

Last updated: 12/08/2014, information June 2014

## 1 Implementation of Tracking Systems

### 1.1 Electricity Disclosure

Disclosure was established by article 110 bis that was added in Real Decreto 1955/2000 on the 23/12/2005 and came into force the next day. This article introduced the obligation from Directive 2003/54 on suppliers to disclose their fuel mix of the previous year as well as the environmental impact in terms of CO2 emissions and radioactive waste. Sources for information on tracked attributes were listed as organised bilateral contract, purchase on markets or imports of physical electricity. On 12/05/2007, article 110 bis was modified to include the obligation to disclose the national supply mix next to the suppliers' mix. It was announced that CNMC would published the detailed regulations for disclosure, which was done with Circular 1/2008, de 7 de febrero

Article 110 bis was completed also by provision 12 of article 1 of Order ITC /2914/2011 from the 27<sup>th</sup> October 2011 introducing the obligation to take GO into account when calculating the suppliers mix (which was already the case in the procedures for calculations explained in Circular 1/2008). It also imposes on the suppliers to communicate to the clients the amount of GO that have been cancelled on their account for the previous year.

CNE, the Spanish regulator, is in charged of the system. CNE's name changed from October 2013 onwards for Comision Nacional de los Mercados y la Competencia (CNMC).

Regulations of Circular 1/2008 from 7<sup>th</sup> February 2008 describe the procedure used to calculate information to disclose the supply mix of electricity.

Attributes of disclosure are the following :

- Renewable energies
- High efficiency cogeneration
- Cogeneration
- Natural gas combined cycle
- Coal
- Fuel / gas
- Nuclear
- Others

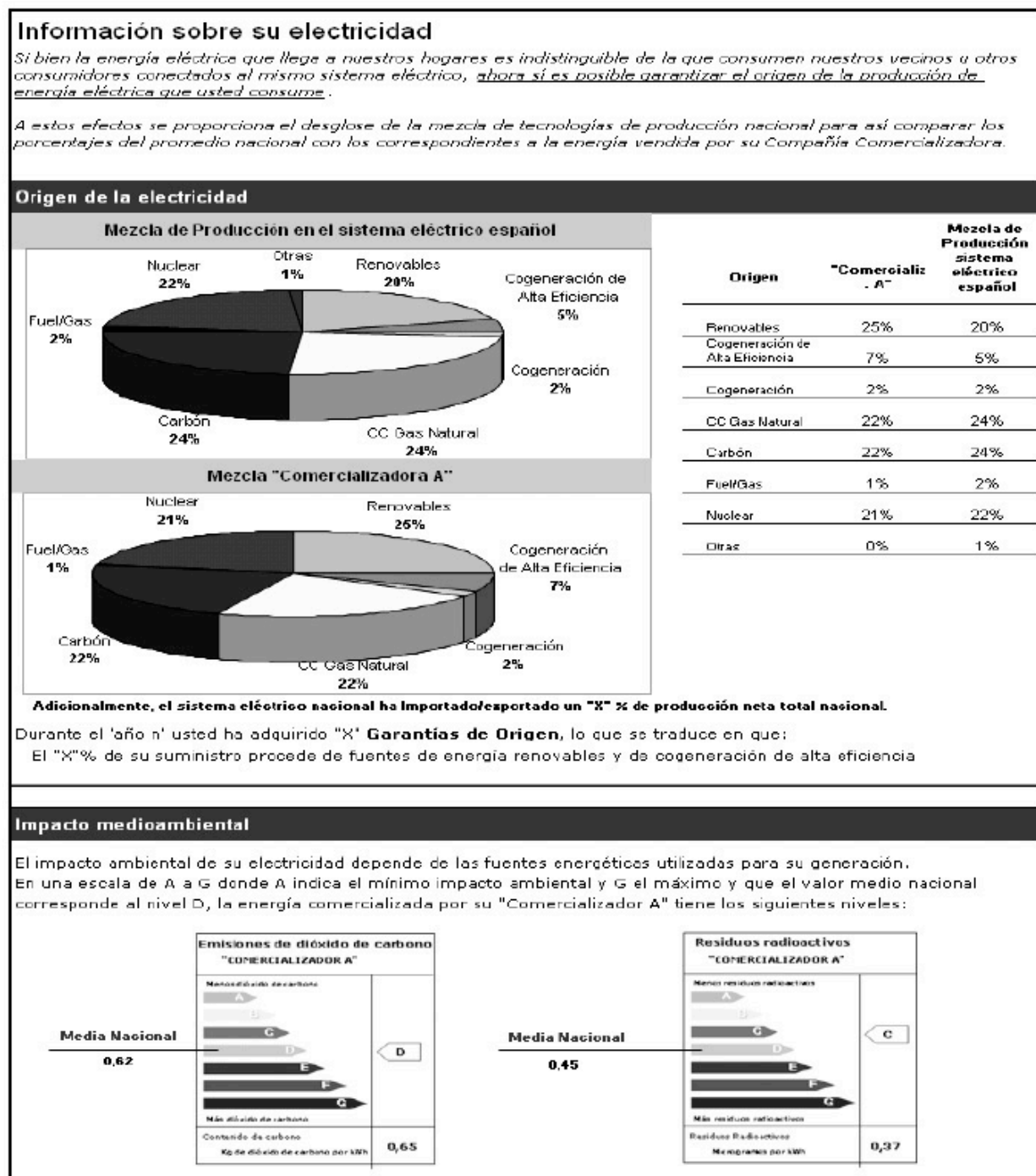
Disclosure is done on the basis of the calendar year. Information on year X should be displayed by suppliers from 1<sup>st</sup> April of year X+1 onwards and until 31<sup>st</sup> March of year X+2.

Disclosure calculations are centralised by CNMC, even in relation to the suppliers' mix. CNMC receives information from the TSO on the national production before the first of March in year X+1. All suppliers have to cancel their GO before 31<sup>st</sup> of March of year X+1 for disclosure of year X. CNMC calculates the different mixes and uploads them on their website from 1<sup>st</sup> April of year X+1.

The format for disclosure is defined by law (Circular 1/2008 from 7<sup>th</sup> February) and is the following :



Graph 1: Disclosure template



### 1.1.1 Disclosure Figures

Disclosure figures are available on CNMC's website :

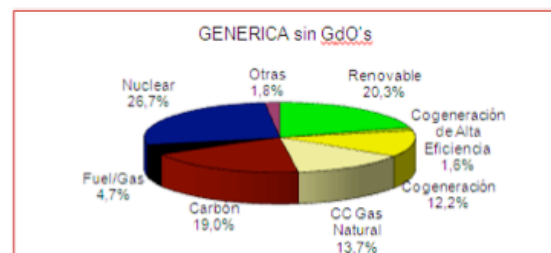
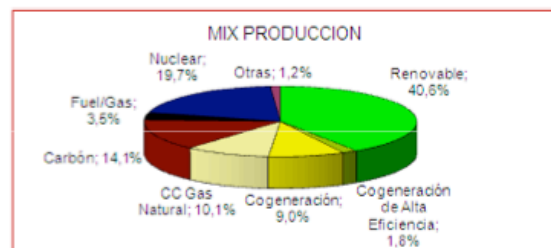
[http://gdo.CNMC.es/CNMC/resumenGdo.do?informe=garantias\\_etiquetado\\_electricidad](http://gdo.CNMC.es/CNMC/resumenGdo.do?informe=garantias_etiquetado_electricidad)

Figures are available for disclosure years from 2007 to 2013.

Table 2: Fuel Mix Disclosure Figures, as communicated by CNMC for 2013 (production mix and residual mix)

**AÑO 2013 (1)**

MIX ENERGIA	MIX PRODUCCIÓN	MIX COMERCIALIZADORA GENÉRICA
	%	%
Renovables	40,6%	20,3%
Cogeneración de Alta Eficiencia	1,8%	1,6%
Cogeneración	9,0%	12,2%
CC Gas Natural	10,1%	13,7%
Carbón	14,1%	19,0%
Fuel/Gas	3,5%	4,7%
Nuclear	19,7%	26,7%
Otras	1,2%	1,8%
<b>EMISIONES DE DIOXIDO DE CARBONO</b>		
kg de dióxido de carbono por kWh	0,27 D	0,36 E
<b>RESIDUOS RADIATIVOS AA</b>		
Miligramos por kWh	0,56 D	0,75 F



(1) Entre las empresas comercializadoras sin GdO's, además de otras que no han adquirido garantías de origen, se encuentran las siguientes Comercializadoras de último recurso (CUR): 'ENDESA ENERGIA XXI, S.L.U.', 'IBERDROLA COMERCIALIZACIÓN DE ÚLTIMO RECURSO, S.A.U.', 'E.ON COMERCIALIZADORA DE ÚLTIMO RECURSO, S.L.', 'HC NATURGAS COMERCIALIZADORA DE ÚLTIMO RECURSO, S.A.' y 'GAS NATURAL SUR SDG, S.A.

Source: CNMC

### 1.1.2 Environmental Information

Environmental parameters are disclosed in kg per kWh for CO<sub>2</sub> emissions and in mg per kWh for radioactive waste. Environmental information is disclosed at the same time as the supplier's mix. For 2013, CO<sub>2</sub> emissions amount to 270g/kWh for the production mix and to 360g/kWh.

### 1.1.3 Suppliers Fuel-Mix Calculations

CNMC is in charge of the calculation of the supply mix of each supplier. The basic principle of the calculation is that CNMC calculates a national supplier mix from the national production mix after subtracting all issued GO for the year considered. This mix is the one that has to be used by all suppliers that haven't done any operations with GO issued for the same year. Suppliers which have either issued, imported or cancelled GO get a specific mix calculated by CNMC, which is based on their GO and on the national mix for the volume of attributes not covered by GO.

The calculation goes stepwise. First the TSO gives information on national production mix, this is then corrected by imports and exports of GO. The mix thus obtained is either expanded or reduced to fit national consumption of electricity. Then to obtain the national supply mix, CNMC subtracts all GO issued for the year considered. The balance of physical exports and imports is disclosed as such without being counted in total production mix. To calculate a supplier's supply mix, CNMC takes into account GO redeemed by the supplier before 31<sup>st</sup> March or that are sitting on the account of this supplier by the 31<sup>st</sup> March and applies national residual mix to the volumes of electricity sold for which no GO are available.

### 1.1.4 Acceptance of GO

When importing GO, a Supplier must submit a request, which includes several documents, including Proof of the existence and characteristics of guarantees of origin issued in another Member State of the European Union by an issuing authority designated by that State. No other criteria are known to be applied for acceptance.

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

### 1.2.1 RES-GO System

Order ITC/1522/2007, which was passed on 24<sup>th</sup> of May 2007 establishes the regulation for RE-GO and CHP GO. It was completed by a circular, number 2/2007 from 29<sup>th</sup> November 2007, which establishes the procedures for issuing RE-GO and CHP GO. Order ITC/1522/2007 has been modified by Order ITC/2914/2011 from 27<sup>th</sup> October in order to transpose the provision of Directive 2009/28, article 15.

CNMC is the issuing body and is responsible for maintaining the common GO and HE CHP-GO register. GO are designed as electronic documents and relate to monthly production (two provisions introduced by Order ITC/2914/2011. Information that GO will contain is the following :

- Identification
- Situation
- Commissioning date
- Type of energy
- Capacity of production device
- Production period
- Support
- And any information detailed if deemed necessary by CNMC by a further circular.

It has to be stated that GO are in MWh with three decimals. So 1 GO does not equal 1 MWh.

A registry is established, that is not based on the EECS system, but manages transfers, exports and redemptions. Imports of GO are theoretically accepted. In practice, no imports have taken place.

Market actors who wish to receive a GO have to make the request before the 31<sup>st</sup> January following the year in question. CNMC has to issue them before 28<sup>th</sup> February. Then market players can only redeem them until 31<sup>st</sup> March. Afterwards, active GO are expired when they reach their twelve-month lifetime.

According to CNMC, RE-GO issued for 2011 production represent 23,6% of national production of electricity and 54,5% of the Spanish production of electricity from RES and cogeneration.

GO can be issued for supported production. Producers that get an additional benefit from the sales of supported GO have an obligation to invest part of the benefits into environmental actions.

### 1.2.2 CHP-GO System

Cf above

### 1.2.3 EECS

GO are not issued according to the EECS standard in Spain, but there is an EECS issuing body for EECS RECS certificates. The IB is the Green Certificate Company that has been chosen by the Spanish team of RECS International.

Table 2: EECS RECS activity in 2011, 2012, 2013 in Spain

Year	Issued	Exported	Cancelled
2011	2 888 978	1 637 513	1 108 593
2012	786 854	1 715 138	916 599
2013	1 798 712	398 197	0

Source : AIB

Activity is diminishing in 2014 as the RECS issuing body, GCC, is planning to resign end of the year.

### 1.2.4 RECs Statistics

58 TWh of GO were issued for the Spanish production in 2011.

Table 3: GO activity for 2011, 2012 and 2013 production of RES electricity

	Issued	Exported	Transferred	Cancelled	Expired
2011	58 901	1 676	54 829	10 540	2 396
2012	66 225	643	53 552	13 627	NA
2013	79 995	280	69 416	20 579	NA

Source : CNMC

The breakdown of issued GO is the following :

Table 4: Issuing and exports of GO for 2013 production of RES electricity according to technology

	Issued	Exported
Wind power	42 124	72
Small hydro (<10 MW)	2 245	0
PV	3 494	1
CSP	1 400	0
Small hydro (> 10 MW)	1 772	0
Biomass	484	0
<b>Total Special regime (supported production)</b>	<b>51 519</b>	<b>1</b>
Large Hydro	23 292	279
<b>Total renewable</b>	<b>74 810</b>	<b>280</b>
<b>HE Cogeneration</b>	<b>1 844</b>	<b>0</b>
<b>Total GO</b>	<b>79 995</b>	<b>280</b>

Source : CNMC

Wind power is the first source of RES-E as far as issuing of GO is concerned, with more than 50% of issued GO.. Large hydro represents 29%of total RE-GO issuing for 2013.

## 1.3 RES-E Support Schemes

According to the RES LEGAL database ([www.res-legal.eu](http://www.res-legal.eu)), “in Spain, the generation of electricity from renewable sources is mainly promoted through a price regulation system. Plant operators may choose between two options: a guaranteed feed-in tariff and a guaranteed bonus (premium) paid on top of the electricity price achieved on the wholesale market. The price regulation system is currently phased out through Real Decreto-ley 9/2013. The reason for this suspension is traced in the preamble of RDL 1/2012. A different regulation that had previously suspended the support schemes, before their final phasing out: RD 6/2009 established that by 2013 a part of the consumers’ electricity bill (the “peajes the acceso”) should be able to fully balance the costs incurred by the State arising from the support scheme. It was deemed, however, that the situation would not have allowed this goal to be reached by 2013. For this reason, and together with the high growth of RES-E in the past years, even beyond the set goals, all support schemes for RES-E were blocked. “

## 2 Proposals for Improvement of the Tracking System

The Spanish framework for disclosure is already quite advanced. Main recommendations deal with the fact that the Spanish system is not taking into account the European framework : account for imports of electricity in the RM calculation, allow for imports of GO, collaborate with Portugal for the treatment of purchases on the joint market...

Main recommendations regarding GO deal with the connection of Spain to the EECS system.

## 2.1 Proposals regarding Disclosure

The Spanish system could be improved by the implementation of the following BPRs:

- 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 RM 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 [28]: As a default, the Residual Mix should be calculated on a national level. However, in case that electricity markets of several countries are closely integrated (e.g. in the Nordic region), a regional approach to the Residual Mix may be taken. This should only be done after an agreement has been concluded amongst all countries in this region which ensures a coordinated usage of the regional Residual Mix.
- 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.

## 2.2 Proposals regarding GO

- BPR [3b]: GO which have reached this lifetime should be collected in the residual mix.
- 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 [5a,5b]: Cancellations of GO relating to production periods in a given year X which take place until a given deadline in year X+1 should count for disclosure in year X. Later cancellations should count for disclosure in year X+1. (In case that disclosure periods differ from the calendar year (see item [31]), the deadline should be defined accordingly.) Deadline is set on 31 March X+1 (BPR [5a, 5b]).
- BPR [6]: The same allocation rule should apply for expired GO (see item [3]): The date of expiry thus determines the disclosure period for which information from expired GO will be used.
- BPR [7,8]: The implementation of GO in all countries in Europe should be based on the European Energy Certificate System (EECS) operated by the Association of Issuing Bodies (AIB). 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 [9]: So-called ex-domain cancellations of GO, where a GO is cancelled in one registry and a proof of cancellation is then transferred to another country in order to be used there for disclosure purposes, should only be used if there is no possibility for a secure electronic transfer and if there is an agreement on such ex-domain cancellations between the competent bodies involved. Statistical information on all ex-domain cancellations should be made available in order to support Residual Mix calculations.

- BPR [10]: GO should generally be issued only for the net generation of a power plant, i.e. gross generation minus the consumption of all auxiliaries related to the process of power production. For hydro power plants involving pumped storage this means that GO should be issued only for the net generation which can be attributed to natural inflow into the reservoir.
- 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 [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 GO 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 GO themselves, a correction should be implemented in the disclosure scheme which compensates for any “double disclosure” of energy consumed...

### 2.3 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.

### 2.4 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 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. 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.

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

Problem	Country-specific proposal
Possible double counting in different explicit tracking instruments	BPRs: [7a], [7b], [8] [9], [10] [11], [14b], [15a], [15b]
Double counting of attributes in implicit tracking mechanisms	BPRs: [5a], [5b], [6], [9], [11], [21], [25], [26a], [26b], [27], [28]
Double counting within individual supplier's portfolio	BPRs: [39], [42]
Loss of disclosure information	BPRs: [3b], [11], [15b], [19]
Intransparency for consumers	BPRs: [11], [39], [40], [41], [42],
Leakage of attributes and/or arbitrage	BPRs: [5a], [5b], [6], [9], [19], [28], [34], [35],
Unintended market barriers	BPRs: [4], [7a], [7b], [8], [9], [20]



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