

Last updated: date (12/08/2014)

1 Implementation of Tracking Systems

1.1 Electricity Disclosure

Obligation to disclose was transposed through the Decree-Law No.73 of 18th June 2007 that was transformed into a law on 3rd 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 25th 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 in Italy.

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 GO or a national residual mix which is calculated by GSE. Article 31 of the decree from the 06th July 2012 stipulated new provisions concerning GO and disclosure. It stipulated that only GO 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 9th August 2011 concerning green products. It states that disclosure of green electricity sold under contracts signed from 1st October 2011 onwards have to be based exclusively on GO. Disclosure process follows the following steps and schedule:

- Until 31st of March, producers communicate production data to GSE as well as issued GO that they have transferred to other market players.
- By 31st March suppliers communicate their data on sales and imports to GSE.
- By 30th April GSE calculates the national residual mix
- GSE calculates suppliers' own supply mix using the figures communicated to GSE and by 30th 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>

1.1.2 Environmental Information

Neither radioactive waste nor CO₂ 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 EU27 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 GO.

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 GO 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:

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

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 GO. Support is recorded on the certificate.

RECS certificates are not accounted for in the calculation of residual mix. If they are exported, they are not deducted from the national residual mix.

1.1.4 Acceptance of GO

No specific criteria of recognition are known.

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 GO in accordance with dispositions of art.15 of RES directive. It also states that GO 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 GO as well as for recognition and use of GO (Art.31(2)). The procedure was approved by the Ministry of Economic Development on 25th 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 EECS

GSE is a founding member of the Association of Issuing Bodies (AIB). GSE has connected to the AIB Hub for the international transfer of GO in December 2013. EECS RECS certificates can now only be issued in combination with GO and the ICS RECS certificates will expire on 31/12/2015.

1.2.4 RECs Statistics

The activity of GSE for EECS certificates is the following:

Table 3: GO activity for 2011, 2012 and 2013 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

Source : AIB

1.3 RES-E Support Schemes

According to 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. 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
- grant feed-in tariffs,

GSE will issue and automatically transfer to its own account (free of charge) GO 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 CO2 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

2.2 Proposals regarding Disclosure

Italy should coordinate more with other EU Member States:

- BPR [26a-b]: The calculation of the residual mix should follow the methodology developed in the RE-DISS project. 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 [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 GO

Italy should implement CHP GO in practice and apply the following BPRs:

- 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]: In case that national GO systems are established outside of EECS, then EECS should at least be used for transfers between registries. (BPR [7]). Reliable linkages should be established with countries which are not EECS members. (BPR [8]).
- BPR [11]: The GO system should be extended beyond RES & cogeneration to all types of electricity generation, which should all be handled in one registry.
- BPR [12]: 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 [16]: In the medium to longer term, GO should be the only “tracking certificate” used. Any other tracking systems of a similar purpose and function as GO should be closely coordinated with GO and eventually converted to GO.
- 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.
- BPR [18]: Green power quality labels should use GO as the unique tracking mechanism.

2.4 Proposals regarding Acceptance of GO

The following BPRs should lead to further reflexion on the criteria on the basis of which to refuse GO from other Member States or EFTA countries.

- BPR [20]: Any rejection should only relate to the actual use of cancelled GO for disclosure purposes in the respective country and should not restrict the transfers of GO between the registries of different countries. .
- 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

Disclosure could further be improved by the implementation of the following BPRs:

- BPR [38]: All electricity products offered by suppliers with claims regarding the origin of the energy (e.g. green or low-carbon power) should be based exclusively on cancelled GO. No other tracking systems should be allowed, with the exception of mechanisms defined by law, e.g. a pro-rata allocation of generation attributes to all consumers which is related to a support scheme (see BPR [22]).
- 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 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. 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.

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], [15a], [15b], [16], [17], [18], [23], [38]
Double counting of attributes in implicit tracking mechanisms	BPRs: [11], [23], [26a], [26b], [27], [37],[38]
Double counting within individual supplier's portfolio	BPRs: [39], [42]
Loss of disclosure information	BPRs: [11], [15b], [22]
Intransparency for consumers	BPRs: [11], [23], [39], [40], [41], [42],
Leakage of attributes and/or arbitrage	BPRs: [28], [35]
Unintended market barriers	BPRs: [4], [8], [20]

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