



Technical support for RES policy development and implementation. Establishing technical requirements & facilitating the standardisation process for guarantees of origin on the basis of Dir (EU) 2018/2001

Task 3 Developing IT Systems Specification

Task 3.2 Data protocol for multi-energy / -purpose certificates

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1. Framework

1.1 FaStGO

The FaStGO project has the objective of providing expert advice to the European Commission DG ENER, based on the terms of Reference N° ENER/C1/2019-517: “Technical support for RES policy development & implementation. Establishing technical requirements and facilitating the standardisation process for guarantees of origin on basis of Dir (EU) 2018/2001.”

1.2 What and why

Taking into account the legislative frameworks, the operational experiences of the current system, and the additional requirements based on a revised CEN standard EN 16325, FaStGO task 3 develops the design requirements for an IT systems infrastructure that enables reliable and efficient for cross border exchange of GOs.

For enhancing efficient and reliable cross border-trade of guarantees of origin, IT systems have proven to play a central role. This FaStGO task 3.2 provides a data protocol for transferring certificates from a registry to another.

1.3 Scope

The emphasis is on the implementation of the data fields foreseen in the CEN standard EN 16325 proposal provided as part of the FaStGO task 2.3. These data fields enable transfers of GOs issued for different energy carriers (electricity, heating/cooling, and gas including hydrogen). It also includes sustainability features and purpose of the certificate to facilitate cross-border transfers of biofuels and target accounting.

The data transport layer, whether file is sent over email, posted to a web service or an API (Application Programming Interface), is not included in this document. The AIB EECS Subsidiary Document (SD) 03 HubCom includes a web-service based data transport layer description and it is publicly available. The AIB transport mechanism has proven reliable and is proposed to be used as such.

The format of the transfer file is proposed to be XML because of its maturity and support by practically all relevant technical platforms. The XML also includes a sophisticated schema structure, which enables efficient and platform independent validation of transfer messages.

Glossary

GO	A guarantee of origin in the meaning of article 19 of REDII
REDII	The Renewable Energy Directive 2018/2001/EU
RES	Renewable energy sources
EECS	European Energy Certificate System
AIB	Association of Issuing Bodies
SD	Subsidiary document



2. Introduction

2.1 Aim

This document aims to provide a data protocol which can be used for transfer of guarantees of origin, and certificates for other purposes, between different registration databases. This data protocol is foreseen to facilitate multi-energy carrier certificates and multiple purposes.

2.2 History

This report bases itself on the developed data protocol in Subsidiary Document SD03 of the EECS Rules, which is currently used for electricity certificates such as guarantees of origin, based on the energy source, guarantees of origin for high-efficiency cogeneration, and EECS Disclosure certificates. It was also used for the RECS certificates before these were phased out in favour of guarantees of origin at the end of 2015.

2.3 Framework

A data protocol for energy certificate transfer between registration databases has only value if surrounded by an adequate set of principles which are agreed to be safeguarded between the transferring parties. As a main set of principles, the elements of the CEN EN 16325 standard for GOs will have precedence. Beyond a set of solid rules from a standard, there are also more flexibly adaptable rules for the detail.

The principles for the certificate transfer protocol, as set out in the body of the EECS SD03 HubCom, remain applicable. They have proven operational value over more than a decade, facilitating reliable and robust cross-border transfers over Europe. While the data format is already structured for expansion to multiple energy carriers, detailed adjustments to the data protocol are necessary to facilitate an actionable update for multiple energy carriers.

Therefore, the data protocol proposed by this document is presented in the form of an update of the data protocol that is set out in Annex B of the AIB EECS SD03 HubCom. It contains a certificate transfer structure and a file format that facilitates multiple energy carriers and multiple purposes.

At the time of drafting this document, the developments of the CEN EN 16325 standard revision are not yet final. The most relevant elements of an update of the data protocol for certificate transfer, from the discussions in CEN, are the data fields to be maintained on the GO.

In order to upgrade the data protocol as developed by AIB in HubCom to multi-energy carrier multi-purpose certificates, this document hence bases itself on the text proposal for CEN EN 16325 and the data fields as proposed in the FaStGO task 2 part 2 (revised), as published on 8th July 2020.

A harmonised data protocol facilitates efficient and robust cross-border transfers between registries, provided it is supported by solid business rules and knowledgeable IT systems management.

A data protocol, as proposed in this document, should be embedded in a structure that enables robustness and flexibility to be balanced and updated to reflect changing requirements. Therefore, it is best to be maintained under an agreement between all participating issuing bodies



3. Transfer Interface File Specification

3.1 Data Field Definition Index

<i>Absolute CO2 Emission Saved (AbsoluteCO2EmissionSaved)</i>	41
<i>Additional Information (Additional Information)</i>	34
<i>Aggregation Stage (AggregationStage)</i>	45
<i>Amount Primary Energy Saved (AmountPrimaryEnergySaved)</i>	39
<i>Certificate Issue Date (IssuedDate)</i>	25
<i>Certification Body (CertificationBody)</i>	42
<i>CO2 Calculation Method (CO2CalculationMethod)</i>	41
<i>CO2 Emissions (CO2Emissions)</i>	40
<i>CO2 Emissions Produced (CO2EmissionsProduced)</i>	40
<i>CO2 Savings Criteria Met (CO2SavingsCriteriaMet)</i>	43
<i>Competent Authority (CompetentAuthority)</i>	24
<i>Context</i>	18
<i>Country of Issue (CountryOfIssue)</i>	25
<i>Date Operational (DateOperational)</i>	26
<i>Distribution Channel (DistributionChannel)</i>	33
<i>Electrical Efficiency (ElectricalEfficiency)</i>	31
<i>Element Capacity (ElementCapacity)</i>	35
<i>Element Date Operational (ElementDateOperational)</i>	36
<i>Element Description (ElementDescription)</i>	36
<i>End Certificate Number (EndCertificateNumber)</i>	21
<i>Energy Carrier (EnergyCarrier)</i>	21
<i>Energy Savings Criteria Met (EnergySavingsCriteriaMet)</i>	24
<i>Energy Source (EnergySource)</i>	29
<i>From Registry (FromRegistry)</i>	17
<i>Gas</i>	42
<i>Heating Cooling (HeatingCooling)</i>	45
<i>High Efficiency Cogeneration (HighEfficiencyCogeneration)</i>	38
<i>Independent Criteria Scheme (IndependentCriteriaScheme)</i>	23
<i>Investment Support Description (InvestmentSupportDescription)</i>	31
<i>Issuing Body (IssuingBody)</i>	24
<i>Legal Status (LegalStatus)</i>	22
<i>Lower Calorific Value (LowerCalorificValue)</i>	32
<i>Maximum Supply Pressure (MaximumSupplyPressure)</i>	46
<i>Mechanical Capacity (MechanicalCapacity)</i>	35
<i>Medium (Medium)</i>	45
<i>Message Transmission Time (MessageTransmissionTime)</i>	16
<i>Network Identity (NetworkIdentity)</i>	33
<i>Network Name (NetworkName)</i>	33
<i>Nominal Capacity (NominalCapacity)</i>	34
<i>Number of Certificates</i>	19
<i>Overall Primary Energy Savings (OverallPrimaryEnergySavings)</i>	40
<i>Percentage Primary Energy Saved (PercentagePrimaryEnergySaved)</i>	39
<i>Product Type (ProductType)</i>	23
<i>Production Device Address (ProductionDeviceAddress)</i>	38



<i>Production Device Coordinates (ProductionDeviceCoordinates)</i>	37
<i>Production Device ID (ProductionDeviceID)</i>	25
<i>Production Device Location (ProductionDeviceLocation)</i>	37
<i>Production Device Name (ProductionDeviceName)</i>	26
<i>Production Period (ProductionPeriod)</i>	27
<i>Production Support Description (ProductionSupportDescription)</i>	31
<i>Purpose</i>	22
<i>Radioactive Waste Produced (RadioactiveWasteProduced)</i>	33
<i>Raw Gas Capacity (RawGasCapacity)</i>	44
<i>Raw Gas Date Operational (RawGasDateOperational)</i>	44
<i>Receiving Account ID (ReceivingAccountID)</i>	19
<i>Sending Account ID (SendingAccountID)</i>	18
<i>Source Shares (SourceShares)</i>	44
<i>Start Certificate Number (StartCertificateNumber)</i>	20
<i>Support Flag (SupportFlag)</i>	29
<i>Support Scheme Type (SupportSchemeType)</i>	30
<i>Sustainability</i>	41
<i>Sustainability Additional Information (SustainabilityAdditionalInformation)</i>	42
<i>Sustainability Audit Report (SustainabilityAuditReport)</i>	42
<i>Sustainable</i>	41
<i>Technology</i>	28
<i>Temperature Range (TemperatureRange)</i>	46
<i>Thermal Capacity (ThermalCapacity)</i>	35
<i>Thermal Efficiency (ThermalEfficiency)</i>	31
<i>To Registry (ToRegistry)</i>	17
<i>Transfer Message ID (MessageID)</i>	16
<i>Type Of Gas (TypeOfGas)</i>	43
<i>Upper Calorific Value (UpperCalorificValue)</i>	32
<i>Use Of Gas (UseOfGas)</i>	43
<i>Use of Heat (UseOfHeat)</i>	39
<i>Useful Cogeneration Heat (UsefulCogenerationHeat)</i>	40



3.2 Overview of File Structure

3.2.1 Preamble

The XML preamble describes the encoding and data schema that apply to the file. It takes the form. Note: the schema version used should be given as below (in below example the "exportenv80.xsd" version is used):

```
<?xml version="1.0" encoding="UTF-8"?>
<r:Env xsi:schemaLocation="http://system.aib-net.org/exportenv80.xsd"
xmlns:r="http://system.aib-net.org"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

3.2.1.1 The hosting of the schema does not form part of this specification.

3.2.2 Header

3.2.2.1 Transfer file has a header section. This is designed to identify the file and to assist registries in routing the file to the appropriate process in their system. Messages received by the Hub must contain appropriate information to identify the eventual recipient.

3.2.2.2 As an example, this file fragment shows a transfer between the registry using the GS1 code number 6420616413223 to the registry using the GS1 code number 5987654321234. The context is "transfer", indicating a certificate transfer.

```
<r:Header MessageTransmissionTime="2020-10-13T15:07:00Z">
  <r:MessageID >042020101300001</r:MessageID>
  <r:FromRegistry cS="GS1">6420616413223</r:FromRegistry>
  <r:ToRegistry cS="GS1">5987654321234</r:ToRegistry>
  <r:Context>transfer</r:Context>
</r:Header>
```

3.2.2.3 The example shows the use of 'cS' attributes on the r:FromRegistry and r:ToRegistry fields to identify different interpretations of the fields. The default is to have no such attribute, in which case the registry GS1 number should be used.

3.2.3 Certificate Transfer File: Body

3.2.3.1 The body section of the certificate transfer file contains the data on the certificates to be transferred, and the identities of the old and new holders of the certificates.

3.2.3.2 It is the responsibility of the sending registry to ensure that the data contained in the file is consistent with the Directive the certificate relates to.

3.2.3.3 It is the responsibility of the receiving registry to ensure that the data contained in the file is used in accordance with the rules appropriate to the particular certificate.

3.2.3.4 This fragment shows a transfer of certificates.

```
<r:Body>
  <r:SendingAccountID cS="eecs">04X00VAPOU</r:SendingAccountID>
  <r:ReceivingAccountID cS="eecs">02XSHELL0V</r:ReceivingAccountID>
  <r:NumberOfCertificates>10</r:NumberOfCertificates>
  <r:Certificates>
    <r:StartCertificateNumber
      cS="eecs">871686799993800000000001267377</r:StartCertificateNumber>
```



```

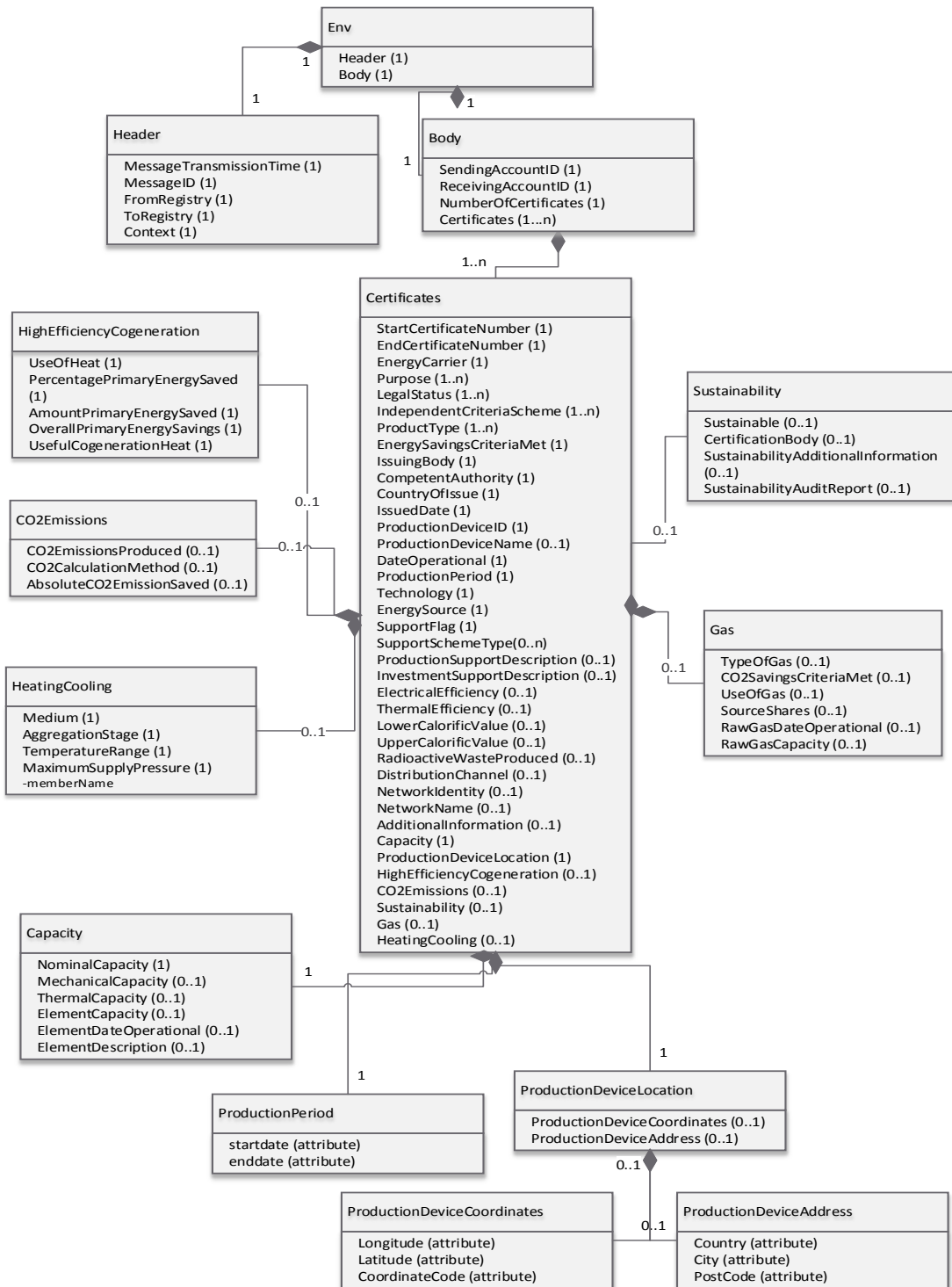
<r:EndCertificateNumber
cS="eecs">87168679999380000000001267386</r:EndCertificateNumber>
<r:EnergyCarrier>Electricity</r:EnergyCarrier>
<r:Purpose>Disclosure</r:Purpose>
<r:LegalStatus>GO</r:LegalStatus>
<r:IndependentCriteriaScheme>ICS:Naturemade
</r:IndependentCriteriaScheme>
<r:ProductType>source</r:ProductType>
<r:IssuingBody>08</r:IssuingBody>
<r:CompetentAuthority>NO01</r:CompetentAuthority>
<r:CountryOfIssue>NO</r:CountryOfIssue>
<r:IssuedDate>2010-08-15</r:IssuedDate>
<r:ProductionDeviceID cS="GS1">6420616413130000012
</r:ProductionDeviceID>
<r:ProductionDeviceName>Name</r:ProductionDeviceName>
<r:DateOperational>1967-08-13</r:DateOperational>
<r:ProductionPeriod enddate="2010-08-13" startdate="2010-08-10"/>
<r:Technology cS="eecs">T30000</r:Technology>
<r:EnergySource cS="eecs">F01050203</r:EnergySource>
<r:SupportFlag cS="eecs">1</r:SupportFlag>
<r:DistributionChannel cS="eecs">Connected to grid</r:DistributionChannel>
<r:Capacity>
  <r:NominalCapacity>20.000</r:NominalCapacity>
</r:Capacity>
<r:ProductionDeviceLocation>
  <r:ProductionDeviceAddress PostCode="0786" Country="NO" City="Oslo"/>
</r:ProductionDeviceLocation>
</r:Certificates>
</r:Body>

```

- 3.2.3.5 The original holder and the new holder are identified in elements 'r:SendingAccountID' and 'r:ReceivingAccountID' respectively. The 'cS' attribute in the example shows that the identifiers are both EECS identifiers.
- 3.2.3.6 The actual certificates are described in the 'r:Certificates' block (bundle). This refers to a contiguous set of certificates with serial numbers between 87168679999380000000001267377 and 87168679999380000000001267386 inclusive. If the transfer involves non-contiguous sets of certificates, then further 'r:Certificates' blocks can be included as required.
- 3.2.3.7 A single transfer file can only have one body element. This implies that:
- All the certificates are to be transferred from the same original holder;
 - All the certificates are to be transferred to the same new holder.



3.2.4 UML Schema – exportenv80





3.3 Physical Certificate Transfer Message Definition

3.3.1 Introduction

3.3.1.1 Data fields defined in the message schema are described in further detail in this section.

3.3.1.2 Where appropriate, details of field structure have been included.

3.3.2 Data fields

3.3.2.1 The table below lists data fields, their usage for different energy carriers and high-level data types.



Element		ProductType = Source				ProductType = Technology	Data Type
Hierarchy	Name	Energy Carrier					
		Electricity	Hydrocarbon Gas	Heating or Cooling	Hydrogen	Electricity (HEC)	
Header	MessageTransmissionTime	M	M	M	M	M	dateTime
Header	MessageID	M	M	M	M	M	long
Header	FromRegistry	M	M	M	M	M	token (string)
Header	ToRegistry	M	M	M	M	M	token (string)
Header	Context	M	M	M	M	M	token
Body	SendingAccountID	M	M	M	M	M	token (string)
Body	ReceivingAccountID	M	M	M	M	M	token (string)
Body	NumberOfCertificates	M	M	M	M	M	positiveInteger
Certificates	StartCertificateNumber	M	M	M	M	M	complex
Certificates	EndCertificateNumber	M	M	M	M	M	complex
Certificates	EnergyCarrier	M	M	M	M	M	token
Certificates	*Purpose	M	M	M	M	M	token
Certificates	*LegalStatus	M	M	M	M	M	token
Certificates	*IndependentCriteriaScheme	O	O	O	O	O	token
Certificates	*ProductType	M	M	M	M	M	token
Certificates	EnergySavingsCriteriaMet	N	N	N	N	M	boolean
Certificates	IssuingBody	M	M	M	M	M	token
Certificates	CompetentAuthority	M	M	M	M	M	token
Certificates	CountryOfIssue	M	M	M	M	M	token
Certificates	IssuedDate	M	M	M	M	M	date



Element		ProductType = Source				ProductType = Technology	Data Type
		Energy Carrier					
Hierarchy	Name	Electricity	Hydrocarbon Gas	Heating or Cooling	Hydrogen	Electricity (HEC)	
Certificates	ProductionDeviceID	M	M	M	M	M	complex
Certificates	ProductionDeviceName	O	O	O	O	O	string
Certificates	DateOperational	M	M	M	M	M	date
Certificates	StartDate EndDate (ProductionPeriod)	M	M	M	M	M	date
Certificates	Technology	M	M	M	M	M	token
Certificates	EnergySource	M	M	M	M	M	token
Certificates	SupportFlag	M	M	M	M	M	boolean
Certificates	*SupportSchemeType ⁵⁾	X	X	X	X	X	token
Certificates	ProductionSupportDescription	O	O	O	O	O	string
Certificates	InvestmentSupportDescription	O	O	O	O	O	string
Certificates	ElectricalEfficiency ⁴⁾	O	N	N	N	M	positiveInteger
Certificates	ThermalEfficiency ⁴⁾	O	N	O	N	M	positiveInteger
Certificates	LowerCalorificValue	N	O	N	O	M	decimal
Certificates	UpperCalorificValue	N	O	N	O	O	decimal
Certificates	RadioactiveWasteProduced ²⁾	X	O	O	O	O	decimal
Certificates	DistributionChannel	M	M	M	M	M	token
Certificates	NetworkIdentity	O	O	M	O	O	string
Certificates	NetworkName	O	O	O	O	O	string
Certificates	AdditionalInformation	O	O	O	O	O	string



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Element		ProductType = Source				ProductType = Technology	Data Type
		Energy Carrier					
Hierarchy	Name	Electricity	Hydrocarbon Gas	Heating or Cooling	Hydrogen	Electricity (HEC)	
Capacity	NominalCapacity	M	M	M	M	M	decimal
Capacity	MechanicalCapacity	O	O	O	O	O	decimal
Capacity	ThermalCapacity	O	O	O	O	M	decimal
Capacity	ElementCapacity	O	O	O	O	O	decimal
Capacity	ElementDateOperational	O	O	O	O	O	date
Capacity	ElementDescription	O	O	O	O	O	string
Production Device Location	ProductionDeviceCoordinates ³⁾	X	X	X	X	X	complex
Production Device Location	ProductionDeviceAddress ³⁾	X	X	X	X	X	complex
HighEfficiency Cogeneration	UseOfHeat	N	N	N	N	M	token
HighEfficiency Cogeneration	PercentagePrimaryEnergySaved	N	N	N	N	M	decimal
HighEfficiency Cogeneration	AmountPrimaryEnergySaved	N	N	N	N	M	decimal
HighEfficiency Cogeneration	OverallPrimaryEnergySavings	N	N	N	N	M	decimal
HighEfficiency Cogeneration	UsefulCogenerationHeat ⁴⁾	N	N	N	N	M	decimal
CO2Emissions	CO2EmissionsProduced ⁶⁾	X	O	O	O	X	decimal
CO2Emissions	CO2CalculationMethod	O	O	O	O	O	token



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Element		ProductType = Source				ProductType = Technology	Data Type
Hierarchy	Name	Energy Carrier					
		Electricity	Hydrocarbon Gas	Heating or Cooling	Hydrogen	Electricity (HEC)	
CO2Emissions	AbsoluteCO2EmissionsSaved	O	O	O	O	M	decimal
Sustainability	Sustainable	O	O	O	O	O	boolean
Sustainability	CertificationBody	O	O	O	O	O	token (string)
Sustainability	SustainabilityAdditionalInformation	O	O	O	O	O	token (string)
Sustainability	SustainabilityAuditReport	O	O	O	O	O	token (string)
Gas	TypeOfGas	N	M	N	O	N	token
Gas	CO2SavingsCriteriaMet	N	O	N	O	N	byte
Gas	UseOfGas	N	O	N	O	N	token
Gas	SourceShares	N	O	N	O	N	token (string)
Gas	RawGasDateOperational	N	O	N	O	N	date
Gas	RawGasCapacity	N	O	N	O	N	decimal
Heating Cooling	Medium	N	N	M	N	N	token
Heating Cooling	AggregationStage	N	N	M	N	N	token
Heating Cooling	TemperatureRange	N	N	M	N	N	token
Heating Cooling	MaximumSupplyPressure	N	N	M	N	N	token

M Mandatory element

O Optional element⁵

N Not relevant

X Conditionally mandatory element - see notes.



Notes:

- 1) The value ProductType: Technology means that the certificate was issued for technology (as opposed to source), for example electricity production from High-Efficiency Cogeneration, as defined by the Energy Efficiency Directive 2012-27.
 - 2) Combined certificates, e.g. GO/RES-E and HEC are recognized by having both ProductTypes: Technology and Source. Mandatory fields from both types have to be filled in.
 - 3) Each certificate must contain at least the ProductionDeviceCoordinates or the ProductionDeviceAddress and may contain both.
 - 4) Optional means that it is optional to give it on issuing, but after a certificate is being issued, it is compulsory to keep the information in imports and exports. (ref EECS Rules A3 IMMUTABILITY)
 - 5) Mandatory when support earmark indicates that support is received. In case of conversion, support flags and scheme types are aggregated from all previous and new energy carriers.
 - 6) Mandatory when the EnergySource parameters starts with F02, meaning that the energy was produced with fossil energy sources.
 - 7) Mandatory when the Energy Source value starts with F03xxxxxx, meaning that the certificate is issued for energy production from nuclear energy sources
- * Occurrence of the element within the specified hierarchy can be more than one



3.3.3 Data Field Definitions – Certificate Transfer File Header

3.3.3.1 MessageTransmissionTime

Timestamp for message file.

Attribute	MessageTransmissionTime
Type	DateTime
Length	Not applicable
Format	UTC (Z). Use of referential time zones (e.g. +1:00) is not permitted.
Occurrence	Required
Structure	YYYY-MM-DDTHH:MM:SSZ
Unit	DateTime
Example	2002-10-15T12:24:00Z

3.3.3.2 MessageID

Message ID for transfer message.

Element Name	MessageID
Type	Long
Length	15 digits
Format	15 digits fixed length number
Occurrence	1 (per Header element of transfer message) NOTE: Unique identification number for a transfer
Structure	IB code (2 digits) & YYYYMMDD & sequential number (5 digits)
Unit	Not applicable
Example	042002101800001



3.3.3.3 FromRegistry

Identifier for sending registry.

This field may be validated for agreement with the XML specification. The recipient may not reject the message based on the content.

Element Name	FromRegistry
Type	Token ¹
Length	6-13
Format	GS1 GLN number
Occurrence	1 (per Header element)
Unit	Not applicable
Example	6420616413223
Attribute	cS
Type	String
Format	'GS1'
Default	'GS1'

3.3.3.4 ToRegistry

Identifier for receiving registry.

This field may be validated for agreement with the XML specification. The recipient may not reject the message based on the content.

Element Name	ToRegistry
Type	Token
Length	6-13
Format	GS1 GLN number
Occurrence	1 (per Header element)
Structure	A GS1 Company Prefix of 6 to 13 digits in length.
Unit	Not applicable
Example	6420616413223
Attribute	cS
Type	String
Format	'GS1'
Default	'GS1'
Structure	Not applicable
Example	GS1

¹ Token: A string with no leading or trailing white space, no tabs, no linefeeds, and not more than one consecutive space.



3.3.3.5 Context

Processing context to assist file routing.

Element Name	Context
Type	Token
Length	1-20
Format	`transfer` is the only supported value for now
Occurrence	1 (per Header element)
Structure	Not applicable
Unit	Not applicable
Example	transfer

3.3.4 Data Field Definitions – Certificate Transfer File Body

3.3.4.1 SendingAccountID

Account ID for party transferring certificates.

Element Name	SendingAccountID
Type	Token
Length	eecs: 9 + 1 check digit GS1: 12 + 1 check digit
Format	Depends on setting of cS attribute, see EECS SD03 section A2.5
Occurrence	1 (per Header element)
Unit	Not applicable
Example	10XRWENETJ (when cS=`eecs`)
Attribute	
cS	
Type	String
Format	`eecs` NOTE: Not case sensitive
Default	`eecs`
Structure	Not applicable
Unit	Not applicable
Example	"eecs"



3.3.4.2 ReceivingAccountID

Account ID for party receiving certificates.

Element Name	ReceivingAccountID
Type	Token
Length	eecs: 9 + 1 check digit GS1: 12 + 1 check digit
Format	Depends on setting of cS attribute, see EECS SD03 section A2.5
Occurrence	1 (per Body element)
Unit	Not applicable
Example	10XRWENETJ (when cS='eecs')
Attribute	cS
Type	String
Format	'eecs' NOTE: Not case sensitive
Default	'eecs'
Structure	Not applicable
Unit	Not applicable
Example	"eecs"

3.3.4.3 NumberOfCertificates

Number of certificates transferred in the message.

Element Name	NumberOfCertificates
Type	Positive Integer
Length	1-11
Format	Number
Occurrence	1 (per Body element)
Structure	N...[N]
Unit	Not applicable
Example	682



3.3.5 Data Field Definitions – Certificate Transfer File Certificates

Each transfer may have one or more “Certificates” elements.

A transfer may not contain more than 5000 Certificates elements.

3.3.5.1 StartCertificateNumber

The number of the first certificate in the block of certificates to be transferred.

Element Name	StartCertificateNumber
Type	String
Length	30
Format	30-digit fixed length NOTE: the data type could be positiveInteger, but the length of 30 digits is too long for an Integer in several technologies and hence it is given as a String.
Occurrence	1 (per Certificates element)
Structure	<i>N</i> -digit Company Prefix with <i>N</i> -digit Individual Asset Reference, total 30 digits
Unit	Not applicable
Example	871686799993800000000001267377
Attribute	cS
Type	String
Format	One of: ‘eecs’ or other encodings to be agreed from time to time.
Default	‘eecs’
Structure	Not applicable
Example	“eecs”



3.3.5.2 EndCertificateNumber

The number of the last certificate in the block of certificates to be transferred.

Element Name	EndCertificateNumber
Type	String
Length	30
Format	30-digit fixed length NOTE: the data type could be positiveInteger, but the length of 30 digits is too long for an Integer in several technologies and hence it is given as a String.
Occurrence	1 (per Certificates element)
Structure	<i>N</i> -digit Company Prefix with <i>N</i> -digit Individual Asset Reference, total 30 digits
Unit	Not applicable
Example	871686799993800000000001267377
Attribute	cS
Type	string
Format	One of: 'eecs' or other encodings to be agreed from time to time.
Default	'eecs'
Structure	Not applicable
Example	Not applicable

3.3.5.3 EnergyCarrier

Energy Carrier for which the EECS the certificates have been issued.

Element Name	EnergyCarrier
Type	Token
Length	1-20
Format	Text field.
Occurrence	1 (per Certificates element)
Structure	Not applicable
Unit	Not applicable
Example	Electricity
Business Rules	Energy Carrier as electricity, fuel as gas, liquid...) Only Electricity is relevant as per now. Allowed values: <ul style="list-style-type: none"> • Electricity • HeatingOrCooling • HydrocarbonGas • Hydrogen



3.3.5.4 Purpose

The Purpose for which the certificates have been issued.

Element Name	Purpose
Type	Token
Length	1-20
Format	Text field.
Occurrence	1 or more (per Certificates element)
Structure	Not applicable
Unit	Not applicable
Example	Disclosure
Business Rules	<p>Indicates the purpose of the certificate. Allowed values:</p> <ul style="list-style-type: none"> • Disclosure • Support • Target <p>Certificates with LegalStatus "GO" shall always have Purpose "Disclosure". Certificates intended for energy production support CSupport". Certificates intended to be used for target accounting, such as e.g. transport sector renewable energy targets set forth by the renewable energy directive 2018/2001, article 25 or renewable consumption share targets as set by article 3 of this directive have Purpose "Target".</p>

3.3.5.5 LegalStatus

The LegalStatus indicates whether the Certificate is a Guarantee of Origin or a Non-Governmental Certificate (NGC);



Element Name	LegalStatus
Type	Token
Length	1-20 chars
Format	Text field. Values according to a relevant fact sheet.
Occurrence	1 or more (per Certificates element)
Structure	See EECS Fact Sheet 17 "EECS Scheme Members and Products" for possible values
Unit	Not applicable
Example 1: Guarantee of Origin	<r:LegalStatus>GO</r:LegalStatus>
Example 2: Non-governmental Certificate	<r:LegalStatus>NGC:EECS Disclosure</r:LegalStatus>

3.3.5.6 IndependentCriteriaScheme

The IndependentCriteriaScheme indicates whether the Certificate conforms to an Independent Criteria Scheme (ICS)

Element Name	IndependentCriteriaScheme
Type	Token
Length	1-20 chars
Format	Text field. Values according to a relevant fact sheet.
Occurrence	0 or more (per Certificates element)
Structure	See EECS Fact Sheet 17 "EECS Scheme Members and Products" for possible values
Unit	Not applicable
Example	<r:IndependentCriteriaScheme>ICS:Naturemade</r:IndependentCriteriaScheme> <r:IndependentCriteriaScheme>ICS:GREENENERGY</r:IndependentCriteriaScheme>

3.3.5.7 ProductType

Where the Certificate is a Guarantee of Origin, whether it is a Guarantee of Origin in relation to the energy source for the Output to which it relates, or the technology type used in producing such Output;

Element Name	ProductType
Type	Token
Length	1-20
Format	Text field
Occurrence	1 or more (per Certificates element)
Structure	Not applicable
Unit	Not applicable
Example	Source
Business Rules	Values: <ul style="list-style-type: none"> • Source • Technology



	The value Technology means that the certificate was issued for technology, for example electricity production from High-Efficiency Cogeneration, as defined by the Directive on Energy Efficiency 2012/27/EU.
--	---

3.3.5.8 EnergySavingsCriteriaMet

Whether the energy unit has met the primary energy savings criteria of the Directive on Energy Efficiency 2012/27/EU Annex II.

Element Name	EnergySavingsCriteriaMet
Type	Boolean
Length	Not applicable
Format	True or False
Occurrence	0 or 1 (per Certificate element)
Structure	Not applicable
Unit	Not applicable
Example	True

3.3.5.9 IssuingBody

The ID of the Issuing Body responsible for the issue of the certificates being transferred.

Element Name	IssuingBody
Type	Token
Length	2
Format	NN
Occurrence	1 (per Certificates element)
Structure	2-character numeric, leading zero if required. See Fact sheet 4 "Member & Competent Authority Codes" for possible values
Unit	Not applicable
Example	07

3.3.5.10 CompetentAuthority

The ID of the Competent Authority responsible for the EECS Product of the certificates being transferred.

Element Name	CompetentAuthority
Type	Token
Length	4
Format	XXNN
Occurrence	1 (per Certificates element)
Structure	Country code + 2-digit See Fact sheet 4 "Member & Competent Authority Codes" for possible values
Unit	Not applicable
Example	NO01



3.3.5.11 CountryOfIssue

The Country of originating Production Device.

Element Name	CountryOfIssue
Type	Token
Length	2
Format	XX
Occurrence	1 (per Certificates element)
Structure	2-characters' code according to the ISO 3166-1 country code list
Unit	Not applicable
Example	FI

3.3.5.12 IssuedDate

The date on which the certificate was issued.

Element Name	IssuedDate
Type	Date
Length	Not applicable
Format	Date is according to local time, not UTC Minimum value 2004-03-17 (the date when EECS GOs came into being)
Occurrence	1 (per Certificates element)
Structure	YYYY-MM-DD
Unit	Not applicable
Example	2020-10-15

3.3.5.13 ProductionDeviceID

The ID of the Production Device for which the certificates being transferred were issued.

Element Name	ProductionDeviceID
Type	Long
Length	Fixed length 18 for GS1
Format	Depends on setting of cS attribute
Occurrence	1 (per Certificates element)
Unit	Not applicable
Example	506003453000000275
Attribute	cS
Type	String
Default	'GS1'
Structure	Not applicable
Example	GS1



3.3.5.14 ProductionDeviceName

Name of the originating Production Device.

Element Name	ProductionDeviceName
Type	String
Length	0-255
Format	Text field
Occurrence	0 or 1 (per Certificates element)
Structure	Free text
Unit	Not applicable
Example	

3.3.5.15 DateOperational

The date on which the Production Device became operational in accordance with national legislation.

Element Name	DateOperational
Type	Date
Length	Not applicable
Format	Minimum value 1800-01-01
Occurrence	1 (per Certificates element)
Structure	YYYY-MM-DD
Unit	Date
Example	2020-10-15



3.3.5.16 ProductionPeriod

Start date and End date of actual generation. This element has no data associated with it. The period is defined by two mandatory attributes.

Element Name	ProductionPeriod
Type	
Length	0 – the information is in attributes
Format	
Occurrence	1 (per Certificates element)
Structure	An element having 2 attributes to show the production start and end dates as shown in the example
Example	<r:ProductionPeriod startdate="2020-01-01" enddate="2020-01-31" />
999Attribute	startdate
Type	Date
Format	Date according to local time, not UTC. Required. Minimum value 2004-03-17 (the date when EECS GOs came into being)
Occurrence	1
Structure	YYYY-MM-DD
Unit	Date
Attribute	enddate
Type	Date
Format	Date according to local time, not UTC. Required. Minimum value 2004-03-17 (the date when EECS GOs came into being)
Occurrence	1
Structure	YYYY-MM-DD
Unit	Date



3.3.5.17 Technology

Technology of the Originating Production Device.

Element Name	Technology															
Type	Token															
Length	1-20															
Format	Depends on setting of cS attribute cS='eecs' the format is TNNNNNN															
Occurrence	1 (per Certificates element)															
Structure	One of the Technology codes from EECS Rules Fact Sheet 5 " <i>Types of Energy Inputs and Technologies</i> ". Combination of "Type of Installation" and "Energy Source" for a Certificate must be a valid combination in EECS Rules Fact Sheet 5.															
Unit	Not applicable															
Example	T030200															
Business Rules	The first letter of the codes should correspond with the Energy Carrier as follows: <table border="1" data-bbox="689 1012 1347 1326"> <thead> <tr> <th>Energy Carrier</th> <th>Technology first letter</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>Electricity</td> <td>T</td> <td>T010100</td> </tr> <tr> <td>Hydrocarbon Gas</td> <td>M or G</td> <td>M010101 G010101</td> </tr> <tr> <td>Hydrogen</td> <td>H</td> <td>H010000</td> </tr> <tr> <td>Heating or Cooling</td> <td>Q</td> <td>Q010100</td> </tr> </tbody> </table>	Energy Carrier	Technology first letter	Example	Electricity	T	T010100	Hydrocarbon Gas	M or G	M010101 G010101	Hydrogen	H	H010000	Heating or Cooling	Q	Q010100
Energy Carrier	Technology first letter	Example														
Electricity	T	T010100														
Hydrocarbon Gas	M or G	M010101 G010101														
Hydrogen	H	H010000														
Heating or Cooling	Q	Q010100														
Attribute	cS															
Type	String															
Format	One of: 'eecs' or other encodings to be agreed in the future.															
Default	'eecs'															



3.3.5.18 EnergySource

Energy Source from which the Output was produced.

Element Name	EnergySource
Type	token
Length	1-20
Format	Depends on setting of cS attribute If cS='eecs' it is FNNNNNNNN
Occurrence	1 (per Certificates element)
Structure	One of the Fuel & Heat codes from EECS Rules Fact Sheet 5 " <i>Types of Energy Inputs and Technologies</i> ". Combination of "Type of Installation" and "Energy Source" for a Certificate must be a valid combination in EECS Rules Fact Sheet 5.
Unit	Not applicable
Example	F01050203
Attribute	cS
Type	String
Format	One of: 'eecs' or other encodings to be agreed in the future.
Default	'eecs'

3.3.5.19 SupportFlag

Earmark accordance with section 3.2.1.16 denoting whether the relevant Production Device and/or its Output have benefited or will benefit from Support.

Element Name	SupportFlag
Type	byte (Schema)
Length	8
Format	Depends on setting of cS attribute
Occurrence	1 (per Certificates element)
Structure	The required codes for Earmark flags are listed in EECS Rules Fact Sheet 3 (" <i>Types of Public Support</i> ").
Unit	Not applicable
Example	1
Attribute	cS
Type	String
Format	One of: 'eecs' or other encodings to be agreed in the future t.
Default	'eecs'



3.3.5.20 SupportSchemeType

Type of the support scheme.

Element Name	SupportSchemeType
Type	Token
Length	1-255
Format	Depends on setting of cS attribute
Occurrence	1 or more (per Certificates element)
Structure	As per a fact sheet to be developed.
Unit	Not applicable
Example	Feed-in Tariff
Attribute	cS
Type	String
Format	One of: 'eecs' or other encodings to be agreed in the future.
Default	'eecs'



3.3.5.21 ProductionSupportDescription

Description of Production Support Scheme. Free text description.

Element Name	ProductionSupportDescription
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Certificates element)
Structure	Not applicable
Unit	Not applicable

3.3.5.22 InvestmentSupportDescription

Description of Investment Support Scheme.

Element Name	InvestmentSupportDescription
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Certificates element)
Structure	Not applicable
Unit	Not applicable

3.3.5.23 ElectricalEfficiency

The electrical efficiency of a production device expressed as a percentage.

Element Name	ElectricalEfficiency
Introduced in schema	v71
Type	Positive integer
Format	NOTE: the minimum value is 1 and the maximum is 100.
Occurrence	0 or 1 (per Certificates element).
Unit	%
Example	80

3.3.5.24 ThermalEfficiency

The thermal efficiency of a production device expressed as a percentage.

Element Name	ThermalEfficiency
Introduced in schema	v71
Type	Positive integer
Format	NOTE: the minimum value is 1
Occurrence	0 or 1 (per Certificates element). Refer to for checking when it is mandatory.
Unit	%
Example	95



3.3.5.25 LowerCalorificValue

Lower Calorific Value in mega joules per kilogramme of fuel or megajoules per cubic metre of gaseous fuel or megajoules per litre of liquid fuels

Element Name	LowerCalorificValue
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Certificates element). Refer to table in 3.3.2 for checking when it is mandatory.
Structure	Value is to be given always with three decimal places.
Unit	MJ/kg of fuel, MJ/m ³ of gaseous fuel or MJ/l of liquid fuels
Example	10.030

3.3.5.26 UpperCalorificValue

Upper Calorific Value in mega joules per kilogramme of fuel or megajoules per cubic metre of gaseous fuel or megajoules per litre of liquid fuels

Element Name	UpperCalorificValue
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Certificates element). Refer to table in 3.3.2 for checking when it is mandatory.
Structure	Value is to be given always with three decimal places.
Unit	MJ/kg of fuel, MJ/m ³ of gaseous fuel or MJ/l of liquid fuels
Example	10.030



3.3.5.27 RadioactiveWaste

Where radioactive waste is produced in the production of electrical energy the radioactive waste produced per unit of electricity (as required by the Internal Markets Electricity Directive 2009/72) in grams per MWh.

Element Name	RadioactiveWasteProduced
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Certificates element). Refer to table in 3.3.2 for checking when it is mandatory.
Structure	Value is to be given always with three decimal places.
Unit	g/MWh
Example	4.030

3.3.5.28 DistributionChannel

Element Name	DistributionChannel
Type	token
Length	1-20
Format	Depends on setting of cS attribute If cS='eecs' it is ??
Occurrence	1 (per Certificates element)
Structure	Refer to EECS Fact Sheet 20 (to be updated).
Unit	Not applicable
Example	Injected in pipeline
Attribute	cS
Type	String
Format	One of: 'eecs' or other encodings to be agreed from time to time.
Default	'eecs'

3.3.5.29 NetworkIdentity

Element Name	NetworkIdentity
Type	Token
Length	0-255
Format	Text field
Occurrence	1 (per HeatingCooling element)
Structure	Free text
Unit	Not applicable
Example	6430123433253
Business Rules	Mandatory for Heating or Cooling Energy Carrier.

3.3.5.30 NetworkName



Element Name	NetworkName
Type	Token
Length	0-1024
Format	Text field
Occurrence	0 or 1 (per HeatingCooling element)
Structure	Free text
Unit	Not applicable
Example	
Business Rules	Optional

3.3.5.31 Additional Information

Additional information on certificates as free text.

Element Name	AdditionalInformation
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Certificates element)
Structure	Not applicable
Unit	Not applicable
Example	

3.3.5.32 Capacity

Each Certificates-element requires one Capacity -element. The elements under that are described below.

(a) NominalCapacity

Production Device Electrical Capacity in kW.

Element Name	NominalCapacity
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	1 (per Capacity element)
Structure	Value is to be given always with three decimal places.
Unit	kW
Example	785.050



(b) MechanicalCapacity

Production Device Mechanical Capacity in kW.

Element Name	MechanicalCapacity
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Capacity element)
Structure	Value is to be given always with three decimal places.
Unit	kW
Example	10.780

(c) ThermalCapacity

Production Device Thermal Capacity in kW.

Element Name	ThermalCapacity
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Capacity element)
Structure	Value is to be given always with three decimal places.
Unit	kW
Example	185.200

(d) ElementCapacity

Nominal capacity of the relevant production element.

Element Name	ElementCapacity
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per Capacity element)
Structure	Value is to be given always with three decimal places.
Unit	kW
Example	185.200



(e) ElementDateOperational

The date on which the relevant production element became operational in accordance with national legislation.

Element Name	ElementDateOperational
Type	Date
Length	Not applicable
Format	Minimum value 1800-01-01
Occurrence	0 or 1 (per Capacity element)
Structure	YYYY-MM-DD
Unit	Date
Example	2002-10-15

(f) ElementDescription

Description of Element. Free text description.

Element Name	ElementDescription
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Capacity element)
Structure	Not applicable
Unit	Not applicable
Example	



3.3.5.33 ProductionDeviceLocation

ProductionDeviceLocation element is required for a Certificates element and it should contain element(s) ProductionDeviceCoordinates and/or ProductionDeviceAddress which are described below.

(a) Production Device Coordinates

Location of the Production Device described with geographical coordinates. This element has no data associated with it. The coordinates and the code are defined by three mandatory attributes.

Element Name	ProductionDeviceCoordinates
Type	Not applicable
Format	See below
Occurrence	0 or 1 (per ProductionDeviceLocation element) Note: either ProductionDeviceCoordinates and/or ProductionDeviceAddress is required
Structure	See below the definition of the needed attributes
Example	<r:ProductionDeviceCoordinates Longitude="448 92 N" Latitude="115 778 E" CoordinateCode="WGS-84"/>
Attribute	
Longitude	
Type	Token
Length	1-20
Format	Depends on Coordinate Code. One of the codes from EECS Fact Sheet 16 "Geographical Coordinates"
Occurrence	1
Structure	Required
Unit	Not applicable
Example	See above
Attribute	
Latitude	
Type	Token
Length	1-20
Format	Depends on Coordinate Code
Occurrence	1
Structure	Required
Unit	Not applicable
Example	See above
Attribute	
CoordinateCode	
Type	Token
Length	1-20
Format	Coordinate code in accordance with the EECS Fact Sheet 16 "Geographical Coordinates".
Structure	Required
Occurrence	1
Example	See above



(b) ProductionDeviceAddress

Location of the Production Device described with country, city, and postal code. This element has no data associated with it. The address is defined by three mandatory attributes.

Element Name	ProductionDeviceAddress
Type	Empty
Format	See below
Occurrence	0 or 1 (per ProductionDeviceLocation element) Note: either ProductionDeviceCoordinates and/or ProductionDeviceAddress is required
Structure	See below the definition of the needed attributes
Example	<r:ProductionDeviceAddress PostCode="NO2342" Country="NO" City="Hønefoss"/>
Attribute	
Country	
Type	Token
Length	2
Format	Text field. 2 characters. Code is according to the ISO 3166-1 country code list
Occurrence	1
Structure	Required
Unit	Not applicable
Example	FI
Attribute	
City	
Type	Token
Length	1-150
Format	Text field
Occurrence	1
Structure	Required 1-150 characters
Unit	Not applicable
Example	See above
Attribute	
PostCode	
Type	Token
Length	1-10
Format	-
Occurrence	1
Structure	Required 1-10 characters
Unit	Not applicable
Example	See above

3.3.5.34 HighEfficiencyCogeneration

The ProductType-element value Technology means that the certificate was issued for production from High-Efficiency Cogeneration, as defined by the



Energy Efficiency directive 2012/27/EU. Below fields are only allowed to be used for High-Efficiency Cogeneration.

(a) UseOfHeat

Use of heat being one of the values identified in EECS Fact Sheet 11 "CHP Codes" under "Use of Heat";

Element Name	UseOfHeat
Type	Token
Length	1-20
Format	Text field
Occurrence	1 (per HighEfficiencyCogeneration-element).
Default	-
Structure	One of the values identified in the EECS Fact Sheet 11 "Cogeneration Codes" under "Use of Heat"
Unit	Not applicable
Example	'a'

(b) PercentagePrimaryEnergySaved

The primary energy saved expressed as a percentage according to Annex II of the Energy Efficiency Directive

Element Name	PercentagePrimaryEnergySaved
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	1 (per HighEfficiencyCogeneration-element)
Structure	Value is to be given always with three decimal places.
Unit	%
Example	10.030

(c) AmountPrimaryEnergySaved

The actual amount of primary energy saved expressed in mega joules per MWh

Element Name	AmountPrimaryEnergySaved
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	1 (per HighEfficiencyCogeneration-element)
Structure	Value is to be given always with three decimal places.
Unit	MJ/MWh
Example	10.030



(d) OverallPrimaryEnergySavings

The overall primary energy savings expressed as a percentage based on the total energy input and output flows of a Cogeneration unit

Element Name	OverallPrimaryEnergySavings
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	1 (per HighEfficiencyCogeneration-element)
Structure	Value is to be given always with three decimal places.
Unit	%
Example	10.030

(e) UsefulCogenerationHeat

Useful Heat production from Cogeneration correlating to 1 MWh of High-Efficiency Cogeneration electricity production.

Element Name	UsefulCogenerationHeat
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	1 (per HighEfficiencyCogeneration-element).
Structure	Value is to be given always with three decimal places.
Unit	GJ/MWh
Example	10.030

3.3.5.35 CO2Emissions

(a) CO2EmissionsProduced

The CO2 emissions produced per unit of electricity in kilograms per MWh, For CHP this is calculated by subtracting the fuel for CHP heat based on Harmonised Efficiency Reference Values for separate production of heat from the total CHP fuel.

Element Name	CO2EmissionsProduced
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per CO2Emissions element). Refer to in table 3.3.2 for checking when it is mandatory.
Structure	Value is to be given always with three decimal places.
Unit	Kg/MWh
Example	10.030



(b) CO2CalculationMethod

Description or a reference to the CO2 calculation method used.

Element Name	CO2CalculationMethod
Type	Token
Length	0-1024
Format	As per a fact sheet to be developed.
Occurrence	0 or 1 (per CO2Emissions element)
Structure	Not applicable
Unit	Not applicable
Example	

(c) AbsoluteCO2EmissionsSaved

in kilo grams per MWh compared with the best available and economically justifiable technology for separate production of heat and electricity using the same fuels; and which was on the market in the year of construction of the CHP unit, as defined in Annex II(f)(2) of the Energy Efficiency Directive

Element Name	AbsoluteCO2EmissionsSaved
Type	Decimal
Length	Minimum value 0, maximum value 9999999.999
Format	Not applicable
Occurrence	0 or 1 (per CO2Emissions element). Refer to table in 3.3.2 for checking when it is mandatory.
Structure	Value is to be given always with three decimal places.
Unit	Kg/MWh
Example	10.030

3.3.5.36 Sustainability

(a) Sustainable

Element Name	Sustainable
Type	Boolean
Length	Not applicable
Format	True or False
Occurrence	0 or 1 (per Sustainability element)
Structure	Not applicable
Unit	Not applicable
Example	True



(b) CertificationBody

Element Name	CertificationBody
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Sustainability element)
Structure	Not applicable
Unit	Not applicable
Example	

(c) SustainabilityAdditionalInformation

Additional information on sustainability in free text.

Element Name	SustainabilityAdditionalInformation
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Sustainability element)
Structure	Not applicable
Unit	Not applicable
Example	

(d) SustainabilityAuditReport

Link (URL) to sustainability audit report.

Element Name	SustainabilityAuditReport
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Sustainability element)
Structure	Not applicable
Unit	Not applicable
Example	https://example.ex/report.pdf

3.3.5.37 Gas

This element and its child elements are applicable only for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.



(a) TypeOfGas

Element Name	TypeOfGas
Type	Token
Length	1-255
Format	Text field.
Occurrence	0 or 1 (per Gas element)
Structure	Allowed values: Network compatible Gas Other Gas
Unit	Not applicable
Example	Network compatible Gas
Business Rules	Indicates the type of the gas. It is mandatory for Energy Carrier Hydrocarbon Gas.

(b) CO2SavingsCriteriaMet

Element Name	CO2SavingsCriteriaMet
Type	Boolean
Length	Not applicable
Format	True or False
Occurrence	0 or 1 (per Gas element)
Structure	Not applicable
Unit	Not applicable
Example	True
Business Rules	It can be given optionally for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.

(c) UseOfGas

Element Name	UseOfGas
Type	Token
Length	1-255
Format	Text field.
Occurrence	0 or 1 (per Gas element)
Structure	Refer to EECS Fact Sheet 21 (to be updated).
Unit	Not applicable
Example	
Business Rules	It can be given optionally for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.
Attribute	cS
Type	String
Format	One of: 'eecs' or other encodings to be agreed from time to time.
Default	'eecs'



(d) SourceShares

Element Name	SourceShares
Type	String
Length	0-1024
Format	Free text
Occurrence	0 or 1 (per Gas element)
Structure	Not applicable
Unit	Not applicable
Example	
Business Rules	It can be given optionally for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.

(e) RawGasDateOperational

Element Name	RawGasDateOperational
Type	Date
Length	Not applicable
Format	Minimum value 1800-01-01
Occurrence	0 or 1 (per Gas element)
Structure	YYYY-MM-DD
Unit	Date
Example	2002-10-15
Business Rules	It can be given optionally for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.

(f) RawGasCapacity

Element Name	RawGasCapacity
Type	Decimal
Length	Minimum value 0, maximum value 99999999.999
Format	Not applicable
Occurrence	1 (per Gas element)
Structure	Value is to be given always with three decimal places.
Unit	kW
Example	785.050
Business Rules	It can be given optionally for Energy Carriers Hydrocarbon Gas and Hydrogen. For other Energy Carriers it is not applicable.



3.3.5.38 HeatingCooling

(a) Medium

Element Name	Medium
Type	Token
Length	1-255
Format	Text field.
Occurrence	1 (per HeatingCooling element)
Structure	Allowed values: <ul style="list-style-type: none"> • water • thermal-oil • air • salt • refrigerant
Unit	Not applicable
Example	air
Business Rules	Mandatory for Heating or Cooling Energy Carrier and not applicable for other Carriers.
Attribute	cS
Type	String
Format	One of: `eecs` or other encodings to be agreed from time to time.
Default	`eecs`

(b) AggregationStage

Element Name	AggregationStage
Type	Token
Length	1-255
Format	Text field.
Occurrence	1 (per HeatingCooling element)
Structure	Allowed values: <ul style="list-style-type: none"> • solid • liquid • gaseous
Unit	Not applicable
Example	solid
Business Rules	Mandatory for Heating or Cooling Energy Carrier and not applicable for other Carriers.
Attribute	cS
Type	String
Format	One of: `eecs` or other encodings to be agreed from time to time.
Default	`eecs`



(c) TemperatureRange

Element Name	TemperatureRange
Type	Token
Length	1-255
Format	Text field.
Occurrence	1 (per HeatingCooling element)
Structure	Allowed values: <ul style="list-style-type: none"> • less than 0 • 0-35 • 35-70 • 70-110 • 110-200 • 200-450 • more than 450
Unit	Not applicable
Example	less than 0
Business Rules	Mandatory for Heating or Cooling Energy Carrier and not applicable for other Carriers.

(d) MaximumSupplyPressure

Element Name	MaximumSupplyPressure
Type	Token
Length	1-255
Format	Text field.
Occurrence	1 (per HeatingCooling element)
Structure	Allowed values: <ul style="list-style-type: none"> • 0-4 • 4-10 • more than 10
Unit	Not applicable
Example	more than 10
Business Rules	Mandatory for Heating or Cooling Energy Carrier and not applicable for other Carriers.