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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 CO<sub>2</sub> (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](http://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

The share of renewables in the Finnish residual mix has decreased constantly while RES production has increased.

Table 1: Finnish production and residual mixes

	Renewable %	Nuclear %	Fossil %
<b>Production Mix 2010</b>	30,7	28,7	40,6
<b>Residual mix 2010</b>	21,8	29,5	48,7
<b>Production Mix 2011</b>	32,7	31,9	35,4
<b>Residual mix 2011</b>	23,7	32,9	43,4
<b>Production Mix 2012</b>	40,3	33,0	26,8
<b>Residual Mix 2012</b>	19,5	40,2	40,3
<b>Production Mix 2013</b>	36,2	33,3	30,5
<b>Residual Mix 2013</b>	11,7	42,5	45,8



	Renewable %	Nuclear %	Fossil %
<b>Production Mix 2014</b>	39,3	34,7	26,1
<b>Residual Mix 2014</b>	9,4	46,4	44,2

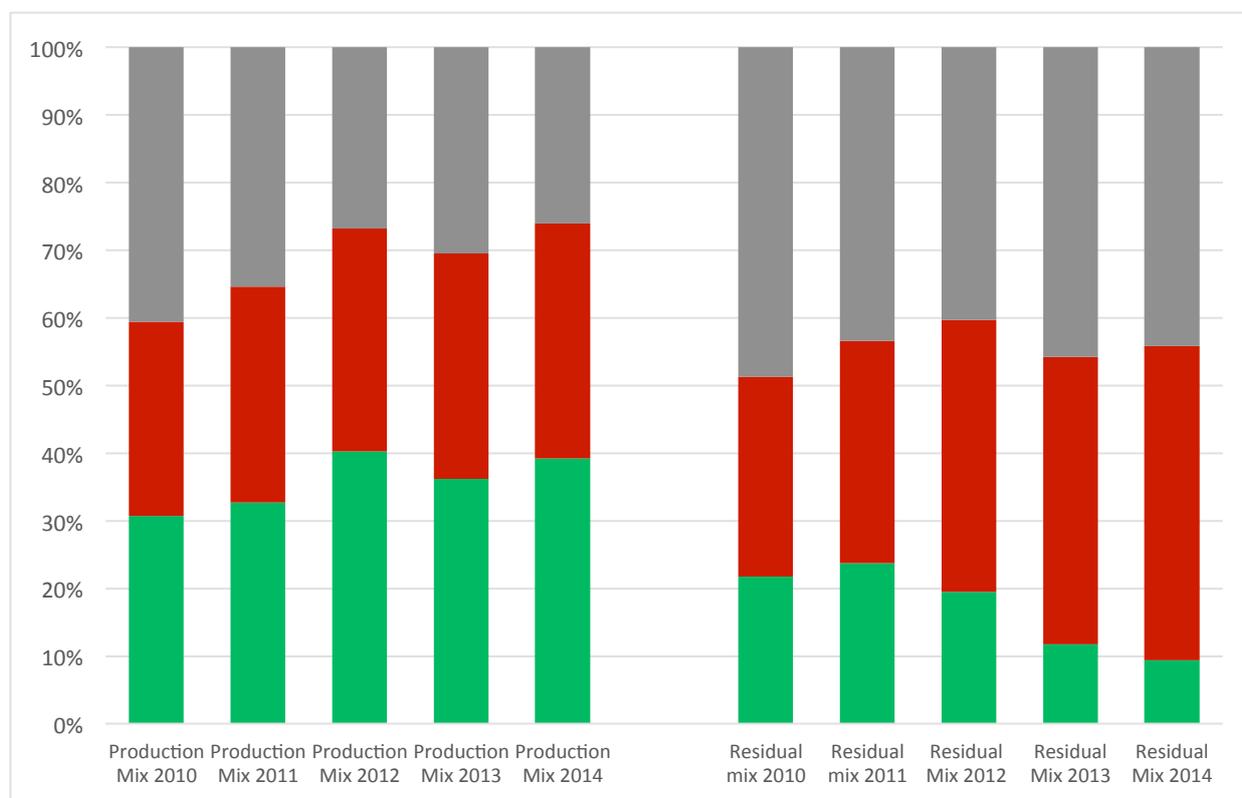


Figure 1: Finnish production and residual mixes

### 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 CO<sub>2</sub> (g/kWh) and used radioactive fuel (mg/kWh) in the sold electricity.

Table 2: Environmental Indicators

	CO <sub>2</sub> (g/kWh)	Radioactive fuel (mg/kWh)
<b>Production Mix 2010</b>	309	0,86
<b>Residual mix 2010</b>	371	0,88
<b>Production Mix 2011</b>	260	0,96
<b>Residual mix 2011</b>	318	1
<b>Production Mix 2012</b>	213	1
<b>Residual Mix 2012</b>	322	1,2
<b>Production Mix 2013</b>	246	1
<b>Residual Mix 2013</b>	280	1,1
<b>Production Mix 2014</b>	168	1
<b>Residual Mix 2014</b>	286	1,3

**Notes:** Residual Mixes 2010-2012 from: [http://www.reliable-disclosure.org/Residual Mixes](http://www.reliable-disclosure.org/Residual%20Mixes) 2013-2014 from: <https://www.energiavirasto.fi/jaannosjakauman-julkaisut>

Production Mixes 2010-2014, based on Entsoe: <https://www.entsoe.eu/data/data-portal/production/Pages/default.aspx>

### 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. It is possible to cancel GOs for the following calendar year disclosure before 31.3.X+1, but only within the lifetime of the GO. 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. Energy Authority should publish the residual mix no later than end of June of the following year, but in practice it has done so already by end of May in 2013 and 2014. Product-specific mixes are not required to be disclosed, but may be. 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](http://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. GOs expire 12 months after the end of the related production period. The expiry rule entered into force on 1.3.2014.

Issuing Body Fingrid is member of the AIB for Finland. The entire Finnish GO system is EECS compatible and connected to the AIB HUB. 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](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.

### 1.2.1 RES-GO System

Table 3: GO Statistics

	Issue (prod.)	Transfer	Export	Import	Cancel	Expire
<b>2007</b>	8 298 621	869 127	4 917 854	315 010	682 821	
<b>2008</b>	10 928 537	1 813 069	13 448 873	11 427 659	1 421 081	
<b>2009</b>	8 652 903	1 078 556	7 498 399	4 725 289	3 000 576	
<b>2010</b>	10 876 863	2 772 021	16 082 485	16 072 143	5 612 628	
<b>2011</b>	9 610 272	5 335 664	29 765 082	33 349 087	10 161 513	
<b>2012</b>	15 735 729	10 173 919	35 090 816	39 930 264	14 704 892	
<b>2013</b>	15 717 142	14 406 465	32 308 104	34 824 563	17 025 211	
<b>2014</b>	20 178 649	15 330 358	17 177 936	16 582 922	25 429 302	7 719 290
<b>2015 (May)</b>	1 367 860	-	6 707 483	8 740 115	13 000 141	132 919

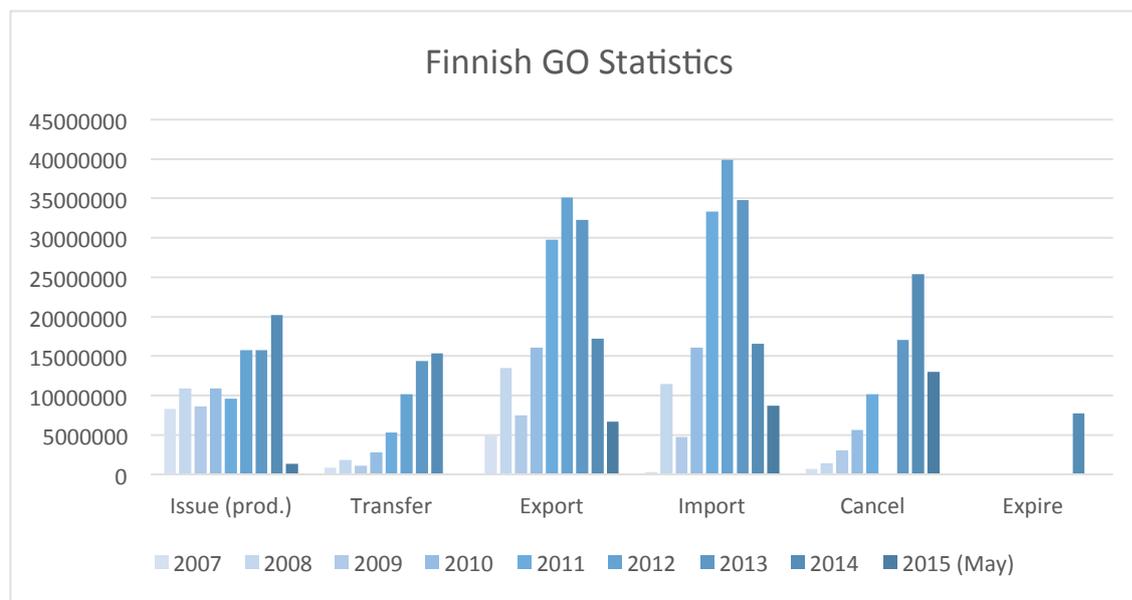


Figure 2: Finnish GO Statistics

In 2014, some 80% of Finnish RES production was issued a Guarantee of Origin.

### 1.2.2 CHP-GO System

EECS CHP-GO can be issued in Finland, but so far haven't.

## 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 CO<sub>2</sub> allowances in the Emission Trading System and the peat tax. If the average price of past three months in at least the two largest CO<sub>2</sub> 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 CO<sub>2</sub> 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

To improve the tracking, disclosure and GO system in Finland, the following BPRs should be applied

### 2.1 Proposals regarding general regulation on tracking systems

- 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.
  - (Contractual tracking for NUC and FOS is allowed in Finland), which also relates to BPRs 23, 24, 29 and 30, which are not separately listed here)

### 2.2 Proposals regarding Disclosure

- BPR [11c]: Competent bodies should consider to make the use of GOs mandatory for all electricity supplied to final consumers.
- 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.
- BPR [39b]: 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” remaining product of the supplier.

### 2.3 Proposals regarding RE-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 [11a]: The GO system should be extended beyond RES & cogeneration to all types of electricity generation.

- BPR [11b]: GOs should be issued for all electricity production, unless an RTS applies for that production, e.g. for the disclosure of supported electricity.

## 2.4 Proposals regarding CHP-GO

- BPR [15b]: This GO should "ideally" combine the functionalities of a RES-GO and a high efficiency cogeneration GO.

## 2.5 Proposals regarding Acceptance of GO

- BPR [20b]: The choice of one or the other option should be transparent for all market parties and clearly communicated.
- BPR [21]: Within the rules set by the respective Directives, European countries should consider their criteria for the acceptance of imported GOs for purposes of disclosure.
  - These criteria should address imports at least from all EU member states, other members of the European Economic Area (EEA) and Switzerland. The parties to the Energy Community Treaty should be considered as well, as soon as GO imports from these countries become relevant.

## 2.6 Further proposals regarding Disclosure

- 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. Matrix of disclosure related problems and country-specific proposals

Problem	Country-specific proposal
Possible double counting in different explicit tracking instruments	BPRs: [8],[11a], [17], [18], [21] [23],[24],[29],[30]
Double counting of attributes in implicit tracking mechanisms	BPRs: [11a], [17], [18], [21] [23],[24],[29],[30]
Double counting within individual supplier's portfolio	BPRs: [39b], [42]
Loss of disclosure information	BPRs: [11a],[15b],[19]
Intransparency for consumers	BPRS: [11a],[11b], [11c], [23],[39b],[40],[41], [42]
Leakage of attributes and/or arbitrage	BPRs: [19]
Unintended market barriers	BPRS: [4],[8],[11b],[11c], [20b], [21]

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