

Fuel Mix Disclosure & CO₂ Emissions 2015

August 2015



About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland’s electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Our Mission

Value and sustainability in energy and water.

Our Vision

We will make a difference for consumers by listening, innovating and leading.

Our Values

Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted.

Be a united team.

Be collaborative and co-operative.

Be professional.

Listen and explain.

Make a difference.

Act with integrity.

Abstract

The purpose of this paper is to set out the 2015 calendar year fuel-mix and CO₂ emissions figures for suppliers operating in the SEM. The disclosures are based on 2015 calendar year data and must be published on bills no later than two months from the publication of this paper.

Audience

Electricity Suppliers, Generators & Consumers

Consumer impact

The Utility Regulator is required under legislation to ensure that all suppliers provide (on 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. The information in this report is used by suppliers to provide information on their websites and on customer bills regarding this fuel mix and environmental impact.

Executive Summary

Under Article 3(9) of the Electricity Directive (2009/72/EC), the Utility Regulator is required to ensure that all suppliers provide reliable information on bills and promotional materials sent to customers regarding the contribution of each energy source to the overall fuel mix of the supplier concerned and the associated environmental impacts in the preceding year.

This document sets out the 2015 fuel mixes and CO₂ emissions factors for suppliers licensed in Northern Ireland and operating in the Single Electricity Market (SEM). The figures are calculated in accordance with SEM-11-095 Fuel Mix Disclosure in the Single Electricity Market: Calculation Methodology Decision Paper. The disclosures are based on the 2015 calendar year data and must be published on bills no later than two months from publication of this paper.

<http://www.sem-o.com/Publications/General/FMD%20Decision%20Paper.pdf>

Related Documents:

- The SEM All-Island 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

For further information on this paper, please contact Frankie Dodds (frankie.dodds@uregni.gov.uk) at the Utility Regulator.

Table of Contents:

1	Background and Introduction	5
2	Fuel Mix & CO ₂ Emissions Disclosure 2015	5
2.1	Presentation of Information	5
2.2	All-Island Fuel Mix 2015 and CO ₂ Emissions	6
2.3	Suppliers' Fuel Mix by Fuel Type in 2015	12
2.4	Suppliers' CO ₂ Emissions for 2015	13
	Appendix: Bill Layout	14

1 Background and Introduction

The purpose of this paper is to set out the updated fuel mix and CO₂ emissions figures for suppliers licensed in Northern Ireland and operating in the SEM. The fuel mix and CO₂ emissions data is taken from data provided to the Utility Regulator (UR) by SEMO. The disclosures are based on the 2015 calendar year data and must be published on bills no later than two months from the publication of this paper.

2 Fuel Mix & CO₂ Emissions Disclosure 2015

There are two parts to this paper:

1. Section 2.2 sets out the All Island Fuel Mix and All Island Average CO₂ Emissions. The All-Island is also presented yearly for comparison.
2. Section 2.3 sets out the Supplier's Fuel Mix and CO₂ Emissions

All the figures in the report are derived from the methodology described in SEM-11-095.

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 to this paper. In particular the UR would like to remind suppliers of the following:

- Where fuel mix information is on the back of bills reference must be made to it on the front of the bill.
- While radioactive waste information is required by the Directive, this figure is 0.000 t/MWh for all suppliers in 2015 and therefore need not be included with the 2015 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).
- Where separate products associated with a particular fuel mix are offered to certain customers, all the supplier's customers should receive information (on request) regarding the fuel mix associated with their electricity (not simply the supplier's average fuel mix) in accordance with SEM-11-095.

- The 2015 fuel mix information must be on all bills within two months of the publication of this paper.

2.2 All-Island Fuel Mix 2015 and CO₂ Emissions

Following the Fuel Mix Disclosure in the SEM calculation methodology, the fuel mix for suppliers will include:

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

When considering the fuel mix and emissions in this paper, it is important to note that:

1. The GO scheme permits transfer of GOs between EU Member States which, depending on the quantity of GOs imported or exported from the island of Ireland in a given period, has the potential to vary significantly from the actual renewable generation produced within the jurisdiction.
2. In the event that there is a deficit of generation attributes to meet overall all-Island demand, the European Residual will be used to meet the deficit. This to a lesser extent has the ability to lead to a fuel mix that differs from actual metered generation.

All-Island Fuel Mix

Figure 1 sets out the all-island fuel mix for 2015.

- Renewables made the largest contribution to the all-island’s electricity supply at 41.06% (up from 34.46% in 2014).
- Gas decreased to 36.36% (down from 41.66% in 2014).
- Coal increased to 16.02% (up from 15.71% in 2014).

- The “other” category at 0.7% includes Oil and the Non-Biodegradable Fraction of Waste (NDBFW).

There are a number of contributing factors to the increase in renewable contribution.

- Firstly, and primarily, there was a significant amount of GO certificates imported from Europe and the UK by suppliers for use in their fuel mix figures. The number of GOs imported increased from circa 5M in 2014 to 9.6M in 2015¹.
- Secondly, there was an increase in installed capacity of wind. A joint EirGrid/Soni report² shows that the installed capacity has increased from 2013-2015: 2,990 MW in 2015, 2,787 MW in 2014 and 2,451 MW in 2013.
- Over the years the wind capacity factor has also increased: it was 32.3% in 2015, 28.5% in 2014 and 30.6% in 2013.

The “other” category consists of all fuels in a given year that represent less than 1% of the final overall generation in the fuel mix disclosure calculation. Since Oil has decreased to 0.5% in 2015, it now contributes to the ‘other’ figure (with Non-Biodegradable waste).

¹SEMO source data

² <http://www.eirgridgroup.com/site-files/library/EirGrid/Annual-Renewable-Constraint-and-Curtailment-Report-2015-v1.0.pdf>

Figure 1 All Island Fuel Mix 2015

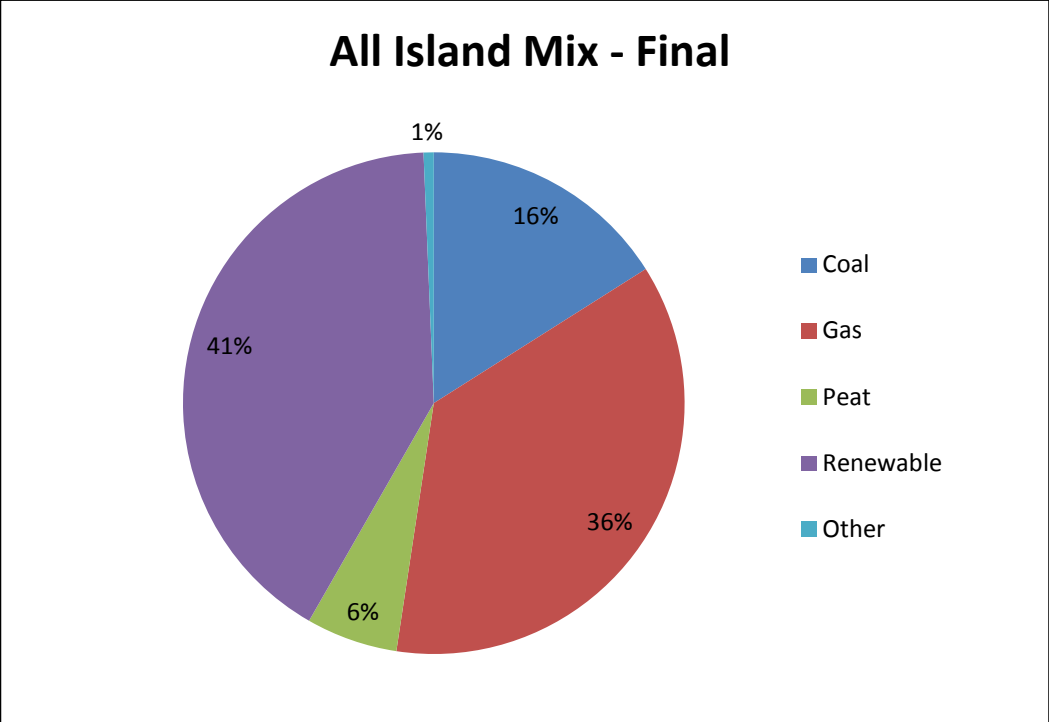


Figure 2 Fuel Mix Comparison 2012 - 2015

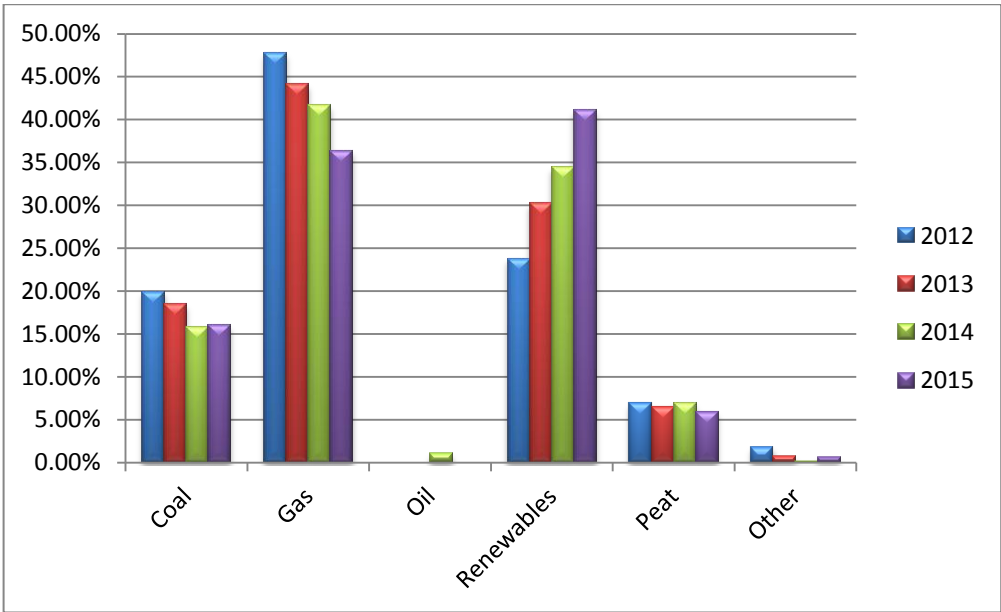
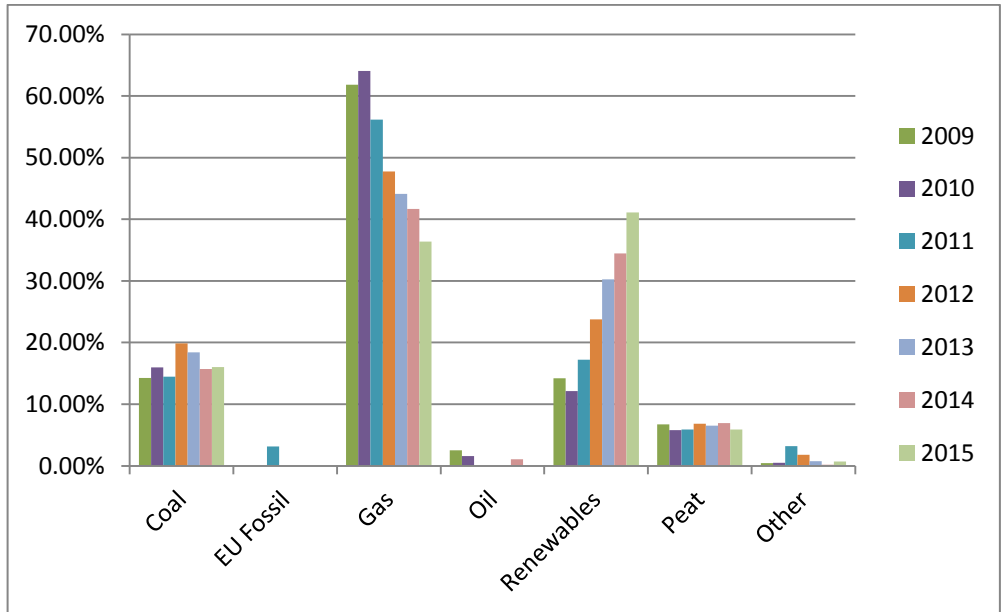


Figure 3 Fuel Mix 2009-2015



Fuel-Mix 2009-2015							
	2009	2010	2011	2012	2013	2014	2015
Coal	14.24%	15.98%	14.44%	19.89%	18.42%	15.71%	16.02%
EU Fossil	0.00%	0.00%	3.12%	0.00%	0.00%	0.00%	0.00%
Gas	61.85%	64.06%	56.16%	47.74%	44.09%	41.66%	36.36%
Oil	2.53%	1.59%	0.00%	0.00%	0.00%	1.06%	0.00%
Renewables	14.23%	12.11%	17.21%	23.74%	30.24%	34.46%	41.06%
Peat	6.70%	5.78%	5.88%	6.86%	6.49%	6.95%	5.90%
Other	0.45%	0.48%	3.18%	1.77%	0.75%	0.17%	0.65%

Note:

- Figures for 2009 and 2010 are based on the Interim Arrangements methodology referenced in this paper.
- Figures for 2011 onwards 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 this paper.
- The “Other” category consists of all fuels which represent less than 1% of the final overall generation in the calculation. For 2015 this consists of Oil and the Non-Biodegradable Fraction of Waste (NBDFW).

CO₂ Emissions

The average carbon dioxide emissions per MWh of electricity slightly increased from 0.370 t/MWh in 2014 to 0.393 t/MWh in 2015 for the island [Table 1]. The raised percentage of coal in the fuel mix year on year (15.71% in 2014; 6.02% in 2015) has contributed to this increase.

Emissions figures are supplied by the EPA and DAERA annually to the SEMO for each conventional generator in the SEM for this calculation. These emission figures are totalled 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 calculate their individual Supplier emissions factor.

Table 1 Average CO₂ Emissions (t/MWh)

2009	0.504
2010	0.519
2011	0.466
2012	0.481
2013	0.452
2014	0.370
2015	0.393

2.3 Suppliers' Fuel Mix by Fuel Type in 2015

Supplier Fuel Mix by type 2015					
Supplier	Coal	Gas	Peat	Renewable	Other
All-Island	16.0	36.4	5.9	41.1	0.7
Airtricity (Northern Ireland)	0.0	63.7	0.0	36.3	0.0
Airtricity (All-Island)	0.0	17.5	0.0	82.5	0.0
Bord Gais (Northern Ireland)	40.7	25.0	15.0	17.7	1.6
Bord Gais (All-Island)	5.4	72.0	2.0	20.4	0.2
Electric Ireland (Northern Ireland)	0.0	73.4	0.0	26.6	0.0
Electric Ireland(All-Island)	16.5	52.2	6.1	24.6	0.7
Energia (Northern Ireland)	0.0	96.8	0.0	3.2	0.0
Energia (All-Island)	0.0	16.1	0.0	83.9	0.0
LCC Power Limited t/a Go Power(Northern Ireland)	39.7	24.4	14.6	19.7	1.6
LCC Power Limited t/a Go Power (All-Island)	34.6	21.3	12.7	30.0	1.4
Power NI (Northern Ireland)	20.5	56.7	7.5	14.5	0.8
Vayu (Northern Ireland)	0.0	0.0	0.0	100.0	0.0
Vayu (All-Island)	0.0	0.0	0.0	100.0	0.0

Note: The fuel mix calculation is carried out on an individual licence basis. When calculating the fuel mix, where a supplier operates as a single company but holds separate licences (such as a supplier that operates in both jurisdictions) those licences that have excess generation attributes are distributed among the licences with excess demand within the single company prior to using the Residual Mix.

2.4 Suppliers' CO₂ Emissions for 2015

Supplier	tCO ₂ /MWh
All-island	0.393
Airtricity (Northern Ireland)	0.309
Airtricity (All-Island)	0.085
Bord Gais Northern Ireland)	0.671
Bord Gais (All-Island)	0.423
Electric Ireland (Northern Ireland)	0.356
Electric Ireland (All-Island)	0.476
Energia (Northern Ireland)	0.470
Energia (All-Island)	0.078
LCC Power Limited (Northern Ireland)	0.654
LCC Power Limited (All-Island)	0.571
Power NI (Northern Ireland)	0.552
Vayu (Northern Ireland)	0.000
Vayu (All-Island)	0.000

Appendix: Bill Layout
Default Presentation of Information³

Supplier Z Disclosure Label		
Applicable Period: January 2015 to December 2015		
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>For more information on the environmental impact of your electricity supply visit www.SupplierZ.co.uk or call 00XXX X XXX XXXX</p>		

³ Please refer to SEM-11-095 for further detail on presentation requirements. Note that the fuel categories used each year can vary.