EECS Electricity
Domain Protocol

for
Finland

Prepared by Finextra Oy
Based on EECS Rules Release 7 v14

Release [1] [2021]
Contents

A Introduction .................................................................................................................. 5
B General ....................................................................................................................... 6
  B.1 Scope ................................................................................................................... 6
  B.2 Status and Interpretation ..................................................................................... 6
  B.3 Roles and Responsibilities .................................................................................. 7
  B.4 Issuance scope summary .................................................................................... 8
C Overview of National Legal and Regulatory Framework ....................................... 8
  C.1 The EECS Framework ......................................................................................... 8
  C.2 National Energy Source Disclosure .................................................................. 10
  C.3 National Public Support Schemes ..................................................................... 11
  C.4 EECS Product Rules ......................................................................................... 11
  C.5 Local Deviations from the EECS Rules .............................................................. 11
D Registration .............................................................................................................. 12
  D.1 Registration of an Account Holder ..................................................................... 12
  D.2 Resignation of an Account Holder ..................................................................... 13
  D.3 Registration of a Production Device .................................................................. 13
  D.4 De-Registration of a Production Device ............................................................. 16
  D.5 Maintenance of Production Device Registration Data ........................................ 16
  D.6 Audit of Registered Production Devices ............................................................ 17
  D.7 Registration Error/Exception Handling .............................................................. 18
E Certificate Systems Administration ....................................................................... 19
  E.1 Issuing EECS Certificates .................................................................................. 19
  E.2 Processes ............................................................................................................ 21
  E.3 Measurement ...................................................................................................... 23
  E.4 Energy Storage (Including Pumped Storage) .................................................... 23
  E.5 Combustion Fuels (e.g. Biomass) and Production Devices with multiple energy inputs .... 23
  E.6 Format ............................................................................................................... 24
  E.7 Transferring EECS Certificates ......................................................................... 24
  E.8 Administration of Malfunctions, Corrections and Errors .................................... 25
  E.9 End of Life of EECS Certificates – Cancellation ............................................... 26
  E.10 End of Life of EECS Certificates – Expiry ......................................................... 27
  E.11 End of Life of EECS Certificates – Withdrawal ............................................... 27
F Issuer’s Agents ......................................................................................................... 27
  F.1 Production Auditor ............................................................................................. 27
  F.2 Production Registrar ........................................................................................... 27
  F.3 Measurement Bodies ........................................................................................... 28
G  Activity Reporting.....................................................................................................................28
  G.1  Public Reports..........................................................................................................................28
  G.2  Record Retention ....................................................................................................................28
  G.3  Orderly Market Reporting........................................................................................................28
H  Association of Issuing Bodies .......................................................................................................29
  H.1  Membership................................................................................................................................29
  H.2  Complaints to the AIB .............................................................................................................29
I  Change Control..................................................................................................................................30
  I.1  Complaints and Disputes .........................................................................................................30
  I.2  Change Requests ......................................................................................................................30
Annex 1: Contacts List .......................................................................................................................31
Annex 2: Account Application / Amendment Form, ........................................................................33
Know-Your-Customer Questionnaire Form....................................................................................33
Annex 3: Sample Cancellation Statement .......................................................................................34
Annex 4: ICS: EKOenergy: Appointment letter from the Finnish Association for Nature Conservation
  37
Annex 5: Sample consumption declaration.....................................................................................38
A Introduction

This Domain Protocol describes how the EECS Standard has been implemented in a certain Domain (country/region) for a certain type of energy certificate and it indicates where that system deviates from that standard. The EECS framework including the Domain Protocol aims to ensure robustness and transparency for all parties involved.

A Domain Protocol promotes quality and clarity, as it:

- explains local rules;
- provides clear information to all stakeholders (consumers, market parties, other members, government, the EU Commission etc.);
- facilitates assessment of compliance and permissible deviation from the EECS Rules;
- facilitates audit; and
- translates local rules into a single format and language, supporting each of the above.

Important contact information is provided in Annex 1.
B General

B.1 Scope

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C3.1.1</th>
<th>E6.2.1a</th>
<th>E6.3.1</th>
<th>E6.3.2</th>
<th>N2.1.1</th>
<th>O.2.1.1</th>
</tr>
</thead>
</table>

B.1.1. This Domain Protocol sets out the procedures, rights and obligations, which apply to the Domain of Finland and relate to the EECS Electricity Scheme as defined in the EECS Rules.

B.1.2. Production Device qualification for this Domain will be determined such that, the Production Device is effectively located in Finland.

B.1.3. Finextra is authorised to Issue EECS Certificates relating to the following EECS Product(s):

- EECS Guarantee of Origin (EECS GO)
- ICS (EKOenergy)

B.1.4. Finextra is authorised to Issue EECS Certificates relating to the following EECS Product Type(s):

- Source
- Technology, implying the mandate to issue certificates for High-Efficiency Cogeneration in accordance with [EU Directive 2009/27 (EU) or other]

B.1.5. Finextra is authorised to Issue EECS Certificates relating to the following Energy Carriers: electricity and to the following energy sources: renewable (including biomass) and nuclear energy.

B.2 Status and Interpretation

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>E6.2.1d</th>
<th>E6.3.1</th>
<th>E6.3.4</th>
</tr>
</thead>
</table>

B.2.1. The EECS Rules are subsidiary and supplementary to national legislation.

B.2.2. The EECS Rules and its subsidiary documents are implemented in Finland in the manner described in this Domain Protocol. Any deviations from the provisions of the EECS Rules that may have material effect are set out in section 0 of this document.

B.2.3. The capitalised terms used in this Domain Protocol shall have the meanings ascribed to them in the EECS Rules except as stated in section 0 of this document.

B.2.4. This Domain Protocol is made contractually binding between any EECS Participant and Finextra by agreement in the form of the Standard Terms and Conditions.

B.2.5. In the event of a dispute, the approved English version of this Domain Protocol will take precedence over a local language version.
B.3 Roles and Responsibilities

This section demonstrates compliance with the following EECS Rules:

| C3.1.1     | E6.2.1c          |

B.3.1. The Authorised Issuing Body for electricity EECS Certificates in Finland is Finextra. Its role is to administer the EECS Registration Database and its interface with the EECS Transfer System.

B.3.2. The Competent Authority for EECS Electricity GOs in Finland is Fingrid Oyj (TSO, Transmission System Operator in Finland). Its role is defined by legislation to be responsible for the operation of for the EECS electricity GO system in Finland. The Competent Authority may assign this task to its totally owned subsidiary. Fingrid Oyj has assigned the task to its totally owned subsidiary Finextra Oy (hereinafter Finextra).

B.3.3. The Authorised Measurement Bodies are listed on the website https://opendata.esett.com/dso. eSett provides imbalance settlement services to electricity market participants in Denmark, Finland, Norway, and Sweden. Relevant Metering Responsible Bodies are established under national regulation to be responsible for the collection and validation of measured volumes of energy used in national financial balance settlement processes. Fingrid Oyj as a TSO is responsible for Production Devices connected to the transmission grid.

B.3.4. Contact details for the principal roles and Issuing Body agents are given in Annex 1.

B.3.5. The EECS Registration Database operated by Finextra can be accessed via the website https://go.finextra.fi. Finextra acts as the Registry Operator in Finland.

B.3.6. The Scheme Operator for the Non-Governmental Certificate ICS: EKOenergy is Finextra. Its role is defined by agreement to be responsible for the operation of ICS: EKOenergy.

B.3.7. The following EECS Product: Independent Criteria Scheme combinations can be Issued under this Domain Protocol:

<table>
<thead>
<tr>
<th>EECS Product</th>
<th>Independent Criteria Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>EECS GO</td>
<td>ICS: EKOenergy</td>
</tr>
</tbody>
</table>

Product Rules on EKOenergy can be found on https://www.ekoenergy.org/.


All three Issuing Bodies co-operate and communicate in order to prevent double issuing.
B.4 Issuance scope summary

B.4.1. In summary, Finextra is authorised to Issue the following types of energy certificates:

<table>
<thead>
<tr>
<th>Issuing Body issues certificates for:</th>
<th>Product Type</th>
<th>Source</th>
<th>Technology (= High-Efficiency Cogeneration)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydro</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solar</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wind</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biomass</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Geothermal</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landfill &amp; sewage treatment plant gas</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Tidal/wave/other ocean energy</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Ambient energy</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Fossil</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Municipal waste</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Nuclear</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

C Overview of National Legal and Regulatory Framework

C.1 The EECS Framework

This section demonstrates compliance with the following EECS Rules:

D3.1.2  E6.2.1b  E6.2.1d  N8

C.1.1. For this Domain, the relevant local enabling legislation is as follows:

Issuing of Guarantees of Origin for electricity production from renewable energy sources, nuclear energy and high-efficient cogeneration (Combined Heat and Power, CHP) as well as electricity disclosure in Finland is implemented in the law


and in secondary legislation, by


The main items are following:

- The information content of RES and CHP GOs are according to Directives (EU) 2018/2001 and 2012/27/EU.
- According to directive (EU) 2018/2001 GOs are issued following the standard CEN – EN 16325. GOs issued following the EECS rules fulfil this standard.
- Finland must recognize Guarantees of Origin for RES, nuclear energy and CHP from other EU and EEA countries unless it has severe doubts about the accuracy, reliability or veracity of the Guarantee of Origin.
- Guarantees of Origin are issued for net generation of electricity from renewable energy sources and nuclear power or using high-efficient cogeneration. Guarantees of Origin are issued for monthly production. Guarantee of Origin may be used within 12 months from the end of the related production period. Each GO must have a unique identification code.
- Fingrid Oyj or its fully owned subsidiary is responsible for maintaining an electronic register for the Guarantees of Origin. The Registry Operator issues, transfers, cancels and expires GOs in a non-discriminatory way. The Registry Operator must at its own initiative expire any Guarantee or Origin within in its registry if more than 12 months have passed from the end date of the related production period.
- The administering of the Guarantees of Origin is a public service obligation, which is subject to acts pertaining to authorities, such as the Administrative Procedure Act. The performance of the relevant duties is supervised by the Energy Authority (Energiavirasto, https://energiavirasto.fi/en).
- The service fees can cover moderate costs of registry operator’s administrative duties. The service model also needs to take into account small-scale producers’ possibility to join the registry.
- The task of the Energy Authority is to monitor compliance with law. The Energy Authority monitors compliance with the obligation of disclosure of electricity mix and monitors the operations of verifiers and the Registry Operator. The Energy Authority approves verifiers according to the Origin Guarantee act. In order to implement monitoring, the Energy Authority is entitled to obtain information from power plant owners, the registry operator, verifiers and electricity suppliers.
- Electricity suppliers must use a Guarantee of Origin to verify a renewable or nuclear origin of sold electricity except when disclosing the renewable or nuclear share in the residual mix. Same rules apply for electricity consumers.
- The residual mix is used to give origin to electricity from unknown origin and in a manner that prevents double counting of renewable or nuclear energy sources.
C.1.2. Finextra has been properly appointed as an Authorised Issuing Body for RES, nuclear and cogeneration GOs under the Act on Guarantees of Origin for Energy (1050/2021).


C.2 National Energy Source Disclosure

This section demonstrates compliance with the following EECS Rules:

| E3.3.14 | | | | |
C.2.1. For this Domain, the authorised body for supervision of Disclosure of the origin of energy towards consumers is The Energy Authority of Finland (https://energiavirasto.fi/en). This body is responsible for supervision of disclosure of the origin of the following Energy Carriers: electricity.

C.2.2. The legislation and regulation for disclosure are available on https://www.fingrid.fi/en → Electricity market → Guarantees of Origin → Legislation → Attachments → Energy Authority instructions for certifying and disclosing the origin of electricity (in Finnish) and Clarification for Energy Authority instructions for certifying and disclosing the origin of electricity (Unofficial translation).

C.2.3. The methodology of the residual mix calculation is explained on https://energiavirasto.fi/en → Industries → Renewable energy → Guarantee of Origin → Legislation → Attachments → Energy Authority instructions for certifying and disclosing the origin of electricity (Unofficial translation).

C.2.4. Cancelation for usage in another Domain (i.e. Ex Domain Cancellations) are allowed, unless the other domain is connected to AIB HUB.

C.3 National Public Support Schemes


C.3.2. Investment aid is based on the assessment of the project in question by the Ministry of Employment and the Economy. The Ministry can grant energy aid for climate and environment investments and surveys audits that promote e.g. the production or use of renewable energy (http://tem.fi/en → Responsibilities → Energy → Energy and Investment Aid → Energy Aid).

C.3.3. No relation exists between renewable energy support and electricity disclosure. FIT is the financial support and GO is the proof of own ownership of generation attributes. The legislation does not set any restrictions for issuing and cancelling Guarantees of Origin from supported electricity generation.

C.4 EECS Product Rules

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>E6.2.1f</th>
<th>E6.2.1g</th>
</tr>
</thead>
</table>

C.4.1. The EECS Product Rules as applied in Finland are set out within sections D and E of this document.

C.5 Local Deviations from the EECS Rules

This section identifies those areas where there are minor differences from the EECS Rules without impacting the integrity of EECS Certificates.

C.5.1. In addition of issuing on monthly basis, GOs can also be issued either quarterly or per the half year's period according to Account Holder's
preference. The GOs shall be however issued separately for each month of the period.

C.5.2. Data stored in the electronic registry, metering production data and all records relating to EECS Scheme Certificates shall be retained for at least for 6 years in electronic format (which originates from the Finnish legislation regarding financial accounting)

C.5.3. Finextra has digitally signed cancellation statement for cancellations where beneficiary is conversion production device.

D Registration

D.1 Registration of an Account Holder

This section demonstrates compliance with the following EECS Rules:

| G2.2.1 |

D.1.1. Any legal person who is not a member of the Association of Issuing Bodies or such member’s affiliate or agent can apply to be an Account Holder in the registry.

D.1.2. To become an Account Holder the Standard Terms and Conditions must be signed. The required attachments of the Standard Terms and Conditions include:

- Contact Information Sheet
- A certified trade registry extract or similar official document stating that the organization is validly existing and founded under the laws of the mother country.
- Name and address of the organization
- Business Identification (ID) of the organization
- Names of authorized signatories (the Standard Terms and Conditions should be signed by this/these Signatory/Signatories).
- Copy of the passport of the Authorized Person. (In case the Standard Terms and Conditions are signed electronically a copy of the passport is not necessary.)
- Know-Your-Customer questionnaire is not required from registered electricity producers and/or suppliers in balance settlement system consisting of Finland, Denmark, Sweden and Norway. Otherwise, they must fill in and attach a Know-Your-Customer questionnaire prepared by the AIB (Annex 2). The purpose of this document is to protect the EECS markets from Value Added Tax (VAT) frauds.

D.1.3. After receiving all documentation of the applicant, Finextra evaluates whether the application can be accepted. Reasons for rejection may be

- Required documents are missing or not properly filled
- Finextra has doubts about the aims of the applicant
- Rejection recommendation by local tax authorities or the AIB.
D.1.4. If the application is accepted, Finextra creates an Account in the registry for the applicant organization. When the Account is created the Authorized Person is given a username and password and will be appointed as main user for the Account Holder. Single account can have multiple main users. All users must also provide a mobile phone number for additional SMS based authentication. One Account Holder organisation can have multiple users, which can be created by the main user(s) of that Account Holder.

D.1.5. Finextra aims to complete the process of registration of participant as soon as possible.

D.1.6. An Account Holder must notify Finextra without any delay, in writing of any changes due to come into effect that will result, or unplanned changes that have resulted, in the information recorded in the EECS Registration Database in relation to the Account Holder becoming inaccurate. The Account Holder is responsible for keeping their Account Holder information recorded in the EECS registry accurate.

D.1.7. If Finextra detects errors in the Account Holder information, it will correct them without any delay. The relevant Account Holder will be informed of such actions.

D.2  Resignation of an Account Holder

D.2.1. The Account Holder must notify Finextra of intent to close its Account in written form. The effective date of closure must not be less than 30 working days from the date of receipt by Finextra.

D.2.2. When closing an Account, the Account Holder is responsible for paying any outstanding payments to Finextra. Finextra is not responsible for refunding any already paid fees of the Account Holder such as the yearly Account Holder's fee.

D.2.3. Finextra will amend the EECS Registration database to seal that Account as of the effective date on the request or 30 days from the date of receipt by Finextra, whichever is later.

D.2.4. Any EECS-GOs remaining in the Account of the EECS registry at the time of locking will remain there until being expired.

D.2.5. Commercial provisions of closing an Account are set in the contract between Finextra and the Account Holder.

D.3  Registration of a Production Device

This section demonstrates compliance with the following EECS Rules:

| C2.1.1 | C2.1.2 | C2.2.4 | D4.1.2 | E3.3.11 | N6.2 | O6.2 |

© Finextra Oy 2021  Page 13 of 38
D.3.1. Account Holders, which aim to register a Production Device, are referred to as registrants. Only the owner of a Production Device, or a Registrant duly authorised by the owner, may register a Production Device into the registration database. The Production Device is verified to fulfil the requirements of the Finnish regulation on GOs. Production Devices can only be registered if they meet the qualification criteria for EECS. To be qualified, Production Devices must:

- be located in Finland (including Åland), and
- be capable of producing electricity.

D.3.2. In addition, different EECS products have additional qualification criteria:

<table>
<thead>
<tr>
<th>EECS Product</th>
<th>Additional criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>GO</td>
<td>When relating to energy source</td>
</tr>
<tr>
<td>GO</td>
<td>When relating to technology</td>
</tr>
</tbody>
</table>
D.3.3. The commercial provisions of registering a Production Device are set out in the web page of Fingrid (www.fingrid.fi/en → Electricity market → Guarantees of Origin → Fees).


D.3.5. Registrant or Registrar must fill-in the following information when registering a Production Device in the registry system:

- Production Device: Name, address, registrant, start date, commissioning date, installed capacity, earmark name and type, operator, applied EECS schemes and all owners.
- Codes of all possible Fuels, which can be converted into energy by that Production Device. According to fuel codes in AIB EECS Fact Sheet 5.
- Technology code of the Production Device according to technology codes in AIB EECS Fact Sheet 5.

D.3.6. As the Production Device is registered into the registry system, it is assigned a unique identifier, if one has not already been assigned. The identifier consists of a number with 18 numeric characters that also identifies the Domain of origin. GS1/GSRN (Global Service Relational Number) coding is used.

D.3.7. The Registrant must warrant that the information provided to Finextra in connection with its application is complete and accurate and that the Production Device meets the qualification criteria for EECS.

D.3.8. The Registrant shall also deliver a line diagram representing the Production Device with at least the following information:

- Connection to grid(s)
- Location and codes of all output and import meters
- Location of transformers
- Location of generation auxiliaries and all relevant metering points and metering information.
- Where there are generating auxiliaries associated with that Production Device, locations and codes of Import Meter(s), which determine the totality of electricity consumption by the Production Device.

D.3.9. In case the Registrant or its affiliate does not own more than 90 % of the Production Device, it must include in the application a power(s) of attorney signed by other owner(s) of the Production Device.

- Power of Attorney is required from all owners of the PD who own more than 5 % of the PD.
- The Power of Attorney (PoA) may give the registrant organization the authority to
  - register the Production Device, and/or;
  - deliver production declarations for the Production Device, and/or;
  - claim ownership of GOs issued for the Production Device (aggregation).
• Aggregation can also be authorized later as a separate process. Power of Attorney template is published at www.fingrid.fi/en → Electricity market → Guarantees of Origin → Joining the GO register → Registration of account holder → Attachments.

D.3.10. In order to be able to connect the Production Device into the registry, the Power Device’s production method must be verified in accordance with the Act on Guarantees of Origin for Energy. Approved methods of verification are a certificate of verification issued by a certification company i.e. on-site audit, a decision of acceptance into the feed-in tariff system for renewable energy or EECS verification.

D.3.11. Finextra will check the correctness of information on application in cooperation with the Registrant.

D.3.12. If the Production Device satisfies both the Finnish laws and the EECS Rules, Finextra activates the Production Device in the registry database and sets next audit date and informs the Registrant.

D.3.13. If the Production Device does not fulfil the requirements, Finextra notifies the Registrant, and the Production Device is not activated. The rejection notice shall include reasons of the rejection.

D.3.14. Finextra aims to complete the process of registration of production device as soon as possible.

D.4 De-Registration of a Production Device

D.4.1. The Registrant must notify Finextra of intent to deregister their Production Device in writing.

D.4.2. All relevant production data of a Production Device will be stored in the database also after deregistration.

D.4.3. Commercial provision of deregistering a Production Device is set out in the STC.

D.5 Maintenance of Production Device Registration Data

This section demonstrates compliance with the following EECS Rules:

| C2.2.1 | C2.2.2 | C2.2.3 | C2.2.5 | D5.1.2 |

D.5.1. Where the capacity of an existing Production Device increases for any reason, including refurbishment or enhancement of the Production Device, then such additional capacity may be registered in the relevant EECS Registration Database as a separate element of that Production Device.

D.5.2. The Registrant of a Production Device must notify Finextra of any planned changes due to come into effect that will result, or unplanned changes that have resulted, in:

• Information recorded in the EECS Registration Database in relation to the Production Device becoming inaccurate; or

• Qualification criteria for the EECS Scheme ceasing to be satisfied with respect to that Production Device.
The registrant notifies Finextra of such changes by making the necessary amendments to Production Device information in the registry.

D.5.3. On receipt of a change of details notification (following an inspection or otherwise), Finextra will evaluate the impact of the changes on the Qualifying Criteria and respond to the Registrant within 15 working days specifying the decision taken. Finextra may respond to the changes by approving or disapproving them in the registry.

D.5.4. Where Finextra becomes aware that a Production Device no longer fulfils, or will no longer fulfil, the qualification criteria, the EECS Registration Database record for that Production Device will be updated to shown that the Production Device no longer qualifies for EECS Scheme Certificates with effect from:

- In relation to planned changes notified in advance, the date on which such planned changes are due to come into effect; or
- In relation to other changes, as soon as reasonably practicable after becoming so aware.

D.5.5. The registration of a Production Device expires after five years. The Registrant must re-apply for registration for the Production Device before expiry.

D.6 Audit of Registered Production Devices

This section demonstrates compliance with the following EECS Rules:

| E3.3.7 | E3.3.8 | D5.1.2 |

D.6.1. Referring to Section D.3. (Process description), Based on legislation following audit procedures are valid for Production devices:

- On-site audits (auditor's approved by Energy Authority, see Annex 1 for web-link)
- Verification to the Production Subsidy system for Electricity Produced from Renewable Energy Sources
- EECS audits: verification with a license of connecting to the transmission or distribution network and verifying registration data using other reliable sources (independent from the owners of the Production Devices).

D.6.2. The Registrant, either as the owner or on behalf of the owner and operator of the Production Device, must permit Finextra, or a Production Registrar as its agent, to access the Production Device or records associated with it, its energy output and sources of energy.

D.6.3. Registrants must report any changes to standing data of a Production Device under D.5, but deviations from registered data are also sought in the Production Device audit. This is especially important regarding changes in ownership structures and metering.
D.6.4. If a Production Device fails to pass the requirements of the audit or the registration information has changed significantly, G0s will not be issued before corrective actions have been performed.

D.6.5. The period between inspections of a Production Device will not exceed 5 years.

D.6.6. Refusal to permit verification related access to a Production Device may be considered a breach of the Standard Terms and Conditions.

D.6.7. If an inspection identifies material differences from the details recorded on the EECS Registration Database, Finextra reserves the right to request the Registrant to re-apply for registration.

D.6.8. Inspections verify that the Measurement Devices are correctly positioned in order to measure the quantity needed for calculating the amount of EECS Certificates to be issued.

D.6.9. Inspections confirm the accuracy of the Measurement Devices involved in the calculation of the amount of EECS Certificates to be issued to be acceptable in accordance with the existing regulatory framework and applicable standards.

D.6.10. Inspections confirm that the formula for calculating the amount of EECS Certificates correctly reflects the amount of Output that qualifies for the Purpose of these EECS Certificates.

D.7 Registration Error/Exception Handling

This section demonstrates compliance with the following EECS Rules:

| C2.2.2 | E4.2.7 |

D.7.1. The registration database shall be amended by Finextra in accordance with any notification that it receives from the account holder or production auditor of changes having the effect that the information recorded in the database in relation to a specific account holder is no longer, or will cease to be, accurate.

D.7.2. Any errors in EECS Certificates resulting from an error in the registered data of a Production Device will be handled in accordance with section E.8.

D.7.3. When Finextra determines that an EECS Market Participant is in breach of the Product Rules or determines that a Production Device does not meet PD Qualification Criteria for an EECS Product in relation to which it is registered, Finextra shall take such action as is necessary to secure that it is compliant with EECS Rules Section E3.3.9(b), such action to include, in a case of material non-compliance by the Registrant, the withdrawal of registration of the relevant Production Device for the purposes of that EECS Product.
E Certificate Systems Administration

E.1 Issuing EECS Certificates

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>EECS Rule</th>
<th>Additional Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2.1.1</td>
<td></td>
</tr>
<tr>
<td>A2.1.2</td>
<td></td>
</tr>
<tr>
<td>C3.1.1</td>
<td></td>
</tr>
<tr>
<td>C3.2.1</td>
<td></td>
</tr>
<tr>
<td>C3.3.1</td>
<td></td>
</tr>
<tr>
<td>C3.4.2</td>
<td></td>
</tr>
<tr>
<td>C3.4.4</td>
<td></td>
</tr>
<tr>
<td>N3.1.1</td>
<td></td>
</tr>
<tr>
<td>O3.1.1</td>
<td></td>
</tr>
</tbody>
</table>

E.1.1. EECS Certificates can be issued:

- In respect of the qualifying energy output of such a Production Device during any period in which it was registered for the purpose of the EECS scheme and
- For a maximum period of 12 months at a time; and
- After the Account Holder has made his selection regarding the issuing period. The GOs will be issued either monthly, quarterly or per the half year periods as chosen by the Account Holder. The GOs shall be however issued separately for each month of the period. The selection is valid for one calendar year, and it can be separately made for each Production Device.
- To an Account Holder who does not have any outstanding fees payable to Finextra or its agents in conjunction with EECS Certificates; and
- For EECS products according following additional criteria:

<table>
<thead>
<tr>
<th>EECS Product</th>
<th>Additional criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>GO</td>
<td>When relating to energy source</td>
</tr>
<tr>
<td>GO</td>
<td>When relating to technology</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ICS: EKOenergy</td>
<td>registration is approved by the Scheme Operator: The Finnish Association for Nature Conservation (FANC)</td>
</tr>
</tbody>
</table>

E.1.2. The registry operator has readiness to issue high-efficient cogeneration GOs in the registry.

E.1.3. The output of Production Device is metered and independently verified.

E.1.4. One EECS Certificate represents one MWh.

E.1.5. The issuing, transferring and cancelling of EECS certificates are arranged as to eliminate the possibility of more than one EECS certificate bearing the same purpose being issued, registered or cancelled in respect of the same unit of output.

E.1.6. The issuing of EECS certificates in this domain have been arranged as to eliminate the possibility of EECS certificates being issued in respect of the same unit of output and attributes for which other transferrable certificates
(other than EECS certificates of a different type where specially permitted by the EECS Rules) have been or will be issued for the same purpose.

E.1.7. An EECS Certificate corresponding to an EECS Product may only be issued in respect of Output:

- which is produced by an Originating Production Device which meets the PD Qualification Criteria in respect of that EECS Product;
- that meets the Output Criteria for that EECS Product;
- in respect of which the Authorized Issuing Body is in receipt of measured values of Output collected and determined by an Authorized Measurement Body (or, where the relevant Product Rules so permits, an Approved Measurement Body) which, having regard to the relevant Consumption Declaration where relevant, corroborate the amount so specified; and
- which has been determined in accordance with the Product Rules for that EECS Product.

E.1.8. An EECS GO shall only be issued in respect of output which has not been and is not being otherwise Disclosed, including by the Issue of any other Certificate of any variety.
E.2 Processes

This section demonstrates compliance with the following EECS Rules:

- C3.4.1
- C3.4.3
- C3.5.1
- C3.5.2
- C3.5.3
- D7.1.2
- N6.4.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Authorised Issuing Body</th>
<th>Account Holder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the Production Device registered in the registration database?</td>
<td>No</td>
<td>Register PD</td>
</tr>
<tr>
<td>2. Check metering data from Electricity Balance Settlement.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>3. Is the request regarding multi-feed PPs or high-efficiency cogeneration?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>4. Fill and deliver the production declaration.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5. Check and approve declarations.</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>6. Issue EECS Certificates</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
E.2.1. Certificates are issued regularly for all Production Devices. The production period of GOs is one month.

E.2.2. The registrant must choose whether issuing operations are executed in the registry on monthly, quarterly or half yearly timeframes for each PD.

E.2.3. Issuing of EECS Certificates is possible at the earliest 15th of the month following the month of production.

E.2.4. One EECS Scheme Certificate will be issued for each whole one MWh of qualifying energy output of the Production Device. Any identifiable residual kWh will be carried forward to the next production period.

E.2.5. Fingrid and DSOs being the measurement bodies as defined in the national electricity balance settlement legislation.

E.2.6. If the request is for multi-fuel PD,

a. and GO is relating to a source: Registrant must fill in consumption declaration in the registry. Consumption declaration contains the data described in Annex 5. Amount of GOs issued is calculated per fuel from net production data received from the measurement body and input factors in the consumption declaration. GOs are issued only for renewable fuels. For mixed waste fuelled PDs the renewable share is the default biodegradable share defined by Statistics Finland.

b. and GO is relating to a technology: The registrant must deliver input data to the AIB Cogeneration model. The format of cogeneration (https://www.aib-net.org/eecs/cogeneration-model) model is amended time to time by the AIB.

E.2.7. Finextra checks declarations that they are competent for issuing the GO.

E.2.8. Finextra issues EECS Certificates and deposits them to the Account nominated by the registrant and the Account Holder is informed of the issue of GO in the registry.

E.2.9. The certificate data specified by the EECS rules shall not change in any way once an EECS GO has been properly issued except to indicate that it has expired, cancelled or been withdrawn.
E.3 Measurement

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D6.1.2</td>
<td>N6.4.</td>
</tr>
</tbody>
</table>

E.3.1. Only Production Devices that are equipped with metering equipment that complies with the relevant regulations for electricity balance settlement shall be registered.

E.3.2. The metering equipment may measure on a scalar basis (meter advance only) or on a period basis (energy measured in units of time) according to the regulations. The registrant is responsible for the measurement data. When a device is out of service, its consumption is not counted.

E.3.3. The measurement bodies collect and verify the values.

E.3.4. Measurement frequency should not be more than 12 months.

E.3.5. Finextra shall issue the Finnish GOs for RES-E, nuclear and high efficient cogeneration for net production.

E.3.6. All relevant acts and national electricity market instructions regarding measurements are applied in accordance with national legislation e.g. Electricity Market Act (Sähkömärkkinallaki 588/2013, www.finlex.fi) and electricity market procedural instructions in Finland.

E.4 Energy Storage (Including Pumped Storage)

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N5.3.1</td>
<td></td>
</tr>
</tbody>
</table>

E.4.1. There are currently no energy storage or pumped storage systems in Finland.

E.5 Combustion Fuels (e.g. Biomass) and Production Devices with multiple energy inputs

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N6.3.2</td>
<td></td>
</tr>
</tbody>
</table>

E.5.1. The registrant must fill in the consumption declaration in the register (Annex 5).

E.5.2. The calculation of combustion fuels is verified by an independent auditor approved by the Energy Authority.
E.6 Format

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C3.5.4</th>
<th>C3.5.5</th>
<th>N6.5.</th>
<th>N6.6</th>
</tr>
</thead>
</table>

E.6.1. EECS Certificates shall be issued in such format as may be determined by AIB. No additional data items will be included.

E.7 Transferring EECS Certificates

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C5.1.1</th>
<th>C5.1.3</th>
<th>C5.1.6</th>
</tr>
</thead>
</table>

E.7.1. The Account Holder can get secure electronic access to the Account to make transfers of Certificates to another Account in the same EECS Registration Database or to another EECS Registration Database for EECS Certificates in another Domain through the website of the registry.

E.7.2. Only persons duly authorized by the Account Holder may request the transfer of EECS Certificates out of that Account Holder’s Account. Authorized persons can be added by the main user of that Account Holder.

E.7.3. The initiation of transfers is done in the registry by the selling Account Holder.

E.7.4. The transfer of Certificates and the confirmation of that transfer are automated.

E.7.5. After the Account Holder has initiated the transfer, the system instantly displays a message of whether or not the initiation has been successful.

E.7.6. In transfers between Accounts in two different registries, the success of the transfer is subject to the verification process of the AIB HUB and the receiving registry. If the transfer is not successful, the certificates are returned to the Account of the original Account Holder.

E.7.7. When certificates are “in transit” they are not available for another transfer. The certificates leave the initiating Account Holder’s account before appearing in the buying Account Holder’s account.

E.7.8. In transfers between Accounts in two different registries, Finextra will cooperate with other Members of the EECS scheme to amend its own, or the other Members’ Account Holder information.

E.7.9. EECS Certificates that have been cancelled or expired are not available for transfer.

E.7.10. Where it is impossible to transfer for technical reasons, this can be overcome by cancelling Certificates for use in another domain, with the agreement of the importing issuing body. Any such cancellations are notified to the “importing” issuing body and the AIB Secretariat.

E.7.11. All EECS GOs are transferrable to Finextra registry, but only GOs issued in EEA and ETA countries are valid for disclosure purposes.
E.8 Administration of Malfunctions, Corrections and Errors

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5.1.7</td>
<td></td>
</tr>
<tr>
<td>C8.4.1</td>
<td></td>
</tr>
<tr>
<td>C8.4.2</td>
<td></td>
</tr>
<tr>
<td>C8.4.3</td>
<td></td>
</tr>
<tr>
<td>C8.5.1</td>
<td></td>
</tr>
<tr>
<td>D9.1.2</td>
<td></td>
</tr>
</tbody>
</table>

E.8.1. The issuing body has the right to perform corrective actions such as withdrawal or transfer of Certificates in the registry where Certificates have been erroneously issued or transferred.

E.8.2. In the case where erroneous GOs from another Issuing Body have been transferred to the Finextra registry, Finextra will cooperate with the other Issuing Body to resolve the issue, and preferably transfer it back to the originating Issuing Body.

E.8.3. Transfer of certificates and the confirmation of that transfer are automated. If there are minor validation errors during transfer, the system will point out the errors in transfer. In the event of complete failure of a transfer, Finextra will reinstate the certificates in the seller's account and investigate to facilitate another attempt.

E.8.4. In the event when it transpires that the data in any EECS Certificate is inaccurate (whether or not through an act or omission of the Registrant of the originating Production Device):

- Finextra shall either withdraw those Certificates (provided that such EECS-GOs are, at the time of such Withdrawal, in the Transfer Account of that Registrant) or correct this error on the following months by issuing more or less EECS-GOs from the same Production Device of the Account Holder; and
- The Registrant shall pay Finextra the cost of securing the agreement of another Account Holder to the Withdrawal of EECS Certificates of the same type from that other Account Holder’s Account, so that, as far as reasonably practicable, EECS Certificates are withdrawn with an adequate volume and financial value.
- In case the Certificates are no longer in the Finnish domain, Finextra will cooperate with other Issuing Bodies to withdraw the erroneous Certificates.

E.8.5. Finextra may also alter EECS Certificates held in its EECS Registration Database to rectify an error which occurred prior to its transfer into the Account in which it is held at such time, provided:

- The Account Holder has agreed to such alteration
- It is reasonably satisfied that any unjust enrichment of an EECS Scheme Participant as a consequence of such error has, to the extent reasonably practicable, been nullified
- It is reasonably satisfied that the alteration itself does not give rise to undue enrichment of the Account Holder.

E.8.6. Finextra will cooperate with other Issuing Bodies in case off erroneously issued GOs.

E.8.7. Once issued, the details of an EECS Certificate cannot be altered or deleted except to correct an error.
E.9  End of Life of EECS Certificates – Cancellation

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C5.2.3</th>
<th>C6.1.1</th>
<th>C7.1.1</th>
<th>C7.2.1</th>
<th>C7.2.2</th>
<th>C7.2.3</th>
<th>C7.3.1</th>
</tr>
</thead>
</table>

E.9.1. Account Holders possessing certificates in the registry, can perform cancellations by executing the transaction in the registry. The Account Holder must specify the Certificates to be cancelled as well as the country of consumption, cancellation purpose, usage category, name, type and location of beneficiary and related consumption period.

E.9.2. The information required in the cancellation request and contained in a cancellation statement is described in Annex 3.

E.9.3. If the cancellation is performed for the conversion of electricity into hydrogen, gas or district heating or cooling, a separate cancellation statement will include an independent notation about it. The other relevant Issuing Bodies in Finland will be informed of such cancellations.

E.9.4. EECS domains to which a secure electronic transfer of certificates is possible are not included in the list of “country of consumption”, which prevents ex-domain cancellations from Finland to these domains.

E.9.5. The cancellation of Certificates is automated.

E.9.6. Certificates can only be cancelled once.

E.9.7. Cancelled Certificates are removed from Account by changing their status to “Cancelled” so they do not appear in any Account of the registry after the Cancellation.

E.9.8. Having performed a cancellation, the Account Holder receives a confirmation of the success or failure of the cancellation instantly in the registry.

E.9.9. Cancellation is removing a Certificate from circulation. Once Cancelled, a Certificate cannot be moved to any other account, and so is no longer tradable.

E.9.10. When cancelling a multiproduct certificate (GO + ICS: EKOenergy) both GO and ICS: EKOenergy are cancelled at the same time.

E.9.11. A cancellation statement can be printed out from the registry by the Account Holder organization, which has performed the cancellation. All cancellation statements for Finland’s consumption are signed electronically once a week.

E.9.12. According to the regulation, the obligation to certify the origin of electricity informed as having been produced from renewable energy sources must be met by cancelling Guarantees of Origin allocated to the previous calendar year with the registrar by 31 March the following year.

E.9.13. Finextra reports to the Energy Authority by 15.4. the amounts of issued, cancelled, imported, exported and expired GOs from previous year.
E.10  End of Life of EECS Certificates – Expiry

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C5.2.3</th>
<th>C6.1.1c</th>
<th>E6.2.1h</th>
</tr>
</thead>
</table>

E.10.1. EECS Certificates cease to be valid for transfer 12 months after the end of the period during which the Output to which they relate was produced.

E.10.2. EECS Certificates cease to be valid for cancellation 12 months after the end of the period during which the Output to which they relate was produced.

E.10.3. According to the Act on Guarantees of Origin for Energy (1050/2021), Guarantees of Origin expire in Finland 12 months after the end of production period.

E.10.4. Expiry is handled automatically in the Finnish registry.

E.10.5. Certificates that have already expired are prevented from export.

E.10.6. When expiring a multiproduct certificate (GO + ICS: EKOenergy) both GO and ICS: EKOenergy are expired at the same time.

E.11  End of Life of EECS Certificates – Withdrawal

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C5.2.3</th>
<th>C6.1.1</th>
<th>C8.2.1</th>
</tr>
</thead>
</table>

E.11.1. Finextra may withdraw an EECS scheme certificate held in an Account on its registry at the request of the Account Holder of that Account or otherwise in accordance with the provisions of the EECS schemes. For example, to give effect to an agreement reached with an EECS market Participant under provisions of its STC that meet the criterion at EECS Rules EECS Certificates may be withdrawn (or amended) by Finextra having regard to the objective of securing the accuracy of EECS Certificates to ensure that no unjust enrichment occurs as a result of an error of any unauthorized access to, or malfunctioning of, an EECS Registration Database.

F  Issuer’s Agents

F.1  Production Auditor

F.1.1. Production Auditors (verifiers) verify production declarations and (where appropriate) consumption declarations made by registrants of Production Devices when deemed necessary by the Issuing Body. Production Auditors are independent from the owners of the Production Devices.

F.2  Production Registrar

F.2.1. Finextra is the Production Registrar. Each Account Holder can add Production Devices in the registry and send them there to Finextra for approval.

F.2.2. Contact details for the principal roles and Issuing Body agents are given in Annex 1.
F.3 Measurement Bodies

F.3.1. The Measurement Bodies in the electricity carrier are as described in B.3.3.

G Activity Reporting

G.1 Public Reports

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>E3.3.4</th>
<th>HPA section 14.2</th>
</tr>
</thead>
</table>

G.1.1. For each technology, statistical information is published on the following website https://www.fingridfi/en → Electricity market → Open data on electricity market → GO Data, regarding:

- certificates issued, imported, exported, cancelled, expired during each month prior to the current month,
- certificates issued, imported, exported, cancelled, expired in relation with the energy produced during each month prior to the current month,

G.1.2. Information on issued, transferred, cancelled and expired GOs is published monthly.

G.1.3. Finextra delivers AIB all needed statistics by 22\textsuperscript{nd} day of each month.

G.2 Record Retention

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>A12.1.1</th>
<th>C5.1.2</th>
</tr>
</thead>
</table>

G.2.1. Data stored in the electronic registry, metering production data and all records relating to EECS Scheme Certificates shall be retained for at least 6 years in electronic format, which is either in an electronic archive or by means of database backups.

G.3 Orderly Market Reporting

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>E4.2.5</th>
<th>E4.2.6</th>
<th>E4.2.7</th>
</tr>
</thead>
</table>

G.3.1. Finextra cooperates with the national VAT Fraud Authority. In case of any notices of a fraud, Finextra also informs the AIB, and other relevant parties.

G.3.2. If the Account Holder is not compliant with STC, Finextra will take necessary actions, informs AIB and other relevant parties. This includes also anticompetitive issues.
H Association of Issuing Bodies

H.1 Membership

This section demonstrates compliance with the following EECS Rules:

<table>
<thead>
<tr>
<th>C2.2.6</th>
<th>C2.2.7</th>
</tr>
</thead>
</table>

H.1.1. The Association of Issuing Bodies brings together the issuing bodies of European energy certificate schemes. The AIB promotes the use of a standardised system, based on a harmonised environment, structures and procedures in order to ensure the reliable operation of European energy certificate systems. With its independent and peer reviews, and its periodic audits, the AIB provides a robust framework for reliable and fraud-resistant GO systems. Among others, it can also act by suspending transfers through the Hub. Membership of AIB facilitates mutual recognition of GOs across Europe.

H.1.2. In case Finextra ceases to be a Scheme Member of an EECS Scheme, it shall revise its EECS Registration Database so that every Production Device registered therein ceases to be registered for the purposes of EECS. Certificate issuing under EECS would stop, and EECS GOs would remain tradable only until Expiry.

H.1.3. In case Finextra ceases to be the Authorised Issuing Body for EECS Certificates, it shall revise its EECS Registration Database so that each Production Device in the Domain ceases to be registered for the purposes of EECS Certificates, it shall stop issuing EECS GOs and after a transitional period the registry shall be taken offline.

H.2 Complaints to the AIB

H.2.1. An Account Holder is allowed to notify the Secretary General of AIB in writing in case:

a) an Authorised Issuing Body in relation to an EECS Certificate is in breach of any of the provisions of Product Rules in relation to EECS Certificate; or

b) any Product Rules do not comply with the relevant provisions of the EECS Rules, and evidence is provided substantiating such allegation, and that the Authorised Issuing Body has been given adequate opportunity to respond to such allegation.

The General Secretary of AIB shall invite the relevant Authorised Issuing Body to respond to the allegation.
I Change Control

I.1 Complaints and Disputes

I.1.1. According to the Finnish legislation on Guarantees of Origin a rectification may be brought by the person to whom the decision is addressed or whose right, obligation or interest is directly affected by the decision.

I.1.2. A request for rectification must be made in writing to Finextra. The statement of claim shall state the decision for which rectification is sought, as well as the type of appeal sought and the grounds on which it is sought.

I.1.3. Once a request for rectification has been made, the authority dealing with the request for rectification may refuse to enforce the decision or order its suspension.

I.1.4. After accepting a request for rectification, Finextra may amend the administrative decision, annul the decision or reject the request for rectification. The decision on the request for rectification shall provide a reasoned decision on the information sought in the request for rectification. The authority deciding on the request for rectification may, in the same context and without any other requirement, also take a decision to rectify the error.

I.1.5. The request for rectification must be lodged within 30 days of notification of the decision. The request for rectification must be dealt with as a matter of urgency.

I.1.6. An appeal may be lodged against a decision made on an appeal against an appeal to Finland’s administrative court as provided in the Administrative Procedure Act.

I.2 Change Requests

This section demonstrates compliance with the following EECS Rules:

| E4.2.3 | E6.2.1e | L5.1.1 |

I.2.1. An Account Holder may propose a modification to this Domain Protocol.

I.2.2. Such a proposal will include a detailed description, including an exact specification of any proposed modification of this Domain Protocol and be passed in writing to Finextra.

I.2.3. Finextra will process the change request and inform the AIB on the matter.

I.2.4. Any changes to the Terms of Service require an approval of the national Energy Authority.
## Annex 1: Contacts List

### Authorised Issuing Body/Registry Operator

<table>
<thead>
<tr>
<th>Company</th>
<th>Finextra Oy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person</td>
<td>Kirsi Salmivaara</td>
</tr>
<tr>
<td>Address</td>
<td>P.O.Box 530, FI-00101 Helsinki</td>
</tr>
<tr>
<td>Country</td>
<td>Finland</td>
</tr>
<tr>
<td>Phone</td>
<td>+358 30 395 5000</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:go@finextra.fi">go@finextra.fi</a></td>
</tr>
</tbody>
</table>

### Competent Authority (if different from the Authorised Issuing Body)

<table>
<thead>
<tr>
<th>Company</th>
<th>Fingrid Oy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person</td>
<td>Kirsi Salmivaara</td>
</tr>
<tr>
<td>Address</td>
<td>P.O.Box 530, FI-00101 Helsinki</td>
</tr>
<tr>
<td>Country</td>
<td>Finland</td>
</tr>
<tr>
<td>Phone</td>
<td>+358 30 395 5000</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:go@finextra.fi">go@finextra.fi</a></td>
</tr>
</tbody>
</table>

### Registry support

<table>
<thead>
<tr>
<th>Company</th>
<th>Finextra Oy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person</td>
<td>Kirsi Salmivaara</td>
</tr>
<tr>
<td>Address</td>
<td>P.O.Box 530, FI-00101 Helsinki</td>
</tr>
<tr>
<td>Country</td>
<td>Finland</td>
</tr>
<tr>
<td>Phone</td>
<td>+358 30 395 5000</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:go@finextra.fi">go@finextra.fi</a></td>
</tr>
</tbody>
</table>

### Competent Body for Disclosure

<table>
<thead>
<tr>
<th>Company</th>
<th>Energy Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person</td>
<td><a href="http://www.energiavirasto.fi/en">http://www.energiavirasto.fi/en</a></td>
</tr>
<tr>
<td>Address</td>
<td>Lintulahdenkuja 2 A, 00530 Helsinki</td>
</tr>
<tr>
<td>Country</td>
<td>Finland</td>
</tr>
<tr>
<td>Phone</td>
<td>+358 29 5050 000</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:go@energiavirasto.fi">go@energiavirasto.fi</a></td>
</tr>
</tbody>
</table>

### ICS: EKOenergy Scheme Operator

<table>
<thead>
<tr>
<th>Company</th>
<th>The Finnish Association for Nature Conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person</td>
<td>Steven Vanholme</td>
</tr>
<tr>
<td>Address</td>
<td>Itälahdenkatu 22 B, 00210 Helsinki</td>
</tr>
<tr>
<td>Country</td>
<td>Finland</td>
</tr>
<tr>
<td>Phone</td>
<td>+358 46 594 6072</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:steven.vanholme@sll.fi">steven.vanholme@sll.fi</a></td>
</tr>
</tbody>
</table>
Production Auditors

*Company name, contact person, department, address, phone #, Fax #, e-mail, website*

Production auditors in Finland are listed on the website [https://energiavirasto.fi/en](https://energiavirasto.fi/en) → Industries → Renewable energy → Guarantee of origin → Electricity producer’s applying for the system of guarantees of origin

Measurement Bodies

Annex 2: Account Application / Amendment Form,

Know-Your-Customer Questionnaire Form

The following document has been digitally signed. Information of signers and documents

Document

```
Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Cancellation Statement - Guarantee of Origin

This cancellation statement certifies that the Guarantees of Origin listed hereunder have been cancelled. The indicated certificates on this Cancellation Statement are no longer tradable. In any case the onward sale of a Cancellation Statement in any format is prohibited. It is as well forbidden to copy or amend this Cancellation Statement.

<table>
<thead>
<tr>
<th>Cancellation Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Cancellation</td>
</tr>
<tr>
<td>Cancellation Number</td>
</tr>
<tr>
<td>Account Holder (Cancelled by)</td>
</tr>
<tr>
<td>Account Holder's address</td>
</tr>
<tr>
<td>Beneficiary (Cancelled for)</td>
</tr>
<tr>
<td>Beneficiary Business ID</td>
</tr>
<tr>
<td>Purpose of Cancellation</td>
</tr>
<tr>
<td>Country of Consumption</td>
</tr>
<tr>
<td>Type of Beneficiary</td>
</tr>
<tr>
<td>Usage of Cancellation</td>
</tr>
<tr>
<td>Consumption Period</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount by Product</th>
<th>Amount by Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>GO:RES</td>
<td>Hydro-electric</td>
</tr>
<tr>
<td></td>
<td>head installations</td>
</tr>
<tr>
<td>ICS:EKOKENERGY</td>
<td>Wind</td>
</tr>
</tbody>
</table>

Finextra Oy

Guarantee of Origin Services

Place and Date

Signature
## Canceled Certificates

<table>
<thead>
<tr>
<th>Certificate Number (From)</th>
<th>Certificate Number (To)</th>
<th>Domain and Date of Issue</th>
<th>Amount</th>
<th>Fuel and Technology</th>
<th>Production Period</th>
<th>Certificate Type</th>
<th>Production Device</th>
<th>Support Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Production Device Information

<table>
<thead>
<tr>
<th>Name</th>
<th>GSRN</th>
<th>Domain</th>
<th>Commission Date</th>
<th>Technology</th>
<th>Fuel(s)</th>
<th>Location</th>
<th>Support Type(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Technologies

<table>
<thead>
<tr>
<th>Technology ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Fuels

<table>
<thead>
<tr>
<th>Fuel ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex 4: ICS: EKOenergy: Appointment letter from the Finnish Association for Nature Conservation

To:
Association of Issuing Bodies (AlB)
c/o. Phil Moody
21/23 Station Road - Gerrards Cross - Bucks
SL9 8ES - United Kingdom

Mandate letter EKOenergy - Finextra Oy

Dear Mr van der Lee, dear Mr Moody,

We hereby inform you about the appointment of Finextra Oy, as responsible entity to issue EKOenergy ICS certificates for the domain Finland. (Or otherwise said to do all necessary to enable the mentioning of the EKOenergy ICS tag on GOs of Finnish origin).

Our contact person for this issue is Steven Vanholme, -358 568 73 85, Steven.Vanholme@ssl.fi

Yours sincerely,

Helsinki, 21st July 2014,

Steven Vanholme
EKOenergy Secretariat
Itliahdenkatu 22b 00210 Helsinki - Finland
info@ekoenergy.org
++358 50 568 73 85
Annex 5: Sample consumption declaration

Registrant must fill in consumption declaration in the registry for multi-fuel PDs. Amount of GOs issued is calculated per fuel from net production data received from the measurement body and input factors in the consumption declaration. GOs are issued only for renewable fuels. For mixed waste fuelled PDs the renewable share is the default biodegradable share defined by Statistics Finland.

So for instance if there were RES Fuel 1, RES Fuel 2 and sum of fossil fuel (RES Fuel 1 + RES Fuel 2 + fossil fuel sum= total usage of fuels)

- GO issued for RES Fuel 1 = RES Fuel 1 / Total usage of fuels * net production data
- GO issued for RES Fuel 2 = RES Fuel 2 / Total usage of fuels * net production data