

Last updated: date (31/05/2015)

## 1 Implementation of Tracking Systems

### 1.1 Electricity Disclosure

Obligation to disclose was transposed through the Decree-Law No.73 of 18<sup>th</sup> June 2007 that was transformed into a law on 3<sup>rd</sup> August 2007 (law No.125/07). Article 5 states that electricity suppliers have to specify in or with the bills and in promotional materials made available to final customers the contribution of each energy source to the overall fuel mix of the supplier over the two preceding years and to indicate where the information concerning the environmental impacts of such production lies. A secondary regulation, was supposed to be proposed by the Authority for Electricity and Gas (AEEG) and adopted by the Ministry of Economic Development 90 days later, however this was not the case.

The so called “Fuel Mix Disclosure Decree” was actually issued on 31st July 2009 and was published in the official journal (Gazzetta Ufficiale, GU) on 25<sup>th</sup> August 2009. GSE (Gestore dei Servizi Energetici), a publicly-owned company which promotes and supports renewable energy sources in Italy, is also the competent authority for disclosure and guarantees of origin.

The Decree gives the calculation procedure for producers’ residual mix and suppliers’ mix. A transition period is foreseen until the end of 2011. As of 2012 the calculation was fully applied for that year.

Suppliers’ mix has to be disclosed using the following format :

	Composition of the energy mix used for the production for the energy sold in the two preceding years		Composition of the national energy mix used for the production of electricity fed into the Italian electricity system in the two preceding years	
	Year (n)	Year (n-1)	Year (n)	Year (n-1)
Primary sources of energy	%	%	%	%
Renewable energy				
Coal				
Natural Gas				
Oil				
Nuclear				
Other sources				



The disclosure period is the calendar year. Electricity suppliers have to send such information at least every 4 months with the invoices, in their web sites and in any promotional materials made available to final customers. In case a supplier covers 2 different countries, the supplier mix it has to show in Italy should only concern Italian consumers and not the ones from the other country as well.

Tracking tools that are available in Italy are GOs or a national residual mix, which is calculated by GSE. Article 31 of the decree from the 06<sup>th</sup> July 2012 stipulated new provisions concerning GO and disclosure. It stipulated that only GOs can be used to track the renewable energy origin and it suppressed provisions to track through CIP/6/92 as well as through bilateral contracts that formerly applied.

Disclosure of individual products is possible, but not fully integrated for the moment with the overall disclosure scheme, in the sense that the end consumer that has not subscribed to a specific product gets the average supplier mix and not a default product mix (e.g.: the overall supplier mix minus the green product sold to other consumers).

A deliberation from the regulator was issued on 9<sup>th</sup> August 2011 concerning green products. It states that disclosure of green electricity sold under contracts signed from 1<sup>st</sup> October 2011 onwards have to be based exclusively on GOs. Disclosure process follows the following steps and schedule:

- Until 31<sup>st</sup> of March, producers communicate production data to GSE as well as issued GOs that they have transferred to other market players.
- By 31<sup>st</sup> March, suppliers communicate their data on sales and imports to GSE.
- By 30<sup>th</sup> April GSE calculates the national residual mix
- GSE calculates suppliers' own supply mix using the figures communicated to GSE and by 30<sup>th</sup> April, suppliers have to disclose it to their end consumers along with the national average production mix fed into the electricity grid.

The calculation of residual mix also takes into account imported GO.

### 1.1.1 Disclosure Figures

GSE, in accordance with the provisions of Article 6, paragraph 5 of the Fuel Mix Disclosure, determines, in partnership with Terna, the transmission system operator, an estimate of the fuel mix used for the production of electricity fed into the Italian power system, including imported electricity.

<http://www.gse.it/it/gas%20e%20servizi%20energetici/mix%20energetici%20e%20offerte%20verdi/Pages/default.aspx>

Tab.1 Comparison of national production mix and residual mix for 2014 as calculated by GSE

	2014	2014
Primary sources of energy	%	%

Renewable energy	42,49	34,03
Coal	19,33	21,81
Natural Gas	28,85	35,59
Oil	1,01	1,16
Nuclear	4,59	2,84
Other sources	3,72	4,57

Source : GSE 2015

### 1.1.2 Environmental Information

Neither radioactive waste nor CO<sub>2</sub> emissions are disclosed. The latter information should have been disclosed by the Ministry of Economic Development (in collaboration with the competent entities) within the disseminating results of studies on the environmental impact of electricity production, taking into account LCA and external costs analysis. Such studies haven't been published yet.

### 1.1.3 Suppliers Fuel-Mix Calculations

As explained in the "EECS Domain Protocol for Italy", electricity of unknown origin is disclosed as follows:

To each source contributing to the amount of unknown electricity is attributed the share of each in the Italian residual mix (for the quota purchased on the market/power exchange) and in the EUROSTAT EU28 energy mix (for the quota of imported electricity).

According to art.31.1 of the ministerial decree of 06th July 2012, renewable share in the supplier fuel mix has to be certified through GOs.

Calculation of the residual mix is done according to the following formulas:

1. The national residual mix is calculated by deducting bilateral contracts (namely imported energy communicated by suppliers to GSE) and GOs cancelled from the total net energy injected into the grid. The latter also takes into account net imports.
2. The mix associated to the electricity purchased by each supplier is calculated as follows:

$$\begin{aligned}
 \text{Mix purchased}_j \text{ [MWh]} &= L_j \\
 &= (\text{Total energy imported} \times \text{EUROSTAT EU28 energy mix}_j) \\
 &+ (\text{Total energy purchased in the market} \\
 &\times \text{National residual mix}_j) \text{ Mix purchased}_j \text{ [MWh]} = L_j \\
 &= (\text{Total energy imported} \times \text{EUROSTAT EU27 energy mix}_j) \\
 &+ (\text{Total energy purchased in the market} \\
 &\times \text{National residual mix}_j) \text{ Mix purchased}_j \text{ [MWh]} = L_j \\
 &= (\text{Total energy imported} \times \text{EUROSTAT EU27 energy mix}_j) \\
 &+ (\text{Total energy purchased in the market} \\
 &\times \text{National residual mix}_j) \text{ Mix purchased}_j \text{ [MWh]} = L_j \\
 &= (\text{Total energy imported} \times \text{EUROSTAT EU27 energy mix}_j) \\
 &+ (\text{Total energy purchased in the market} \\
 &\times \text{National residual mix}_j)
 \end{aligned}$$

Where  $j$  = RES, Coal, Natural Gas, Oil products, nuclear, others (which contains the generation of pumped-storage plants and the generation from derived gases and other fuels (for instance Coke Oven Gas, steel gas)).

Based on the above data, the supplier residual mix is calculated as follows:

$$\begin{aligned}
 \text{Supplier residual mix}_{RES} \text{ [MWh]} &= N_{RES} = L_{RES} + \text{cancelled GOs} \\
 \text{Supplier residual mix}_i \text{ [MWh]} &= N_i = L_i - \left( \frac{L_i}{\sum_i^{source} N_i} \times \text{cancelled GOs} \right)
 \end{aligned}$$

Where "i" states for all the  $j$  above except RES.

In terms of % the supplier residual mix is thus calculated as follows:

$$\text{Supplier residual mix}_j [\%] = \frac{N_j}{\sum_j^{\text{source}} N_j}$$

Renewable electricity production even supported through Feed in Tariff, Feed in Premium or green certificates can get GOs. Support is recorded on the certificate.

#### 1.1.4 Acceptance of GOs

Some criteria have been decided on by GSE, which follow the RE-DISS recommendation (BPR [21]). They include the fact that the exporting country should have a disclosure system in place, that they were issued based on Art. 15 of Directive 2009/28/EC or compatible national legislation, and that they meet the explicit requirements set in Art. 15, for example, regarding the information content of the GOs. GOs from other countries should be rejected if the country which has issued the GOs or the country which is exporting the GOs have not implemented appropriate measures which effectively avoid double counting of the attributes represented by the GOs. Such appropriate measures should ensure the exclusivity of the GOs for representing the attributes of the underlying electricity generation, implement clear rules for disclosure, establish a proper Residual Mix or equivalent measures, and ensure their actual use.

Furthermore, the appropriate measures should ensure that attributes of exported GOs are subtracted from the Residual Mix of the exporting country and cannot be used for disclosure at any time in the issuing or the exporting country by explicit mechanisms, unless the GOs are re-imported and cancelled there.

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

#### 1.2.1 RES-GO System

The RES directive was transposed into the Italian legislative framework through the legislative decree No. 28/2011. With regard to Guarantees of Origin it requests the publication of a ministerial decree to update the procedures for issuing, recognition and cancellation of GOs in accordance with dispositions of art.15 of RES directive. It also states that GOs issued according to the above procedures will be the only tool to be used by electricity suppliers for disclosure purposes.

On 6th July 2012 the Ministerial Decree introducing new support schemes for renewable energy sources other than PV was issued. Furthermore it implements article 34 of Legislative Decree No.28/2011, upholding the GSE as Competent Authority to issue Guarantees of Origin in Italy. It also asks to update rules on the composition of energy mix sold by electricity suppliers to their customers (art.31).

In particular, art.31(1) asks GSE to propose to the Ministry of Economic Development the procedure for qualifying RES power plants and for issuing and transfer GOs as well as for recognition and use of GOs (Art.31(2)). The procedure was approved by the Ministry of Economic Development on 25<sup>th</sup> January 2013.

Art.31(1) also reaffirms that the GO issued according to the procedure to be implemented by GSE will have the sole purpose of disclosure.

In December 2013 GSE successfully connected its registry to the AIB Hub and from then on has been using the Hub for exports and imports.

## 1.2.2 CHP-GO System

CHP-GO were implemented by legislative Decree from 8th February 2007, n.20 transposing Directive 2004/8/CE on the promotion of cogeneration, which was published in the official journal (GU) n°54 from 6th March 2007. CHP GO should be issued for net electricity fed into the grid. There is however no CHP- GO registry active yet. Interactions with RES-GO are not known.

## 1.2.3 GO Statistics

The activity of GSE for EECS certificates is the following: Table 3: GO activity for 2011, 2012, 2013 and 2014 production of RES electricity

	Issued	Exported	Transferred	Import	Cancelled	Expired
2011	0	6 082 593	7 830 240	3 865 125	18 591 512	0
2012	0	4 388 067	5 718 098	4 320 814	12 815 302	0
2013	13 936 018	408 579	6 248 711	871 957	3 202 298	0
2014	27 435 216	2 104 246	45 611 330	6 430 277	31 614 057	1 581 010

Source : AIB

## 1.3 RES-E Support Schemes

According to [www.res-legal.eu](http://www.res-legal.eu), main support schemes in Italy are the following:

- **Price regulation.** Renewable energy sources in general and photovoltaic energy in particular are promoted through several kinds of feed-in and premium tariffs. Photovoltaic installations are promoted through a guaranteed payment up to a certain envelope which has already been reached as far as Quinto Conto Energia is concerned. Other renewable technologies may be promoted under a tendering scheme, a feed-in or a premium model. Furthermore, Gestore dei Servizi Energetici (GSE) shall manage the sale of renewable energy on request, and interested parties can make use of net-metering.
- **Tax regulation mechanisms.** Photovoltaic and wind energy plants are eligible for a reduced VAT of 10 % (instead of 20 %). This tax benefit applies to enterprises, the professions and private individuals.

In addition to these national incentives, Italy provides for a series of regional programmes. The Osservatorio Politiche Energetico-Ambientali Regionali e Locali and FIRE give an overview of regional support schemes (e.g. "tetti fotovoltaici" programme or regional energy programmes).

Art.31(3) states that in relation to renewable power plants which:

- benefit from the "simplified purchase and resale arrangements "; or
- benefit from "net metering "; or
- benefit from feed-in tariffs,

GSE will issue and automatically transfer to its own account (free of charge) GOs related to the corresponding electricity produced and injected into the grid.

## 2 Proposals for Improvement of the Tracking System

### 2.1 Proposals regarding general regulation on tracking systems

To improve the tracking system in place the following BPRs should be applied:

- BPR [22]: Full disclosure schemes should be implemented, including the disclosure of CO<sub>2</sub> emissions and radioactive waste.
- BPR [23]: Other Reliable Tracking Systems (RTS) should be defined where appropriate based on criteria of added value, reliability and transparency
- BPR [24]: RTS can comprise, where applicable:
  - Homogeneous disclosure mixes for regulated market segments where no choice of supplier of different products exists,
  - Support systems whose interaction with disclosure requires a certain allocation of the attributes of supported generation (e.g. a pro-rata allocation to all consumers in a country where RES electricity is supported by a feed-in tariff),
  - Contract based tracking

## 2.2 Proposals regarding Disclosure

- BPR [26a]: The calculation of the Residual Mix should follow the methodology developed in the RE-DISS project.
- BPR [26b]: As part of this methodology, competent bodies from all countries in Europe should cooperate in order to adjust their Residual Mixes in reflection of cross-border transfers of physical energy, GO and RTS.
- BPR [27]: For purposes of this cross-border adjustment, competent bodies should use data provided by RE-DISS. They should also support the collection of input data for the related calculations by the RE-DISS project team.
- BPR [34]: The deadline for cancelling GO for purposes of disclosure in a given year X should be 31 March of year X+1 (see BPR 5b).
- BPR [35]: The timing of the calculation of the Residual Mix should be coordinated across Europe:
  - By 30 April X+1 all countries should determine their preliminary domestic Residual Mix and whether they have a surplus or deficit of attributes.
  - By 15 May X+1, the European Attribute Mix should be determined.
  - By 31 May X+1, the final national Residual Mixes should be published.
  - As of 1 July X+1 the disclosure figures relating to year X can be published by suppliers.

## 2.3 Proposals regarding GOs

- BPR [2]: If possible, issuing of GOs should be done directly after the end of each production period.
- 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 of the GO.

- BPR [8]: Reliable linkages should be established with countries which are not EECS members.
- BPR [10.2]: Verification mechanisms should be implemented for ongoing control of registered data (e.g. reaudits, random checks, etc...)
- BPR [11a]: The GO system should be extended beyond RES & cogeneration to all types of electricity generation, which should all be handled in one registry.
- 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
- BPR [11c]: Competent bodies should consider to make the use of GOs mandatory for all electricity supplied to final consumers.
- BPR [12.1]: All types of GO should be handled in one comprehensive registry system per country. (For an exception from this recommendation see the coexistence of national GO systems and EECS )
- BPR [15a, 15b]: This also applies to CHP plants which are using RES as the energy source: Only one GO should be issued per unit of electricity. This GO should combine the functionalities of a RES-GO and a cogeneration GO.
- 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...

## **2.4 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 implement adequate measures which avoid double counting, e.g. a proper determination of a Residual Mix for disclosure.

## **2.5 Further proposals regarding Disclosure**

- BPR [39a]: As required by Art. 3 (9) of the IEM Directive 2009/72/EC annual disclosure of the supplier mix on or with the bill should be mandatory. This should also include information on environmental impacts.
- 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.
- BPR [40]: There should be clear rules for the claims which suppliers of e.g. green power can make to- wards their consumers. There should be rules 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.
- BPR [43]: The following recommendations should be followed with respect to the relation of disclosure to cooperation mechanisms (Art 6 - 11 of Directive 1009/28/EC):
  - a) If EU MS or MS or any other country agree on Joint Projects, such agreements should also clarify the allocation of attributes (via GO, RTS or Residual Mix) issued from the respective power plants
  - b) b) If EU MS agree on Joint Support Schemes, such agreements should also clarify the allocation of attributes (via GO, RTS or Residual Mix) issued from the power plants supported under these schemes
- BPR [44]: Suppliers should follow the RE-DISS methodology for the calculations of their disclosure figures.

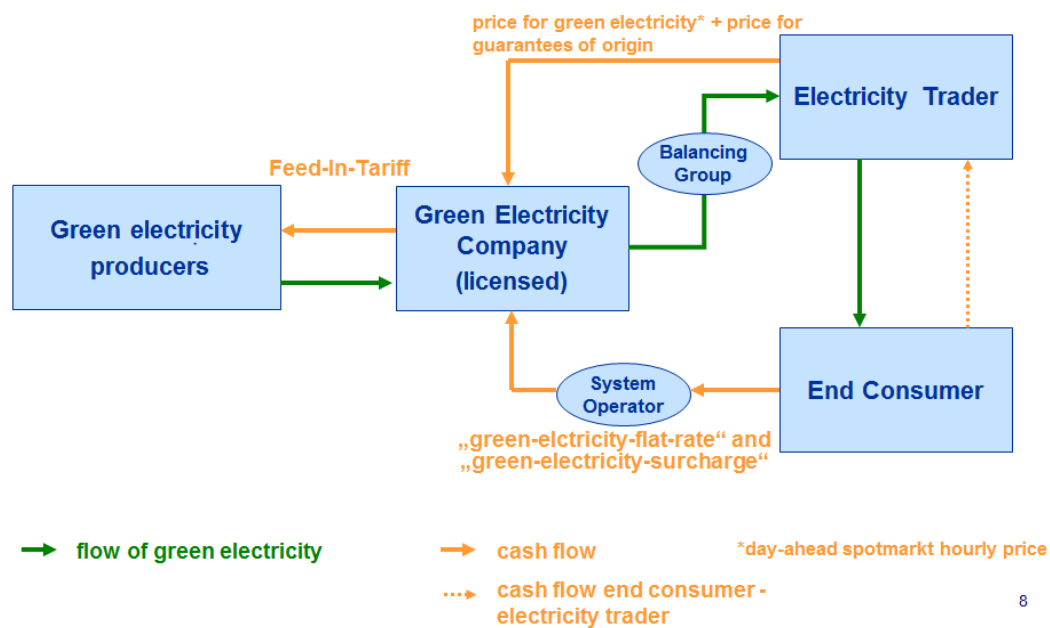
## 2.6 Matrix of disclosure related problems and country-specific proposals

Problem	Country-specific proposal
Possible double counting in different explicit tracking instruments	BPRs: [10.2], [11a], [12.1], [15a], [21], [23], [24],
Double counting of attributes in implicit tracking mechanisms	BPRs: [11a] [21], [23], [24], [26a], [26b], [27], [43], [44]
Double counting within individual supplier's portfolio	BPRs: [39b], [42]
Loss of disclosure information	BPRs: [11a], [15b], [19], [39a]
Intransparency for consumers	BPRs: [11a], [11b], [11c], [23], [39a], [39b], [40], [41], [42],
Leakage of attributes and/or arbitrage	BPRs: [2], [19], [34], [35],
Unintended market barriers	BPRs: [4], [8], [11b],

Problem	Country-specific proposal
	[11c], [21]

Example for a Figure:

Figure 1: Schematic diagram of the renewable electricity support scheme under the Green Electricity Act 2012



**Disclaimer:**

The sole responsibility for the content of this document lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EACI nor the European Commission is responsible for any use that may be made of the information contained therein.