Commission for Energy Regulation
An Coimisiún um Rialáil Fuinnimh

Utility Regulator
ELECTRICITY GAS WATER

Single Electricity Market

Fuel-Mix Disclosure in the Single Electricity Market: Calculation Methodology Decision Paper

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1 Introduction

1.1 Background

Fuel mix disclosure is required by Article 3(6) of Directive 2003/54/EC, replaced by Article 3(9) of Directive 2009/72/EC. The transposing legislation in Ireland[1] requires the Commission for Energy Regulation ("the CER") to ensure suppliers provide reliable fuel mix information on all bills and promotional materials issued to customers. In Northern Ireland the transposing legislation[2] requires that licences issued by the Utility Regulator ("the UR") include a condition requiring compliance with Article 3(6).

In April of 2009 the SEM Committee published the decision paper '*High Level Methodology for the Calculation of Fuel Mix Disclosure in the SEM'* (SEM/09/033). That paper set out the SEM Committee's intention to use a certificate based methodology for fuel mix disclosure in the SEM. However, at the time of publication of that paper, Directive 2009/28/EC (the "Renewables Directive") had not yet been finalised. As such, the detail of the methodology could not be set out in the absence of certainty regarding both the European legislation and the transposition of that legislation by the Oireachtas and the Northern Ireland Assembly. As Article 15 of the Renewables Directive has now been published and transposed in both jurisdictions, this paper outlines how the enduring disclosure methodology will operate.

In the absence of the legislative framework required to implement the enduring methodology interim arrangements were put in place. The current methodology for fuel mix disclosure in the SEM is set out in the decision paper '*Interim Arrangements: Fuel-Mix Disclosure in the SEM'* (SEM/09/081). This is now replaced by the methodology outlined in this decision paper.

Please note that the CER has published a decision paper (CER/11/824) which outlines arrangements for the operation of a Guarantee of Origin ("GO") system in Ireland. GOs in Northern Ireland are administered by Ofgem on behalf of the UR, in accordance with the Renewables Obligation (Amendment Order) (Northern Ireland) 2010.

1.2 Related Documents

- CER/11/139 Consultation on the Supervisory Framework for Guarantees of Origin
- CER/11/824 Decision on the Supervisory Framework for Guarantees of Origin.

[1] Regulation 25 of SI Number 60 of 2005
[2] Article 11A(9)(c) of the Electricity (NI) Order 1992 as amended by Article 14 of the Gas and Electricity (Internal Markets) Regulations (Northern Ireland) 2011.

- SEM/11/058 Fuel Mix Disclosure in the SEM: Calculation Methodology Consultation Paper.
- Interim Arrangements for Fuel-Mix Disclosure in the SEM (SEM/09/081)
- High Level Methodology for the Calculation of Fuel Mix Disclosure in the SEM (SEM/09/033)
- Renewables and CHP Register User Guide, Ofgem guidelines
- Renewables Obligation (Amendment) Order (Northern Ireland) 2010
- Statutory Instrument 147 of 2011
- Directive 2009/28/EC

1.3 Legislative Background

Article 3(9) of the Internal Market in Electricity Directive (Directive 2009/72/EC) (which replaces Article 3(6) of Directive 2003/54/EC) requires Member States to ensure that the contribution of each energy source to the overall fuel-mix of the supplier over the preceding year and related environmental information are provided in or with bills sent by suppliers to final customers. This Article also stipulates that regulators (or another competent authority) must take the necessary steps to ensure that the above information provided by suppliers to customers is reliable.

Article 3(6) of Directive 2003/54/EC has been transposed into national legislation in Ireland by Regulation 25 of S.I. No. 60 of 2005[3]. This requires the CER to ensure that all suppliers provide, on or in bills and promotional materials, reliable information regarding the contribution of each energy source to their overall fuel-mix and related environmental impact information over the preceding year.

Article 3(9) of Directive 2009/72/EC was transposed in Northern Ireland under Article 14 of the Gas and Electricity (Internal Markets) Regulations (Northern Ireland) 2011, which inserts Article 11A(9)(c) of the Electricity (NI) Order 1992 under which electricity licences, issued by the UR, shall include conditions to ensure that consumers of electricity have access to the information required by Article 3(9) of the Directive.

It is understood that transposition of Directive 2009/72/EC is progressing in Ireland but there is unlikely to be any material impact on the legislative framework regarding fuel mix disclosure. The SEM Committee has determined that the disclosure of information to customers by suppliers in the all-Island market is a SEM matter.

Directive 2001/77/EC introduced the concept of GOs; several Member States have already commenced using these for fuel mix disclosure purposes. The Renewables Directive[4] replaces Directive 2001/77/EC. Article 15 of the Renewables Directive further develops GOs which were introduced in Directive 2001/77/EC. The

[3] S.I. 60 of 2005 European Communities (Internal Market in Electricity) Regulations 2005
[4] Transposed by the Renewables Obligation (Amendment) Order (Northern Ireland) 2010 in Northern Ireland and by SI 147 of 2011 in Ireland.

Renewables Directive makes several clarifications regarding GOs which should be noted. Firstly, there is no connection between the calculation of national targets and fuel mix disclosure. Secondly, the sole purpose of GOs is fuel mix disclosure. Thirdly, the GO does not need to follow the physical flow of the electricity to which it relates. Lastly, GOs have a lifetime of twelve months and are fully transferable throughout Europe[5].

1.4 Structure of this Paper

This paper is laid out as follows:

- Section 2 provides the key responses received to the Consultation on Fuel Mix Disclosure in the SEM: Calculation Methodology Consultation Paper (SEM/11/058). The SEM Committee's responses to the comments received are also outlined.

- Section 3 provides a summary of the key decisions outlined by the SEM Committee in respect of the Fuel Mix Disclosure Methodology. Note that section 3 is a summary of key decisions and should be read in conjunction with the rest of the paper[6].

- Section 4 outlines any relevant next steps.

- The appendices contain a detailed description of the Fuel Mix Disclosure Methodology, the presentation format to be used by suppliers, an overview of the Northern Irish administrative arrangements for guarantees of origin and illustrative examples.

1.5 Terms Used

Administrative Body	means the body designated to supervise the issuance, transfer and cancellation of GOs;
Calculating Body	means the body which undertakes the fuel mix disclosure calculation;
cancel	means the act, carried out by the Administrative Body, of putting the certificate beyond use or transfer;
Disclosure Period	The calendar year, 1st January to 31st December.

[5] "Europe" in this paper refers to the EU27 plus those non-EU European countries which have implemented GOs to the standard required by Article 15 of the Renewables Directive. The term "Member State" is used for convenience but should be read in the same context.
[6] A more detailed description of the Fuel Mix Disclosure Methodology is provided in the Appendix

expiry	means the period immediately after the life of the GO has passed, this is 12-months in Ireland and 16-months in Northern Ireland.
Fuel Mix Disclosure Methodology	Means the methodology and decisions outlined in this decision paper with regard to calculating the calculation of the all-Island fuel mix.
Guarantee of Origin	as defined in Directive 2009/28/EC means a document (electronic or otherwise) which has the sole purpose of proving to final customers that a given share/quantity of electricity was produced from renewable sources;
Interim Arrangements	means the arrangements, as outlined in SEM/09/081, applied for the Interim Period;
Interim Period	means the period in which the arrangements outlined in SEM/09/081 will apply;
Residual Mix	means the average fuel-mix of the island excluding energy attributed to suppliers in accordance with this decision;

2 Summary of Responses and the SEM Committee's Decisions

In this section an overview of the responses to the main issues in the Consultation Paper is given. The overview highlights the key issues outlined in the Consultation Paper as commented on by respondents and gives the SEM Committee's decisions (in italics) in respect of the relevant matters raised.

The following parties responded to the consultation:

- SEMO
- Power NI
- Airtricity Ltd
- Bord Gáis Energy Ltd
- ESB Energy International
- Energia

The responses to the Consultation Paper are published alongside this decision paper, except where noted as confidential by the respondent.

2.1 Transfer of Attributes and GOs

The transfer of the attributes of generation to suppliers, including allowing thermal generation to nominate a supplier, was broadly welcomed by respondents. One respondent noted that the detachment of PSO supported attributes should be on the basis of elective action taken by owners/holders of certified attributes rather than such detachment occurring by default.

A respondent noted that as proposed in the Consultation Paper, generators would not be under an obligation to apply for those GOs to which they are entitled. The respondent believed this is a mistake because there will be no motivation on a generator who has signed a PPA to convey the benefit of the GOs that may materialise to their supplier.

Another respondent noted that the proposal to attribute generation creates a situation where vertically integrated organisations declare their generated production to affiliated suppliers at the behest of group companies. The respondent considered that this leaves non-vertically integrated suppliers exposed to residual pool volumes. The respondent noted that given the administrative burden there is no incentive for independent generators to declare in favour of a supplier and therefore this proposal discriminates against non-vertically integrated suppliers - contrary to the objectives of the Trading and Settlement Code.

The SEM Committee considers it in keeping with the objectives of disclosure that there be some means of suppliers differentiating their fuel-mix in relation to the generation attributes on the island not just renewable generation attributes covered by a GO. It is considered that this is consistent with the SEM Committee's objectives in particular allowing customers to make meaningful comparison between suppliers.

The approach that must be taken in relation to energy covered by a GO, i.e. that the movement of the attribute is considered separately to the movement of the physical electricity, is also considered appropriate in the context of thermal generator assignments.

The SEM Committee considers it appropriate that where a supplier is to be assigned particular thermal generation attributes or where a generator transfers its GO to that supplier that the generator informs the relevant body of its wish to nominate/transfer to the relevant supplier. In respect of generator declarations for non renewable fuel there is no legal provision or certificate framework in place. The SEM Committee does not consider it appropriate that it should require generators to declare attributes to suppliers in this fashion, but wishes to provide for them to do so if they so wish. The SEM Committee does not consider it appropriate that the Calculating Body shall conduct any review or otherwise of commercial arrangements to determine the appropriateness of generation declarations. Finally, the Calculating Body may not in the first instance have all the required information for assigning the GOs or generator declaration, therefore the SEM Committee considers the onus to provide that information and register appropriately with the Calculating Body rests with the participant and not the Calculating Body. The treatment of GOs and requirements on generators and suppliers in that regard is a jurisdictional matter[7]*.*

The SEM Committee acknowledges that the approach outlined in this decision facilitates vertically integrated companies to declare generation production for associated supplier companies. It was noted by the respondent that this leaves non-affiliated suppliers exposed to residual pool mix. The SEM Committee does not consider that this is the case as such suppliers are free to obtain GOs and generator declarations from within Ireland and from relevant parties in other Member States, subject to those GOs and generator declarations being accepted by the Calculating Body. The SEM Committee does not consider that there is no incentive for an independent generator to declare for a supplier, if there is a benefit to a supplier of receiving a generator declaration, an incentive can be offered by a supplier to a generator for the generator declaration.

2.2 Lifespan of GOs

The SEMO highlighted a concern with regard to the use of GOs issued by OFGEM in subsequent years. The SEMO noted that OFGEM allows a sixteen month lifespan for its GOs, highlighting the SEMOs concern that accepting GOs for NI generation which are older than twelve months, but within the sixteen months, would be contrary to the EU Directive which requires that GOs have a twelve month lifespan only.

The SEM Committee does not consider that there is a problem here. The GO will always have been active during the relevant disclosure period in question, which is

[7] See Supervisory Framework for Guarantees of Origin CER/11/824 for the treatment of GOs in Ireland

the criteria for accepting a GO for use in the Fuel Mix Disclosure Methodology outlined in this decision.

2.3 Green Star Rating in Northern Ireland

Those respondents who commented on the green star rating did not agree with the proposal, particularly given the level of information provided. A number of respondents sought clarity on the green star rating proposed by the Utility Regulator in relation to suppliers licensed in Northern Ireland. One respondent noted that in respect of the green star rating, simplification of presentation would be obtained at the expense of clarity. Another respondent noted that there is insufficient information provided in the consultation paper to understand how the green star rating is intended to work and what exactly its intended purpose is. The respondent noted an immediate concern that a star-rating system would be arbitrary, misleading, and would invariably convey a much broader and misplaced perception of quality than intended.

The Utility Regulator has confirmed that the green star system has not been finalised yet; when working out any detail on how such a system could be established the responses to this consultation will be taken into consideration. Any future considerations regarding a possible green star system will be progressed by the Utility Regulator.

2.4 Transparency of Fuel Mix Disclosure

A number of respondents raised concerns regarding how the proposals in the paper, if implemented, could create a false sense of transparency or make it difficult for customers to ascertain the greenness of the electricity supplied to them. It was noted that the methodology could potentially contribute to confusing the end customer, rather than help the end customer make informed choices about suppliers or allow meaningful comparison between suppliers. The original objectives of the EU Commission in this regard were also questioned. A respondent commented that within the pool system, electricity cannot be fairly or meaningfully allocated to any particular supplier.

One respondent quoted if, for example, a consumer could purchase a product that is disclosed as 100% green but simultaneously is priced with a LEC (Levy Exemption Certificate) cost included. It was noted that the same unit of electricity can have a LEC, a ROC, and a GO applied to it, and that the same unit of renewable generation could therefore potentially be claimed by three suppliers.

The SEM Committee is keen to ensure the original objectives of fuel mix disclosure set out in legislation are met. These included the need to ensure compliance with relevant legislation, to facilitate ease of comparison by customers on the Island of

fuel mix information provided by suppliers, and as appropriate to enable consumers make informed choices about suppliers based on disclosure information provided to them.

The SEM Committee notes the GOs are required by EU law, as subsequently transposed into jurisdictional legislation. The transposing legislation in Ireland[8] requires the Commission for Energy Regulation ("the CER") to ensure suppliers provide reliable fuel mix information on all bills and promotional materials issued to customers. In Northern Ireland the transposing legislation requires that licences issued by the Utility Regulator ("the UR") include a condition requiring compliance with Article 3(6).

The SEM Committee also notes that the Renewables Directive expressly provides that a GO shall have 'no function in terms of a Member State's compliance with Article 3', where Article 3 refers national renewable targets and use of energy from renewable sources. The detachment of GOs from physical energy flows is therefore envisaged in the Renewables Directive. The sole function of a GO is to prove to final customers that a given share or quantity of energy was produced from renewable sources. This is the nature of fuel mix disclosure and the SEM Committee considers it does allow for meaningful comparison between suppliers in the context of the relevant EU requirements.

The SEM Committee also considers that the use of generation attributes means that generators are afforded the chance to apportion the attributes associated with their generation to suppliers of their choice and that this is consistent with the approach for GOs – that the movement of the attribute is considered separately to the movement of the physical electricity. It is considered this is consistent with the SEM Committee's objectives, in particular in allowing customers make meaningful comparisons between suppliers.

Of the instruments noted, only GOs are used to convey information to customers about fuel mix. Only one GO will be issued per MWh of electricity generated and this GO can only be used once for the purposes of Fuel Mix Disclosure. Therefore there can be no double-counting of the same unit of electricity while giving customers information on fuel mix.

The sole purpose of LECs are to provide evidence to the tax authority in the UK that certain units of energy supplied are exempt from the Climate Change Levy.

The sole purpose of ROCs is to allow suppliers to meet their obligations under the Northern Ireland and Great Britain Renewables Orders.

2.5 Non-RES Certificate Transfers from other EU Member States

The SEMO noted the requirement to accept certificates relating to non-renewable generation from other Member States, once, as outlined in the Consultation Paper, these are “accurate, verifiable and reliable”. The SEMO notes that there is no EU law governing this assessment process, and any arrangements that another Member State may have is not enforceable. The SEMO highlighted that it is concerned with regard to how these submissions can be assessed and considered “accurate, verifiable and reliable”.

The SEM Committee notes the SEMO’s concern regarding imported non-renewable generation certificates from other Member State. The SEM Committee does consider it appropriate, however, that all-Island suppliers should be afforded the opportunity to use certificates for non-renewable energy from other member states. As stated in the Consultation Paper, the SEM Committee also wishes that in so far as reasonably possible certificates for non-renewable energy from other member states are accurate, verifiable, and reliable. Therefore in the context of facilitating the above, and in order to ensure insofar as reasonably practical such certificates are acceptable to be used in the Fuel Mix Disclosure Methodology:

a) *A certificate relating to imported non-renewable generation from other Member States shall contain the information prescribed in section A3 of the Appendices.*

b) *The participant wishing to use the non-renewable renewable certificate shall present to the Calculating Body written confirmation from the relevant Competent Authority in the relevant Member State that the information contained in the certificate is accurate, verifiable, and reliable.*

c) *The participant shall also present written confirmation from the relevant Competent Authority to the Calculating Body that the generation being claimed in the certificate has not, and will not, be used elsewhere for the purposes of Fuel Mix Disclosure.*

d) *The participant shall present written confirmation from the Regulatory Authority in the relevant Member State that the Authority or Authorities referred to in b) and c) above are the relevant Competent Authorities to provide such confirmations.*

Where there is more than one Competent Authority, the participant is obliged to obtain the necessary confirmations from all relevant authorities. To be clear, the onus is on the participant to present this information to the Calculating Body, the Calculating Body is under no obligation to seek this information in respect of imported non-renewable certificates.

Where the Calculating Body is not satisfied with the information provided in a)-d) it may refuse to accept the certificate for the purposes of fuel mix disclosure.

The SEM Committee notes that there is no provision in legislation for non-renewable certificates. In this context the arrangement described above will be kept under review. The Calculating Body shall provide a specific update to the RAs on the operation of this aspect of the Fuel Mix Disclosure Methodology in its annual report on the operation of the Fuel Mix Disclosure Methodology to the RAs.

It is the responsibility of the Competent Authority in another Member State to confirm with the Calculating Body that any non-renewable generation being exported is accurate, verifiable and reliable. The SEM Committee does not anticipate this to be a significant matter at this juncture and will keep it under review.

2.6 Residual and Smaller Fuel Mix Volumes

In respect of the residual fuel mix, it was suggested that the deficit at a national level in the fuel mix be represented in the fuel mix as 'unknown'. Another respondent considered that the proposal to adopt the European residual fuel-mix instead of the Great British residual fuel-mix to be an incorrect application of the detachability of GOs from actual electricity flows. The respondent noted that where electricity attributes have not been explicitly assigned, either by owners/holders or by rules such as the one that relates to support schemes, it considers that the default treatment of such attributes is that they follow the electricity from which they derive.

The SEM Committee acknowledges that the lack of a harmonised approach in Europe to disclosure will create disparities at a national level where demand will not be equal to energy attributes accounted for in a given period. The nature of the difficulties here is discussed further in section A.13 of the Appendices. The SEM Committee does not, however, consider it appropriate that deficits at a national level in the fuel mix should be represented as 'unknown'. The SEM Committee considers that the application of a methodology for fuel mix should be consistent with the spirit of the Renewables Directive and facilitate customers to make informed choices, based on information set out by the fuel mix calculation. The use of an 'unknown' category is not considered to promote clarity or transparency for customers when options, even if imperfect, are available for categorising the fuel mix of residual volumes.

Regarding the application of the GB residual to unaccounted for energy, it should be noted that the GB residual isn't necessarily unassigned in the same way the EU residual is. Interconnector flows have the fuel mix of the GB residual but this residual is also applied to GB customers where their supplier doesn't have assignable generation. In addition to this, the overall deficit/surplus in fuel mix disclosure in the SEM (and elsewhere in Europe) will not be related to physical flows over the interconnectors but rather import/export of GOs. If interconnector flows were given the GB residual the deficit would still have to be accounted for. Using the GB

residual for energy beyond the physical imports would therefore not seem correct. The EU framework for GOs and fuel mix disclosure does not relate to the physical flow of electricity. The purpose of the EU residual is that it assigns MWhs that have not been assigned elsewhere, noting the work of the Reliable Disclosure Systems for Europe (RE-DISS) which is supported by Intelligent Energy Europe[9]. For the reasons outlined above, the SEM Committee does not consider that the GB residual is correct fuel mix to prescribe to all-Island residual volumes.

2.7 Disclosure of Information to End Customer

A number of respondents were not in favour of the proposals in the Consultation Paper with regard to how information relating a customer's fuel mix is to be presented on bills. The Consultation Paper outlined that where a supplier offers a product(s) to specific customers on the basis of a particular fuel-mix or a given level of CO2 emissions the supplier must present the average fuel mix and CO2 emissions for the all-Island market, the supplier's average fuel-mix and CO2 emissions and the fuel-mix and CO2 emissions supplied to that customer. One respondent suggested that presenting fuel mix information in the format of Figure 1 or Figure 3 (from the Appendix of the Consultation Paper) is appropriate in complying with all aspects of Article 3(9) of Directive 2009/72/EC and that presenting in the format of Figure 2 could be considered incompatible with the Directive requirements of providing reliable, comprehensible and directly comparable fuel mix information to customers. Both respondents make reference to the considerable practical difficulties they envisage with implementing a customer-specific fuel mix disclosure table such as Figure 2 in the Appendix of the Consultation Paper.

The SEM Committee has considered respondents' comments on this matter. The SEM Committee is keen to ensure that customers are provided with accurate, relevant information. The SEM Committee considers that it is appropriate that such information is, to the greatest extent possible, easy to understand and that customers may make meaningful comparisons between different electricity suppliers. The SEM Committee recognises that there may be a level of practical challenges associated with the provision of the information envisaged in Figure 2 of Appendix A in the Consultation Paper on paper bills, and that additional costs may be incurred in respect of the provision of the information in that format. The SEM Committee has decided not to require suppliers to provide fuel mix information to relevant customers in the format envisaged in Figure 2 of Appendix A in the Consultation Paper on paper bills at this juncture. Suppliers shall, at a minimum, provide a fuel mix table on the back of their paper bills to customers in the format outlined in Figures B1 and B2 of Appendix B of this paper. Suppliers shall endeavour to provide fuel mix information to customers on all promotional materials where this is reasonably possible, in accordance with Appendix section A.17 of this paper. Each RA may

[9] This is an EU programme overseen by the European Commission see http://ec.europa.eu/energy/intelligent/ and http://www.reliable-disclosure.org/

provide for further requirements or conditions in this regard for their respective licensed suppliers as they deem appropriate.

The SEM Committee considers it appropriate that suppliers should be able to explain and justify to a customer the fuel mix of the electricity that is being supplied to that customer, in particular where that customer is being supplied a non standard product based on fuel mix or CO2 emissions. Therefore, the SEM Committee considers it appropriate that the following sentence shall appear on the front of each customer's bill:

'For further information on your fuel mix, please contact your electricity supplier'.

In addition, (as is currently the case under the Interim Arrangements), if the fuel mix table (as per Figure B1 or B2 as appropriate in Appendix B) is presented on the back of customer's bills[10], reference to this must also be made on the front of suppliers bills.

For suppliers in Northern Ireland, the Utility Regulator requires' a reference to the GB figures to be displayed on the front or back of all bills (so that customers can also compare fuel mix on a UK-wide basis) and, as appropriate, on promotional material.

The respective RAs may request information from licensed suppliers to support the basis for suppliers' fuel mix disclosure to customers, in particular the where suppliers offer differentiated products to customers based on particular fuel mixes or CO2 emissions (see section 2.9 for further information).

2.8 Timeline for Implementation

One respondent considered that any new arrangements should not be introduced in advance of a disclosure period, when the relevant disclosure period is two thirds finished and that no provision or discussion regarding GOs or declarations has taken place.

The SEM Committee considers that sufficient discussion regarding GOs and generation declarations has taken place. In April of 2009 the SEM Committee published the decision paper "High Level Methodology for the Calculation of fuel mix disclosure in the SEM" (SEM/09/033). That paper set out the SEM Committee's intention to use a certificate based methodology for fuel mix disclosure in the SEM, based on GOs and generator declarations. However, at the time of publication Directive 2009/28/EC (the "Renewables Directive") had not yet been finalised. The detail of the disclosure methodology could not be set out in the absence of certainty afforded by appropriate legislation. As Article 15 of the Renewables Directive has now been published and transposed in both jurisdictions, the current paper outlines how the enduring disclosure methodology will operate.

[10] The tables B1 and B2 in Appendix B must be presented on customer's bills, suppliers have a choice as to whether these are presented on the frpnt or back of bills.

In the absence of the legislative framework required to implement the enduring methodology the Interim Arrangements were put in place. The current methodology for fuel mix disclosure in the SEM is set out in the relevant decision paper (SEM/09/081). The Interim Arrangements will be replaced by the Fuel Mix Disclosure Methodology outlined in this decision paper.

2.9 Additional Comments from Respondents

- A respondent noted that a supplier is currently required to supply all sites which are supplied with green products on a spreadsheet by MPRN and actual kWh supplied. This is (among perhaps other things unknown to us) to verify that the volumes supplied via "green deals" does not exceed the volumes of green power procured by that supplier. The respondent noted that the process is both unnecessary and inefficient. The respondent then outlines alternative proposals for the provision of the information to allow independent verification and which would not, according to the respondent, act as a barrier to the introduction of mass market green products. An alternative proposal was outlined by the respondent and is published with this decision paper in the relevant response.

  On the proposal by the respondent, the SEM Committee considers it would only work for 100% and 0% green products variations. It would therefore not be compatible with approaches where suppliers may offer various percentages of green, low-carbon products, technology/fuel specific (e.g. wind, biomass, or even gas). All these would be associated with a fuel mix but would not work within the respondent's proposal.

  The SEM Committee considers it appropriate that customers are in a position to compare suppliers and their product offerings and that customers have sufficient and appropriate information available to them regarding contractual agreements made with suppliers for specific product offerings. The SEM Committee notes in that context that the respective RAs may require the provision of fuel mix or CO2 emission information from licensed suppliers to them, in particular information relating to where suppliers sell specific products based on differentiated fuel mixes or CO2 emissions, as they deem necessary and appropriate. This is a matter for the respective RAs in respect of their respective licensed suppliers.

- A respondent suggested a more balanced timeline is appropriate for suppliers to raise queries on the results of the fuel mix calculation. The respondent considers that this is necessary as it takes into consideration the needs of suppliers as well as the Calculating Body and that a period of 10 working days is more appropriate for suppliers to review, analyse and respond with any queries. The respondent considers that this is especially important in light of

the new methodology which rightly includes a broader range of generation characteristics peculiar to suppliers based on certificates and assignments.

In consideration of this response, the SEM Committee has decided to allow for seven working days for suppliers to revert with any queries they have in relation to the fuel mix calculation. This timeline is considered appropriate for the first year of calculating fuel mix information on the basis of this decision paper and this timeline will be kept under review and, where considered appropriate, may be reduced. The Calculating Body shall ensure that the additional days afforded suppliers in this regard is reflected appropriately in its processes and procedures relating to fuel mix disclosure.

- A respondent noted that on page 9 of the Consultation Paper it is proposed that at the end of each quarter and at the end of a disclosure period generators will assign their generation (REGOs) to a supplier of their choice. The generator will notify SEMO of the fuel source, start/end date of production and the supplier unit to which it should be assigned. SEMO will subsequently validate the data.

  This will create an increased administrative burden on both generators and suppliers as well as on occasion resulting in REGOs been left unassigned. A more efficient and cost effective method would be for generators to have the option to nominate a supplier as it's intermediary in the a form similar to that as currently exists for SEMO market registration. This would enable suppliers to provide SEMO with the consolidated data for all renewable generators for which it acts as an intermediary on a quarterly basis for validation.

  Firstly, the SEM Committee notes that the quarterly assignment of generation attributes referred to on page 9 of the consultation paper does not relate to GOs, but to generator declarations. GOs are issued, transferred and used in accordance with the relevant provisions and operational structures in each Member State. The Consultation Paper included the option of quarterly generation assignments to afford generators the option to assign generation at regular intervals to a supplier, but also stated that such generators may also do so once at the end of the year to provide the relevant information to the Calculating Body in time for inclusion in Disclosure calculations. There is no obligation to assign such generation each quarter.

  Regarding the use of a supplier as an 'intermediary'[11] *in this regard (i.e. for generator declarations), the SEM Committee considers that there is merit in this proposal but that there is no need to give this action a title per se. To the*

[11] The generator's administrative assignee for the purposes of generator declarations, not having the same meaning as the term 'Intermediary' defined under the Trading and Settlement Code.

same effect, the generator may inform the SEMO that it has nominated a particular supplier to which it assigns the use of its generation attributes as required for fuel mix disclosure. This may be done on a once off basis as per the SEMO's processes and procedures regarding fuel mix disclosure. From that point on the supplier will, on behalf of the generator, notify the SEMO of the relevant generation attributes to be included in the supplier's fuel mix. A generator may inform the SEMO that a supplier is no longer nominated to receive its generation attributes or that those attributes are no longer automatically assigned.

- A respondent noted that the RAs should also be mindful that renewable generation is connected at both transmission and distribution level. The respondent considered that the treatment of loss adjustment factors proposed does not provide sufficient clarity regarding this issue. It should be noted that SEMO (the Calculating Body) receives demand at trading point (i.e. already loss adjusted) this is not the same as meter point demand and furthermore prior to global aggregation in Northern Ireland there is no accurate means for determining total meter point demand.

  For the sake of clarity, distribution and transmission connected generators' metered data used in the calculation by the Calculating Body shall be the generation metered at the point of entry to the distribution or transmission system as appropriate (i.e. before the application of loss factors of any kind). The Calculating Body shall ensure the appropriate metered data is provided/used by it in the fuel mix disclosure calculation.

  The SEM Committee considers that the proposal outlined in the Consultation Paper is appropriate, whereby a uniform factor is applied to demand used in the disclosure calculation that represents the difference between total metered generation (adjusted for net imports) and total metered demand occurring during the Disclosure Period. The use of this factor reconciles the trading point demand to the metered generation of all plant used for the purposes of the Fuel Mix Disclosure Calculation.

- It was suggested that the SEM Committee should retain the 2.5% threshold for the 'other' category, as is used in the current Interim Arrangements for fuel mix disclosure in the SEM.

  The SEM Committee has decided to use the 1% threshold regarding the 'other' category as proposed in the Consultation Paper in order to minimise the 'other' category for final electricity customers. This shall be kept under review on an annual basis. The calculating body shall provide the RAs with a breakdown of the fuel types present in the 'other' category in its annual report on the Fuel Mix Disclosure Calculation to the RAs.

2.10 Additional Comments from the SEMO as Calculator and Administrator of the All-Island Fuel Mix Disclosure

- The SEMO requested further clarification regarding the treatment of exported GOs. Where the Consultation Paper refers to “any generation attributes not assigned to, and submitted by, a supplier” in the context of the calculation of the Residual Mix, it should be clarified that this includes exported certificates.

  The calculation of the Residual Mix shall take account of exported GOs or generation attributes. Therefore, the calculation of the Residual Mix shall not include exported GOs or generation attributes as appropriate.

- The SEMO notes that in recent years Meter Data Providers have submitted loss adjusted data for fuel mix disclosure purposes in the context of the Interim Arrangements; however, this will change as part of the new arrangements. The SEMO would like the decision to include explicit reference to this requirement for non loss adjusted Metered Data from the Meter Data Providers. The SEMO also requested that timelines for submission are included in the final decision paper.

  As outlined in the Consultation Paper, the GOs used to meet demand will not necessarily relate temporally or geographically to the generation that physically supplied the customer. All GOs will have to be treated on an equal basis regardless of their country of origin or grid location in that country. The SEM Committee hereby confirms that the Meter Data Providers are to provide non loss adjusted Metered Data to the SEMO in order that it may fulfil its requirements in respect of calculating the all-Island fuel mix disclosure. This data should be provided to the SEMO at the end of each quarter in accordance with the SEMO’s timelines and processes and procedures. Metered data reconciliations will be carried out annually as appropriate before relevant values are taken account of in the final Fuel Mix Disclosure calculation.

- The SEMO notes that the Consultation Paper suggests that Suppliers should be required to provide “The total amount of energy (MWh) relating to a particular fuel type (e.g. renewables) which had been guaranteed to be supplied to customers at any time during the Disclosure Period, insofar as such guarantees were made”. The SEMO consider that this data does not figure in the calculation of the Fuel Mix Disclosure for participants and the use of this information is not set out in the consultation paper. The SEMO does not consider that this data is required for the calculation.

The SEM Committee has considered the SEMO's response and has decided that this information shall not be provided to the SEMO as it is not required to perform the calculation of the fuel mix disclosure. However, this information may form an important part of monitoring the provision of reliable fuel mix information on all bills and promotional materials issued to customers, in accordance with Article 3(9) of Directive 2009/72/EC. In particular Regulation 25 of S.I. No. 60 of 2005 requires the CER to ensure "all licensed suppliers furnish reliable information on or in bills or promotional materials sent to final customers". The respective RAs may request this information as part of their duties regarding the monitoring of the reliability of information provided to end customers by their respective licensed suppliers. The SEM Committee considers it is important that suppliers offering differentiated products to their customers can prove the basis upon which those products are being offered.

- When reconciling data, SEMO believes it may be unnecessarily onerous to complete a quarterly reconciliation on attributes that have been assigned and that this could be completed on an annual basis when the Fuel Mix Calculation is being completed.

  For the sake of clarity, the quarterly reconciliation referred to by the SEMO above relates to adjusting ex-post metered generation data. The SEM Committee has considered this proposal by the SEMO and agrees that the relevant metered generation reconciliations[12] may be carried out on a yearly basis, before the relevant Fuel Mix Disclosure calculation rather than at the end of each quarter.

- The SEMO notes that the Consultation Paper outlines that the "costs of conducting the calculating will be covered through the SEMO Price Control as approved by SEM Committee". The SEMO notes that the existing Price Control was based on the interim arrangements for Fuel Mix Disclosure calculation as set out in SEM-09-061. SEMO note that the workload for the Fuel Mix Disclosure calculation proposed in this calculation is increasing significantly compared to the interim arrangements. The SEMO consider that additional resources will be required to work on this all year round. Any costs that may be incurred in the relevant period should be allowed for in the K factor adjustments and in subsequent Price Controls.

  Any decisions in relation to costs are not appropriate for this paper, but will be dealt with through the normal regulatory price control process

[12] The reconciliation for GOs is carried out on a jurisdictional basis in accordance with the relevant provisions set out in each jurisdiction (see CER/11/824)

- The SEMO notes the proposal included in the example in the Appendix section of the Consultation Paper that GOs expire at the end of the month and that this is intended to allow a standardisation and simplicity in the system. The SEMO is concerned with respect to this proposal as it would appear to run counter to the Statutory Instrument and the original EU Directive both of which require that the lifespan of a GO is twelve months from the date of production of the energy. As such, per the Regulation and SI, a GO issued in respect of a MWh of electricity produced on July 15th 2012 should expire on July 14th 2013 and not July 31st 2013. The proposal included would appear to extend the lifespan of a GO beyond that set out in the legislation even if only by a number of weeks or days.

  The standardisation proposal was initially included in the Consultation Paper as the SEM Committee considered it would ease the administrative burden on the SEMO. It was not intended to change the lifespan of a GO. The lifespan of GOs is a jurisdictional matter[13]*, which then feeds into the Fuel Mix Disclosure Methodology described in this document*

- The SEMO noted that the Consultation Paper proposed that dual fuel generators which are not required to make submissions to the EPA and DOE are obligated to submit independent verification as to their total fuel usage. The SEMO requested clarification as to which body will be responsible for the verification of this data.

  The SEM Committee has considered this matter further. Small (<20MW) non-renewable generation that is not required to make submissions to the EPA and DOE is considered as representing a very small proportion of the total overall mix at present. Given the scale of this generation in the overall context of the SEM, the SEM Committee does not consider that independent verification of the total fuel usage and CO2 emissions is necessary at this time where it is not required for other reasons as this would likely be disproportionately costly and somewhat onerous on all parties involved. The Calculating Body shall apportion the appropriate SEM fuel emissions factor to the generation from such generators based on the fuel type(s) used by that generator.
  Such generation attributes (i.e. those relating to plant <20MW) shall be placed in the SEM residual. If a supplier wishes to include such generation in its Fuel Mix Disclosure, the supplier shall submit the independently certified CO2 emissions relating to that generation, along with all other requirements in respect of a Generator Declaration. The SEMO shall accept independently certified CO2 emissions submitted in this regard that it considers appropriate.

[13] See Supervisory Framework for Guarantees of Origin (CER/11/824)

Non-renewable generation equal to or greater than 20MW that is not required to make submissions to the EPA and DOE shall submit independent verification to the Calculating Body regarding its CO2 emissions and fuel usage.

The above arrangement shall be kept under review for each Fuel Mix Disclosure period to ensure it is appropriate given the scale of such generation.

3 Summary of Key Decisions

The purpose of this section is to summarise the key decisions that the SEM Committee has made with respect to the Fuel Mix Disclosure Methodology. The decisions are grouped under appropriate headings. The rest of the paper including the Appendix should be read in conjunction with this section to ensure the reader has a full understanding of the full detail of how the Fuel Mix Disclosure Methodology is to operate.

The Calculating Body and Administrative Procedures

- The Single Electricity Market Operator (the SEMO) will be the Calculating Body. The Calculating Body will calculate the fuel mix disclosure figures once a year. The information to be provided to the Calculating Body to carry out the Fuel mix Disclosure Methodology is outlined in section A.9 of the Appendices.

- The Calculating Body shall complete and publish a processes and procedures document, approved by the RAs to which it will adhere in administering and completing the annual Fuel Mix Disclosure Methodology. The RAs will keep the Calculating Body's administration and calculation of the Fuel Mix Disclosure Methodology under review and, if deemed appropriate may request an audit of the Calculating Body's administration of the Fuel Mix Disclosure Methodology

- An annual report giving an overview of the Calculating Body's work in respect of the Fuel Mix Disclosure for the relevant Fuel Mix Disclosure Period will be provided by the Calculating Body to the RAs by 30th September 2011.

The Fuel Mix Disclosure Calculation Overview

- The SEM Committee has decided to provide for generator units to assign their generation attributes to suppliers for the purposes of fuel mix disclosure. These assignments not need to relate to the physical flow of the electricity and the commercial arrangements relating to the electricity and/or attributes will not be considered by the Calculating Body.

- Northern Irish renewable generators may request a GO from Ofgem. These may then be transferred to suppliers and suppliers can present them to the Calculating Body to be used in the annual disclosure calculation. Irish renewable generators who are not in receipt of support may request a GO from the SEMO. This GO can be transferred to a supplier for disclosure[14].

- Generator units will have the opportunity to assign their generation attributes to a supplier unit at regular intervals throughout the year in accordance with

[14] Please refer to the CER decision paper (CER/11/824) for more information.

the SEMO's processes and procedures document as published. At the end of the disclosure period suppliers may use the generation attributes assigned to them for their disclosure.

- Suppliers have the option of importing renewable attributes from other Member States, including GB, through GOs.

- Where a supplier's demand is greater than the sum of submitted GOs and assigned generation attributes the Residual Mix will be applied. The Residual Mix is the portion of the all island fuel mix which has not been claimed by suppliers.

- When there is a deficit of generation attributes to meet overall all-Island demand, the European Residual will be included in the Residual Mix, when there is a surplus of generation attributes the surplus will be included in the European Residual (where it may be used by Members States with a deficit).

- The European residual fuel mix shall be used as opposed to the residual fuel mix of Great Britain as stated in the high level methodology paper (SEM/11/058).

Assignment of Generation Attributes

- The SEM Committee considers it in keeping with the objectives of disclosure that there be some means of suppliers differentiating their fuel-mix in relation to the non-renewable generation attributes on the island not just renewable generation attributes covered by a GO.

- In order for a generator or supplier to avail of this provision, the generator must first register with the Calculating Body and provide any information the Calculating Body reasonably requires to ensure that the resulting fuel mix calculation will be reliable, in accordance with this decision.

- Once per quarter, and close to the end of the Disclosure Period, generators will be provided with the opportunity to assign their generation attributes to a supplier of their choice. A generator may assign all its generation attributes to a supplier and may appoint that supplier to carry out all interactions regarding generation assignments with the Calculating Body on its behalf. The generator may stop this arrangement or choose another supplier if it so decides in accordance with the SEMO processes and procedures.

- The Calculating Body will verify generation assignments against meter data provided by the Meter Data Providers and ensure that the same energy has not been previously assigned. The Calculating Body shall complete a

reconciliation of metered data when the Fuel Mix Disclosure calculation is being completed.

- The emissions data received from the EPA and DOE[15] will be used by the Calculating Body to establish the fuel usage of each generator over the year ex-post, except for those plant where submissions are not required to be made to the EPA or DOE. In the case of plant not required to make submissions to the EPA or DOE, the relevant fuel mix and emissions data will be dealt with as outlined in section A.3 of the Appendices.

- In the case of imported non renewable generation, to ensure the imported certificates are acceptable to be used in the Fuel Mix Disclosure Methodology:

    - A certificate relating to imported non-renewable generation from other Member States shall contain the information prescribed in section A3 of the Appendices.

    - The participant wishing to use the non-renewable renewable certificate shall present to the Calculating Body written confirmation from the relevant Competent Authority in the relevant Member State that the information contained in the certificate is accurate, verifiable, and reliable.

    - The participant shall also present written confirmation from the relevant Competent Authority to the Calculating Body that the generation being claimed in the certificate has not, and will not, be used elsewhere for the purposes of fuel mix disclosure.

    - The participant shall present written confirmation from the Regulatory Authority in the relevant Member State that the Authority or Authorities referred to in b) and c) above are the relevant Competent Authorities to provide such confirmations.

    - Where there is more than one Competent Authority, the participant is obliged to obtain the necessary confirmations from all relevant authorities. Confirmation by email shall suffice for the above purposes. To be clear, the onus is on the participant to present this information to the Calculating Body, the Calculating Body is under no obligation to seek this information in respect of imported non-renewable certificates.

    - Where the Calculating Body is not satisfied with the information provided in a)-d) it may refuse to accept the certificate for the purposes of fuel mix disclosure.

[15] Environmental Protection Agency (Ireland) and the Department of the Environment (Northern Ireland).

Calculation of a Supplier's Fuel Mix

- A submission for fuel mix disclosure purposes must be made in respect of each supply licence held even where a single company holds more than one licence. The presentation of the Fuel Mix figures may however be disclosed on a company basis as outlined in the Appendix of this paper.

- A supplier's fuel mix will be made up of the valid GOs, generator assignments, in the case of Irish suppliers, PSO supported renewable generation that has been assigned, plus a proportionate amount of the Residual Mix. Further detail is outlined in section A.4 of the Appendix.

Calculation the Residual Mix

- The Residual Mix will be calculated as the sum of any generation attributes (including exported certificates) not assigned to, and submitted by, a supplier, surplus GOs declared by suppliers[16], and unused certificates which were expired in the relevant Disclosure Period.

- Where the all-island demand is greater than the sum of all the suppliers' declarations plus the Residual Mix (based on the above inputs) the European Residual Mix will be applied to the remaining demand and included in the Residual Mix. In the case that demand is less than the sum of all the suppliers' declarations the surplus will be included in the European Residual Mix.

Disclosure Period

- The SEM Committee has previously decided[17] that the Disclosure Period is the calendar year, beginning 1st January and ending 31st December each year. All data is considered in aggregate over this period and not in smaller time intervals for the calculation of the fuel-mix.

Disclosure of Information

- Suppliers shall include the fuel mix disclosure information in Appendix B on the back of all bills to customers. The fuel mix disclosure information shall be provided on all promotional material in so far as reasonably practical.

- Suppliers shall have two months from the publication of the fuel mix disclosure to include the required information on all bills issued to customers.

[16] This refers to GOs submitted by suppliers which are not required to meet their demand, suppliers are not required to include in their submission all GOs that they hold.
[17] SEM/09/033

- It is a matter for each respective RA to determine the necessity for and nature of information requested from licensed suppliers in relation to fuel mix or CO2 emission information provided to customers, in particular where suppliers offer specific differentiated products to customers based on particular fuel mixes or CO2 emissions.

- The following sentence shall appear on the front of each customer's bill "For further information on your fuel mix, please contact your electricity supplier". In addition, (as is currently the case under the Interim Arrangements), if the fuel mix table (as per Figure B1 or B2 as appropriate in Appendix B) is presented on the back of customer's bills[18], reference to this must also be made on the front of suppliers bills.

Timing of the Calculation

- The SEM Committee has decided that suppliers will submit their GOs three months after the end of the disclosure period; the 31st March each year. By the end of April the all-island surplus or deficit will be calculated and applied to the European Residual Mix calculation. This timeline will be kept under review to ensure it is appropriate.

- Northern Irish suppliers must "retire"[19] their GOs before submitting them to the Calculating Body. Nineteen months after the month in which the generation occurred Northern Irish GOs will be cancelled on Ofgem's register at which point the GOs cannot be used for fuel mix disclosure.

- The Calculating Body shall check the Ofgem register on 31st March each year to verify the information on the register with the suppliers' submissions. Only GOs retired on the Ofgem register prior to 31st March will be included in the fuel mix disclosure calculation.

- Taking consideration of responses to the Consultation Paper, queries to the Calculating Body from suppliers in respect of their indicative fuel mix figures, and the timely publication of the All-island disclosure figures, such publication shall take place eighteen working days from the date the Calculating Body issues the indicative fuel mixes to suppliers.

[18] The tables B1 and B2 in Appendix B must be presented on customer's bills, suppliers have a choice as to whether these are presented on the frpnt or back of bills.

[19] This is an arrangement whereby Northern Irish suppliers will have the option to retire their GOs. Retiring the GO means that the supplier has signalled their intention to use it for disclosure and cannot transfer it but it is not yet cancelled. Retired GOswill be included in the SEM disclosure calculation and deemed cancelled by Ofgem 19 months from the month of the associated generation. These arrangements are necessary to facilitate the administration of Northern Irish guarantees of origin by Ofgem.

- Emissions figures will be sourced from the EPA in Ireland and from the DOE in Northern Ireland. It is expected these figures will be available by in May of each year.

- It is current practice that the European Residual Mix is determined by 15th May. The Calculating Body shall issue indicative fuel mixes to suppliers once it has the relevant emissions data, European Residual Mix and other information as required to complete suppliers indicative mix calculations.

- The RAs will monitor the key milestones necessary to ensure the timely publication of fuel mix disclosure figures. However, it is noted that some milestones such as emissions data and the calculation of the European Residual Mix are outside the control of the RAs and the Calculating Body.

Smaller Scale Generation

- The CER has issued decisions regarding the treatment of GOs in respect of generation metered at less than 1MWh in its decision paper on the Supervisory Framework for Guarantees of Origin in Ireland (CER/11/824).

- Ofgem also issues GOs annually to generators with a capacity of 50kW or less. The timeline for issue of such GOs by Ofgem and how that timeline is incorporated into the Fuel Mix Disclosure Methodology is outlined further in section A.7 of the Appendices.

- In the case of non-renewable, small scale generation that is not required to make submissions to the EPA and DOE:

    - the SEM Committee does not consider that independent verification of the total fuel usage and CO2 emissions is necessary as this would likely be disproportionately costly and somewhat onerous on all parties involved. The Calculating Body shall apportion the appropriate SEM fuel emissions factor to the generation from such generators based on the fuel type used by that generator and such generation shall be placed in the SEM Residual Mix.

    - If a supplier wishes to include the attributes of such generation in its fuel mix disclosure, the supplier shall submit independently certified CO_2 emissions relating to that generation, along with all other requirements in respect of a Generator Declaration. The SEMO shall accept independently certified CO_2 emissions submitted in this regard that it considers appropriate. The above arrangement shall be kept under review for each fuel mix disclosure period to ensure it is appropriate given the scale of such generation.

Loss Adjustment Factors

- The SEM Committee has decided that a uniform factor is applied to demand used in the disclosure calculation that represents the difference between total metered generation (adjusted for net imports) and total metered demand[20] occurring during the Disclosure Period.

- The Calculating Body shall inform suppliers of this factor at the time it issues suppliers' fuel mixes to suppliers for review. To be clear, the losses will be accounted for only at the point of calculating the fuel mix not before and will not apply to any GO at the point of issue or at the point of export.

CO_2 Emissions

Each year the Calculating Body will calculate CO_2 emission factors for each fuel-type. The emissions factors will be based on information received from the EPA and DETI and on relevant metered generation[21] for the Disclosure Period. The resulting emissions factors will be applied to suppliers' fuel mixes to produce a figure for CO_2 emissions per kWh which will be published along side the fuel mix figures.

[20] Settlement demand

[21] Please note that this relates to all metered generation over the calendar year and is unrelated to the GOs being included in the disclosure calculation.

4 Next Steps

The Interim Arrangements set out in SEM-09-081 will be superseded fully by the Fuel Mix Disclosure Methodology outlined in this decision paper. As such the Interim Arrangements will remain in place until the full implementation of the Fuel Mix Disclosure Methodology in this paper and the implementation of the Supervisory Framework for Guarantees of Origin in Ireland is completed.

The Calculating Body is hereby directed by the SEM Committee to put in place the systems and processes required for the implementation of the matters set out in this decision paper. Accordingly, the SEMO will prepare and publish the procedures required to implement this decision. The Regulatory Authorities shall approve these procedures and any revisions to same from time to time. It is intended that the 2012 calculation (i.e. for the disclosure period 2011) will be carried out in accordance with the Fuel Mix Disclosure Methodology outlined in this paper.

Each Regulatory Authority may enforce the resulting decision by way of supply licence conditions. The respective RAs may require information from their licensed suppliers regarding products offered based on specific fuel mix/emissions as they deem appropriate in accordance with the respective governing legislation.

Appendix A: Fuel Mix Disclosure Methodology

A.1. Introduction

In its decision regarding the high level methodology (SEM/09/033), the SEM Committee set out the general objectives of fuel-mix disclosure.

These were that the methodology should;

- ensure compliance with governing legislation;
- facilitate ease of comparison, by customers on the island, of information provided by suppliers in accordance with the disclosure requirement;
- be implemented in a manner that minimises costs to market participants and final customers; and
- be compatible with the other functions and duties of the Regulatory Authorities.

Separately the European Commission set out the following objectives[22]:

- increase market transparency by providing open and easy access to relevant information;
- comply with consumers' right to information regarding purchased products;
- enable consumers to make informed choices about suppliers based on the generation characteristics of the electricity they supply; and
- educate consumers and stimulate electricity generation that contributes to a secure and sustainable electricity system.

As discussed above, the Renewables Directive introduces requirements around GOs which have a considerable impact on the methodology that must be employed for fuel mix disclosure.

A.2. Overview of Fuel Mix Disclosure Methodology Approach

The high level methodology decision stated that the enduring approach to the fuel mix disclosure calculation would be based on certificates, to the extent that generation is covered by certificates. The Disclosure Period was decided upon in that decision as the calendar year. It was also decided that suppliers would have two months from the publication of the fuel mix disclosure to include the required information on all bills issued to customers.

[22] These four objectives are set out in the EU Commission's communication on Directives 2003/54 and 2003/55 on the Internal Market in Electricity and Natural Gas (Non Binding) entitled 'Labelling Provision in Directive 2003/54/EC'.

Therefore, the approach detailed in this paper sets out how the disclosure calculation based on certificates will be carried out. The Renewables Directive makes clear that GOs need not follow the physical flow of energy requiring a disconnect between the attribute and the physical energy to be facilitated in disclosure calculations. GOs may be used for disclosure without reference to the physical flow of the energy associated with it. The European residual fuel mix will therefore be used as opposed to the residual fuel mix of Great Britain as stated in the high level methodology. The logic of using the British residual fuel mix was that physical imports were being considered. The consideration of physical imports is no longer applicable given the disconnect between the certificate and the physical energy it represents. It should also be noted that suppliers have the option of importing attributes from other Member States, including GB, through GOs [23].

Further considerations are that non-renewable certificates are not provided for in Irish or Northern Irish legislation. Irish GOs are restricted to those relating to renewable generation not covered by the Irish PSO and generators are under no obligation to request a GO. Therefore, there will be some generation attributes covered by GOs but some will not. Specifically, non-renewable generation, Irish PSO supported renewable generation, and generation for which Irish and Northern Irish renewable generators do not request a GO. Therefore there needs to be a consistent means of accounting for generation whose attributes are covered by GOs and those that are not.

The SEM Committee has decided to provide for generator units to assign their non-GO, non PSO-supported generation attributes to suppliers for the purposes of fuel mix disclosure. These assignments will not need to relate to the physical flow of the electricity and the commercial arrangements relating to the electricity and/or attributes will not be considered by the Calculating Body. The generator in question will notify the Calculating Body of the supplier their generation attributes should be associated with for the purposes of fuel mix disclosure. These generation attributes will then be included in the supplier's fuel mix disclosure unless the supplier indicates otherwise in their annual submission.

The Single Electricity Market Operator (the SEMO) will be the Calculating Body. The Calculating Body will calculate the fuel mix disclosure figures once a year. The Calculating Body will maintain a register of all generator units and supplier units on the island. In the first instance meter data received by the Calculating Body will be used to allocate generation attributes to the generator units, these attributes may then be assigned at the request of the generator. At regular intervals throughout the year generator units will have the opportunity to assign their generation attributes to a supplier unit. At the end of the disclosure period suppliers may use the generation attributes assigned to them for their disclosure. Northern Irish renewable generators may request a GO from Ofgem. These may then be transferred to suppliers and suppliers can present them to the Calculating Body to be used in the annual disclosure calculation. Irish renewable generators who are not in receipt of support may request a GO from the SEMO. This GO can be transferred to a supplier for disclosure[24].

Where a supplier's demand is greater than the sum of submitted GOs and assigned generation attributes the Residual Mix will be applied. The Residual Mix is the portion of the

[23] Subject to approval from the Regulatory Authorities, certificates relating to non-renewable generation may be accepted by the Calculating Body from other Member States provided they are accurate, verifiable and reliable.
[24] Please refer to the CER decision paper (CER/11/824) for more information.

all island fuel mix which has not been claimed by suppliers. Because GOs can travel throughout Europe it is possible that the island will see a net import or export of GOs resulting in a mismatch between generation attributes accounted for in the fuel mix calculation and total demand. When there is a deficit of generation attributes the European Residual will be included in the Residual Mix, when there is a surplus of generation attributes the surplus will be included in the European Residual (where it may be used by Members States with a deficit).

A.3. Assignment of Generation Attributes

The SEM Committee considers it in keeping with the objectives of disclosure that there be some means of suppliers differentiating their fuel-mix in relation to the non-renewable generation attributes on the island not just renewable generation attributes covered by a GO. However, there is no legal provision to use certificates for non-renewable generation and given the nature of the SEM there is no direct link between the energy sold into the pool by generators and the energy purchased from the pool by suppliers.[25]

Therefore, the SEM Committee has decided to facilitate generators assigning the attributes associated with their generation to suppliers of their choice. It is considered that this is consistent with the SEM Committee's objectives in particular allowing customers to make meaningful comparison between suppliers. It is also consistent with the approach that must be taken in relation to energy covered by a GO – that the movement of the attribute is considered separately to the movement of the physical electricity.

In order for a generator or supplier to avail of this provision they must first register with the Calculating Body and provide any information the Calculating Body reasonably requires to ensure that the resulting fuel mix calculation will be reliable. This will include for generators:

- MPRN associated with the metered generation;
- the fuel source(s);
- the identity of the installation (name, address and generator unit ID[26]);
- the easting and northing location of the installation;
- the capacity of the installation;
- whether the generator is not covered by a national support scheme (if so which);
- the date on which the installation became operational[27]; and
- the authorised persons for all communication with the Calculating Body regarding disclosure.

and for suppliers:

- the identity of the supplier (supplier unit ID); and
- the authorised persons for all communication with the Calculating Body regarding disclosure.

Once per quarter, and at the end of the Disclosure Period, generators will be provided with the opportunity to assign their generation attributes to a supplier of their choice. A generator

[25] The use of Contracts for Difference for this purpose has previously been decided against by the SEM Committee.
[26] Where applicable
[27] The date of the first metered export

can also nominate a supplier to complete the assignments on their behalf. The generator unit will notify the Calculating Body of the energy (MWh), indicating the fuel source, start and end date of production and the supplier unit to which it is to be assigned. The Calculating Body will then verify this against meter data provided by the Meter Data Providers and ensure that the same energy has not been previously assigned. The generator may choose the MWh quantity to apply to the assignment. Accordingly that quantity of metered generation will be assigned to the supplier.

In the case of dual fuel generators the fuel type associated with the generation will be deemed to be the fuel type indicated by the generator in the assignment. The emissions data received from the EPA and DOE[28] will be used by the Calculating Body to establish the fuel usage of each generator over the year ex-post. Where there is a disparity between the assignments and the emissions data regarding fuel usage throughout the year the fuel type of the assignments will be proportionately adjusted. These adjustments will be applied to the unassigned generation in the first instance and then proportionately across all assigned generation.

In the case of non-renewable generation below 20MW that is not required to make submissions to the EPA and DOE the SEM Committee does not consider that independent verification of the total fuel usage and CO2 emissions is necessary as this would likely be disproportionately costly and somewhat onerous on all parties involved. The Calculating Body shall apportion the appropriate SEM fuel emissions factor to the generation from such generators based on the fuel type used by that generator and such generation shall be placed in the SEM residual. However, if a supplier wishes to include such generation in its fuel mix disclosure, the supplier shall submit the independently certified CO2 emissions relating to that generation, along with all other requirements in respect of a Generator Declaration. The SEMO shall accept independently certified CO2 emissions submitted in this regard that it considers appropriate. The above arrangement shall be kept under review for each fuel mix disclosure period to ensure it is appropriate given the scale of such generation.

Non-renewable generation equal to or greater than 20MW that is not required to make submissions to the EPA and DOE shall submit independent verification to the Calculating Body regarding its CO2 emissions and fuel usage.

In the case that a generator takes part in the process of assigning generation attributes to a supplier but then does not submit the required verification by the submission deadline (31st March) the relevant generation attributes will be included in the Residual Mix. The Calculating Body will reasonably apportion fuel types to such generation based on available information held by the system operators.

A.4. Calculation of a Supplier's Fuel-Mix

The calculation will be based on suppliers' annual submissions. A submission must be made in respect of each supply licence held even where a single company holds more than one licence. The presentation of the fuel-mix figures may however be disclosed on a company basis as outlined in the Appendix of this paper.

[28] Environmental Protection Agency (Ireland) and the Department of the Environment (Northern Ireland).

Suppliers' fuel mixes will be calculated in the following manner.

1. The SEMO will inform each supplier of their metered demand and the generation attributes assigned to them.

2. Each licensed supplier will then provide the SEMO with their disclosure submission. The submission will include all GOs[29] they wish to use for the relevant disclosure period and confirmation that the generation attributes assigned[30] to them are correct.

3. The total generation attributed as set out in the supplier's submission is used to meet the supplier's demand.

    - Where the supplier has more generation attributes than demand the surplus will be put into the Residual Mix (renewable generation attributes will be assigned to the supplier first followed by thermal generation attributes in ascending order of emissions per MWh). The supplier will be notified if its submission exceeds its demand.[31]

    - Where the supplier has more demand than contained in the submission the Residual Mix will be used to meet the remaining demand.

A supplier's fuel mix will be made up of the total number of valid GOs and generator assignments plus a proportionate amount of the Residual Mix.

A.5. Calculation of the Residual Mix

The Residual Mix will be calculated in the following manner:

- any generation attributes not assigned to (including exported generation attributes), and submitted by, a supplier;

- surplus GOs declared by suppliers[32];

- unused and expired certificates which were active in the relevant Disclosure Period; and

- where the all-island demand is greater than the sum of all the suppliers' declarations plus the Residual Mix (based on the above inputs) the European Residual Mix will be applied to the remaining demand and included in the Residual Mix. In the case that demand is less than the sum of all the suppliers' declarations the surplus will be included in the European Residual Mix.

The Regulatory Authorities, and the Calculating Body, intend to work with our European colleagues to calculate a European Residual Mix. The European Residual Mix is a fuel mix

[29] Only GOs issued in accordance with the Renewables Directive will be accepted.
[30] Please see CER/11/824 on the treatment of GOs in Ireland and renewable generation attributes.
[31] For the avoidance of doubt, this places no obligation on SEMO to facilitate a change to the supplier's submission after the submission deadline has passed.
[32] This refers to GOs submitted by suppliers which are not required to meet their demand, suppliers are not required to include in their submission all GOs that they hold.

made up of the surplus fuel mixes from all the Member States which have accounted for more generation attributes than they have demand in a disclosure period. Please see section A.13 for more information on this matter.

A.6. Disclosure Period

The SEM Committee has previously decided[33] that the Disclosure Period is the calendar year, beginning 1st January and ending 31st December each year. All data is considered in aggregate over this period and not in smaller time intervals for the calculation of the fuel-mix.

Using the calendar year as the Disclosure Period is in line with European practice generally. All Member States, with a few exceptions[34], use the calendar year as the Disclosure Period. A notable exception is Great Britain and the implications of this are discussed in the following section. The SEM Committee considers it important that there is harmonisation in Disclosure Periods throughout Europe given the pan-European nature of GOs. Differing Disclosure periods could affect the liquidity of the market for GOs, could encourage suppliers to engage in regulatory arbitrage and would make the calculation of a European Residual mix particularly difficult.

A.7. Timing of the Calculation

As discussed above the Disclosure Period will be the calendar year. The SEM Committee wishes to ensure the timely publication of the all-island fuel mix disclosure figures. Other issues which have been considered in relation to this issueare that suppliers should have sufficient time to acquire GOs to meet their demand, the availability of accurate metering data, the availability of emissions figures and that the calculation of the European Residual Mix can be accommodated. Appendix D has examples of how the timings will work in practice.

The SEM Committee has decided that suppliers will submit their GOs three months after the end of the disclosure period, i.e. by the 31st March each year. By the end of April the all-island surplus or deficit will be calculated and applied to the European Residual Mix calculation. It is current practice[35] that the European Residual Mix be determined by 15th May. Taking consideration of suppliers' responses and queries to the Calculating Body, the publication of the All-island disclosure figures shall take place eighteen working days from the date the Calculating body issues the indicative fuel mixes to suppliers.

The most up-to-date meter data available at the time of the calculation, sourced from the meter data providers, will be used in the calculation. Emissions figures will be sourced from the EPA in Ireland and from the DOE in Northern Ireland, except for those plant not required to submit to the EPA and DOE as discussed previously. It is expected these figures will be available in May of each year.

[33] SEM/09/033
[34] Austria, Estonia and Great Britain use the financial year. Portugal uses a rolling 12 month period.
[35] *Best Practice Recommendations For the implementation of Guarantees of Origin and other tracking systems for disclosure in the electricity sector in Europe* (Version 1.1, 8th April 2011) - Reliable Disclosure Systems for Europe, www.reliable-disclosure.org

The administrative arrangements in place in relation to GOs for Northern Irish suppliers are discussed in Appendix B. However, it should be noted that as Ofgem administers GOs on the Utility Regulator's behalf the difference in Disclosure Periods between Great Britain and Northern Ireland, in addition to the 12-month lifespan of a GO, does create an issue. This has been discussed with Ofgem. Accordingly the administrative arrangements are such that Northern Irish suppliers must "retire"[36] their GOs before submitting them to the SEMO. Nineteen months after the month of the relevant generation Northern Irish GOs will be cancelled on Ofgem's register at which point the GOs cannot be used for fuel mix disclosure.

The SEMO, as the Calculating Body, will check the Ofgem register on 31st March each year to verify the information on the register with the suppliers' submissions. Only GOs retired on the Ofgem register prior to 31st March will be included in the fuel mix disclosure calculation.

A.8. Small-Scale Generation including Micro-Generation

Only metered generation exported to the grid will be considered for disclosure purposes.

The CER has issued decisions regarding the treatment of generation metered at less than 1MWh in its decision paper on the *Supervisory Framework for Guarantees of Origin* in Ireland (CER/11/824).

Ofgem's approach is to issue GOs annually to generators with a capacity of 50kW or less. However, the difference in Disclosure Periods makes this approach an issue. These generators will be issued GOs based on generation over the financial year (1st April – 31st March) and so will be actually issued with the GOs by June (generators have until May to make the request) which allows sufficient time to redeem the GOs before Ofgem's 1st July deadline for disclosure but is outside the timeframe for the calculation outlined above.

Such generation attributes shall be included in the subsequent Disclosure Period. Therefore, micro-generation issued a GO for the financial year April 2012 – March 2013 would receive the GO by June 2013. The relevant supplier will retire that GO on Ofgem's register in June 2013 and the Calculating Body will record the GO as used in 2013. The GO would then be used for the calculation of the Disclosure Period 2013 (i.e. the calculation taking place in the first half of 2014). The onus is on the supplier in question to notify the Calculating Body of the GO.

A.9. Information to be Provided to the Calculating Body

The following parties are required to provide the information outlined below to the Calculating Body. In order to allow the calculation to be completed in a timely manner, this information is required to be provided to the Calculating Body within the timelines notified to the participant by the Calculating Body in accordance with their processes and procedures as approved and published. Each year the Calculating body will issue a request for this information in a form it reasonably considers appropriate.

[36] This is an arrangement whereby Northern Irish suppliers will have the option to retire their GOs. Retiring the guarantee of origin means that the supplier has signalled their intention to use it for disclosure and cannot transfer it but it is not yet cancelled. Retired guarantees of origin will be included in the SEM disclosure calculation and deemed cancelled by Ofgem 19 months from the month of the associated generation. These arrangements are necessary to facilitate the administration of Northern Irish guarantees of origin by Ofgem.

Single Electricity Market Operator[37]:

- Total amount of electricity (MWh) sold into the SEM pool for the Disclosure Period by all generating stations (and Intermediaries).
- Total generation purchased from the SEM pool by each supplier (MWh) for the Disclosure Period.
- Total demand[38] (MWh) by supplier for the Disclosure Period.

Meter Data Providers:

- Total amount of generation (MWh) associated with all out-of-market purchases for the Disclosure Period.

Suppliers:

- A list of all GOs suppliers wish to be used for the Disclosure Period.
- A list of all generation attributes assigned to the supplier that the supplier wishes to use for the Disclosure Period, including the relevant information outlined in this decision paper that is required relating to imported non-renewable generation.
- Any further information that may be required by the Calculating Body to verify the supplier's claims in relation to their fuel mix disclosure.

All generators not required to report emissions for the purposes of the ETS[39]

- A list of fuels used by the generator over the Disclosure Period.
- Where more than one fuel was used the total fuel usage, by fuel type.
- The meter data providers will assist the Calculating Body in collating this data.

Others:

- Emissions figures will be sourced from the EPA in Ireland and the DOE in Northern Ireland. The Regulatory Authorities will facilitate the provision of this information.

Further relevant information, including relevant templates, will be outlined in the Calculating Body's processes and procedures.

A.10. Loss Adjustment Factors

It is a reality of the electricity system that in transmitting energy from the generator to the customer there is lost energy. These losses must be accounted for in order to maintain a

[37] As determined in this paper the SEMO will be the Calculating Body and accordingly make use of the information available to it.
[38] Settlement demand will be used. Please note this includes the residual allocation of the error demand unit.
[39] Emissions Trading Scheme

reliable disclosure system, notwithstanding the disconnect between GOs, where they apply, and the physical flow of the energy.

The Interim Arrangements use the TLAF methodology in place in the SEM for the relevant disclosure period. However, there is a difficulty in using the methodology that is used in the SEM. The difficulty is that, as discussed above, the GOs used to meet demand will not relate temporally or geographically to the generation that physically supplied the customer. All GOs will have to be treated on an equal basis regardless of their country of origin or grid location in that country.

Therefore, the SEM Committee has decided that a uniform factor is applied to demand used in the disclosure calculation that represents the difference between total metered generation (adjusted for net imports) and total metered demand[40] occurring during the Disclosure Period. The Calculating Body shall inform suppliers of this factor at the time it issues suppliers their fuel mixes for review. To be clear, the losses will be accounted for only at the point of calculating the fuel mix not before and will not apply to any GO at the point of issue or at the point of export.

A.11. Reconciliation of Metered Data

It is a feature of the industry that initial metered values are subsequently corrected. As discussed above the best available data will be used in the calculation however the initial allocation of generation attributes to generators will be based on initial meter data. This raises the possibility that the values of the attributes assigned to suppliers during the year will be different to the values used by the Calculating Body in the calculation.

To correct for this the Calculating body will revise the values of the relevant attributes based on best relevant available meter data once before the time of the calculation.

A.12. CO2 Emissions

Each year the Calculating Body will calculate CO_2 emission factors for each fuel-type. The emissions factors will be based on information received from the EPA and DETI and on metered generation[41] for the Disclosure Period. The resulting emissions factors will be applied to suppliers' fuel mixes to produce a figure for CO_2 emissions per kWh which will be published along side the fuel mix figures.

A.13. European Residual Mix

The GO scheme required by the Renewables Directive provides for a pan-European market in GOs where they can freely travel between Member States. Furthermore, Member States have no ability to refuse a GO from another Member State unless there is a question over its reliability.

However, this European market for GOs must exist alongside national regimes of fuel mix disclosure and differing approaches to the implementation of the previous and current

[40] Settlement demand
[41] Please note that this relates to all metered generation over the calendar year and is unrelated to the GOs being included in the disclosure calculation.

Renewables Directives (2001/77/EC and 2009/28/EC). A further complication is that Article 15 of the Renewables Directive does not cover thermal generation and such generation attributes may continue to be linked to the physical flow of the associated energy. Therefore, national disclosure calculations in Europe will be problematic for Member States.

The lack of a harmonised approach in Europe to disclosure will create disparities at a national level where demand will not be equal to energy accounted for in any given period. At a European level all energy should be able to be accounted for (although due to differences in calculation methodologies this may not be the case).

To illustrate this point it would be possible for several renewable generators in country A to transfer their GOs to suppliers in country B, however there is no equivalent movement of thermal generation attributes. So while physically supply has equalled demand in both countries in country B suppliers have disclosed GOs from country A to meet their demand and there is a large amount of thermal generation attributes which cannot be assigned to any customer. While in country A there is no way to account for the renewable energy that was exported by way of GOs but that was physically consumed (and sold) in country A. However, if both countries were to "export" and "import" their respective surplus and deficit generation attributes the surplus thermal generation attributes could be used to meet the unaccounted for demand in country A. The inherent inconsistency, at a national level, between a virtual trade in the attributes of electricity and the physical trade in the electrons they represent combined with different approaches to disclosure requires a solution at a European level.

The Regulatory Authorities have been in discussions with several of our European colleagues to help address the issue to the degree possible. Of particular note is the Reliable Disclosure Systems for Europe (RE-DISS) project which is supported by Intelligent Energy Europe[42]. Part of this project is the annual calculation of the European Residual Mix. Each participating country will submit their deficit or surplus, the surpluses will be combined to form the residual mix and then allocated to the countries with deficits; in this way the disclosure system can be consistent at the European level. A pilot calculation for the European Residual was conducted in 2010 and a calculation was carried out in 2011.

The Best Practice Recommendations that have been prepared by the RE-DISS project team have been taken into account in the preparation of the SEM Committee's proposals. However, the RE-DISS recommendations have no legal standing and are not in any way binding on the Regulatory Authorities or the SEM Committee.

The Regulatory Authorities and the Calculating Body shall participate in the calculation of the European Residual Mix. The European Residual Mix shall be included in the calculation of the Residual Mix as appropriate. This will require aggregate demand and aggregate generation figures (broken down by fuel type) to be sent to the RE-DISS project team by the end of April each year and accordingly require adherence to the timeline set out in Section A.7.

It should be noted that the calculation of the European Residual is unlikely to be fully robust. This problem is unavoidable and stems from the fact that it relies on the voluntary input of

[42] This is an EU programme overseen by the European Commission see http://ec.europa.eu/energy/intelligent/

the national competent bodies. The methodologies used, and their robustness, varies between Member States. And so, while the SEM Committee is confident that the RE-DISS team will make every endeavour to ensure the calculation is as robust as possible, the SEM Committee acknowledges that it is not possible to ensure the robustness of the calculation. For this reason a formal calculation of the European Residual Mix would be beneficial.

Furthermore, it should be noted that the RE-DISS project will terminate in the next few years at which point a successor will have to be found to carry out the calculation. The Regulatory Authorities will continue to engage with the European Commission and the other appropriate national authorities to advance the SEM Committee's view that a formal calculation of the European Residual Mix should be conducted by an objective party in the context of the requirements of the Directives regarding GOs and fuel mix disclosure. In the absence of a European Residual Mix calculation the Calculating Body shall contact the RAs, following which an alternative to using the European Residual Mix will be chosen with the approval of the RAs.

It is the SEM Committee's view that applying the European Residual Mix is the approach most consistent with the objectives of disclosure and its pan European nature. Were a significant portion of customers' fuel mix be represented as "unknown", it would be somewhat unhelpful to customers and may cause confusion. Also as the issue of disclosure continues to be addressed at the European level the issues relating to the potential lack of robustness of the calculation will diminish.

A.14. Calculating Body

Having taken into account the relevant legal obligations and timelines involved, the SEM Committee considers that the most suitable body to carry out the calculation of fuel-mix for the island of Ireland is the Single Electricity Market Operator (SEMO). The SEMO will utilise the data already available to it in addition to information provided by other parties as discussed in this paper.

A.15. Publication of Fuel Mix Disclosure

Upon completion of the disclosure calculation the Calculating Body will inform each supplier of their own fuel mix and the all-island average. Suppliers will have seven working days to raise any queries with the result of the calculation.[43] The Calculating Body will then finalise the disclosure figures and submit them, along with any unresolved supplier queries, to the Regulatory Authorities.

The Regulatory Authorities will review the calculation and publish the disclosure figures – which include both the fuel mixes and associated emissions - for all suppliers operating in the retail market as well as the average figures for the island. Once the figures are published suppliers must ensure that they include their disclosure figures, as published, on all bills within two months. Suppliers shall provide a sample copy of a bill to the relevant Regulatory

[43] Note that this timeline may be reduced post the completion of calculation/dissemination of fuel mix information for 2011 if this is considered appropriate by the Regulatory Authorities.

Authority. As required by the decisions set out in this paper and below (Section A.17) all promotional materials also must include the new figures within two months of publication

A.16. Presentation

It should be noted that the SEM Committee's foremost concern is the presentation of reliable and accurate disclosure information by suppliers to all of their customers, as set out in Article 3(9) of Directive 2009/72/EC. The following requirements shall apply to the presentation of fuel-mix disclosure and environmental impact information:

1. the fuel-mix and environmental impact information must be provided by all suppliers in the format set out in this paper (see Appendix B) and must be supplied on either the front or back of all bills to customers (or communicated at least annually where bills are not used). This information can be augmented with the approval of the relevant licensing Regulatory Authority. Where this information is provided on the back of bills to customers, clear reference must be made to this on the front of all such bills. The form and detail of such information on bills will be subject to approval by the licensing Regulatory Authority, prior to its issue to final customers;

2. the default label format for presentation of fuel-mix and associated environmental information to final customers includes; a) the average fuel-mix and b) information regarding CO_2 emissions and radioactive waste for both the supplier and the all island Market for comparative purposes. The labels are set out in Appendix B of this paper;

3. where a supplier wishes to further sub-divide a fuel category, this may be done provided that a total percentage is included for each fuel category that the Regulatory Authorities require to be included in bills sent to final customers. A supplier shall inform the Calculating Body of where it requires a further sub-division of a fuel category;

4. the categories of energy sources that will be used for the purpose of fuel-mix disclosure are coal, natural gas, peat, renewables, oil, nuclear and other. Energy sources (including those listed) which represent less than 1% of the total contribution to meeting the island's demand may be listed as 'other';

5. the definition of 'renewable energy sources' set out in Directive 2009/28/EC shall apply for disclosure purposes i.e. 'energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases; and

6. where a supplier operates as a single business but holds separate licences (such as a supplier that operates in both jurisdictions) that supplier may, subject to the approval of the Regulatory Authorities, present the company's all-island fuel-mix on bills and promotional material. However, to assist with verification of data and jurisdictional requirements each licensed entity must separately submit the required information to the Calculating Body.

A.17. Promotional Materials

1. Promotional material is material handed out or sent directly to customers, excluding newspaper, magazine, bill-board and television advertisements. It includes welcome packs for new customers, materials provided by salespeople seeking to attract new customers and material sent to households encouraging them to sign up to a supplier.

2. Information provided by suppliers on promotional materials regarding fuel-mix and associated environmental impact information should use the same basic format as that required to be made available in or with bills to final customers. References to such information provided on promotional material should refer to information provided in this format also.

3. The Regulatory Authorities will adopt a proportionate approach to the enforcement of this matter. The Regulatory Authorities' foremost concern on this matter is that customers are given accurate and reliable information on suppliers' fuel-mix when considering their choice of supplier.

4. In complying with the above suppliers must ensure they do so in a manner that is in compliance with the relevant obligations regarding vulnerable customers.

Appendix B: Presentation of Information

Figure B1: Default Presentation of Information

Supplier Z Disclosure Label **Applicable Period: January 20xx to December 20xx**		
Electricity supplied has been sourced from the following fuels:	**% of total**	
	Electricity Supplied by Supplier Z	**Average for All Island Market (for comparison)**
Coal	X %	X %
Natural Gas	X %	X %
Nuclear	X %	X %
Renewable	X %	X %
Peat	X %	X %
Oil	X %	X %
Other	X %	X %
Total	100 %	100 %
Environmental Impact		
CO_2 Emissions	X g per kWh	X g per kWh
Radioactive Waste	X g per kWh	X g per kWh
For more information on the environmental impact of your electricity supply visit www.SupplierZ.ie or call 00XXX X XXX XXXX		

Figure B2: Presentation of Information with Additional Fuel Sub-Categories[44]

Supplier Z Disclosure Label **Applicable Period: January 20xx to December 20xx**		
Electricity supplied has been sourced from the following fuels:	**% of total**	
	Electricity Supplied by Supplier Z	**Average for All Island Market (for comparison)**
Coal	X %	X %
Natural Gas	X %	X %
Nuclear	X %	X %
Renewable: • Wind • Hydro • Other	X % X% X% X%	X % X% X% X%
Peat	X %	X %
Oil	X %	X %
Other	X %	X %
Total	100 %	100 %
Environmental Impact		
CO_2 Emissions	X g per kWh	X g per kWh
Radioactive Waste	X g per kWh	X g per kWh
For more information on the environmental impact of your electricity supply visit www.SupplierZ.ie or call 00XXX X XXX XXXX		

[44] Renewables breakdown is for illustrative purposes only. The supplier may sub-divide any fuel source in any manner at the supplier's discretion, in accordance with the requirements set out in this paper.

Appendix C: Summary of Arrangements for Northern Ireland

Introduction

Below is a summary of the administration of renewable energy guarantees of origin (REGO[45]) by Ofgem as it applies to Northern Irish generators and suppliers. Please refer to Ofgem's guidance document[46] for more information.

The key implication for Northern Irish suppliers is that they must ensure that they "retire" all REGOs they wish to claim for fuel-mix disclosure on the Ofgem register. They must retire them in advance of the deadline for submission to the Calculating body. The Calculating Body will check the Register on the submission deadline to verify suppliers' submissions. Any REGOs not retired will not be included in the fuel-mix disclosure calculation. After they are cancelled the REGOs cannot be used or transferred.

Summary

Ofgem administer Northern Irish REGOs on the UR's behalf in the same manner as they administer REGOs originating from GB.

The Renewables and CHP Register (the Register) is the main tool used to administer the REGO scheme. It fulfils Ofgem's duty to establish, maintain and publish a Register in electronic form containing the information set out in Schedule 2 under Regulation 7(1)[47]. It is an electronic, web-based system used for the accreditation of renewable generating stations, requesting and issuing REGOs, holding details of and recording the transfer, cancellation, retirement and use of REGOs. The Register is conclusive proof as to whether a REGO exists, who the registered holder is at a point in time and the registered particulars of the REGOs.

All parties, generating stations, electricity suppliers, agents and participants use the Register to receive, trade and use REGOs. To obtain access to the Renewables and CHP Register one must register for an account. Full information on how to use the Register is available on Ofgem's website www.ofgem.gov.uk in the 'Renewables and CHP Register User Guide'.

REGOs are requested through the Register. Only the operator of an accredited generating station can request REGOs for the renewable electricity they generate. The operator may appoint an agent to request REGOs on their behalf and for their benefit.

There is no deadline for requesting a REGO however all REGOs issued by Ofgem have a life of 16 months from the month of generation before they are cancelled. Therefore, a REGO must be issued before it is cancelled.

[45] The term REGO is used in this appendix for consistency with the Ofgem literature. A REGO (Renewable Energy Guarantee of Origin) is a guarantee of origin as defined by the Renewables Directive.
[46] Renewables and CHP User Guide, Ofgem
[47] The Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) (Amendment) Regulations 2010

REGOs can be claimed for either a calendar month or annually (April-March) for generators <50kW. All claims for REGOs will be rounded up or down to the nearest whole MWh, with any exact half being rounded upwards. If less than half is generated for a period no REGO will be issued.

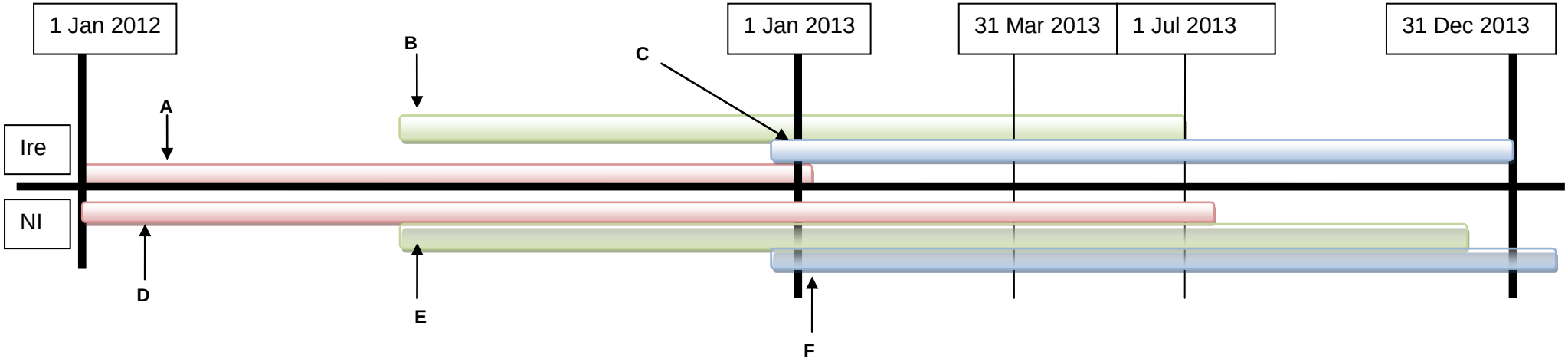
All REGOs are issued, held and transferred electronically within the Renewables and CHP Register. It records transfers of REGOs between registered holders and prospective registered holders. This helps maintain tractability of the REGOs and avoids double counting. Revoked, redeemed or retired REGOs cannot be transferred.

Regulation 6(6) of the 2010 NI Regulations introduced the provision to retire REGOs if Ofgem are requested to do so by the registered holder. This provision was introduced to allow Northern Ireland electricity suppliers to present REGOs for disclosure in the SEM. To ensure that retired REGOs are cancelled, Regulation 6(6) provides that 19 months after the month of generation these REGOs are *deemed cancelled*. Retired REGOs will not be cancelled on the Renewables and CHP Register (they will remain with a status of 'retired').

Once a REGO has been cancelled or deemed cancelled, or revoked, it will no longer qualify as proof that the electricity to which it relates was produced from renewable energy sources. It cannot be transferred or used.

Since a different disclosure period is used for disclosure in the SEM to that used in GB Ofgem are unable to 'redeem' REGOs on behalf of electricity suppliers as evidence to prove the supply of electricity to customers in NI. As such, all Northern Irish electricity suppliers must retire REGOs in respect of the Disclosure Period (i.e. the calendar year) themselves by the submission deadline outlined in this paper before they are cancelled. REGOs are retired using the 'retire REGOs' functionality in the suppliers' Renewables and CHP Register account. Ofgem will capture and report on all retired REGOs in a supplier's account at midday 1st July to present to the Single Electricity Market Operator (SEMO), who will verify these against submissions made to it.

Appendix D: Illustrative examples



Key Dates

1 January 2012: Start of SEM Disclosure Period

1 April 2012: Start of GB Disclosure Period

31 December 2012: End of SEM Disclosure Period

31 March 2013: SEM Disclosure submission deadline for 2012

15 May 2013: EU residual fuel mix figures available

June 2013: SEM disclosure figures published

1 July 2013: GB Disclosure deadline for FY2012/13

1 September 2013: Retired GOs issued by Ofgem for January 2012 are deemed cancelled

1 July 2014: Retired GOs issued by Ofgem for December 2012 are deemed cancelled

Example

The diagram above is a graphical illustration of the life cycle of six GOs. A, B and C are issued in Ireland (by SEMO) while D, E and F are issued in Northern Ireland (by Ofgem). The table below summarises the dates involved.

- A and D are issued for generation that took place on 1st January 2012.
- B and E are issued for generation that took place on 15th July 2012.
- C and F are issued for generation that took place on 31st December 2012

Each of the Irish GOs can be used in both the 2012 and 2013 Disclosure Periods, this is because each is active at some point in both Disclosure Periods. A, B and C are issued on 01/01/12, 15/07/12, and 31/12/12 respectively. Accordingly the GOs expire 12 months from these dates. However in Ireland the GO may still be transferred and used until it is cancelled. Because A is active throughout 2012 and for January of 2013 this means that it can be submitted by a supplier in March 2013 in respect of its 2012 disclosure. Equally the supplier may decide not to use it for the 2012 disclosure period and instead wait until 2014 to submit it in respect of its 2013 disclosure (because it was active in January 2013). If the supplier does not submit it for its 2013 disclosure SEMO will use it for the Residual Mix and cancel it. B is issued for generation that took place on 15th July 2012 and will expire on 15th July 2013. B is active in 2012 (from July onwards) and in 2013 (up until July), therefore B can be used by the supplier for 2012 or 2013 disclosure. If it is not submitted by 31st March 2014 it will be used by SEMO for the 2013 Residual Mix and cancelled. C is issued for generation that took place on 31st December 2012 and so C is active in 2012 and 2013, expiring 31st December 2013. Therefore it may be submitted for 2012 disclosure or for 2013 disclosure. As with A and B, if C is not submitted by 31st March 2014 it will be used for the 2013 Residual Mix.

NI GOs, have a different life span and may not be used once cancelled. However, the cancellation of a GO is tied to its expiry. Under the NI legislation, a GO will be cancelled 16 months after the month in which the production took place unless retired. If retired it will be deemed cancelled 19 months after the month in which the production took place. Once they are cancelled (or deemed cancelled) they cannot then be used or transferred. Operationally, all unretired NI GOs on the Ofgem register will be given the status of cancelled after 19 months and retired GOs will remain with the status of retired.

D is issued on 1st January 2012, it has a life of 16 months and so will expire 1st May 2013 unless it is retired in which case it will be deemed cancelled 19 months later on 1st July, 2013. Therefore the supplier must retire D and submit it to SEMO by the 31st March 2013 for it to be included in the 2012 Disclosure. If it is not included in the 2012 disclosure it cannot be included in the 2013 Disclosure as it cannot be used after 1st July, 2013. Once it is retired it cannot be transferred. E is issued for generation that took place on 15th July 2012 and accordingly will expire on 1st

February 2014 (if retired) – Ofgem issues GOs in respect of the month in which the generation occurred and so all GOs expire on the 1st of the month 16 months from the month of generation. If it is retired before the 1st November, 2013 then it will be deemed cancelled on 1st February, 2014. For E to be included in the 2012 Disclosure it must be retired before 31st March 2013, if it is retired after the 31st March 2013 it will not be included in the 2013 Disclosure. E will not be able to be included in the 2014 Disclosure as it cannot be used after 1st February, 2014 (which is prior to the submission deadline of 31st March). As with D, the supplier must include E in its 2012 disclosure, if it does not E will expire and be cancelled in on 1st November 2013 and there will be no way for the supplier to use it for 2013 disclosure.

F is issued for generation that took place on 31st December 2012 and it will be deemed cancelled on 1st July, 2014. As F will not be cancelled until after the 31st March 2014 it may be included in the supplier's 2013 disclosure.

Table

Jurisdiction	Generated	Issued	Expired (Ire)/Cancelled (NI)	Submission deadline	Disclosure Periods
Ireland	1st January 2012	April 2012	1st January 2013	31st March 2013 or 31st March 2014	2012 2013
Northern Ireland	1st January 2012	February 2012	1st May 2013 (if not retired) 1st July 2013 (deemed cancelled)	31st March 2013	2012
Ireland	15th July 2012	October 2012	15th July 2013	31st March 2013 or 31st March 2014	2012 2013
Northern Ireland	15th July 2012	August 2012	1st November 2013 (if not retired) 1st February 2014 (deemed	31st March 2013	2012

			cancelled)		
Ireland	31st December 2012	January 2013	31st December 2013	31st March 2013 or 31st March 2014	2012 2013
Northern Ireland	31st December 2012	January 2013	1st April 2014 (if not retired) 1st July 2014 (deemed cancelled)	31st March 2013 or 31st March 2014	2012 2013