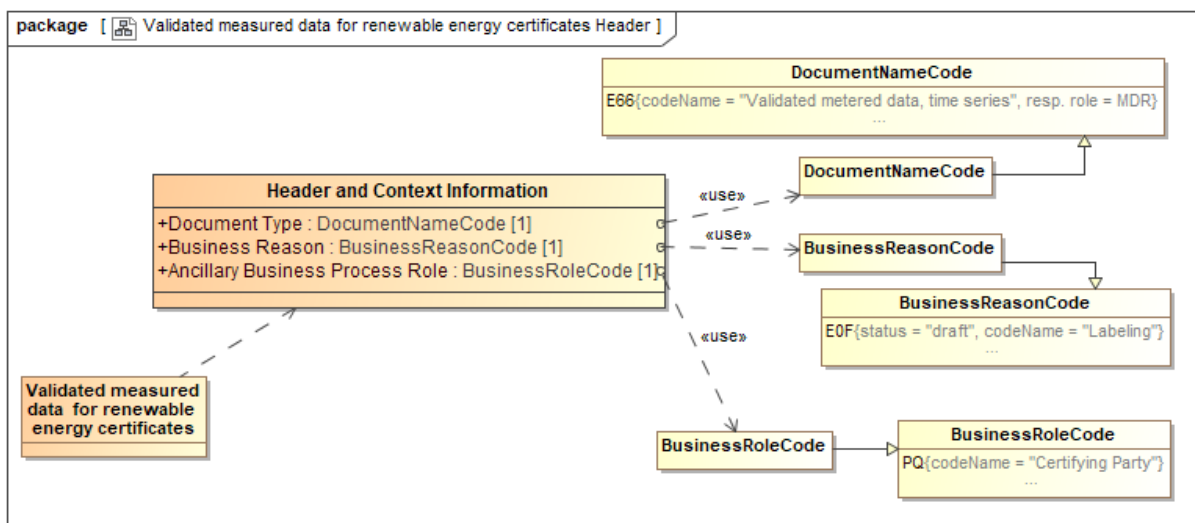


Figure 5 Header and Context Information (class diagram): Validated measured data for renewable energy certificates

³ It is assumed that Metering Points are uniquely dedicated to either electricity or to gas.

A.3. Request validated measured data for renewable energy certificates

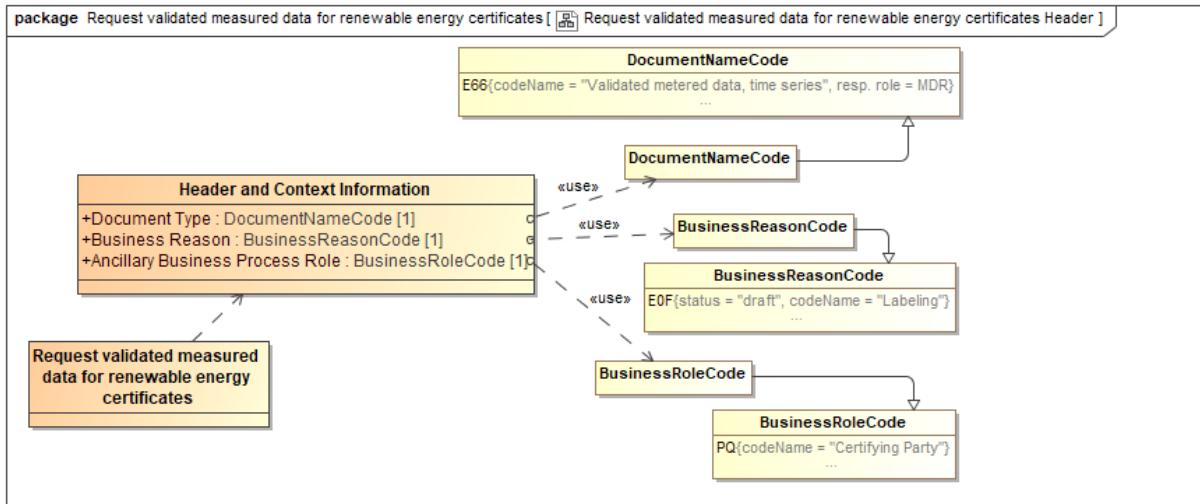


Figure 6 Header and Context Information (class diagram): Request validated measured data for renewable energy certificates

A.4. Reject request validated measured data for renewable energy certificates

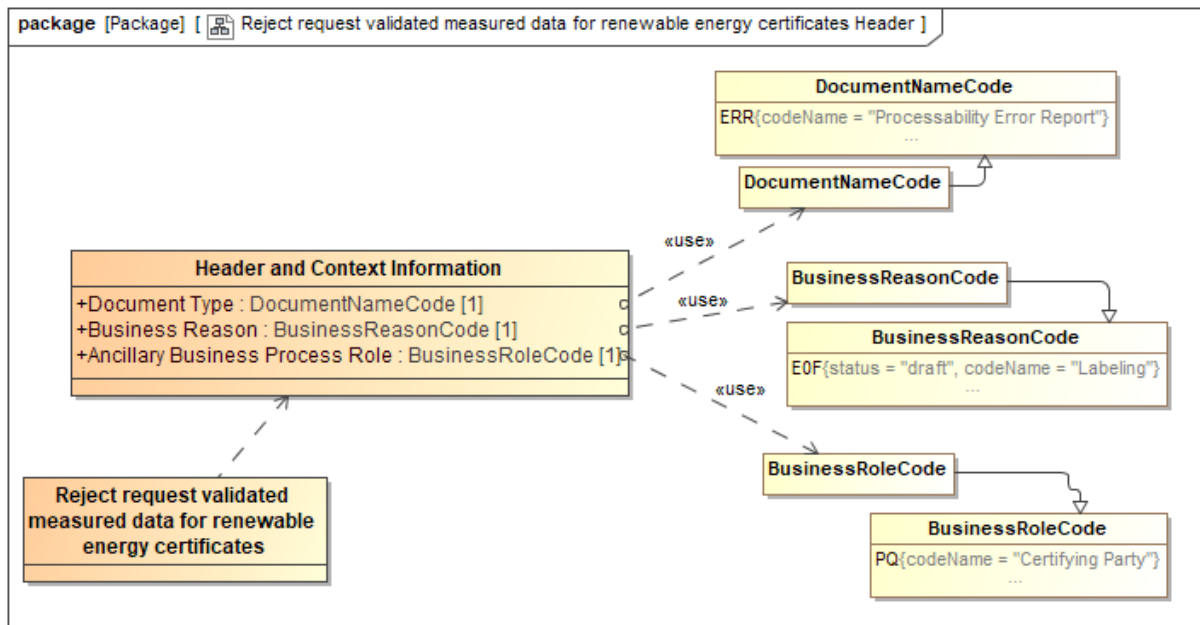


Figure 7 Header and Context Information (class diagram): Reject request validated measured data for renewable energy certificates