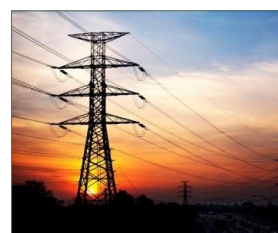


# Fuel Mix Disclosure & CO<sub>2</sub> Emissions 2016

October 2017



## 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 2016 calendar year fuel-mix and CO<sub>2</sub> emissions figures for Northern Ireland suppliers operating in the SEM. The disclosures are based on 2016 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 2016 fuel mixes and CO<sub>2</sub> 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 2016 calendar year data and must be published on bills no later than two months from publication of this paper. Suppliers must make a submission to SEMO; any supplier who chooses not to make a declaration will be allocated the residual mix.

<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](mailto:frankie.dodds@uregni.gov.uk)) at the Utility Regulator.

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## **1 Background and Introduction**

The purpose of this paper is to set out the updated fuel mix and CO<sub>2</sub> emissions figures for suppliers licensed in Northern Ireland and operating in the SEM. The fuel mix and CO<sub>2</sub> emissions data is taken from data provided to the Utility Regulator (UR) by SEMO. The disclosures are based on the 2016 calendar year data and must be published on bills no later than two months from the publication of this paper.

## **2 Fuel Mix & CO<sub>2</sub> Emissions Disclosure 2016**

There are two parts to this paper:

1. Section 2.2 sets out the All Island Fuel Mix and All Island Average CO<sub>2</sub> Emissions. The All-Island is also presented yearly for comparison.
2. Section 2.3 sets out the Supplier's Fuel Mix and CO<sub>2</sub> 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 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.
- CO<sub>2</sub> information should be given in the units tonnes of CO<sub>2</sub> 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 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 CO<sub>2</sub> Emissions

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 2016.

- Renewables made the largest contribution to the all-island's electricity supply at 40.09% (down slightly 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).
- The "other" category at 1.17% includes Oil and the Non-Biodegradable Fraction of Waste (NDBFW).

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

- 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.<sup>1</sup>
- Secondly, there was an increase in installed capacity of wind. Table 1 from EirGrid’s Annual Renewable Energy Constraint and Curtailment Report 2016<sup>2</sup> indicates a continual increase in wind capacity.

**Table 1 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

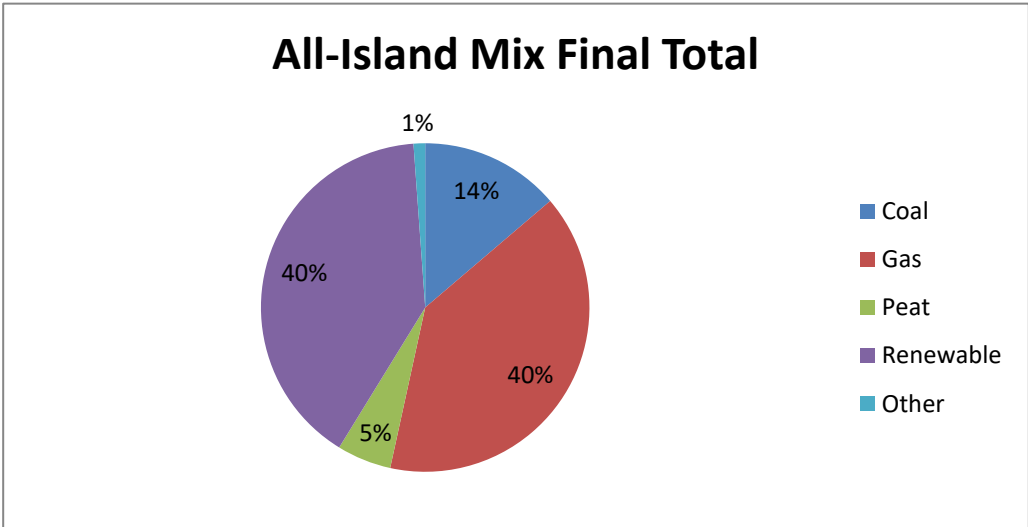
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<sup>1</sup>SEMO source data

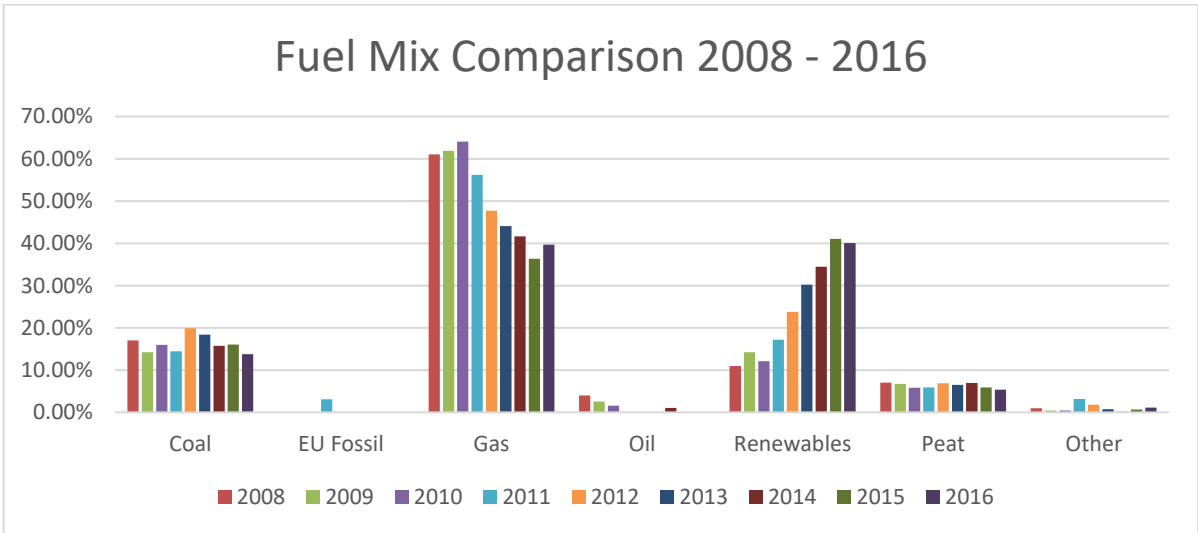
<sup>2</sup> <http://www.eirgridgroup.com/site-files/library/EirGrid/Annual-Renewable-Constraint-and-Curtailment-Report-2016-v1.0.pdf>



**Figure 1: All Island Fuel Mix 2016**



**Figure 1 Fuel Mix 2008-2016**



<b>Fuel-Mix 2009-2016</b>								
	2009	2010	2011	2012	2013	2014	2015	2016
Coal	14.24%	15.98%	14.44%	19.89%	18.42%	15.71%	16.02%	13.76%
EU Fossil	0.00%	0.00%	3.12%	0.00%	0.00%	0.00%	0.00%	0.00%
Gas	61.85%	64.06%	56.16%	47.74%	44.09%	41.66%	36.36%	39.66%
Oil	2.53%	1.59%	0.00%	0.00%	0.00%	1.06%	0.00%	0.00%
Renewables	14.23%	12.11%	17.21%	23.74%	30.24%	34.46%	41.06%	40.09%
Peat	6.70%	5.78%	5.88%	6.86%	6.49%	6.95%	5.90%	5.35%
Other	0.45%	0.48%	3.18%	1.77%	0.75%	0.17%	0.65%	1.14%

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 normally 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).

## CO<sub>2</sub> 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 [Table 1].

Emissions figures are supplied by DAERA and the EPA 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 CO<sub>2</sub> 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 in 2016

Supplier Fuel Mix by type 2016						
Supplier	Coal	Gas	Peat	Oil	Renewable	Other
All-Island	13.8	39.7	5.4	0.0	40.1	1.1
Budget Energy (Northern Ireland)	33.0	35.8	12.8	2.4	15.7	0.4
Electric Ireland (Northern Ireland)	0	74.6	0	0.0	25.4	0
Electric Ireland(All-Island)	12.7	52.6	4.9	0.0	28.8	1.0
Energia (Northern Ireland)	0	93.6	0	0.0	6.4	0
Energia (All-Island)	0	14.6	0	0.0	85.4	0
LCC Power Limited t/a Go Power(Northern Ireland)	30.8	33.4	12.0	2.2	21.2	2.5
Power NI (Northern Ireland)	8.1	74.7	3.2	0.0	13.4	0.7
SSE Airtricity (Northern Ireland)	0	64.0	0	0.0	36.0	0
Vayu (Northern Ireland)	0.0	0.0	0.0	0.0	100.0	0.0
Vayu (All-Island)	0.0	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.

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

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' CO<sub>2</sub> Emissions for 2016

Supplier	tCO <sub>2</sub> /MWh
<b>All-island</b>	<b>0.367</b>
Budget Energy (Northern Ireland)	0.622
Electric Ireland (Northern Ireland)	0.322
Electric Ireland (All-Island)	0.413
Energia (Northern Ireland)	0.405
Energia (All-Island)	0.063
LCC Power Limited (Northern Ireland)	0.581
Power NI (Northern Ireland)	0.438
SSE Airtricity (Northern Ireland)	0.277
Vayu (Northern Ireland)	0.000
Vayu (All-Island)	0.000
Suppliers who did not submit a declaration	0.630

**Appendix: Bill Layout  
Default Presentation of Information<sup>3</sup>**

<b>Supplier Z Disclosure Label</b>		
<b>Applicable Period: January 2016 to December 2016</b>		
<b>Electricity supplied has been sourced from the following fuels:</b>	<b>% of total</b>	
	<b>Electricity Supplied by Supplier Z</b>	<b>Average for All Island Market (for comparison)</b>
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 %
<b>Total</b>	<b>100 %</b>	<b>100 %</b>
<b>Environmental Impact</b>		
CO <sub>2</sub> Emissions	X t/MWh	X t/MWh
<p>For more information on the environmental impact of your electricity supply visit  <a href="http://www.SupplierZ.co.uk">www.SupplierZ.co.uk</a> or call 00XXX X XXX XXXX</p>		

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