



An Coimisiún
um Rialáil Fóntas
**Commission for
Regulation of Utilities**

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Commission for Regulation of Utilities

Fuel Mix Disclosure 2016

Information Paper

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Executive Summary

This paper sets out the 2016 fuel mix disclosure for suppliers licensed in Ireland and operating in the Single Electricity Market (SEM).

Fuel mix disclosure presents reliable information regarding the sources of energy that suppliers have chosen to meet their customers' demand (their fuel mix) and the related environmental impact. It does this by disclosing the fuel mix as the percentage of a supplier's demand that is met by various energy sources (% renewables, % gas etc.) and the associated carbon dioxide (CO₂) emissions (tonnes/MWh). Suppliers must present these data on their customer bills.

It is important to note that these figures are for a supplier's entire customer base rather than on an individual customer basis. As such, they represent a supplier's average fuel mix and not that of a specific product that the supplier is selling. There is a responsibility on suppliers to explain the fuel mix of its individual products to customers as well as providing clear marketing information. In addition, this year the CER will publish, for the first time, the results of a verification process to further ensure the accuracy of green claims of specific products.¹

The 2016 fuel mixes and CO₂ emissions factors for suppliers licensed in Ireland and operating in the Single Electricity Market (SEM) are presented in the following tables. The calculations are conducted by the Single Electricity Market Operator (SEMO) in accordance with an approved methodology (see [SEM-11-095](#) for more details). Suppliers must make a submission in order to have their own fuel mix calculated. If they choose not to make a declaration, they will be allocated the residual fuel mix. This residual mix is what is left over after individual supplier's fuel mixes have been calculated.

In line with the methodology, tradable certificates called Guarantees of Origin (GOs) can be used towards a supplier's fuel mix. A Guarantee of Origin (GO) certificate is an instrument defined in European legislation² that certifies that electricity generated is from renewable energy sources. This year, as with previous years, suppliers from Ireland have purchased GOs from other European countries. The use of GOs in the fuel mix increases the overall renewable percentage. Therefore the fuel mix in the graphs and tables in this report will not reflect the actual generation in Ireland.

¹ Regulation of Green Source Products in the Electricity Retail Market, CER/15/205

² EU Directive 2009/28/EC

Public Impact Statement

The purpose of fuel mix disclosure is to provide consumers with information to allow them to see the environmental impact of the electricity that they buy and to choose between suppliers based on their fuel mix and emissions information.

This paper sets out the 2016 fuel mix disclosure for suppliers licensed in Ireland. Suppliers must make a declaration to have their own specific fuel mix calculated. If they choose not to do this, they must use the residual fuel mix (i.e. what is left over after all the individual supplier calculations are done).

Suppliers must update the fuel mix data on their bills within 2 months of this publication.

For the purposes of the Fuel Mix disclosure, suppliers can purchase renewable Guarantees of Origin (GOs). These GOs are certificates that provide customers with certainty that the electricity has been generated from a renewable source. As a result, the renewable share of the supplier fuel mix in this report is higher than the renewable sources used in the production of electricity in Ireland. GOs may be traded cross border and are further explained in Appendix 2. As these GOs feature in the fuel mix, the fuel mix will not reflect the actual generation in Ireland.

Table 1 Fuel Mix of Ireland Suppliers 2016

Supplier	Coal	Gas	Peat	Renewable	Other
All Island Fuel Mix	13.76%	39.66%	5.35%	40.09%	1.14%
Bord Gais (Ireland)	0.00%	74.51%	0.00%	25.49%	0.00%
Electric Ireland (Ireland)	13.54%	51.10%	5.26%	28.98%	1.12%
Energia (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Flogas (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
LCC Power Limited t/s Go Power (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Panda Power (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
SSE Airtricity (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Vayu (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
BRI Green Energy Supply	0.00%	0.00%	0.00%	100.00%	0.00%

Table 2 Suppliers' CO2 Emissions 2016

Supplier	tCO₂/MWh
All-island	0.367
Bord Gais (Ireland)	0.322
Electric Ireland (All Island)	0.407
Electric Ireland (Ireland)	0.413
Energia (All Island)	0.063
Energia (Ireland)	0.000
Flogas Natural Gas Limited	0.000
LCC Power Limited t/s Go Power (Ireland)	0.000
Panda Power (Ireland)	0.000
SSE Airtricity (Ireland)	0.000
Vayu (All Island)	0.000
Vayu (Ireland)	0.000
BRI Green Energy Supply	0.000

For suppliers who have submitted a Northern Ireland declaration and also want to be treated as All Island combined, these are in the table as “All Island”.

Suppliers who do not make a fuel mix declaration are allocated the All Island Residual Mix. Suppliers in Ireland in the consumer markets who did not make declarations for the purposes of fuel mix disclosure were PrePay Power and Pinergy, these two suppliers are assigned the All Island Residual Mix. The All Island Residual mix will appear on the back of these suppliers' customer's bill.

The information presented in this report is used by suppliers to provide information on their websites and on customer bills regarding the overall fuel mix and environmental impact for customers.

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1. Introduction

1.1 Background

1.1.1 Introduction

Fuel Mix Disclosure is required by Article 3(9) of Directive 2009/72/EC. The transposing legislation in Ireland, S.I. number 60 of 2005, 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.

The SEM Committee Decision Paper (SEM-11-095) sets out the enduring methodology for calculation of fuel mix. Suppliers publish their own information, as well as the All Island information, on all bills and promotional materials.

The purpose of this paper is to set out the updated fuel mix and CO2 emissions figures for suppliers licensed in Ireland and operating in the SEM. The fuel mix and CO2 emissions data are taken from data provided to the CER by SEMO.

1.1.2 Glossary of Terms

- FMD – Fuel Mix Disclosure
- GO – Guarantee of Origin
- SEMO – Single Electricity Market Operator
- AIB – Association of Issuing Bodies
- Ofgem – Office of Gas and Electricity Markets
- UR – Utility Regulator
- CER – Commission for Energy Regulation
- SEM – Single Electricity Market
- EPA – Environmental Protection Agency
- DAERA – Department of Agriculture, Environment and Rural Affairs

1.1.3 Related Documents

- The SEM All Island Fuel Mix Disclosure for previous periods can be found [here](#).
- The CER Fuel Mix Disclosure for previous periods can be found [here](#).
- [SEM-09-081](#) Interim Arrangements: Fuel Mix Disclosure in the SEM. Decision paper on the methodology and principals for the calculation of fuel mix disclosure in the SEM.

- [SEM-11-095](#) Fuel Mix Disclosure in the Single Electricity Market: Calculation Methodology Decision Paper.
- CER Decision on Supervisory Framework for Administration of Guarantees of Origin [CER/11/824](#).

For further information on this paper, please contact Clare Mulcahy (cmulcahy@cru.ie) at the CER.

Information on the CRU's role and relevant legislation can be found on the CRU's website at www.cru.ie

1.1.4 Structure of Paper

There are three parts to this paper:

1. Section 2.2 sets out the All Island Fuel Mix and All Island Average CO2 Emissions. The All Island fuel mix is also presented yearly for comparison.
2. Section 2.3 sets out suppliers' fuel mix.
3. Section 2.4 sets out suppliers' CO2 emissions.

All the figures in the report are derived from the methodology described in SEM-11-095 Fuel Mix Disclosure in the Single Electricity Market: Calculation Methodology Decision Paper.

2. Fuel Mix Disclosure and CO2 Emissions 2016

2.1 Presentation of Information

The fuel mix information should be presented on bills in accordance with SEM-11-095 and a template for this purpose is reproduced in the Appendix 1 “Bill Layout” to this paper. In particular the CER would like to remind suppliers of the following:

- Where fuel mix information is presented on the back of bills, reference must be made to it on the front of the bill.
- Radioactive waste information is required by S.I. No. 60 of 2005, this figure is 0.000 t/MWh for all suppliers in 2016 and therefore need not be included with the 2016 fuel mix disclosure information on bills.
- To ensure consistency across suppliers, percentages should be rounded to one decimal place.
- CO2 information should be given in the units tonnes of CO₂ per MWh (t/MWh).
- In addition to the fuel mix disclosure requirements, section 3.5.3 of the CER’s decision paper on the Regulation of Green Source Products in the Electricity Retail Market, [CER/15/2015](#), governs display of information for suppliers who offer green source products.
- The 2016 fuel mix information must be on all bills within two months of the publication of this paper.

2.2 All Island Fuel Mix 2016 and CO2 Emissions

This section presents the fuel mix for suppliers and their CO2 emissions. Following the fuel mix disclosure in the SEM Calculation Methodology, the fuel mix for suppliers will be calculated using the following:

- non-renewable generation attributes
- renewable generation attributes that are covered by Guarantees of Origin (GOs)
- non-renewable generation attributes that are not included in the GOs scheme
- the Residual Mix or EU Residual Mix

Please refer to the SEMO Calculation Methodology Paper for the calculation details and for the definitions of “residual mix” (see [SEM-11-095](#) for more details).

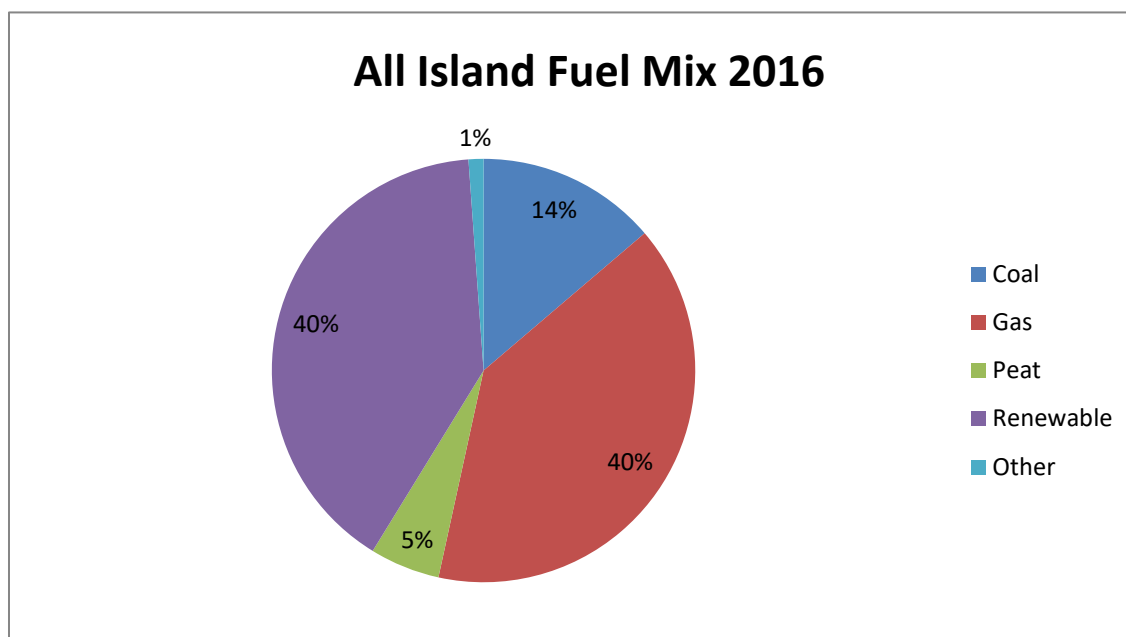
When considering the fuel mix and emissions in this paper, it is important to note that, in line with the methodology, tradable certificates called Guarantees of Origin (GOs) can be used towards a supplier’s fuel mix.

1. A Guarantee of Origin (GO) certificate is an instrument defined in European legislation³ that certifies that electricity generated is from renewable energy sources.
2. GOs are electronic certificates issued for energy from renewable sources. GOs are issued to eligible generators for every 1 MWh of energy produced. The purpose of these certificates is to ensure that the electricity produced has come from a renewable source. Only one GO will be issued per MWh of electricity generated and this one GO can only be used once for the purposes of the fuel mix disclosure. Therefore there is no double counting of the same unit of electricity in the fuel mix.
3. It is important to note that guarantees of origin may not be representative of metered generation in Ireland as they are tradeable instruments and may be imported from other countries. For the purposes of fuel mix disclosure, electricity suppliers can import GO certificates that do not reflect the physical generation of electricity produced in Ireland. Therefore the percentage figure for fuel mix in the graphs and tables in this report will not reflect the actual generation in Ireland as they include any certificates that have been imported into Ireland by electricity producers / suppliers.

³ EU Directive 2009/28/EC

Figure 1 sets out the all-island fuel mix for 2016.

Figure 1 All Island Fuel Mix 2016



Please note that the numbers in the above figure have been rounded.

The below provides a comparison between the all island fuel mix from 2015 and that for 2016:

- Renewables made the largest contribution to the all-island’s electricity supply at 40.09% in 2016 which is a small decrease from 41.06% in 2015.
- Gas increased to 39.66% (up from 36.36% in 2015).
- Coal decreased to 13.76% (down from 16.02% in 2015).
- Peat made up 5.35% of the fuel mix (down from 5.9% in 2017).
- The “other” category at 1.14% includes Oil and Non-Biodegradable Fraction of Waste (NDBFW). In 2015 the “other” category was at .07% and also included Oil and Non-Biodegradable Fraction of Waste (NDBFW).

There are a number of contributing factors to the renewable contribution difference between 2015 and 2016.

- The amount of GO certificates imported from Europe and the UK by suppliers for use in their fuel mix figures contributes to the renewable percentage figure. The number of

GOs imported slightly reduced from 9.6M in 2015 to 8.3M in 2016 which has contributed to the slight decrease in renewable % year-on-year.⁴

- Secondly, there was an increase in installed capacity of wind. **Table 3 Wind Capacity (MW) at Year End** in EirGrid's Annual Renewable Energy Constraint and Curtailment Report 2016⁵ indicates a continual increase in wind capacity.

Table 3 Wind Capacity (MW) at Year End

Year	Wind Capacity (MW) at Year End		
	Northern Ireland	Ireland	All Island
2011	405	1,631	2,036
2012	488	1,763	2,252
2013	554	1,896	2,450
2014	614	2,173	2,787
2015	627	2,363	2,990
2016	799	2,827	3,626

⁴SEMO source data

⁵ <http://www.eirgridgroup.com/site-files/library/EirGrid/Annual-Renewable-Constraint-and-Curtailment-Report-2016-v1.0.pdf>

Figure 2 compares the changes in the fuel mix over the last three years between 2014 and 2016.

Figure 2 Fuel Mix 2014-2016

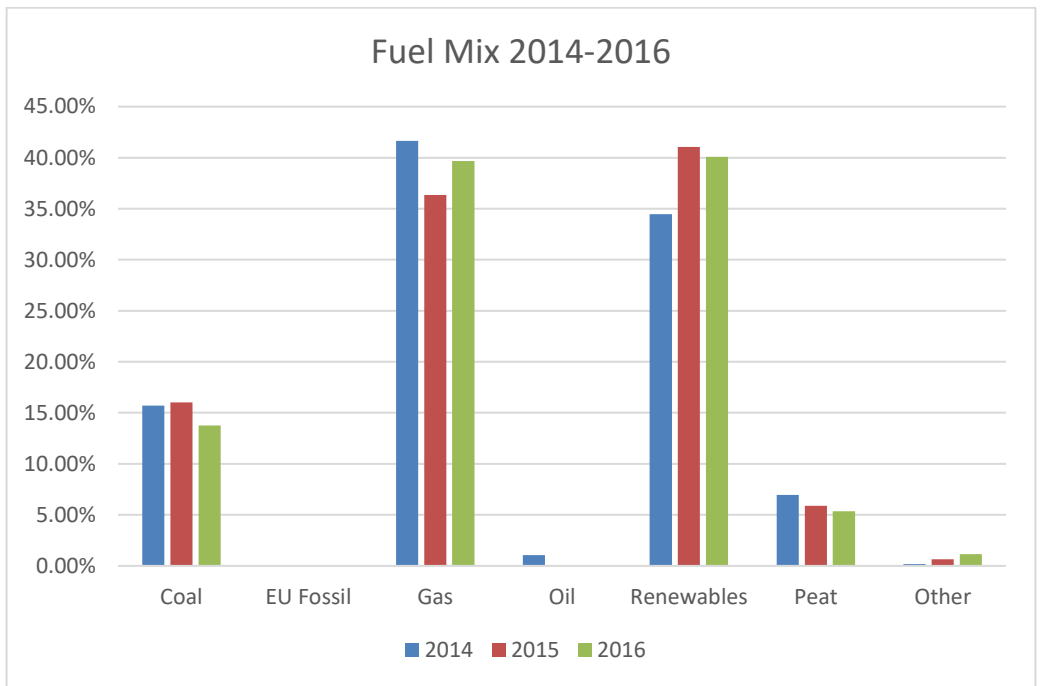
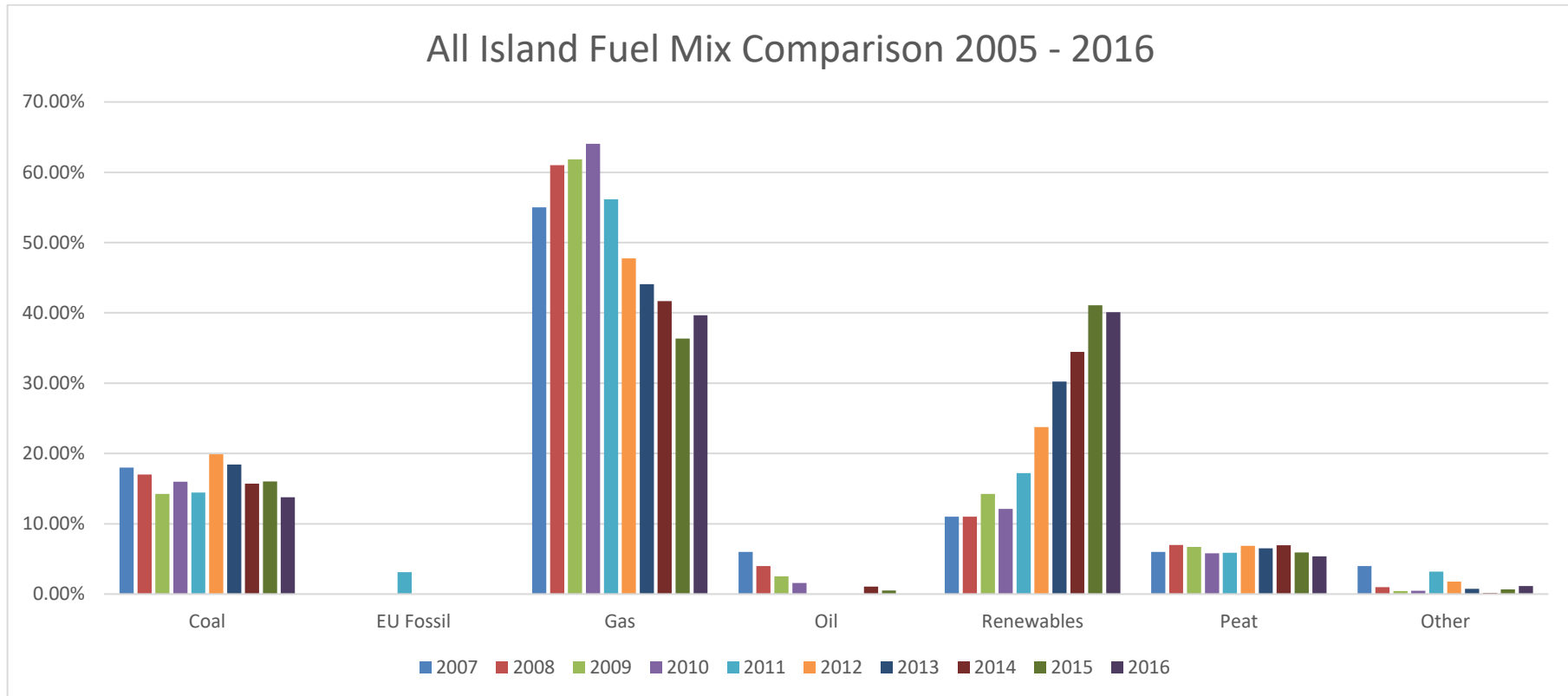


Figure 3 compares the all island fuel mix from 2005 to 2016.

Figure 3 All Island Fuel Mix Comparison 2005-2016



The following table, **Table 4**, shows the percentage figures for the all island fuel mix from 2005 to 2016.

Table 4 All Island Fuel Mix 2005-2016

All Island Fuel-Mix 2005-2016												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Coal	24.00%	19.00%	18.00%	17.00%	14.24%	15.98%	14.44%	19.89%	18.42%	15.71%	16.02%	13.76%
EU Fossil	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.12%	0.00%	0.00%	0.00%	0.00%	0.00%
Gas	46.00%	50.00%	55.00%	61.00%	61.85%	64.06%	56.16%	47.74%	44.09%	41.66%	36.36%	39.66%
Oil	12.00%	9.00%	6.00%	4.00%	2.53%	1.59%	0.00%	0.00%	0.00%	1.06%	0.00%	0.00%
Renewables	9.00%	11.00%	11.00%	11.00%	14.23%	12.11%	17.21%	23.74%	30.24%	34.46%	41.06%	40.09%
Peat	8.00%	7.00%	6.00%	7.00%	6.70%	5.78%	5.88%	6.86%	6.49%	6.95%	5.90%	5.35%
Other	1.00%	4.00%	4.00%	1.00%	0.45%	0.48%	3.18%	1.77%	0.75%	0.17%	0.65%	1.14%

Note:

- Figures from 2007 relate to Ireland only and calculations are based on pre-SEM methodology.
- Figures for 2008, 2009 and 2010 relate to Ireland and Northern Ireland and are based on the Interim Arrangements Methodology ([SEM-09-081](#)) referenced in the Related Documents section of this paper.

- Figures for 2011 onwards relate to Ireland and Northern Ireland and are based on the SEM Committee Decision Paper Fuel Mix Disclosure in the Single Electricity Market: Calculation Methodology Decision Paper (SEM-11-095) referenced in the Related Documents section of this paper.
- The “Other” category consists of all fuels which represent less than 1% of the final overall generation in the calculation in a given year. For 2016 this consists of Oil and the Non-Biodegradable Fraction of Waste (NBDFW).

CO2 Emissions

The average carbon dioxide emissions per MWh of electricity decreased from 0.393 t/MWh in 2015 to 0.367 t/MWh in 2016 for the island. This is as shown in **Error! Reference source not found.**

To calculate these figures, emissions data are supplied by the EPA (Environmental Protection Agency) and DAERA (Department of Agriculture, Environment and Rural Affairs) annually to the SEMO for each conventional generator in the SEM.

These emission figures are grouped according to fuel type and divided by the metered generation to give specific emission factors of a given fuel. All emissions factors are then grouped together and each fuel's emissions factor is multiplied by the corresponding percentage in the All Island Mix. The resulting values are then summed to give a Final All Island emissions factor. This process is repeated for each Supplier, using their individual mix, to arrive at their individual Supplier emissions factor.

Table 5 Average All Island CO2 Emissions (t/MWh)

2008	0.533
2009	0.504
2010	0.519
2011	0.466
2012	0.481
2013	0.452
2014	0.370
2015	0.393
2016	0.367

2.3 Suppliers' Fuel Mix by Fuel Type 2016

The following table shows suppliers' fuel mix by fuel type for 2016. For comparison purposes, the All Island figure is indicated in the first row. Suppliers are then listed either as Ireland and some suppliers are also listed as All Island. The suppliers indicated in their fuel mix submissions if they wanted to be treated as Ireland only or combined which is Ireland and Northern Ireland, this combination is referred to as All Island.

Table 6 Suppliers' Fuel Mix by Type 2016

Supplier	Coal	Gas	Peat	Renewable	Other
All-Island	13.76%	39.66%	5.35%	40.09%	1.14%
Bord Gais (Ireland)	0.00%	74.51%	0.00%	25.49%	0.00%
Electric Ireland (Ireland)	13.54%	51.10%	5.26%	28.98%	1.12%
Electric Ireland (All-Island)	12.67%	52.60%	4.93%	28.75%	1.05%
Energia(Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Energia(All-Island)	0.00%	14.58%	0.00%	85.42%	0.00%
Flogas (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
LCC Power Limited t/s Go Power (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Panda Power (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
SSE Airtricity (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Vayu (Ireland)	0.00%	0.00%	0.00%	100.00%	0.00%
Vayu (All-Island)	0.00%	0.00%	0.00%	100.00%	0.00%
BRI Green Energy Supply	0.00%	0.00%	0.00%	100.00%	0.00%

Note: The fuel mix calculation is carried out on an individual licence basis. Where a supplier operates as a single company but holds separate licences (such as a supplier that operates in Ireland and Northern Ireland) any access generation attributes from one licence can be allocated to the other licence.

Suppliers in Ireland who did not make declarations for the purposes of fuel mix disclosure are assigned the All Island Residual Mix (Table 6).

Table 7 All Island Residual Mix 2016

All-Island Residual Mix	
Coal	33.37%
Gas	36.22%
Oil	2.40%
Peat	12.97%
Renewable	14.67%
Other	0.36%

2.4 Suppliers' CO₂ Emission 2016

The following table sets out the supplier's CO₂ submission for 2016.

Table 8 Suppliers' CO₂ Emissions 2016

Supplier	tCO₂/MWh
All Island	0.367
Bord Gais (Ireland)	0.322
Electric Ireland (All Island)	0.407
Electric Ireland (Ireland)	0.413
Energia (All Island)	0.063
Energia (Ireland)	0.000
Flogas Natural Gas Limited	0.000
LCC Power Limited t/s Go Power (Ireland)	0.000
Panda Power (Ireland)	0.000
SSE Airtricity (Ireland)	0.000
Vayu (All Island)	0.000
Vayu (Ireland)	0.000
BRI Green Energy Supply	0.000

Suppliers in Ireland who do not make a fuel mix declaration are allocated either the Ireland or the Northern Ireland emissions factor. Suppliers in Ireland in the domestic and business markets who did not make declarations for the purposes of fuel mix disclosure were PrePay Power and Pinergy, these two suppliers are assigned the Ireland emissions factor.

All Island emissions factors are as follows:

- Ireland: 0.604
- Northern Ireland: 0.630

3. Appendix 1 - Bill Layout

Default Presentation of Information⁶

Supplier Z Disclosure Label		
Applicable Period: January 2016 to December 2016		
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 %
EU Fossil	X %	X %
Other	X %	X %
Total	100 %	100 %
Environmental Impact		
CO ₂ Emissions	X t/MWh	X t/MWh
<p>Your specific fuel mix may differ to the fuel mix shown because SUPPLIER Z offer green source products. For information on your fuel mix and on the environmental impact of your electricity supply visit www.SupplierZ.ie or, for further details call 00XXX X XXX XXXXX ⁷</p>		

⁶ Please refer to SEM-11-095 for further detail on presentation requirements. Note that the fuel categories used each year can vary.

⁷ Please see section 3.5.3 from the CER's decision paper on the Regulation of Green Source Products in the Electricity Retail Market, [CER/15/205](#), for suppliers who offer green source products.

4. Appendix 2 – Guarantees of Origin (GO)

A Guarantee of Origin (GO) certificate is an instrument defined in European legislation that certifies that electricity generated is from renewable energy sources. The GO guarantees that one MWh of electricity has been produced from renewable energy sources. Electricity suppliers buy GOs to certify that their electricity demand is covered by certified renewable sources.

In Ireland, SEMO is a member of the Association of Issuing Bodies (AIB) since May 2015. AIB is a European body that provides a standardised system for European Energy Certificate System - EECS - and GOs are part of this European certification system. In Ireland, SEMO is the body that issues GOs to generators.

GOs are electronic certificates issued for energy generated from renewable sources and are issued to renewable generators that are not in support schemes (such as the PSO in Ireland) per MWh of generation. These are tradeable instruments and do not need to follow the flow of energy. GOs are traded at a European level. The AIB operates a hub where such certificates can be traded between countries. Suppliers can purchase GOs to use as proof of the share or quantity of energy from renewable sources in their Fuel Mix. GOs are both imported and exported between Ireland and the rest of Europe.

Renewable generators that are signed up to the GO scheme are issued GOs per MWh of generation which can then be transferred to suppliers to use in their fuel mix disclosure. Each year, suppliers submit a fuel mix declaration form to the Single Electricity Market Operator (SEMO), which performs the fuel mix calculation on behalf of the Regulatory Authorities. This declaration outlines all of a supplier's claims on electricity, broken down into GOs held by the supplier on SEMO's registry, Renewable Energy GOs (which are held on Ofgem's registry) and the attributes of specific generators, some of which may be supported by the Public Service Obligation levy. A Supplier can also include non-renewable Generator Attributes in its fuel mix declaration.