



THE INTERNATIONAL
REC STANDARD

Empowering Electricity Purchasers

The I-REC Code

version 1.6

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Change History

Version	Description
1.0	Initial issue version
1.1	Clarification of relationship with carbon offsets
1.2	Establishing the initial period (CP2015-02)
1.3	Introducing a residual mix deadline (CP2016-02) Change of I-REC Device Registrar to I-REC Device Verifier (CP2016-05)
1.4	Renaming the Rest of the World Issuer to Central Issuer (CP2017-01)
1.5	Housekeeping changes (CP2018-01)
1.6	Aggregation (CP2017-04) Co-firing (CP2017-05) Housekeeping changes (CP2018-02)

1. Introduction

1.1 The I-REC Service

The I-REC Service is a global electricity environmental attribute tracking system. It is designed to facilitate reliable Scope 2 carbon accounting consistent with various international accounting standards. I-RECs allow all electricity users to make a conscious and evidence-based choice for renewable electricity, in any country around the world.

1.2 Structure of the I-REC Code

The Code itself is intended to be a statement of principles and a description of how the system operates at high level. Detailed descriptions of procedures are contained in Code Subsidiary Documents.

2. Definition

In all cases, the derivatives of the following terms shall be construed accordingly.

Term	Definition
Account	A data store within the I-REC Registry that is attributed directly to a single I-REC Participant or Issuer for the purpose of recording I-RECs within the I-REC Registry.
Approved Tracking Scheme (ATS)	An energy tracking scheme that has been approved by I-REC Services as compatible with the I-REC Code.
Assignment	The allocation of a Redeemed I-REC to a specified consumer for use in carbon accounting for a specified consumption period.
Code Subsidiary Document (CSD)	A document containing the detailed description of an I-REC process which must be complied with by the relevant service provider(s).
Co-firing	The use of mixed fossil and renewable energy sources in a single Production Device where the fossil contribution exceeds 2% of the calorific input.
I-REC	A verified record of an event of electricity production at a registered Production Device or Production Group recorded in the I-REC Registry.
I-REC Device Verifier	An organisation approved by I-REC Services to verify Production Device or Production Group characteristics as part of the device registration process.
I-REC Participant	An organisation holding one or more trading Accounts on the I-REC Registry.
I-REC Registry	The register of I-RECs which includes records of the full lifecycle of ownership and use.
I-REC Service	The global electricity environmental attribute tracking and reporting system provided by I-REC Services.
I-REC Services	I-REC Services B.V., a company registered in the Netherlands and being the organisation providing the I-REC Service.
Installation	A single location of a generation source within a Production Group. It is defined by a single metering point.

Issue	The act of creating a record of one or more I-RECs in an Account on the I-REC Registry.
Issue Request	A formal request by a Registrant of a Production Device or Production Group to an Issuer to Issue I-RECs in relation to that Production Device or Production Group against evidence provided for a given production period.
Issuer	An organisation formally authorised by I-REC Services to Issue I-RECs within a specified country or region.
Labelling Scheme Authority	An organisation providing an independent verification and labelling service which confirms certain qualities in the production and use of energy.
Production Auditor	An organisation which is independent of the Registrant and the receiving I-REC Participant whose role is to verify the measured volume in an Issue Request.
Production Device	One or more related generation units of substantially the same technology capable of producing electricity delivered through an identifiable measurement point.
Production Group	A group of generation Installations of substantially the same technology capable of producing electricity delivered through a number of identifiable measurement points. Installations constituting a group can be geographically dispersed, but must all exist within a single Issuer's country of service.
Redemption	The act of using an I-REC for the purpose of making a disclosure statement. Redeeming removes an I-REC from circulation.
Registrant	The owner of a Production Device or Production Group, or a person legally empowered by that owner, to register that Production Device or Production Group to receive I-RECs.
Residual Mix	The calculated national energy mix that remains unclaimed or has not been Redeemed at a notified national cut-off date.
Residual Mix Deadline Date	The date when I-REC data for the previous calendar year is frozen. This date is 15 May each year.
Retirement	The default Redemption of an I-REC.
Threshold Capacity	The aggregate registered Production Device and Production Group capacity in a country at which a local Issuer service contract should be initiated. The current value of the Threshold Capacity is 50MW.

3. Statement of Principles

3.1 A Consumer's Right to Information

The consumer has a right to obtain full information concerning the origin of the energy he has consumed.

3.2 An I-REC is Unique

An I-REC is a unique statement representing the environmental attributes associated with a specific MWh of electricity produced. An I-REC cannot be Issued where another I-REC currently exists for the same MWh of electricity produced. An I-REC can co-exist with an emissions reduction certificate or carbon offset that relates to the same MWh of electricity produced. An I-REC can exist sequentially

from another energy attribute tracking methodology (e.g. the Guarantee of Origin in Europe) such that only one is active at a point in time.

3.3 An I-REC is a Non-expiring Statement

As a statement of an event, an I-REC is enduring. The eligibility of an I-REC to be Redeemed for a purpose may expire. An I-REC may be Retired by national authorities for the purposes of calculating a Residual Mix.

3.4 Ownership of an I-REC is Exclusive

An I-REC can only exist within an Account on the I-REC Registry. Each Account must be registered to an I-REC Participant or an Issuer. Therefore, only one I-REC Participant can own an I-REC at any point in time. An I-REC will not be Issued for energy produced under a public consumption obligation.

3.5 Use of an I-REC is Unique

An I-REC is used when it is Redeemed or Retired. At this point the I-REC ceases to be transferable between I-REC Participants. An I-REC can only be Redeemed once. The use of an I-REC can be Assigned at Redemption.

3.6 An I-REC is Evidence Based

An I-REC can only be Issued against independently verified evidence of electricity production. If that evidence is an energy attribute tracking certificate (e.g. a GO or TREC), then that certificate must have been prevented from further use (i.e. cancelled, retired, or removed from its market of origin).

3.7 The I-REC Service is Inclusive

The I-REC Service is a global energy attribute tracking system. Its objective is to provide a service to all Registrants and I-REC Participants.

4. Structure

4.1 I-REC Participants

I-REC Participants are the Account holders trading and using I-RECs. They contract with I-REC Services for use of the I-REC Registry and supporting services. Any legal person or organisation can be an I-REC Participant unless they are an Issuer or an I-REC service provider for whom restrictive (i.e. non-trading) participation provisions apply.

The detailed process of becoming an I-REC Participant is set out in the Code Subsidiary Document: 'CSD01 Registrant and Participant Application'.

4.2 I-REC Standard Foundation

All I-REC Participants are members of the I-REC Standard Foundation. The I-REC Standard Foundation has a Board which is supported by a secretariat. The I-REC Standard Foundation is the largest shareholder of I-REC Services.

4.3 I-REC Services

I-REC Services is responsible for the central services including the I-REC Registry, quality assurance and the authorisation of Issuers. The functions for which it is responsible may be contracted out to specialist service providers. I-REC Services is also responsible for the development of the I-REC

systems, procedures and governance arrangements. All payments for centrally administered services are paid through I-REC Services.

4.4 Local Issuers

Issuers are authorised on a country basis to Issue I-RECs in relation to Production Devices or Production Groups registered in that country. Issuers contract with I-REC Services. Production Device or Production Group Registrants contract with an Issuer for services. A local Issuer can Issue I-RECs derived from a national Approved Tracking Scheme.

The detailed process of becoming an Issuer is set out in the Code Subsidiary Document: 'CSD03 Issuer Application'.

4.5 Central Issuer

In order to reduce the impact of market entry costs, a special case exists for countries with an aggregate registered Production Device and Production Group capacity less than the Threshold Capacity. They are served by the Central Issuer. When the Threshold Capacity is crossed, the Central Issuer must pass all registered Production Devices and Production Groups in the country to a local Issuer if one exists. It is possible for a local Issuer to operate alongside the Central Issuer in countries where capacity is below the Threshold Capacity.

In addition to acting in the same capacity as a local Issuer, the Central Issuer can also be the Issuer for I-RECs derived from multi-national Approved Tracking Schemes.

4.6 Registrants

A Registrant contracts with an Issuer who is authorised to Issue I-RECs in the country where the Production Device or Production Group exists. The Registrant will nominate an I-REC Account into which the Issued I-RECs will be placed. A Registrant can also be an I-REC Participant. The detailed process of becoming a Registrant is set out in the Code Subsidiary Document: 'CSD01 Registrant and Participant Application'.

4.7 Legal

All I-REC documentation is in English and all service contracts with I-REC Services are under English law.

5. The I-REC Registry

The I-REC Registry is based on a single central registry which can be accessed via the internet. It consists of two primary elements: a register of Accounts held by I-REC Participants, and a register of Production Devices and Production Groups. The Production Device or Production Group registration data can be viewed by public access.

5.1 I-REC Participant Account Records

I-REC Accounts can only be accessed by users granted permission to do so by the I-REC Participant holding the Account. Issued I-RECs can be transferred between Accounts by the sender nominating the receiving Account and the I-RECs to be transferred.

5.2 Production Device and Production Group Records

The relevant characteristics of a Production Device or Production Group are stored in the I-REC Registry. These characteristics are a public record and some may be included as detail in disclosure

statements. Issuing records are stored against the relevant Production Device or Production Group, but are not publically accessible as they may be commercially sensitive.

5.3 Registry Users

The ability to create and update records on the I-REC Registry is restricted to I-REC Participants (their Account and reporting areas only), Registrants (placing of Issue requests), Issuers (Production Device, Production Groups and Issued I-RECs only), and the registry administrator: I-REC Services by (create I-REC Participant, Registrant and Issuer records, national production and residual mixes and general administration). Other I-REC Registry users have view access only.

6. Registering Production Devices and Production Groups

The detailed process of registering Production Devices and Production Groups is set out in the Code Subsidiary Document: 'CSD02 Production Device and Production Group Registration'.

6.1 Application

An application to register a Production Device or Production Group must be made to a local Issuer or the Central Issuer if no local Issuer exists. A list of authorised countries and their Issuers is published on the I-REC website.

6.2 Verification

If, following discussion with the relevant Issuer, an I-REC Device Verifier is required to independently verify the characteristics of his Production Device or Production Group, the applicant must nominate an I-REC Device Verifier. This verification may utilise an official government Production Device registration system if such exists. A list of I-REC Device Verifiers and their schedule of charges is available on the relevant Issuer's website.

6.3 Registration

Once the Issuer is satisfied that the Production Device or member of a Production Group is not already receiving energy production certificates (including I-RECs) or participating in another similar energy attribute tracking system, they will create a device registration record on the I-REC Registry. Registration to another similar attribute tracking system does not prevent registration to I-REC, but must be declared by the applicant. Registration is effective from the date of commissioning or the 1st day of the month of effective registration, whichever is the latter.

6.4 Expiry

Registration of a Production Device or Production Group will expire five years from the effective date of registration. A Registrant must reapply for registration before the date of expiry in order to ensure uninterrupted Issuing.

7. Interfaces with Other Tracking Systems

An Approved Tracking System conveys sufficient information to I-REC Services to satisfy the evidential and unique ownership requirements of section 8.1. The interface must allow full traceability of the I-REC back to the originating Production Device or Production Group.

8. Labelling Schemes

Labelling schemes are supported by the I-REC System. The Registrant should inform the Issuer of any labelling schemes for which the Production Device or Production Group has been accredited prior to making Issuing requests where the label is required.

9. Issuing I-RECs

The detailed process of Issuing I-RECs is set out in the Code Subsidiary Document: 'CSD04 Issuing I-RECs'.

9.1 Evidence

I-RECs are Issued against supporting evidence of the production event having taken place. Such evidence must be independently verified and must include:

- control area balancing authority energy settlements metering data, or
- measured volume documentation for the periodic commercial/legal energy transfer to another person, or
- the cancellation of energy certificates from an Approved Tracking Scheme, or
- a system of measurement approved by I-REC Services

In some cases it may be necessary to use a combination of metering and energy transfer documentation.

9.2 Authorised Issuers

I-RECs can only be Issued by Issuers authorised by I-REC Services for the relevant country where the Production Device or Production Group is situated. Where an I-REC is Issued on the basis of the cancellation of a certificate from an Approved Tracking Scheme (e.g. a European GO), the Issuer may also need to be accredited to that Approved Tracking Scheme.

9.3 I-REC Volume

One I-REC shall be Issued corresponding to one whole megawatt hour (1MWh) of eligible production. Production is measured as that active energy which is available for consumers. The measurement point is normally at entry to a network. Any remaining production volume may be carried forward to the immediately following production period.

9.4 First Production Period

The first day of the first production period for which I-RECs can be Issued is the effective date of registration of the Production Device or Production Group (see 6.3).

9.5 Issuing Deadline

As of the first Residual Mix Deadline Date and for each subsequent Residual Mix Deadline Date, except where an I-REC is derived from a legislative production certificate within an Approved Tracking Scheme, an I-REC cannot be Issued for a production period within the preceding calendar year.

The first Residual Mix Deadline Date is 15 May 2017.

9.6 Error Management

An I-REC shall not be deleted nor can it be changed except for the correction of an error. Where it becomes clear that an I-REC has been Issued in error, it will be withdrawn by I-REC Services. Where

I-REC Services becomes aware that the provenance of an I-REC is suspect, it may suspend the I-REC from transfer or Redemption during investigations. I-REC Services will amend the details of an I-REC when it has been confirmed that such an error exists. No corrections can be made to an I-REC once it has been redeemed.

9.7 Relationship with Carbon Offsets

An I-REC is a factual statement of an electricity production event. Such events may also contribute to a reduction in global emissions against a business as usual case. This notional additional benefit may be recognised through a carbon offset or emissions reduction certificate. For market transparency, the Registrant must declare on an Issue Request whether he and/or the Production Device or Production Group owner(s) retain(s) the right to obtain carbon offsets in relation to the energy which is the subject of that Issue Request. This declaration does not oblige the Registrant to obtain carbon offsets. However, where a Registrant has declared that offsets will not be obtained, this will form part of the contractual relationship with I-REC Services.

Each I-REC will carry an identifier throughout its life to convey whether that right has been retained and this will be visible to I-REC Participants.

10. Redeeming I-RECs

The purpose of I-REC is to facilitate environmental disclosure by energy-consuming organisations. In order to make a disclosure statement, it is necessary to first remove the I-RECs involved from the market. Please see CSD07 Redemption and Disclosure Statements for details.

10.1 I-REC Participant Control

Redemption of an I-REC is done by the I-REC Participant through his Account. An I-REC must be removed from a trading Account and placed in a Redemption Account from which it cannot be returned.

11. I-REC and Residual Mix Calculation

Most countries do not officially calculate a Residual Mix.

11.1 Exclusivity with a Residual Mix

I-REC certificates can only exist in I-REC Participant Accounts and so the environmental attributes have already been claimed by a trader/consumer. Therefore, those attributes should not be eligible for a Residual mix.

11.2 European Union and Treaty Countries

Countries operating energy attribute tracking systems under European Union Directives use the Guarantee of Origin (GO) as the principal means of disclosure. I-RECs can only be Issued in these countries where a GO has been cancelled or will be cancelled immediately following issue. On cancellation of the GO, the energy attributes are not eligible for inclusion in the Residual mix.

11.3 United States of America

The computation of a Residual Mix varies between jurisdictions with some Residual Mixes including voluntary claims while others do not. The I-REC Service will seek to produce complete Residual Mix information including relevant voluntary claims which have been independently verified in accordance with Code Subsidiary Document: 'CSD06 Residual Mix Derivation'.

11.4 Informal Residual Mix

In countries where there is no official Residual Mix and there is an I-REC Issuer, I-REC will provide an informal Residual Mix based on best available information. I-REC Services can give no warranty for the accuracy of this Residual Mix, but will publish the methodology for its calculation. The methodology for calculating a national residual mix is set out in the Code Subsidiary Document: 'CSD06 Residual Mix Derivation'.

11.5 National Production and Residual Mix Records

The I-REC website provides a holding source of national production and residual mix information. This is an I-REC Community resource which will be built up and updated over time by contribution from I-REC Participants, Issuers and I-REC Services. This information source is provided without warranty of accuracy and the data may have no official status. The objective is for the I-REC Community to share knowledge and understanding of national information to create a 'best of our knowledge' resource such that double counting of non-explicitly-claimed environmental attributes is avoided and that this information is reported in a consistent and cost effective manner. The information provided will be moderated by I-REC Services.

12. I-REC Disclosure Statements

I-REC Participants can generate a report from the system which can be used as a disclosure statement. See 'CSD07 Redemption and Disclosure Statements' for details.

12.1 I-REC Participant Control

The creation of a disclosure statement is controlled by the I-REC Participant through his Account. Energy consumed during the reporting period is entered at the desired reporting aggregation level. The start and end dates for the reporting period are set on a calendar month basis by the I-REC Participant. A view of the draft statement is available to the I-REC Participant, but only the final version will be available as an output. A disclosure statement can be reproduced at any time.

12.2 Statement Content

The I-REC disclosure statement can include all national Accounts held by the I-REC Participant organisation at the desired aggregation level. Redeemed I-RECS for production periods which fall within the reporting period will be included. Where there is a shortfall in I-REC certificate volume compared to the energy consumed and an appropriate national Residual Mix dataset exists within the I-REC database, that mix will be applied to the shortfall. The I-REC Participant can select the level of information displayed down to originating Production Device or Production Group.

12.3 Statement Format

An I-REC disclosure statement can be produced in pdf or text file format for inclusion in other documentation.

12.4 Statement Publication

A disclosure statement is a public report. The I-REC Participant can elect for the full detailed report or a country level summary to be placed in the public access area of the website.

13. Code Governance and Quality

This I-REC Code and its Code Subsidiary Documents establish the principles and operating rules for the I-REC Service. They are owned and maintained by I-REC Services. As a tracking and reporting mechanism, the I-REC Service is designed to be open and transparent in all matters whilst not compromising commercial confidentiality.

13.1 Change Management

Any I-REC Participant or service provider can raise a change request. Proposed changes are considered by I-REC Services. Approved changes are incorporated into the I-REC Code and/or a CSD as appropriate and are normally released with the two scheduled updates per year. Exceptional changes may be released with immediate effect.

The detailed process of change management is set out in the Code Subsidiary Document: 'CSD05 Code Management'.

13.2 Quality Assurance

The operational quality of the I-REC Service is maintained through independent verification. This includes but is not limited to:

- Assessment of Issuers as part of their accreditation process.
- Periodic systems audits of Issuers
- Initial and periodic review of Production Device registrars
- Independent validation of production data
- Registry monitoring
- Independent assessment of change proposals
- Liaison with other tracking systems
- Liaison with national and international anti-fraud and money laundering authorities

Any I-REC service provider failing assessment or any I-REC Issuer, Participant, or Registrant suspected of fraudulent activity may be suspended from I-REC.

The detailed processes for quality assessments are set out in the Code Subsidiary Document: 'CSD08 Assessment Procedures'.

13.3 Production Device Inspections

In addition to any verification inspection carried out during the registration process, the Issuer, a Production Device Verifier, or I-REC Services may conduct an unannounced control and auditing visit to the premises of the Registrant/owner and/or the premises of the Production Device. The scope of such visits will be confined to verification of the data held on the I-REC Registry. Unreasonable withholding of access to the relevant premises or documentation will constitute a breach of the I-REC Code and will result in the immediate suspension of Issuing in relation to that Production Device.

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