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A European Standard for the Tracking of Electricity

Terminology used within the E-TRACK project

**Prepared as part of the IEE project
„A European Tracking System for Electricity (E-TRACK)”**

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The E-TRACK project

The E-TRACK project has investigated the feasibility of a harmonised standard for tracking of generation attributes in Europe. The aim of the project was to outline a comprehensive approach for all tracking requirements which are imposed by European and national legislation. The major benefits of such a tracking standard will be that electricity attributes (such as the fuel type used for generation and related environmental indicators) can easily be accounted for in the internal market; problems with multiple counting of attributes (e.g. from renewable energy sources) can be avoided; verification of tracking procedures can be simplified and cross-border trade of attributes will be facilitated. The tracking standard has been designed in such a way as to support European and Member State electricity policies. It leaves room for the specific design of tracking systems on the national or regional level and it does not predetermine policy decisions such as the design of support instruments for electricity from renewable energy sources or cogeneration.

The project provides a detailed insight into the requirements for the design and operation of tracking systems, which are set by European and Member States legislation as well as by market participants. The main result of the project is a blueprint of a European standard for tracking of electricity generation attributes, which covers technical aspects (e.g. database and interface specifications) and non-technical issues, such as institutions and processes involved. The project involved partners with scientific expertise as well as electricity transmission system operators, regulators and market players, which will be able to work with the standard. This ensures that results from the project are oriented towards practical implementation and can easily be disseminated. An intensive consultation phase and several dissemination activities have supported the project results.

In the context of the project, the term “standard” is used in an informal way. It denotes a set of rules which can be applied in European countries in order to implement a tracking system. If required, additional national regulations can be added. The standard is not meant as a formal standard, e.g. under CEN or Cenelec rules.

Glossary

Association (to a scheme)

A link to a scheme for which a certificate is eligible. Certificates can have one or more associations.

Association of Issuing Bodies

The European organisation which governs the European Energy Certificate System (EECS).

(Electricity) Attributes

Information on electricity, which is to be allocated through tracking. Details are specified by the respective schemes. For example for disclosure, the following attributes are required: Fuel source and technology, CO₂ emissions and nuclear waste created.

Certificate

An instance of evidence (normally in units related to 1 MWh) for one or more schemes which can be transferred between different owners. Certificates are usually held as electronic records in a database (registry).

Compliance period

A period of time which is used for the verification of compliance with a scheme. E.g. for electricity disclosure, the compliance period is one year.

Contract-based tracking

An explicit tracking method where electricity attributes are allocated to consumers based on the bilateral contracts concluded in the electricity market. Contract-based tracking can be performed *ex ante* or *ex post* (in relation to the point in time when the electricity contract is concluded). In any case, contract-based tracking can be implemented based on certificates, which in this case would be allocated along the contract path.

De-linked tracking

An explicit tracking method where electricity attributes are allocated to consumers based on certificates which allow for the allocation of the attributes from generators to consumers along a path which is independent from the physical electricity market.

(Electricity) Disclosure

Based on Directive 2003/54/EC electricity retailers must disclose to their customers the origin of their electricity and related CO₂ emissions and the production of nuclear waste. This requires the installation of a tracking system for electricity.

Disclosure certificates

Certificates which can be used for purposes of disclosure, i.e. which are associated to the disclosure scheme. In the report, the term Guarantees of Origin (in its broader sense) is used for this kind of certificates.

Domain

A single geographic or geopolitical region defined for the purposes of a scheme. There must be only one scheme authority in a domain.

Electricity from high-efficient cogeneration (CHP-E)

Electricity from high-efficiency cogeneration, as defined in Directive 2004/8/EC.

Electricity from renewable energy sources (RES-E)

Electricity from renewable energy sources as defined in Directive 2001/77/EC.

European Energy Certificate System (EECS)

A harmonised European system for the handling of certificates for electricity attributes, which is operated by the Association of Issuing Bodies. EECS is the only standardised tracking system for electricity in Europe. Currently, EECS integrates Guarantees of Origin for RES-E and CHP-E, RECS certificates and generic Guarantees of Origin in their broader sense (disclosure certificates).

Evidence

Proof of a set of generation attributes. Certificates are issued against evidence to facilitate transfers and compliance with schemes.

Explicit tracking

A mechanism which allows the bilateral allocation of electricity attributes from a generator to a retailer or final consumer. This can be based on electricity contracts or de-linked from these. Both types of explicit tracking can be implemented based on certificates.

External Reliable Tracking Systems (ERTS)

Independent explicit tracking systems, e.g. in relation to feed-in support systems, which exist alongside with the E-TRACK standard. In order to avoid multiple counting of attributes in relation to explicit and implicit tracking under the standard, ERTS must fulfil certain criteria.

Generation episode

A period in time during which electricity was generated, usually marked by two meter readings. Tracking is usually based on the average attributes of electricity generation during a generation episode.

Guarantee of Origin (GO)

In a specific sense: A means of proving the origin of electricity, which was generated from renewable energy sources or from high-efficient cogeneration, which was introduced by Directives 2001/77/EC (for RES-E) and 2004/8/EC (for CHP-E). Their use is optional.

In a broader sense: General term for certificates which are associated to disclosure.

Implicit tracking

A mechanism which allows the allocation of electricity attributes from a group of generators to usually a large group of retailers or final consumers. The simplest way of implicit tracking is the use of statistical data on electricity generation in a certain area, e.g. national or UCTE or NORDEL system mixes. The E-TRACK standard requires the use of a Residual Mix instead of production statistics.

Issuing Body

The organisation which is appointed by the scheme authority to manage a tracking domain. The issuing body can delegate several tasks, e.g. to a registry operator, production device accreditation body, data collector (for meter readings etc.).

Multiple counting

The use of attributes from the same instance of electricity generation for more than one uses, which are conflicting. For example, if the attributes of a hydro plant from Austria are used for disclosure both in Austria and in Italy, this is a case of multiple counting. Multiple counting can be distinguished into multiple issuing, multiple sale and multiple use of attributes. The question whether certain uses of attributes are conflicting or not, must be regulated clearly, e.g. by the scheme authorities.

Nordel

The organisation for the Nordic transmission system operators (<http://www.nordel.org>).

OTC trading

Bilateral trading of standardised electricity contracts, which is not performed on power exchanges.

Physical electricity market

Market transactions (long-term contracts, OTC trade, trade on power exchanges) which imply physical delivery of energy into the balancing group of the buyer. Pure financial contracts can be disregarded, as they do not allocate physical energy.

RECS International

The European organisation of market participants which use the European Energy Certificate System (EECS). RECS International and the AIB have jointly developed the RECS System, which can be seen as a predecessor of Guarantees of Origin for RES-E.

Renewable Energy Certificate System (RECS)

A voluntary scheme which was developed in order to track electricity attributes from RES-E for purposes of green electricity supply. The RECS System can be seen as a predecessor of Guarantees of Origin for RES-E.

Redemption

The realisation of the value of a certificate. The value may be monetary, or in terms of compliance with a legislative or regulatory requirement, or fulfilling a product description. On redemption, the certificate ceases to be transferable or useable for any other purpose.

Residual mix

A set of attributes for use in electricity disclosure, which has been determined based on the attributes of all electricity generation in one or several disclosure domains and corrected by all attributes which have been used for explicit tracking or by ERTS, and also for exports and imports of attributes and physical energy. Each residual mix stands for a certain volume of attributes and should not be used for the disclosure of a larger volume of electricity consumption than this volume.

Scheme

A set of rules and procedures using the results from attribute tracking for the purposes of e.g. complying with a Directive, supporting specific generation technologies, or evidencing a quality label for electricity products.

Scheme authority

A person or a body appointed by legislation or by members of a voluntary scheme to control the qualification of production devices and both the issuing, transfer and redemption of certificates for that scheme. Additionally, a scheme authority will manage the compliance process including the use of non-certificate information, e.g. based on the residual mix or ERTS. There must be only one scheme authority for a scheme in any domain.

Support

A policy by which a country promotes the generation of electricity from certain energy sources (e.g. renewable energies) or by certain technologies (e.g. cogeneration) through financial incentives.

Support certificate

A transferable certificate which is used for the implementation of support schemes. Such certificates can be used e.g. in quota obligation systems, where producers, retailers or consumers are obliged to redeem support certificates which represent a certain share of their production, sales to final consumers or consumption. The allocation of support can either be linked to the Guarantee of Origin, in which case the support system has a connection to electricity disclosure, or it can be separated from the GO. In the latter case, the separate support certificates are a purely financial instrument and have no relation to disclosure.

Targets

Quantitative targets for certain types of electricity generation which have been set on a European level and have been broken down on the national level. Currently, indicative targets have been set for the shares of RES-E in total electricity consumption of EU Member States by 2010. More ambitious overall targets for renewable energy sources, and possibly also sectoral targets for RES-E, for the year 2020 are currently under discussion. There are currently no clear EU-wide targets for CHP-E.

Tracking

General term for the accounting of generation attributes. It usually implies an allocation of attributes from generators of electricity to consumers or their retailers. This can be done for purposes of different schemes, e.g. disclosure, support or target accounting.

UCTE

Union for the Co-ordination of Transmission of Electricity in continental Europe (<http://www.ucte.org>). Note that the Nordic region is covered by Nordel, whereas Britain and Ireland have separate transmission systems.