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1 Implementation of Tracking Systems

1.1 Electricity Disclosure

Electricity disclosure in Finland is implemented by the law “Laki sähkön alkuperän varmentamisesta ja ilmoittamisesta - Act on Verification and Notification of Origin of Electricity” (1129/2003) and as amended by 445/2013. As well as by secondary legislation, the government decree “Valtioneuvoston asetus sähkön alkuperän ilmoittamisesta - Government Decree on Notification of Origin of Electricity” (417/2013).

Paragraph 11 of the law sets primary rules for disclosure, which include:

- Electricity suppliers must use a guarantee of origin to verify a renewable origin of sold electricity except when disclosing the renewable share in the residual mix. Same rules apply for electricity consumers.
- Electricity suppliers are required to disclose in bills and promotional materials to their end customers the contribution of each energy source in the sold electricity, at least at the accuracy of separation between renewable, nuclear and fossil sources. Electricity suppliers must also disclose in bills and promotional materials a reference to public data sources which disclose the content of CO₂ (g/kWh) and used radioactive fuel (mg/kWh) in the sold electricity.
- Electricity suppliers are only required to disclose the total mix of the supplier.
- The residual mix is used to give origin to electricity from unknown origin. The national residual mix is calculated by the Energy Authority (www.energiavirasto.fi) of Finland at latest by 30.6.X+1. The residual mix follows RE-DISS recommendations and is balanced using the European Attribute Mix as calculated by RE-DISS. The Nordic area residual mix is no longer used.
- Contract-based tracking can be used for disclosure information of other energy sources than renewable.

The Finnish Energy Authority (Energiavirasto) is responsible for ensuring that the disclosure information is reliable and for calculating the Finnish residual mix.

There are no guidelines on how the disclosure information is to be presented.

1.1.1 Disclosure Figures

Table 1: Finnish production and residual mixes

	Renewable %	Nuclear %	Fossil %
Production Mix 2010	30,7	28,7	40,6
Residual mix 2010	21,8	29,5	48,7
Production Mix 2011	32,7	31,9	35,4
Residual mix 2011	23,7	32,9	43,4
Production Mix 2012	40,3	33,0	26,8
Residual Mix 2012	19,5	40,2	40,3

1.1.2 Environmental Information

Electricity suppliers must disclose in bills and promotional materials a reference to public data sources which disclose the content of CO₂ (g/kWh) and used radioactive fuel (mg/kWh) in the sold electricity.



Table 2: Environmental Indicators

	CO2 (g/kWh)	Radioactive fuel (mg/kWh)
Production Mix 2010	309	0,86
Residual mix 2010	371	0,88
Production Mix 2011	260	0,96
Residual mix 2011	318	1
Production Mix 2012	213	1
Residual Mix 2012	322	1,2

1.1.3 Suppliers Fuel-Mix Calculations

Electricity disclosure is based on calendar years and cancellations of GOs relating to disclosure of year X need to be made by 31.3.X+1 the latest. Suppliers are required to present their previous year total fuel mix, at latest 2 months after the publication of the Finnish residual mix, by the Energy Authority. Product-specific mixes are not required to be disclosed. Disclosure of renewable energy origin is only possible through cancelled guarantees of origin or through the residual mix.

In bilateral contracts, a supplier may use the disclosure information given by the vendor regarding fossil and nuclear attributes. However this is not obligatory, and the residual mix can also be used. Electricity from unknown origin (mainly the Nordpool power exchange) has to be disclosed with the residual mix, unless a guarantee of origin is cancelled for this purpose.

1.1.4 Acceptance of GOs

Under the law "Laki sähkön alkuperän varmentamisesta ja ilmoittamisesta - Act on Verification and Notification of Origin of Electricity" (1129/2003) and as amended by 445/2013, Finland must recognise guarantees of origin issued by other EU or EEA Member States. Finland may refuse to recognise guarantees of origin issued by other EU or EEA Member States if it has well-founded doubts about their accuracy, reliability or veracity. Such decision is taken by the Ministry of Employment and the Economy and notify the refusal to the Commission.

So far, Finland has not refused to recognise any guarantees of origin and has no standard criteria for recognition.

1.2 Guarantees of Origin for Electricity from Renewable Energy Sources and High-Efficient Cogeneration

The guarantee of Origin system in Finland according to the directive 2009/28/EC, Article 15 is set forth by primary law "Laki sähkön alkuperän varmentamisesta ja ilmoittamisesta - Act on Verification and Notification of Origin of Electricity" (1129/2003) and as amended by 445/2013. As well as by secondary legislation, the government decree "Valtioneuvoston asetus sähkön alkuperän ilmoittamisesta - Government Decree on Notification of Origin of Electricity" (417/2013). The law amendment entered into force 1st of July 2013. Guarantees of origin can be issued in Finland for RES and efficient co-generation of power and heat.

The competent body for GOs is the transmission system operator, Fingrid (www.fingrid.fi), and it is under the supervision of the Energy Authority of Finland. Guarantees of origin are issued for monthly production and only for electricity production from renewable energy sources and from high-efficient cogeneration. In case of cogeneration from renewable energy sources, only one GO is issued for the MWh. GOs expire 12 months after the end of the related production period. The expiry rule enters into force on 1.3.2014 and applies for all guarantees of origin issued after 1.7.2013. Guarantees of origin issued before 1.7.2013 are valid for disclosure for 12 months after their issuance date.

1.2.1 EECS

In theory a Finnish national GO system exists alongside the EECS system, but in practice all GOs are issued as EECS-GOs. The issuing of Finnish and EECS GO for the same MWh is avoided through a contract between the Finnish-GO issuing body Fingrid and the EECS-GO issuing body Grexel. The detailed rules and procedures for guarantee of origin can be found in the Finnish domain protocol. The current version of the domain protocol can be found at AIB web page (http://www.aib-net.org/portal/page/portal/AIB_HOME/FACTS/AIB%20Members/Domain_Protocols). GOs from production devices that have received public support get an earmark according to EECS, but they can be freely traded and used for disclosure purposes.

The central registry for Finnish guarantees of origin can be found at: cmo.grexel.com. Finnish GOs are widely traded and used.

Table 3: GO statistics 2007-2013

	Issue (prod.)	Transfer	Export	Import	Cancel
2007	8 298 621	869 127	4 917 854	315 010	682 821
2008	10 928 537	1 813 069	13 448 873	11 427 659	1 421 081
2009	8 652 903	1 078 556	7 498 399	4 725 289	3 000 576
2010	10 876 863	2 772 021	16 082 485	16 072 143	5 612 628
2011	9 610 272	5 335 664	29 765 082	33 349 087	10 161 513
2012	15 735 729	10 173 919	35 090 816	39 930 264	14 704 892
2013	15 717 142	14 406 465	32 308 104	34 824 563	17 025 211



Figure 1: GO statistics 2007-2013

In 2012, some 60 % of total RES production was issued a guarantee of origin, and the percentage will likely rise for 2013. The Finnish domain is a popular trading place for GOs, which demonstrates in high volumes of international transfers.

1.3 RES-E Support Schemes

In the beginning of 2011, the law, which enables feed-in tariff for wind energy, biogas and wood energy, came into force (1396/2010) (<http://www.finlex.fi/fi/laki/alkup/2010/20101396>). The FIT guarantees a price of 83.50 €/MWh for electricity for 12 years. The windmills will get an elevated price of 105.30 €/ during the first 3 years of operation until the end of 2015. The feed-in tariff system functions like a premium system, in which producers sell the electricity on the market and receive a bonus for each MWh, which equals the difference between the target price and average price of electricity during the previous three months at the location of the generator. All production devices, which use the abovementioned energy sources and which were installed after the beginning of 2009, are eligible for the FIT system.

For plants using forest residuals the support is determined by the average price of CO₂ allowances in the Emission Trading System and the peat tax. If the average price of past three months in at least the two largest CO₂ allowance exchanges has been lower than 10€ and the peat tax has been 4,90 €/MWh (years 2013-2014), the support is 13,13€/MWh. If the average price of CO₂ allowances is above 10€, the support decreases linearly towards zero (zero is reached at the average price of 18,93€). Small CHP plants (capacity between 100 kW and 8 MW) using 100 % forest residuals as fuel source are eligible for the feed-in tariff instead of the forest residual support scheme.

For new technologies (e.g. wood gasifiers) an investment support scheme exists, in which the support decision is taken individually for each plant. Power plants that contain a wood gasifier, is eligible for a gasifier premium, which amounts max. 6,46 €/MWh on top of basic subsidy (forest residual support scheme). A plant can be eligible for both the forest residual support scheme and investment support scheme, but not both for the feed-in tariff and another support scheme.

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

2 Proposals for Improvement of the Tracking System

2.1 Proposals regarding general regulation on tracking systems

The following are proposals from the RE-DISS BPR for improving the tracking system regulations:

- BPR [17]: Besides GO, only Reliable Tracking Systems (which may include contract based tracking) and the Residual Mix should be available for usage for disclosure. No other tracking mechanisms should be accepted.
 - Unsupervised contract-based tracking may be used for nuclear and fossil attributes.

2.2 Proposals regarding Disclosure

- BPR [19]: European countries should clarify whether and under which conditions the use of GOs by end consumers is allowed. Such GO use should not be based on ex-domain cancellations performed in other countries. If consumers are allowed to use GOs themselves, a correction should be implemented in the disclosure scheme which compensates for any “double disclosure” of energy consumed.

2.3 Proposals regarding RE-GO and CHP GO

- BPR [4]: An extension to this lifetime can be granted if a GO could not be issued for more than [six] months after the end of the production period for reasons which were not fully under the control of the plant operator. In this case, the lifetime of the GO might be extended to [six] months after issuing the GO.
- BPR [8]: In case that not all European countries are members of EECS, appropriate connections between the EECS system and non-EECS members as well as in between different non-EECS members will need to be established. These include inter alia procedures for assessing the reliability and accuracy of the GO issued in a certain country and interfaces for the electronic transfer of GO.

- BPR [11]: The GO system should be extended beyond RES & cogeneration to all types of electricity generation.

2.4 Proposals regarding Acceptance of GO

- BPR [21]: Within the rules set by the respective Directives, Member States should consider to reject the recognition of GO from other countries for disclosure in case that these countries have not implemented adequate measures which avoid double counting, e.g. a proper determination of a Residual Mix for disclosure.

2.5 Further proposals regarding Disclosure

- BPR [39]: Suppliers offering two or more products which are differentiated regarding the origin of the energy should be required to give product-related disclosure information to all their customers, including those which are buying the “default” product of the supplier.
- BPR [40]: There should be clear rules for the claims which suppliers of e.g. green power can make towards their consumers. There should be rules on how the “additionality” of such products can be measured (the effect which the product has on actually reducing the environmental impact of power generation), and suppliers should be required to provide to consumers the rating of each product based on these rules.
- BPR [41]: Claims made by suppliers and consumers of green or other low-carbon energy relating to carbon emissions or carbon reductions should also be regulated clearly. These regulations should avoid double counting of low-carbon energy in such claims. A decision needs to be taken whether such claims should adequately reflect whether the energy purchased was “additional” or not.
- BPR [42]: In case that suppliers are serving final consumers in several countries rules must be developed and implemented consistently in the countries involved on whether the company disclosure mix of these suppliers should relate to all consumers or only to those in a single country.

2.6 Matrix of disclosure related problems and country-specific proposals

Problem	Country-specific proposal
Possible double counting in different explicit tracking instruments	BPRs: [8], [11], [17]
Double counting of attributes in implicit tracking mechanisms	BPRs: [11], [21]
Double counting within individual supplier's portfolio	BPRs: [39], [42]
Loss of disclosure information	BPRs: [11], [19]
Intransparency for consumers	BPRs: [11], [39], [40], [41], [42]
Leakage of attributes and/or arbitrage	BPRs: [19]
Unintended market barriers	BPRs: [4], [8]

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