Generator Financial Performance in the Single Electricity Market (SEM)

SEM/14/111

19 December 2014

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The SEM Committee is established in Ireland and Northern Ireland by virtue of section 8A of the Electricity Regulation Act 1999 and Article 6 (1) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007 respectively. The SEM Committee is a Committee of both CER and NIAUR (together the Regulatory Authorities) that, on behalf of the Regulatory Authorities, takes any decision as to the exercise of a relevant function of CER or NIAUR in relation to an SEM matter.

1 EXECUTIVE SUMMARY

Introduction

This Regulatory Authority (RA) report from the Market Modelling Group (MMG) examines the financial performance of generation companies operating in the SEM. The purpose of this report is to assist SEM transparency while respecting individual generator commercial sensitivity. It follows a similar format to that published last year (SEM/13/034), which in turn followed the RA "Decision Paper on Generator Financial Reporting in the SEM", SEM/12/027[1]. The data in this report comes from the following sources:

1) Regulated accounts of generators for each financial year from 2007 to 2013/14;
2) Generator financial reporting templates for each financial year from 2011 to 2013/14; and,
3) Clean spark and dark green spreads in SEM including a comparison with BETTA, from 2008 to Q1 2014.

While this report focuses on annual financial generator performance, it should be noted that electricity generation typically involves a large long-term capital investment lasting a number of decades, over which costs will fluctuate, and so annual variations in generator profitability (up or down) should be considered in that context.

Background

There is a strong relationship between gas fuel prices and generator profits in the SEM. This is firstly because when the cost of gas increases, the short-run cost of the marginal (typically gas-fired) generator rises and hence SMP rises, and vice versa. Given that total SEM energy pool revenue for generators in SEM is essentially SMP multiplied by Demand, rising gas prices therefore tends to lead to higher aggregate generator revenues. Furthermore, because the marginal plant has a relatively higher fuel cost than the majority of plants that are run, a rise in the gas cost generally results in a greater increase in SMP and total pool revenue than in most generators' fuel costs. Hence a rise in gas prices tends to increase generator industry profits and vice versa.

A factor which has helped mitigate against this relationship in SEM is the entry of efficient new generation, as discussed below. This new generation entry has been encouraged by the transparent and cost-reflective nature of the SEM.

Key Messages

Key messages in relation to the regulated accounts, the financial templates and spark spreads are provided below, with detailed information in the body of the report.

As a summary, the table below represents the aggregate generator financial performance with respect to the regulated accounts received by the RAs.

[1] SEM/12/027 and SEM/13/034 – available for down load from www.allislandproject.org

€ '000	2007	2008	2009	2010	2011	2012	2013
Revenue	€2,742.82	€3,228.97	€2,666.37	€2,418.32	€2,479.26	€2,495.18	€2,410.70
Operating Profit (EBITDI)	€755.03	€781.83	€990.54	€681.62	€662.73	€713.20	€597.13
Operating Profit Margin (EBITDI/Turnover)	26%	24%	37%	28%	26%	28%	25%
Net Profit (EAT)	€458.02	€455.51	€635.92	€229.57	€303.81	€137.64	€29.60
Net Profit Margin (EAT/Turnover)	16%	14%	23%	9%	12%	5%	1%

Summary table of revenues, operating and net profit positions – 2007 to 2013

Key Message 1: Reduction in Profits from 2009 to 2010

The regulatory accounts in this report show that aggregate generator profits in SEM were highest in 2009 given high fuel prices and SMP in 2008 and the lag from forward contracting for differences (CfDs) set in that year. Aggregate generator operating and net margins in 2009 were 37% and 23% respectively. There was then a significant reduction in operating and net profits in 2010, with margins falling to 28% and 9% respectively. This was in line with the lag of dramatically lower fuel prices and SMP of 2009.

Key Message 2: Relatively Stable Operating Profits since 2010

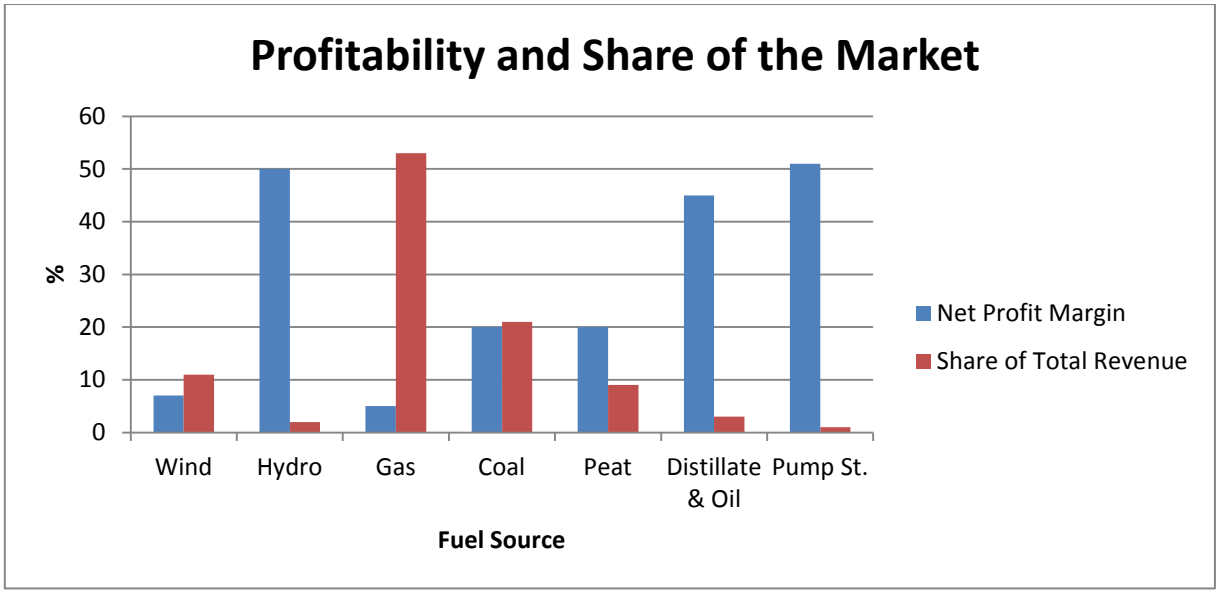
Since 2010 aggregate operating profit and operating margin levels have been relatively stable, with operating margins around the 26% mark as per the table above. This reflects the fact that, while SMP increases from 2010 would have assisted generator revenue and profit levels, against this new generator entry and lower demand would have put some downward pressure on generator running and profit levels. The financial templates for 2013 which covers all generators including wind show a broadly similar operating margin to the regulatory accounts information reflected in the table above.

Key Message 3: Reduction in Net Profits since 2011

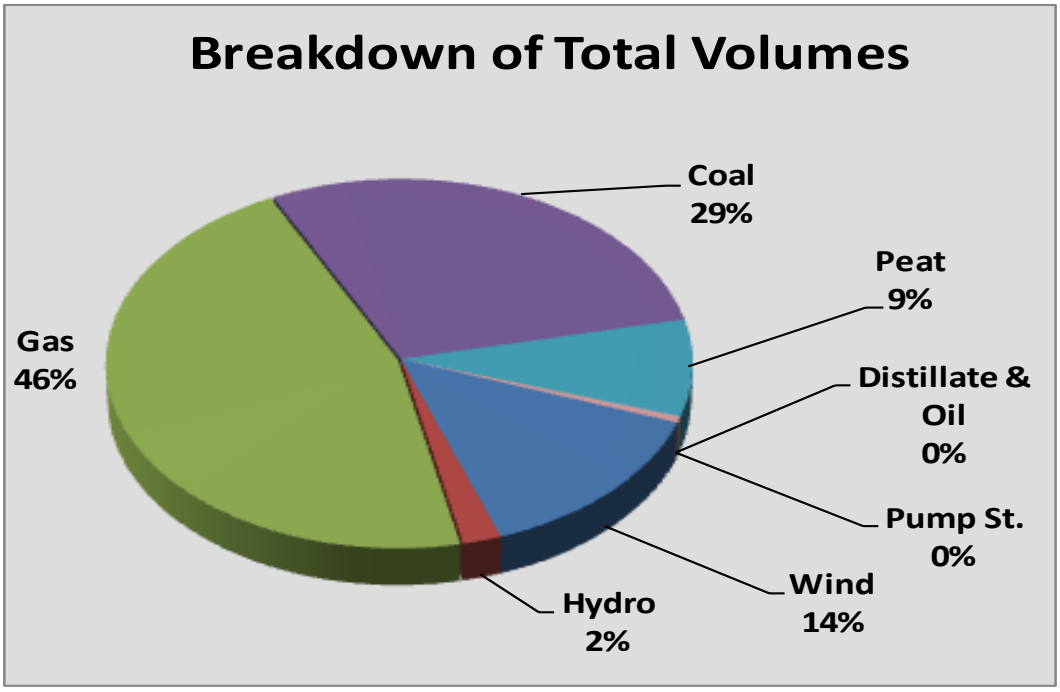
While operating profits have been fairly stable, net profits as reported in the regulatory accounts have been falling since 2011, which is related to impairment charges for some generators, with a 1% net profit margin reported in 2013. A broadly similar net profit situation for 2013 is shown in the financial templates, again driven by impairments.

Key Message 4: Higher Profits for Lower Running Generator Types

The financial reporting templates for 2013 provide information which enables an assessment and comparison of operating and net profit margins between the various fuel types as depicted in the graph below. The graph illustrates that while relatively high net profit margins (which in this case excluded impairment charges) were earned for Hydro, Distillate & Oil and Pumped Storage, these sources represent only 6% of total revenues in the SEM. It is also worth noting that the majority of revenue for Distillate & Oil is from capacity payments rather than from the pool market. In comparison Gas and Wind plants earned lower net profit margins of 5% and 7% respectively (again, excluding impairment) but represent 64% of the revenues in the SEM. Coal and Peat both report a net profit margin of 20% and represent 30% of the revenues.



The pie chart below illustrates the contribution by generation output volume for 2013 from the various generator types. Gas remains the dominant fuel source at 46%, with coal providing 29% and Wind 14% for the 2013 year. This compares to 64% for Gas, 13% for Coal and 12% for Wind as reported in 2011.



Key Message 5: Higher Spark-Spreads

The spark spreads represent the theoretical gross income of a plant selling a unit of electricity. All of a generator's costs such as operation, maintenance and capital must be recovered from the clean/green spark/dark spread level multiplied by generator's actual running in the market, in order to derive the generator's net profit position. The spark spread data analysis shows that overall they were higher in the SEM than in BETTA from 2008 to early 2014, which is likely related to structural differences between the two markets. It should be noted that these spreads represent the theoretical gross generator margins and so it does not mean that an individual generator's profits are higher in SEM compared to BETTA, as this depends on its level of running regime in the market.

The RAs will continue to monitor the financial position of generators in SEM, with an updated report for 2014/15 planned for publication in Q4 of 2015.

2 PURPOSE OF THIS PAPER

This Regulatory Authority (RA) report from the Market Modelling Group (MMG) examines the financial performance of generation companies operating in the SEM. As such the publications by the MMG can be read in conjunction with those published by the Market Monitoring Unit[2] (MMU).

The purpose of this report is to assist SEM transparency while respecting individual generator commercial sensitivity. It follows a similar format to that published last year (SEM/13/034)[3], which in turn followed the RA "Decision Paper on Generator Financial Reporting in the SEM", SEM/12/027[3]. However some formatting changes have been made to this report to assist in the presentation of the findings. The data in the report comes from the following sources:

a. Generator financial reporting templates submitted by generators to the RAs. The first year such templates were requested and submitted was 2011 and this report includes templates up to 2013/14[4]. This is a requirement from SEM/12/027, which sets out the financial reporting template to be completed by generation companies with a combined capacity greater than or equal to 25 MW;
b. Regulated accounts of generators submitted to the RAs for each financial year from 2007 to 2013/14[4];
c. Clean spark and dark green spreads in SEM including a comparison with BETTA. The data provided is from 2008 to Q1 2014.

The previous report included an analysis of the historic financial performance of generators from 2008 by reference to the SEM pool only. This has been discontinued from this report as it was felt by the RAs that the analysis provided little added value to the data already available from the financial reporting templates and the regulated accounts. Also, some generators sent in restated end of year accounts so the historical figures may have changed. This explains why there may not be consistency between some of the figures in the previous report and this report.

While this report focuses on annual financial generator performance, it should be remembered that electricity generation typically involves a large long-term capital investment lasting a number of decades, over which costs need to be paid, and so annual variations in generator profitability (up or down) should be considered in that context.

The RAs will continue to monitor the financial position of generators, with an updated report for 2014/15 planned for publication in Q4 of 2015.

For an explanation of some of the financial terms used in this report please refer to Appendix A.

[2] Market Modelling Unit - http://www.allislandproject.org/en/market_monitoring_unit.aspx
[3] SEM/12/027 and SEM/13/034 – available for down load from www.allislandproject.org
[4] The financial year is either the year ending 31st December for generators based in Ireland or 31st March for generators based in Northern Ireland – so, for example, 2013 accounts or template data in this report refers to the year to 31st December 2013 for Ireland or year to 31st March 2014 for Northern Ireland.

3 CONTEXT

There is a strong relationship between gas fuel prices and generator profits in the SEM. This is firstly because when the cost of gas increases, the short-run cost of the marginal (typically gas-fired) generator rises and hence SMP rises, and vice versa. Given that total SEM energy pool revenue for generators in SEM is essentially SMP multiplied by Demand (SMP*Demand), rising gas prices therefore tends to lead to higher aggregate generator revenues. Furthermore, because the marginal plant has a relatively higher fuel cost than the majority of plants that are run, a rise in the gas cost generally results in a greater increase in SMP and total pool revenue than the corresponding increase in most generators' fuel costs.

Consequently a rise in gas prices tends to increase generator industry gross profits and net profits (which includes semi-fixed and fixed costs), and vice versa, as shown in this report. The entry of new and efficient generation has mitigated the relationship between gas prices and generator profitability in the SEM, as discussed later in the report.

The RAs have received regulated accounts from generators for the full operational years of the SEM from 2008 through to 2013/14. The year 2008 saw record prices for fossil fuels which fed through to a very high System Marginal Price (SMP) in the SEM. In line with the economic downturn, 2009 saw large reductions in fuel prices, electricity demand and SMP. In 2010 and 2011 fuel prices and SMP recovered significantly from their 2009 lows, with small further increases in SMP recorded in 2012 and 2013, as shown below in the following table and graphs. Also, while strictly beyond the focus of this report, the subsequent fall in SMP in the first eight months of 2014 compared with the same period in 2013 is noted, and this is linked to lower international gas prices during this period.

Year	Annual Average SMP (Time)	Change	Jan - Aug Average SMP (Time)	Change
2008	€80.36		€81.57	
2009	€43.47	-46%	€45.10	-45%
2010	€53.81	24%	€50.66	12%
2011	€61.75	15%	€62.55	23%
2012	€63.20	2%	€61.66	-1%
2013	€65.71	4%	€66.01	7%
2014			€56.00	-15%

Table 1 - 2008 to 2014 Average SMP and Percentage Change

Figures 1 to 3 below illustrate the trends in average SMP, fuel prices and system demand over the last number of years.

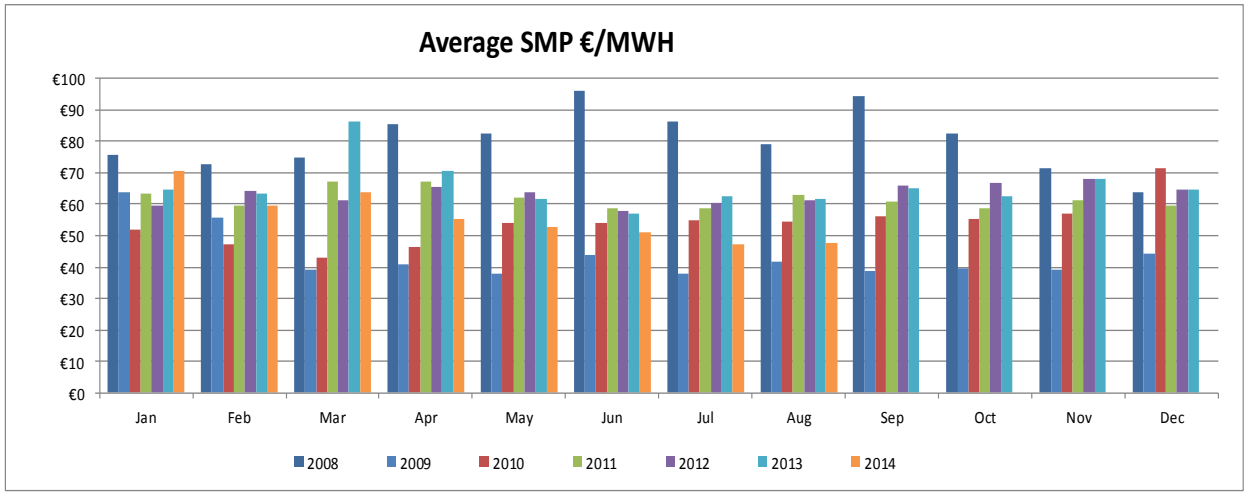


Figure 1 - 2008 to 2014 Monthly Average SMP

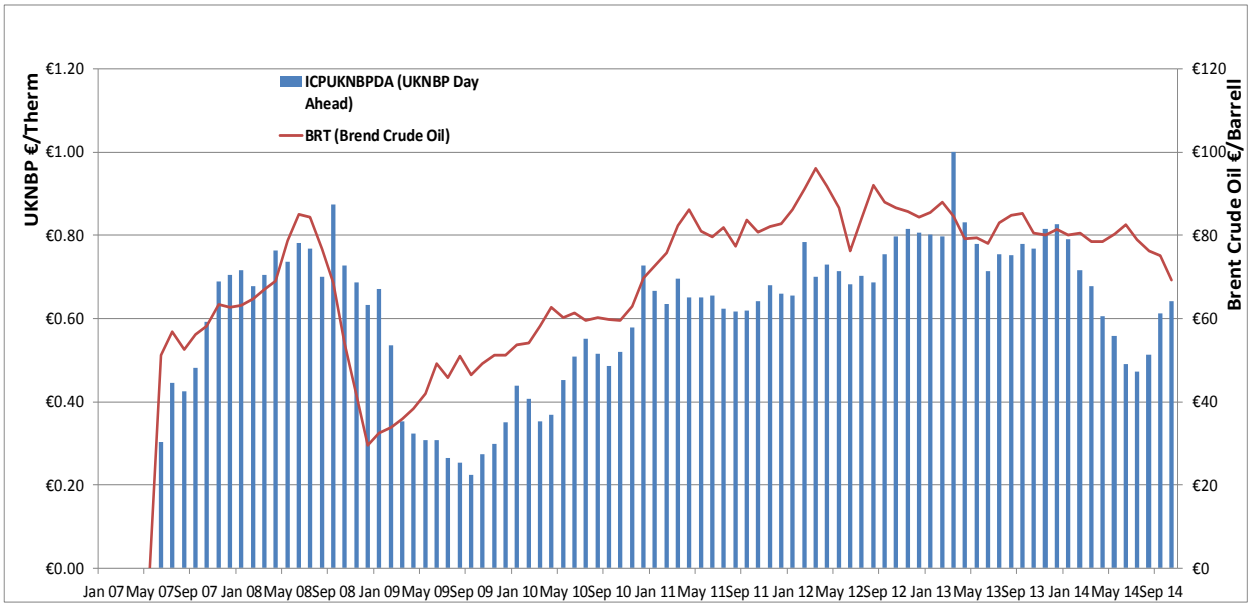


Figure 2 - Average Gas and Oil Prices from May 2007 (Source: Reuters)

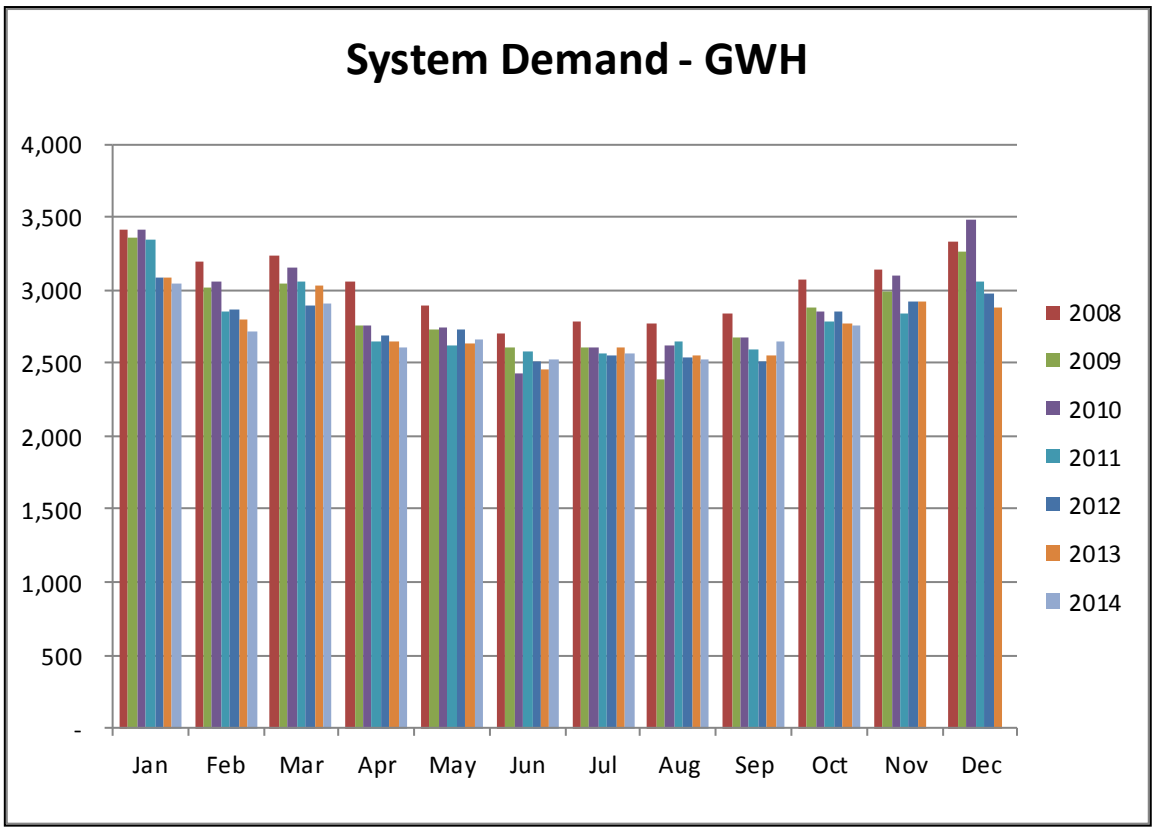


Figure 3 - Monthly System Demand - 2009 to 2014

As stated earlier and as can be seen in this report, there is a strong relationship between gas fuel prices and generator profits in the SEM. This is firstly because when the cost of gas increases, the short-run cost of the marginal (typically gas-fired) generator rises and hence SMP rises, and vice versa. The close relationship between gas costs and SMP is illustrated in the figure below.

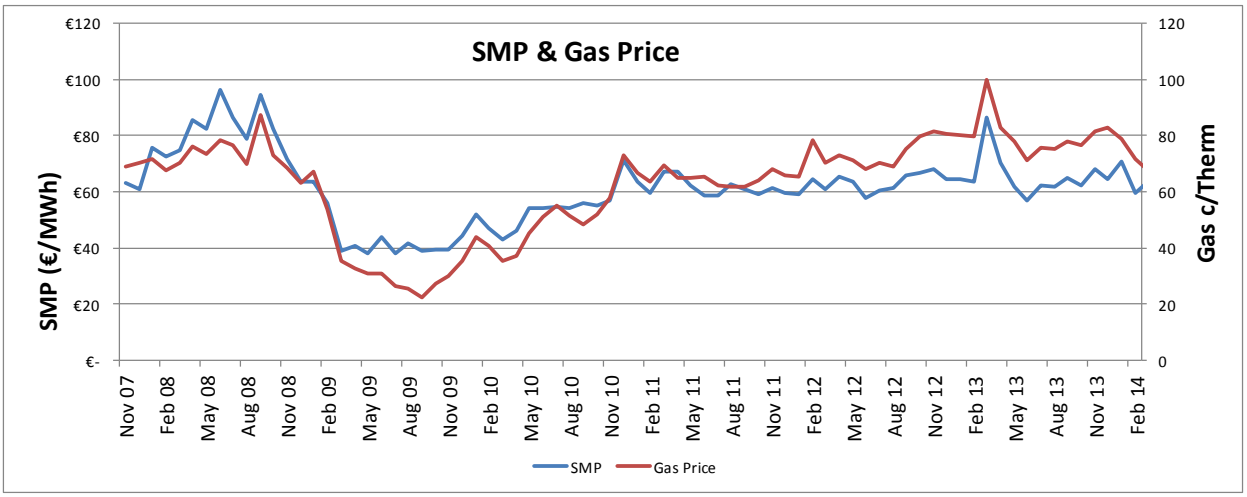


Figure 4 – 2007 to 2014 SMP and Gas Price (Source: Reuters)

Given that total SEM energy pool revenue for generators in SEM is essentially SMP * Demand, rising gas prices therefore leads to higher aggregate generator revenues.

4 FINANCIAL PREORTING TEMPLATES

4.1 INTRODUCTION

In May 2012 the RAs published a decision paper on generator financial reporting in the SEM[5], which set out new reporting requirements for generators in the SEM. The document set out a new financial reporting template that must be completed annually by generation companies with a combined capacity greater than or equal to 25 MW.

Below is a sample of the template that must be submitted by generators. The revenue and cost categories in the template were explained in the May 2012 decision. The template helps ensure that generators provide financial data in a uniform way.

Financial Reporting Template	
Volume of Electricity Sold - MWh	
Revenue	**€,000**
Revenue from SEM Pool	
Revenue from Contract/Difference Payments	
Revenue from Capacity Payments	
Other Revenue	
Total Revenue	**€ -**
Operating Costs	**€,000**
Fuel Related Operating Costs	
Non-fuel Operating Costs	
Total Operating Costs	**€ -**
EBITDI	**€ -**
Depreciation & Impairment	
EBIT	**€ -**
Interest & Tax	
Net Profit	**€ -**

All generators with a combined generation capacity equal to or greater than 25 MW were required to submit the completed template for each site within six months of the end of their financial year. The following financial reporting templates have been collected from relevant generators by the RAs for the financial year to end December 2013 for Ireland and end March 2014 for Northern Ireland:

- All conventional plant above the threshold in Ireland and Northern Ireland, with a combined capacity of circa 8,000 MW;
- The majority of wind generation plants in Ireland. Data for circa 1,500 MW of wind generation capacity has been received – from an estimated 1,700 MW of capacity above the 25 MW threshold; and,
- Templates were received for the vast majority of wind generation plants above the threshold in Northern Ireland, some 150 MW of wind generation capacity.

[5] Decision Paper on Generator Financial Reporting in the SEM – SEM/12/027

Also, in some of the larger generation groups assumptions had to be made as to how certain costs would be allocated between different generation sites. Depending on what was the most appropriate, this was done either on the basis of output or generator size. As a result the breakdown of revenues and costs into the sub categories should be taken as indicative.

It should be noted that the template data received from generators is broadly in line with regulated accounts received. Also, the template data encompasses more generation than the financial accounts, for example Wind is included in the template data and not in the regulated accounts.

4.1 Breakdown by Generation Fuel Source

While the financial accounts allowed the performance of different generation companies to be analysed, the reporting templates allows the amalgamation of templates to see how different types of generators performed. One way is to group generators by fuel type and Table 2 below shows the amalgamated results of several fuel types, namely: Wind, Hydro, Gas, Coal, Peat, and Distillate & Oil.

Financial Year 2013	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
Volume of Electricity Sold - MWh	27,317,623	3,858,483	576,483	12,679,734	7,959,179	2,336,645	31,366	(124,268)
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 1,788,288	€ 221,258	€ 36,836	€ 818,318	€ 538,518	€ 153,000	€ 7,950	12,408
CfD	€ 110,467	€ 17,654	€ 916	€ 84,566	€ 4,505	€ 3,024	€ -	(197)
Capacity	€ 436,840	€ 7,206	€ 6,298	€ 246,179	€ 63,655	€ 19,187	€ 79,007	15,307
Other Revenue	€ 480,919	€ 74,620	€ 1,299	€ 331,612	€ (23,984)	€ 70,637	€ 10,853	15,882
Total Revenue	**€ 2,816,515**	**€ 320,738**	**€ 45,348**	**€ 1,480,675**	**€ 582,695**	**€ 245,849**	**€ 97,810**	**43,400**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Operating Costs	€ 1,375,369	€ 115	€ -	€ 951,182	€ 290,536	€ 124,852	€ 8,684	-
Non-fuel Operating Costs	€ 576,572	€ 99,444	€ 20,965	€ 248,990	€ 120,767	€ 36,645	€ 32,284	17,475
Total Operating Costs	**€ 1,951,941**	**€ 99,559**	**€ 20,965**	**€ 1,200,172**	**€ 411,303**	**€ 161,497**	**€ 40,968**	**17,475**
EBITDI	**€ 864,574**	**€ 221,179**	**€ 24,383**	**€ 280,502**	**€ 171,391**	**€ 84,352**	**€ 56,842**	**25,924**
Depreciation & Impairment	€ 634,118	€ 113,932	€ 1,659	€ 411,354	€ 53,613	€ 33,893	€ 15,971	3,697
EBIT	**€ 230,456**	**€ 107,247**	**€ 22,724**	**€ (130,851)**	**€ 117,779**	**€ 50,459**	**€ 40,871**	**22,228**
Interest & Tax	€ 147,117	€ 85,939	€ -	€ 52,062	€ 3,473	€ 1,080	€ 4,630	(68)
Net Profit	**€ 83,339**	**€ 21,308**	**€ 22,724**	**€ (182,913)**	**€ 114,305**	**€ 49,379**	**€ 36,241**	**22,296**
Operating Margin - %	31%	69%	54%	19%	29%	34%	58%	60%
Net Margin - %	3%	7%	50%	-12%	20%	20%	37%	51%

Table 2 - Overview of Template Data by Fuel Source (for plants >25 MW) – 2013

The table above shows that the operating and net profit margin across all reported generators in 2013/14 is at 31% and 3% respectively, which is slightly higher but broadly similar to the figures in the regulated accounts (see Section 5).

Depreciation and impairment is one driver of the low net profit figures in 2013/14 overall (as noted also with the regulated accounts section). Indeed if the impairment charge incurred by the Whitegate plant owing to the sale of the assets to Centrica is removed, the adjusted net profit figure is higher, at 12%. Table 2 (Adjusted) below highlights this difference. There was also impairment for the former Endesa plant[6] in 2012.

[6] Tarbert, Great Island, Rhode and Tawnaghmore

	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
EBITDI	**€ 864,574**	**€ 221,179**	**€ 24,383**	**€ 280,502**	**€ 171,391**	**€ 84,352**	**€ 56,842**	**€ 25,924**
Depreciation & Impairment	€ 371,239	€ 113,932	€ 1,659	€ 160,132	€ 53,613	€ 33,893	€ 8,011	€ 3,697
EBIT	**€ 493,335**	**€ 107,247**	**€ 22,724**	**€ 120,371**	**€ 117,779**	**€ 50,459**	**€ 48,831**	**€ 22,228**
Interest & Tax	€ 147,185	€ 85,939	€ -	€ 52,062	€ 3,473	€ 1,080	€ 4,630	-€ 68
Net Profit	**€ 346,150**	**€ 21,308**	**€ 22,724**	**€ 68,309**	**€ 114,305**	**€ 49,379**	**€ 44,201**	**€ 22,296**

Operating Margin - %	31%	69%	54%	19%	29%	34%	58%	60%
Net Margin - %	12%	7%	50%	5%	20%	20%	45%	51%

Table 2 (Adjusted): Overview of 2013 Template Data by Fuel Source (for generation companies ≥ 25 MW) – excluding impairment charge

While the total net profit margin across all generators was 12% with depreciation and impairment removed, there was a wide spread between the different fuel types. As might have been expected Hydro and Pump Storage plants had the highest net profit margins given their low operating costs and low financing costs due to their age. The next highest profit margins were those earned by Distillate & Oil generators; peaking plants that accounted for a small percentage of total revenues, but which earned high margins. At the opposite end of the spectrum were Gas plants whose net profit margins were the lowest, but who earned the largest shares of revenue.

The table below shows the impairment charges for the past three years (2011 to 2013) when templates were received from generators.

Summary	2011	2012	2013
EBIT	**€ 502,339**	**€ 516,905**	**€ 230,456**
Impairment	€ 1,456	€ 258,231	€ 268,133
EBIT + Impairment	**€ 503,795**	**€ 775,136**	**€ 498,589**
Interest & Tax	€ 158,912	€ 147,301	€ 147,117
Net Profit	**€ 344,883**	**€ 627,835**	**€ 351,472**
Operating Margin - %	32%	29%	31%
Net Margin - %	13%	21%	12%

Table 3 - Overview of impairment charge for generators 2011 to 2013 – net margins without impairment

4.1.1 Revenues by Fuel Source

The figures below show the breakdown of generation output (metered) volumes by each fuel type and the total revenues earned by each. As can be seen there is a fairly close correlation between the two, in particular for the generators producing the majority of the electricity. The share of total output from Gas, Coal, Peat and Wind generators is similar or the same as their share of total revenues. As they operate primarily at times of peak/high prices, Oil and Distillate plant produced less than 1% of the total output, but received 3% of the total revenues.

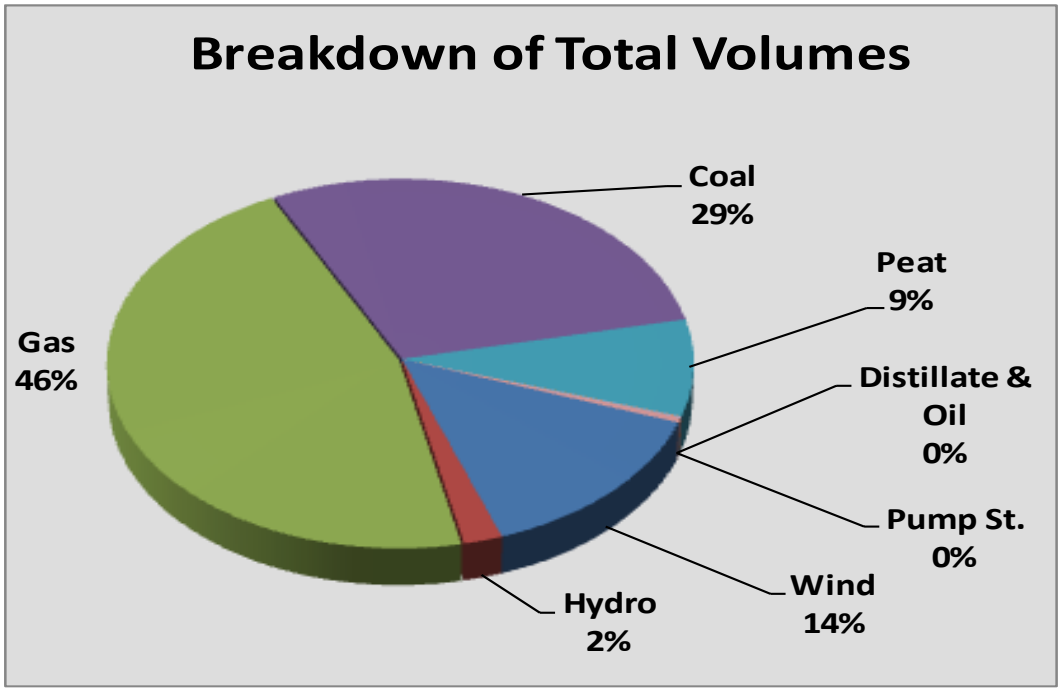


Figure 5 - Breakdown of Total Volumes by Fuel - 2013

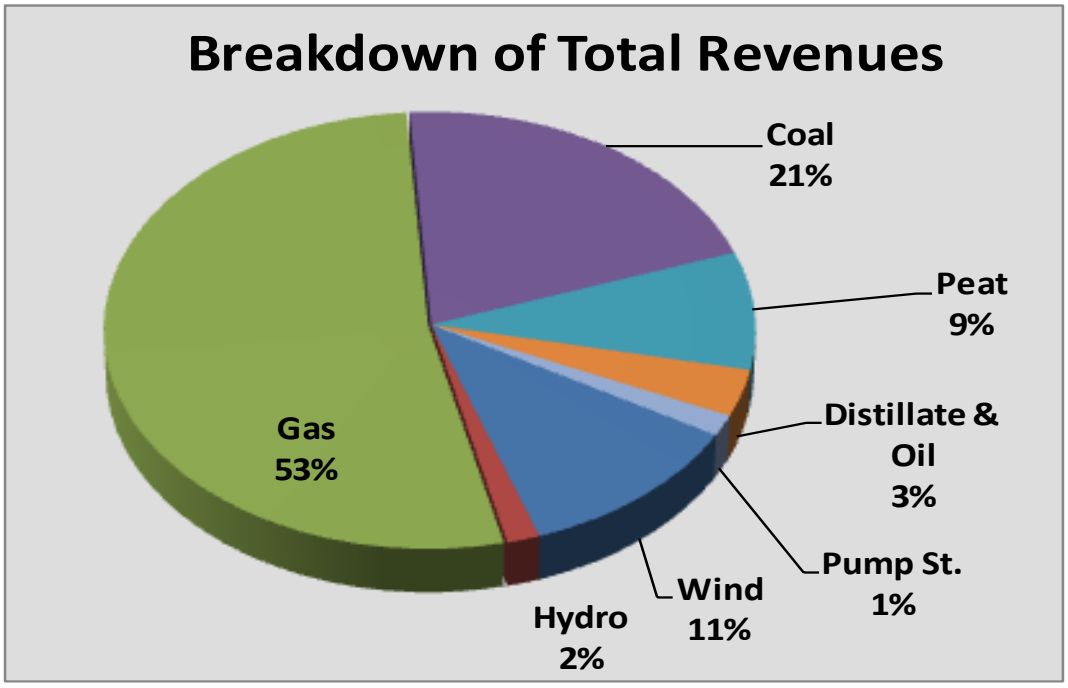


Figure 6 - Breakdown of Total Revenues by Fuel - 2013

4.1.2 Generator Revenues and Costs by Fuel Source

The reporting template asks generators to break revenue out into four categories – Revenue from the Pool, Contract/Difference Payments, Capacity Payments and Other Revenue. As can be seen in the figure below, SEM Pool revenue accounts for 65% of the total revenues earned by generators, with capacity payments accounting for a further 16%. CfDs make up a relatively small portion of generators overall revenue (4%) in 2013; this could be because CfDs in 2013 were fairly close to the out-turn SMP. Other Revenue accounts for around 15%. With respect to Distillate and Oil most of the revenue in this category comes from capacity payments.

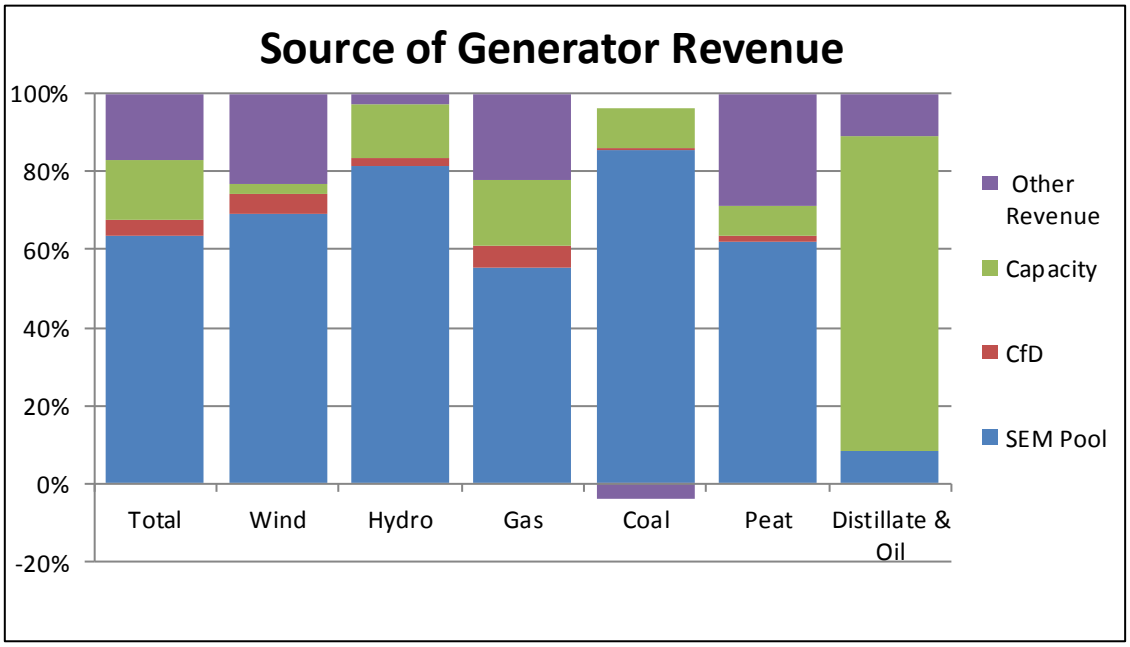


Figure 7 - Percentage Breakdown of Generator Revenues - 2013

Generators were also given four categories into which costs were to be allocated: Fuel Related Operating Costs, Non-fuel Operating Costs, Depreciation & Impairment and Interest & Tax.

The figure below shows that there is a wide variance in the make-up of costs between the generators with different fuel types. Wind generators have relatively high capital costs, and Interest & Tax and Depreciation & Impairment made up the majority of their costs. In contrast, fuel related operating costs were the largest overall costs for Gas, Peat and Coal generators. One interesting observation is that fuel related costs made up 50% of the total costs for all generators. This is lower than the 56% reported in the previous report.

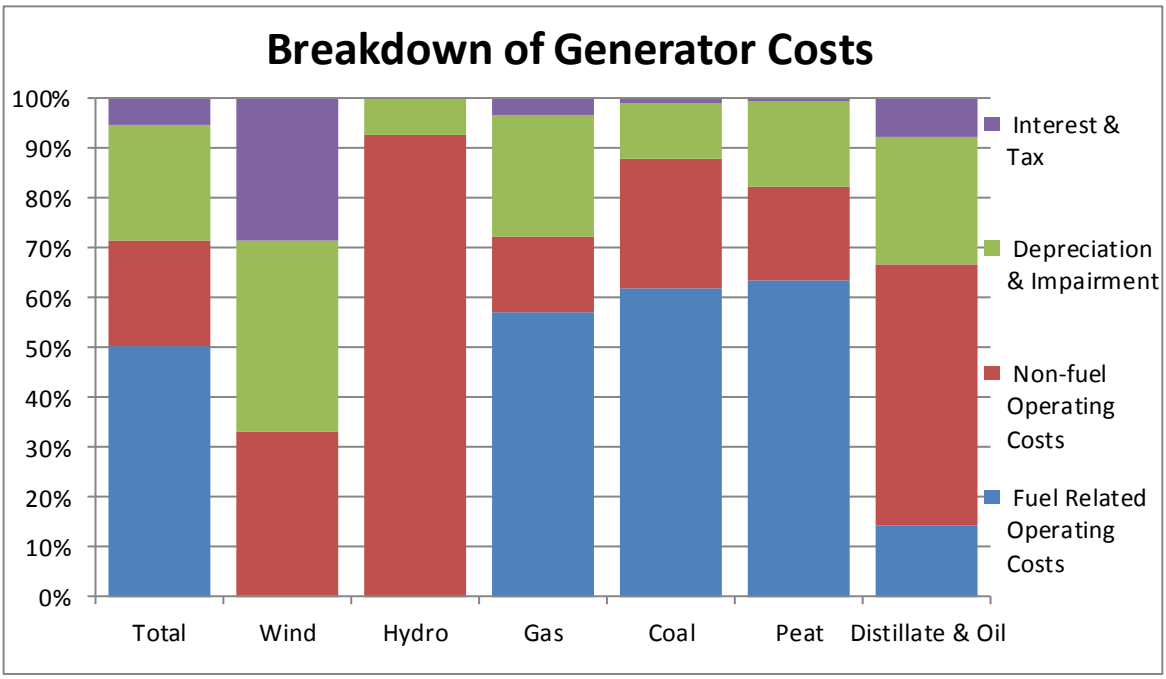


Figure 8 - Percentage Breakdown of Generator Costs - 2013

4.1.3 Generation Fuel Source Breakdown in MW terms

The breakdown of generators' revenues and costs set out above provides insights into how the different types of generators fare relative to one another. In order to gain a more in-depth understanding of this, the table below shows the data further broken down by looking at the figures on a per MW basis. The table shows the total number of MWs of capacity for each generator type and what the revenues and costs were per MW.

Total MWs	**10,012**	**1,538**	**216**	**4,957**	**1,331**	**344**	**530**	**804**	**292**
Financial Year 2013	**Total**	**Wind**	**Hydro**	**Gas**	**Coal**	**Peat**	**Distillate**	**Oil**	**Pump St.**
Volume of Electricity Sold	2,729	2,508	2,669	2,558	5,980	6,793	14	30	(426)
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Revenue from SEM Pool	€ 179	€ 144	€ 171	€ 165	€ 405	€ 445	€ 5	€ 7	€ 42
Revenue from Contract/D	€ 11	€ 11	€ 4	€ 17	€ 3	€ 9	€ -	€ -	€ (1)
Revenue from Capacity P	€ 44	€ 5	€ 29	€ 50	€ 48	€ 56	€ 62	€ 58	€ 52
Other Revenue	€ 48	€ 49	€ 6	€ 67	€ (18)	€ 205	€ 18	€ 1	€ 54
Total Revenue	**€ 281**	**€ 208**	**€ 210**	**€ 299**	**€ 438**	**€ 715**	**€ 85**	**€ 66**	**€ 149**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Operating C	€ 137	€ 0	€ -	€ 192	€ 218	€ 363	€ 8	€ 6	€ -
Non-fuel Operating Costs	€ 58	€ 65	€ 97	€ 50	€ 91	€ 107	€ 12	€ 33	€ 60
Total Operating Costs	**€ 195**	**€ 65**	**€ 97**	**€ 242**	**€ 309**	**€ 469**	**€ 19**	**€ 38**	**€ 60**
EBITDI	**€ 86**	**€ 144**	**€ 113**	**€ 57**	**€ 129**	**€ 245**	**€ 65**	**€ 28**	**€ 89**
Depreciation & Impairmen	€ 63	€ 74	€ 8	€ 83	€ 40	€ 99	€ 25	€ 3	€ 13
EBIT	**€ 23**	**€ 70**	**€ 105**	**€ (26)**	**€ 88**	**€ 147**	**€ 40**	**€ 24**	**€ 76**
Interest & Tax	€ 15	€ 56	€ -	€ 11	€ 3	€ 3	€ 9	€ -	€ (0)
Net Profit	**€ 8**	**€ 14**	**€ 105**	**€ (37)**	**€ 86**	**€ 144**	**€ 32**	**€ 24**	**€ 76**

Operating Margin - %	31%	69%	54%	19%	29%	34%	77%	42%	
Net Margin - %	3%	7%	50%	-12%	20%	20%	37%	37%	

Table 4 - Overview of Template Data by Fuel Source on a per MW basis - 2013

As can be seen from Table 4 above and Table 5 below, Peat plants earn the highest revenues for each MW of capacity but also incurs the highest costs. This is not surprising given that the three Peat plants run when available and therefore have the highest volume of electricity

output per MW. They also have a significant amount of 'Other Revenue' which could possibly include PSO payments. The Peat generators are followed by Coal and Gas generators in terms of revenue per MW.

€ '000	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil
Total Revenue	€ 281.32	€ 208.49	€ 209.95	€ 298.73	€ 437.79	€ 714.68	€ 73.32
Op. Costs	€ 194.96	€ 64.72	€ 97.06	€ 242.14	€ 309.02	€ 469.47	€ 30.71
Dep. & Imp.	€ 63.34	€ 74.06	€ 7.68	€ 82.99	€ 40.28	€ 98.53	€ 11.97
Int & Tax	€ 14.69	€ 55.86	€ -	€ 10.50	€ 2.61	€ 3.14	€ 3.47
Net Profit	€ 8.32	€ 13.85	€ 105.20	-€ 36.90	€ 85.88	€ 143.54	€ 27.17

Table 5 - Breakdown of Generator Revenues per MW of Capacity - 2013

Table 5 above and Figure 9 below show the revenue per MW for each fuel source. As above Peat shows the largest revenue on a per MW basis, followed by Coal and Gas.

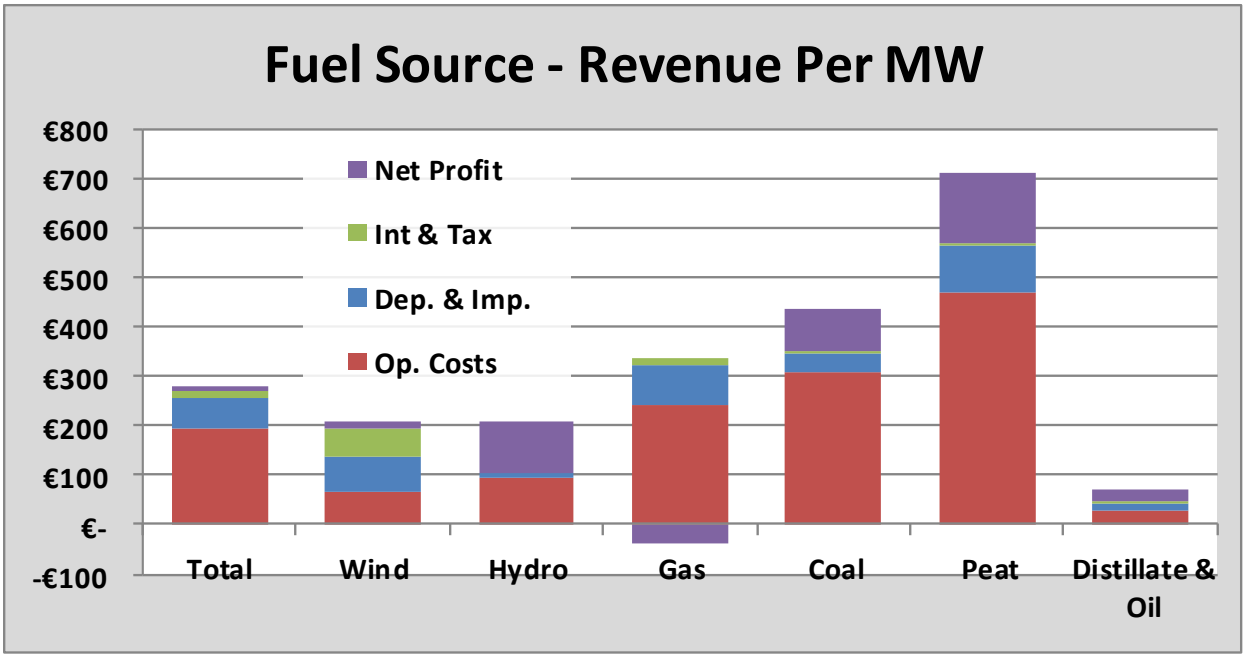


Figure 9 - Breakdown of Generator Revenues per MW of Capacity - 2013

4.2 Breakdown by Generation Type

In addition to examining the performance of generators by fuel type, this report has also broken the data down into the different generation categories, namely: Renewables, Price Takers, Baseload, Mid-Merit and Peakers. Table 8 below shows the data broken down into these categories.

Renewables includes all Wind, Hydro and Pumped Storage plants. Price Takers includes conventional plant that operates as a price taker in the market (Peat plant). Any remaining generators are assigned as a Baseload, Mid-Merit or Peak plant. Please note that a direct comparison with the figures produced in the previous report may be unsafe due to plants going in and out of merit.

For the purposes of this report, and based on the information available, the following allocation of plant has been made based on the following criteria (with mid-merit in between):

Type	Load Factor
Baseload	75% or above
Peak	15% or below

Table 6 – Plant type and load factors

Type	Plant Name
Baseload	Moneypoint Unit 1, Synergen
Mid Merit	Tynagh, Coolkeragh, Moneypoint Unit 2 & Unit 3, Aghada CCGT, Huntstown 2, Whitegate, Kilroot 1 & 2.
Peak	Aghada (Units 1, CT Unit 1, CT Unit 2, CT Unit 4, Marina, Northwall Unit 5, Poolbeg Combined Cycle, Huntstown 1, Ballumford B Station, Ballylumford C Station, Rhode, Tawnaghmore Cushaling Power Ltd, Kilroot (KGT1- KGT4), Ballylumford (BGT 1 & 2), Tarbet, Great Island.

Table 7 – Plant Types (as per template data received for 2013)

Table 8 below presents the same data as per Table 2 above but shown by generation type. Mid-Merit plant account for the largest share of output and revenue. Their profit margins are below the average margin and in line with that earned by Gas plants (as shown earlier). In terms of the net profit margins earned Baseload outperforms the other plant types.

Financial Year 2013

Financial Year 2013	**Total**	**Renewables**	**Price Taker**	**Baseload**	**Mid Merit**	**Peak**
Volume of Electricity Sold - MWh	27,317,623	4,310,698	2,336,645	5,371,159	14,408,609	890,510
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Revenue from SEM Pool	€ 1,788,288	€ 270,503	€ 153,000	€ 356,427	€ 907,724	€ 100,635
Revenue from Contract/Difference	€ 110,467	€ 18,372	€ 3,024	€ 9,053	€ 27,121	€ 52,896
Revenue from Capacity Payments	€ 436,840	€ 28,811	€ 19,187	€ 38,423	€ 140,512	€ 209,907
Other Revenue	€ 480,919	€ 91,800	€ 70,637	€ (16,614)	€ 116,148	€ 218,947
Total Revenue	**€ 2,816,515**	**€ 409,486**	**€ 245,849**	**€ 387,290**	**€ 1,191,505**	**€ 582,385**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Operating Costs	€ 1,375,369	€ 115	€ 124,852	€ 196,613	€ 781,542	€ 272,247
Non-fuel Operating Costs	€ 576,572	€ 137,885	€ 36,645	€ 49,510	€ 202,733	€ 149,799
Total Operating Costs	**€ 1,951,941**	**€ 138,000**	**€ 161,497**	**€ 246,123**	**€ 984,275**	**€ 422,046**
EBITDI	**€ 864,574**	**€ 271,487**	**€ 84,352**	**€ 141,167**	**€ 207,230**	**€ 160,339**
Depreciation & Impairment	€ 634,118	€ 119,288	€ 33,893	€ 35,998	€ 348,089	€ 96,850
EBIT	**€ 230,456**	**€ 152,198**	**€ 50,459**	**€ 105,169**	**€ (140,859)**	**€ 63,489**
Interest & Tax	€ 147,117	€ 85,871	€ 1,080	€ 12,344	€ 22,754	€ 25,068
Net Profit	**€ 83,339**	**€ 66,327**	**€ 49,379**	**€ 92,825**	**€ (163,613)**	**€ 38,421**

Operating Margin - %	31%	66%	34%	36%	17%	28%
Net Margin - %	3%	16%	20%	24%	-14%	7%

Table 8 - Overview of Financial Template Data by Generation Type - 2013

4.2.1 Revenues by Generation Type

When generation output and revenues is broken into the groups of generators, as shown in Figures 10 and 11 below, it can be seen that while Baseload and Renewables make up 36% of the total output, they receive somewhat different amounts in revenues - 28%. This compares with 81% of output and 74% of revenue in the previous report. There has been a shift of the generator mix in each category between Baseload, Mid Merit and Peak since the previous report (Baseload 66% down to 20%, Mid Merit up to 53% from 0% and Peak down from 11% to 3%).

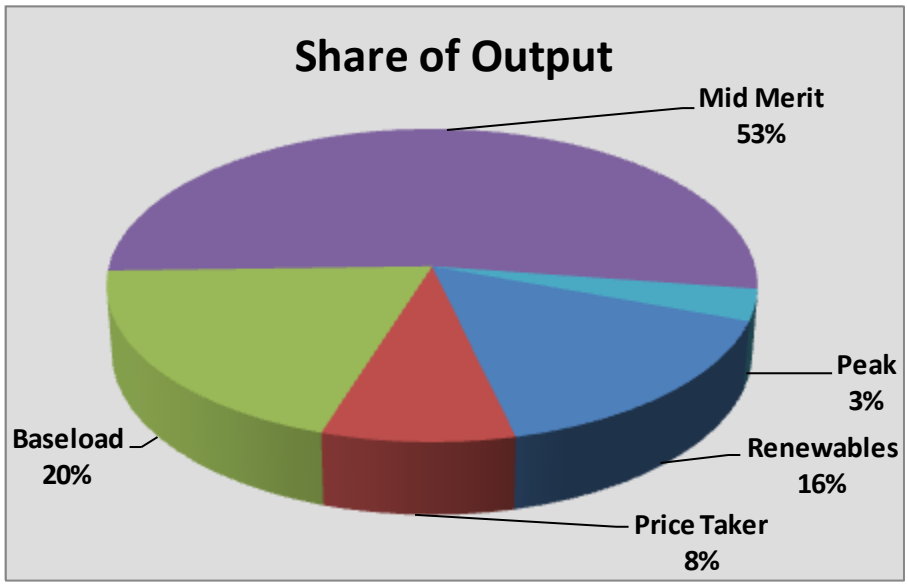


Figure 10 - Breakdown of Output by Generation Type - 2013

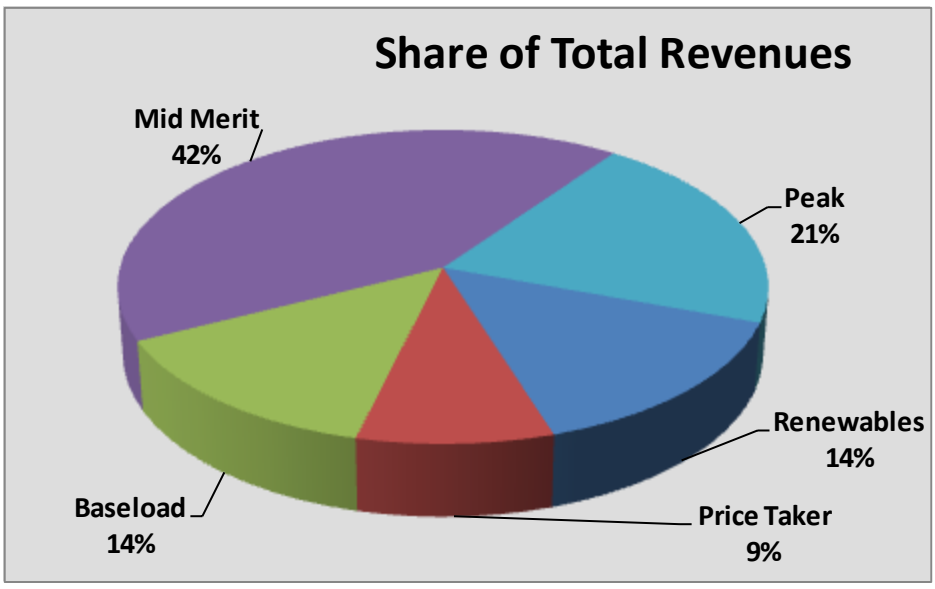


Figure 11 - Breakdown of Revenues by Generation Type - 2013

4.2.2 Generator Revenues and Costs by Generation Type

The figure below shows the breakdown of revenue received by each group. As highlighted previously, the SEM pool makes up 65% of generators' total revenues overall, as reported in the templates, although this varies between generator groups. Peakers earn a greater share of their revenue from CfDs than any other groups. Baseload plant received the highest proportion of revenue from the SEM Pool. As would have been expected, Peakers earned a large share of their revenue from capacity payments. Other revenue accounted for a significant share of Price Takers', Peakers' and Renewables' total revenue.

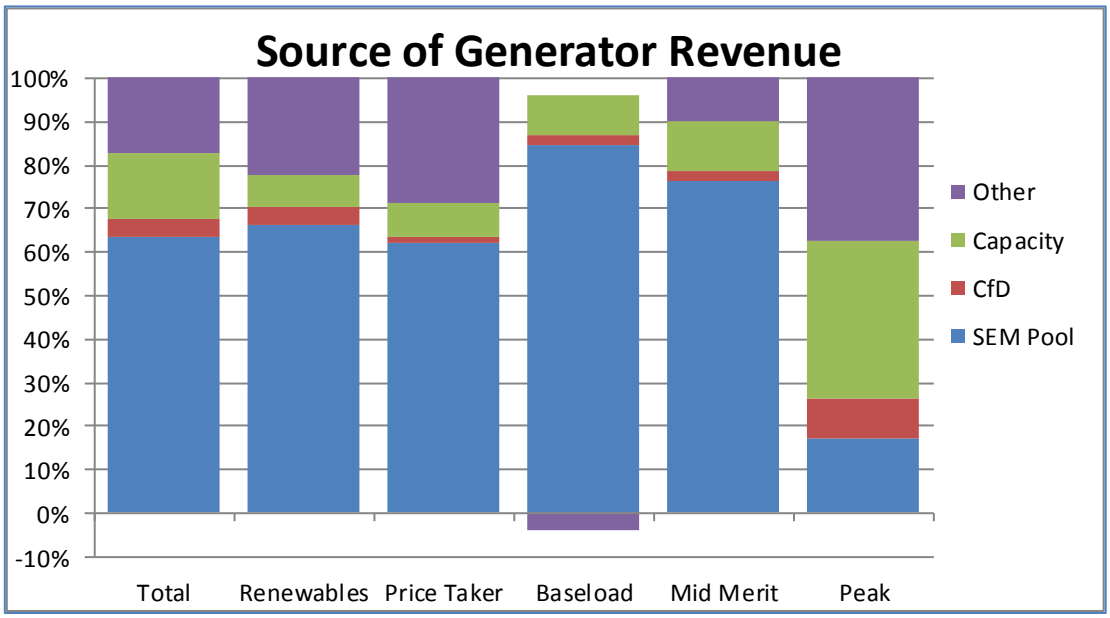


Figure 12 - Percentage Breakdown of Generator Revenues - 2013

The figure below shows how the different generator groups' costs were made up. As can be seen there is a significant difference between the different groups and in particular between Renewable generators and the other groups of generators. This position is similar to that reported in the previous report.

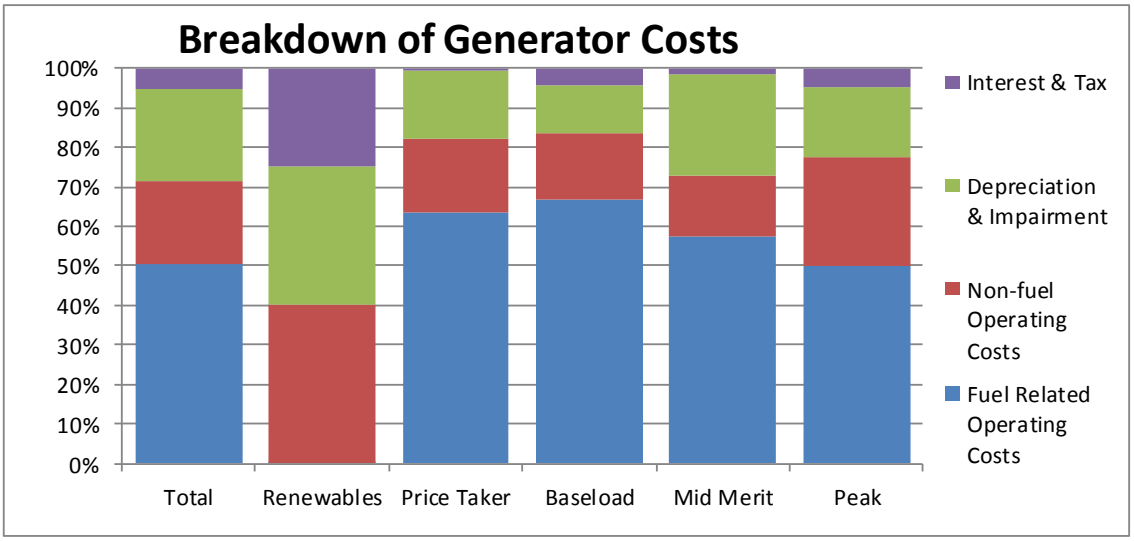


Figure 13 - Percentage Breakdown of Generator Costs - 2013

4.2.3 Generation Type Breakdown in MW Terms

The table below breaks down the figures detailed above to show each category in terms of what the costs and revenues are for each MW of capacity.

Total MWs	**10,166**	**2,200**	**344**	**700**	**3,173**	**3,749**
Financial Year 2013	**Total**	**Renewables**	**Price Taker**	**Baseload**	**Mid Merit**	**Peak**
Electricity Sold - MWh	2,687	1,959	6,793	7,673	4,541	238
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 176	€ 123	€ 445	€ 509	€ 286	€ 27
CfD	€ 11	€ 8	€ 9	€ 13	€ 9	€ 14
Capacity	€ 43	€ 13	€ 56	€ 55	€ 44	€ 56
Other	€ 47	€ 42	€ 205	€ (24)	€ 37	€ 58
Total Revenue	**€ 277**	**€ 186**	**€ 715**	**€ 553**	**€ 376**	**€ 155**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Op. Costs	€ 135	€ 0	€ 363	€ 281	€ 246	€ 73
Non-fuel Op. Costs	€ 57	€ 63	€ 107	€ 71	€ 64	€ 40
Total Operating Costs	**€ 192**	**€ 63**	**€ 469**	**€ 352**	**€ 310**	**€ 113**
EBITDI	**€ 85**	**€ 123**	**€ 245**	**€ 202**	**€ 65**	**€ 43**
Dep. & Imp.	€ 62	€ 54	€ 99	€ 51	€ 110	€ 26
EBIT	**€ 23**	**€ 69**	**€ 147**	**€ 150**	**€ (44)**	**€ 17**
Int & Tax	€ 14	€ 39	€ 3	€ 18	€ 7	€ 7
Net Profit	**€ 8**	**€ 30**	**€ 144**	**€ 133**	**€ (52)**	**€ 10**

Figure 14 - Overview of Template Data by Fuel Source per MW - 2013

It can be seen that as well as earning the highest revenues for each MW of capacity, Price Taker plant have the highest costs. It is also worth noting that Mid-Merit plant made a net loss in 2013.

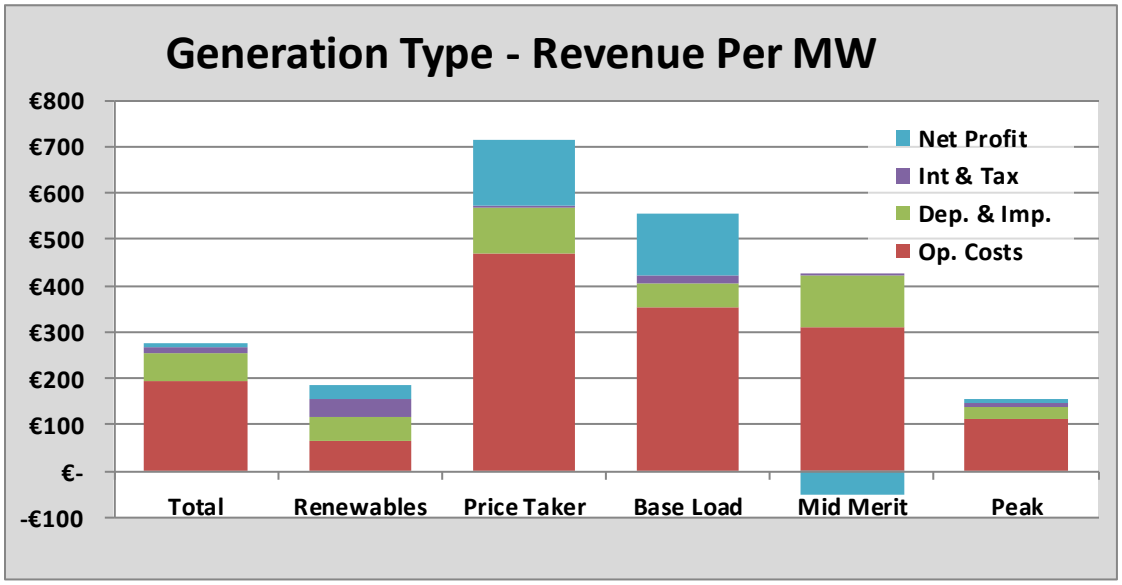


Figure 15 - Breakdown of Generator Revenues by each MW of Capacity - 2013

4.3 Revenue and Cost Breakdown – 2011 to 2013

The following figures show the breakdown in revenues and costs across all generators over the 2011 to 2013 period by reference to the received financial templates. More details of the breakdown within each fuel type and each generator category can be found in Appendix B.

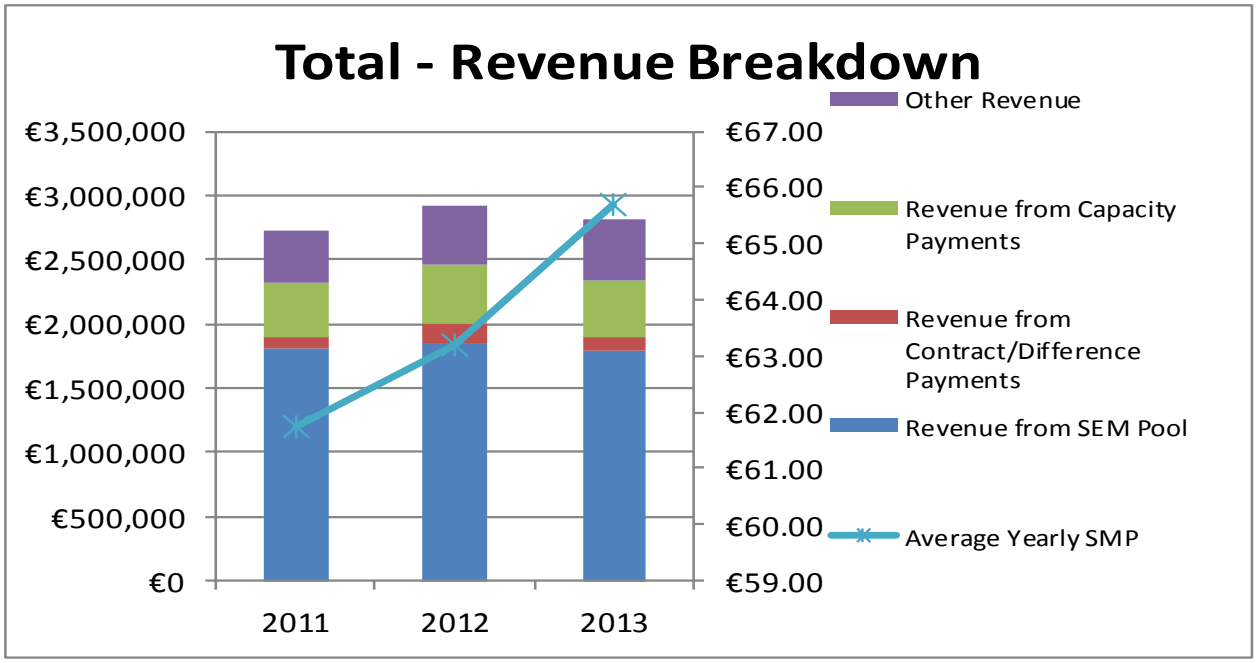


Figure 16 - Breakdown of Generator Total Revenues – 2011 to 2013

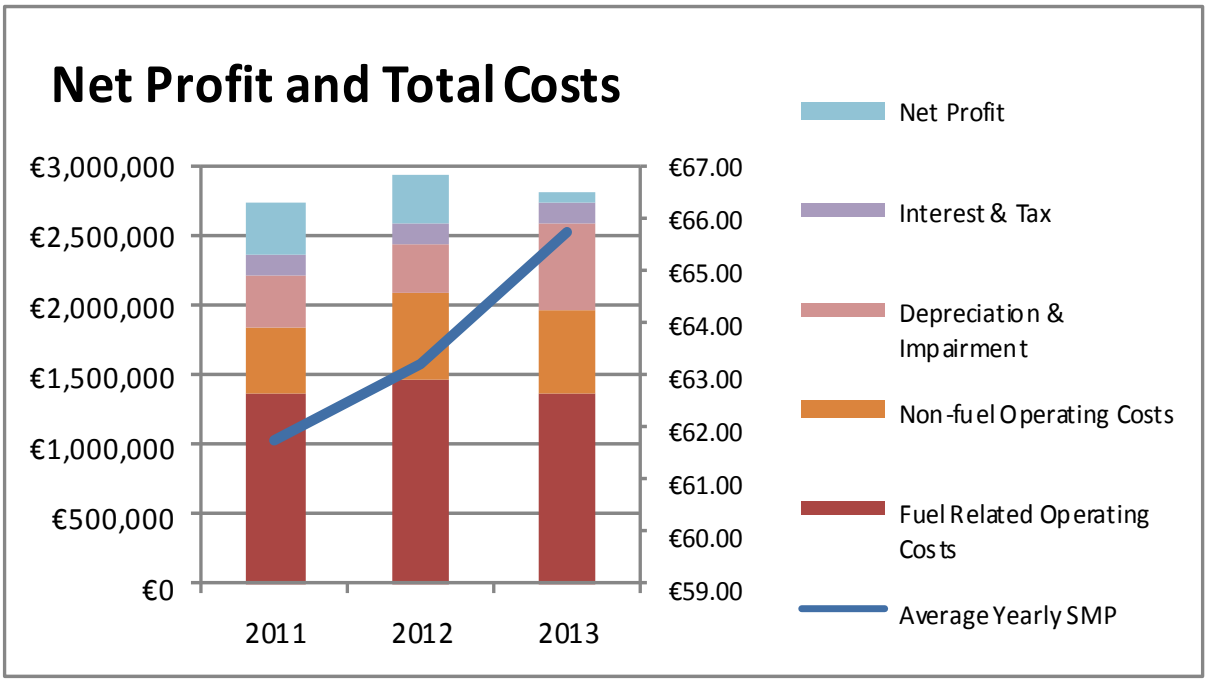


Figure 17 - Breakdown of Generator Total Costs -2011 to 2013

5 REGULATED ACCOUNTS

5.1 Introduction

This section presents the results of a number of financial tools/ratios used to examine the historical performance of SEM generators. This is based on analysis of regulated accounts received by the RAs from SEM generators for the years 2007 to 2013/14 inclusive. Generators who report in Ireland have their financial year ending in December whereas generators who report in Northern Ireland have their financial year ending in March of the following year.

As with the template data it should be noted that the regulated accounts received from generators is broadly in line with the template data received. Also, the template data encompasses more generation than the regulated accounts, for example Wind is included in the template data and not in the regulated accounts.

5.2 Overview of Accounts

The following table shows the aggregate operating profit and net profit margins for generators who submitted regulatory accounts over the past seven years, with some key messages summarised underneath. The generators that submitted regulatory accounts are ESB Power Generation, Synergen, Coolkeeragh, Tynagh Energy Limited, Huntstown Power Company, Viridian Power Ltd, SSE Generation Ireland Limited (formerly Endesa Ireland Limited), AES Ballylumford (formerly Premier Power), AES Kilroot and BGE Whitegate Power Plant. These generators account for approximately 75% of the power generation market in the SEM. For an explanation of some of the financial terms please refer to Appendix A.

Profit & Loss Data (€ '000)	2007	2008	2009	2010	2011	2012	2013
Revenue	€ 2,743	€ 3,229	€ 2,666	€ 2,418	€ 2,479	€ 2,495	€ 2,411
Other operating income	€ 112	€ 50	€ 40	€ 40	€ 68	€ 40	€ 22
Total Revenue	€ 2,855	€ 3,279	€ 2,706	€ 2,458	€ 2,547	€ 2,535	€ 2,432
Cost of Goods Sold	€ 1,503	€ 1,848	€ 1,203	€ 1,416	€ 1,568	€ 1,507	€ 1,546
Gross Profit	€ 1,351	€ 1,431	€ 1,504	€ 1,042	€ 979	€ 1,028	€ 886
Operating costs	€ 596	€ 649	€ 513	€ 360	€ 316	€ 315	€ 289
EBITDI (Earnings before interest, tax, depreciation and impairement)	€ 755	€ 782	€ 991	€ 682	€ 663	€ 713	€ 597
Impairement	€ 0	€ 0	€ 0	€ 108	€ 1	€ 259	€ 268
Depreciation	€ 162	€ 162	€ 206	€ 234	€ 211	€ 225	€ 215
Earnings before interest and tax (EBIT)	€ 593	€ 619	€ 785	€ 339	€ 450	€ 230	€ 114
Interest and financing costs	€ 63	€ 86	€ 48	€ 39	€ 90	€ 39	€ 37
EBT	€ 530	€ 533	€ 737	€ 300	€ 360	€ 191	€ 77
Tax	€ 72	€ 78	€ 101	€ 70	€ 56	€ 53	€ 48
Earnings after tax (EAT)	€ 458	€ 456	€ 636	€ 230	€ 304	€ 138	€ 30
Operating Profit Margin (EBITDI/Turnover)	26%	24%	37%	28%	26%	28%	25%
Net Profit Margin (EAT/Turnover)	16%	14%	23%	9%	12%	5%	1%

Table 9 - Overview of Generator Financial Performance from Regulatory Accounts[7] - 2007 to 2013

It should be noted that there can be lag between the revenue/profits between one year and the next; this can be explained by the hedging. That is CfDs, the majority of which have historically been sold by generators up to approximately a year-ahead of "real time" in the pool. However, this lag effect has been diluted in recent years as more contracts are offered closer to "delivery" and/or the SMP outturn has been closer to the contract price.

[7] Some generators sent in restated financial accounts so figures here may have changed from the previous report.

The CfD revenue year-ahead lag explains how, while generator revenue in the above aggregated regulated accounts table fell very significantly from 2008 to 2009 in line with lower SMP, it didn't fall as sharply as one might expect given that SMP almost halved during this period (see Section 3). It also explains why operating/net profits and margins in 2009 were higher overall than 2008. In fact 2009 EBITDI (or operating profits) and EAT (or net profits) figures recorded a high of €991 and €636 million, or in margin terms 37% and 23% respectively. Aggregate generator operating/net profit levels then fell significantly in 2010 to €682 and €230 million respectively, equivalent to margins of 28% and 9%, in line with the lag of dramatically lower fuel prices and SMP in 2009.

Since 2010 aggregate operating profit (EBITDI) and operating margin levels have been relatively stable – SMP increases from 2010 would have assisted revenue and operating profit levels, but against this increased generator entry and lower demand would have put downward pressure on generator running levels and operating profit figures.

While operating profits/margins have been relatively stable since 2011, net profit levels and margins have fallen noticeably overall due to high depreciation and impairment levels. The 2013 net profit (EAT) levels and margins were at a low point of only €30 million and 1% respectively.

Comparisons can be made with 2010 to 2013 SEM financial data and an analysis of generators in Great Britain published by Ofgem[8], as below.

EBIT/Turnover - GB and SEM	2010	2011	2012	2013
GB Market				
Revenues (m)	£ 9,270	£ 10,241	£ 10,102	£ 10,149
EBIT (m)	£ 2,010	£ 2,408	£ 1,951	£ 1,240
EBIT Margin	22%	24%	19%	12%
SEM				
Revenues (m)	€2,458	€2,547	€2,535	€2,432
EBIT (m)	€339	€450	€230	€114
EBIT Margin	14%	18%	9%	5%

Table 10 - Average Operating Profit Margin for generators in the GB market - 2010 to 2013

In the previous report it was noted that operating margins in the SEM and the GB market were converging. From the currently available data it would appear that this convergent trend has continued. However this report calculates the EBIT for the two jurisdictions whereas the previous report commented on operating profit. Care needs to be taken when comparing both as there may be a difference between how the two terms are used in each jurisdiction.

[8] Information sourced from "The revenues, costs and profits of the large energy companies in 2013" report from Ofgem, available at https://www.ofgem.gov.uk/ofgem-publications/90701/css2013summarydocument.pdf

5.3 Profitability Ratios

Profitability ratios have been computed across two categories; Return on Sales and Return on Investment. For each of the profitability ratios, a higher ratio indicates greater profitability.

In terms of Returns on Sales, the Operating and Net Profit Margins (OPM and NPM) of generation companies have been assessed. Operating Profit Margin is calculated as Gross Margin minus Operating Costs[9]. An increasing Operating Margin can indicate a higher Gross Margin (e.g. if SMP increases) and/or improvements in controlling Operating Costs, such as maintenance, payroll and administrative overheads. Net Profit is calculated as Revenue minus all Expenses, including finance expenses and tax.

Three ratios were examined in relation to Return on Investment; Return on Assets (ROA), Return on Fixed Assets (ROFA) and Return on Capital Employed (ROCE). Please refer to Appendix A for a definition of these terms.

Please note that the fixed assets in this report are based on historic cost minus depreciation rather than market value. Current assets are "cash in the bank" and inventories such as secondary fuel oil distillate, etc.

The table below sets out a summary of the historic profitability ratios for the various electricity generation companies that have been examined. These companies are ESB Power Generation, Tynagh Energy, Synergen, Huntstown 1, Huntstown 2, Endesa, Bord Gáis Whitegate, Coolkeeragh, AES Ballylumford (Formerly Premier Power) and AES Kilroot which together represent approximately 75% of the market. The remaining 25% represents energy on the interconnectors and other generators who are not included in the list on which this report is based.

Profitability	2007	2008	2009	2010	2011*	2012	2013	Average
Earnings Before Interest & Tax (€m)	592.9	619.5	784.8	339.5	450.1	229.6	114.1	447.2
Earnings After Tax (€m)	458.0	455.5	635.9	229.6	303.8	137.6	29.6	321.4
Return on Sales								
Operating Profit Margin (EBIT/Turnover)	21%	19%	29%	14%	18%	9%	5%	17%
Net Profit Margin (EAT/Turnover)	16%	14%	23%	9%	12%	5%	1%	12%
Return on Investment								
Return on Capital Employed (EBIT/Capital Employed)	26%	26%	22%	9%	12%	7%	4%	14%
Return on Fixed Assets (EAT/Fixed Assets)	18%	16%	17%	6%	8%	4%	1%	10%
Return on Assets (EAT/Total Assets)	13%	11%	13%	5%	7%	3%	1%	8%

***2011 accounts restated for ESB and AES Ballylumford**

Table 11 - Generator Profit/Return Totals - 2007 to 2013

Overall profits rose across the various SEM generating companies from 2008 to 2009, with average net profit margin rising from 14% to 23% in this period. This is likely related to the fact that plant revenues were in part based on contracts (CfDs) as explained earlier, with the price of these for 2009 based on the high SMP seen in 2008. Hence, with this lag effect, the fall in SMP in 2009 can be seen in generators' profits in 2010 with the average Net Profit Margin dropping to 9%. Since 2010 net profit margin has decreased to 1% in 2013.

[9] Gross profit margins were not assessed given the observed inconsistencies in the treatment of costs as 'operating' or 'cost of goods sold' in the various financial accounts.

6 SPARK AND DARK SPREAD ANALYSIS

This section of the report examines clean spark spread and dark green spread levels in SEM and compares them to those in BETTA for 2008 to Q1 2014.

The spark spread is measured as the wholesale price of electricity minus the price of natural gas using an assumed fuel efficiency of 49.13% for a natural gas generation plant. It is also known as the dirty spark spread.

The clean spark spread is calculated by also including the cost of carbon credits such as European Union Allowance (EUA). Hence the clean spark spread is essentially the theoretical gross income of an 49.13% efficient gas-fired power plant from selling a unit of electricity (measured in MWh), having bought the fuel and carbon credits required to produce this unit of electricity. The dark green spread is essentially the same as the above, except it applies to coal rather than gas and assumes a coal generator efficiency of 35%.

It is important to bear in mind that the spark spreads represents the theoretical gross income of a plant selling a unit of electricity.

All of a generator's costs such as operation, maintenance and capital must be recovered from the clean/green spark/dark spread level multiplied by generator's actual running in the market, in order to derive the generator's net profit position. An illustration of clean spark spreads is next.

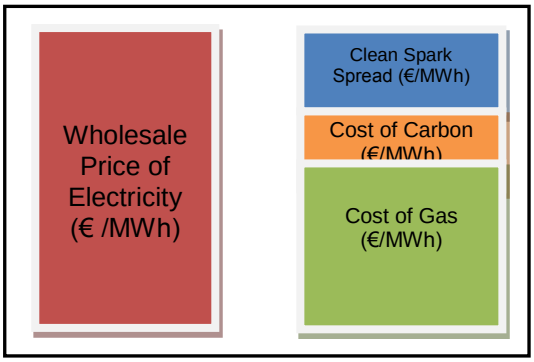


Figure 18: Clean Spark Spreads Illustration

The concept of spark and dark spreads is related to gross profits as discussed in this report, with the key differences being that:

1. Gross profits are based on an individual generator's actual efficiency levels rather than the assumed standard generator efficiency level. The advantage of using the standardised efficiency level for spark and dark spread analysis is that it is an international benchmark and allows for SEM comparison with other jurisdictions - differences in spreads are explained through the wholesale price of electricity or the price of gas/coal or both; and,
2. Actual gross profits for a generator are based on the spreads multiplied by the generator's running in the market – hence even if spreads are high, a low utilisation rate can result in low net generator profits.

The price of gas and coal in the UK and Ireland is similar, with slightly higher prices for SEM gas generators due to the additional gas transport and shrinkage costs incurred. The main

difference in spark spreads between SEM and BETTA is therefore down to the differences in the wholesale price of electricity between SEM and BETTA. Please note that this data does not account for the UK Carbon Support Scheme.

Figure 19 below shows the monthly clean spark spreads in the SEM and BETTA markets from January 2008 up to Q1 2014. It also shows that the clean spark spread was higher in the SEM for the first half of 2008, then higher in BETTA for the second half of 2008. Since 2009 the clean spark spread has been consistently higher in SEM, though it has been reducing over time in both markets to 2013 and has been mostly negative in BETTA since the second half of 2012.

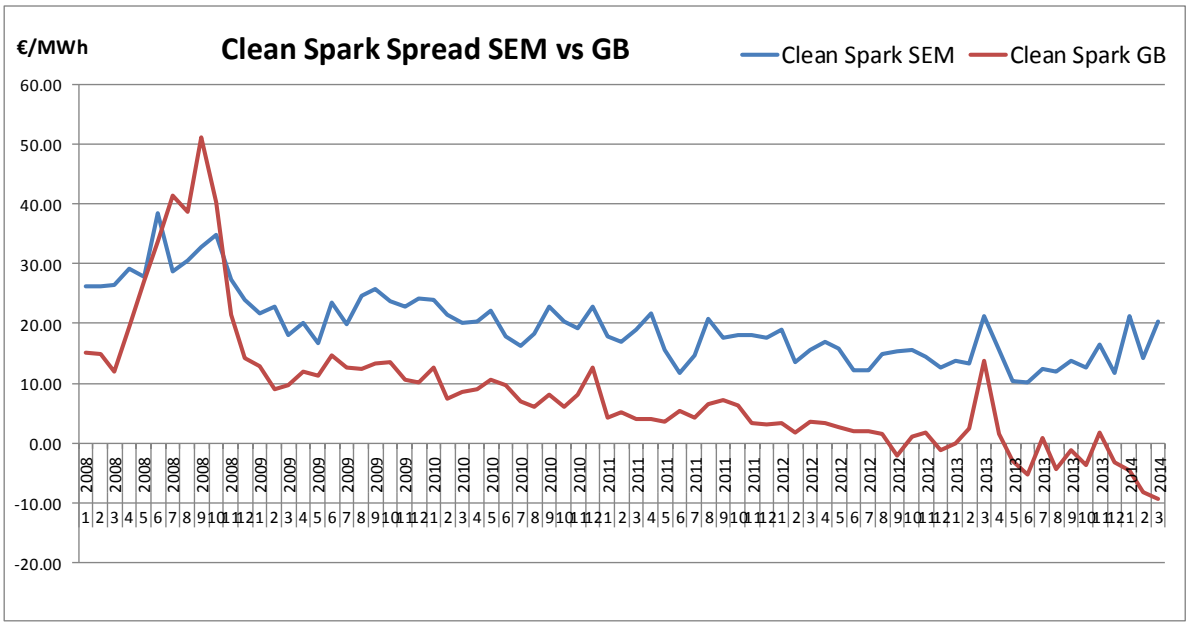


Figure 19: Clean Spark Spread - SEM vs. GB - 2008 to 2014

Figure 20 below shows the monthly dark green spreads in the SEM and BETTA markets from January 2008 up to Q1 2014. It shows that the dark green spread was higher in the SEM for the first half of 2008, then higher in BETTA for the second half of 2008. Since 2009 the dark green spread has been consistently higher in SEM and has been increasing in both markets to 2013, which is related to the relatively low cost of coal compared to gas. It is noted that the spread then fell somewhat in Q1 2014.

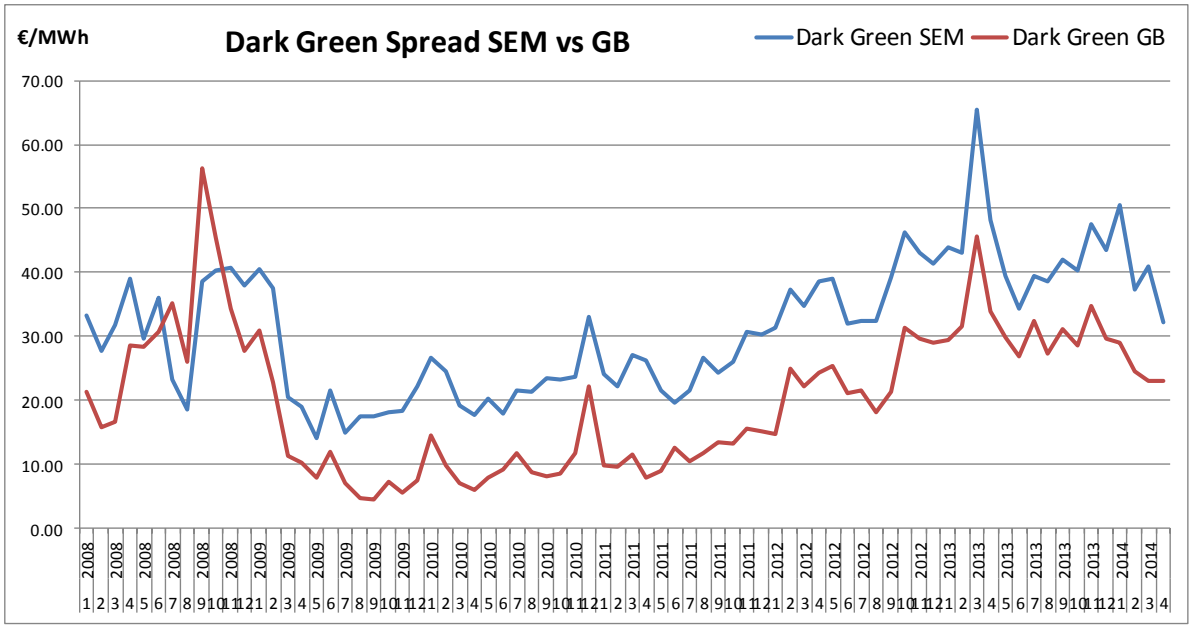


Figure 20: Dark Green Spread - SEM vs. GB - 2008 to 2014

The following issues need to be taken into account when comparing spreads between SEM and BETTA.

1. *Generator Running:*

Firstly, the utilisation of generators in each market is important in determining overall net generator profit levels as it is their gross profit (equal to capacity * utilisation * spread) which pays their other costs such as operation/maintenance and financial costs.

Generation plants, especially gas plants, may be utilised less in the SEM compared to BETTA as the amount of new generation on the system increases, especially new gas and wind plant. Hence, even though clean spark spreads are higher in SEM than BETTA, this does not mean that individual generator profits are higher to the same extent.

1. *Generation Mix and Scale Differences:*

It is likely that the generation mix between the two markets has accounted for a significant portion of the SEM and BETTA spread differentials in recent years, given that coal is now running at a higher-level in GB (due to the relative reduction in the coal price) than a few years ago, pushing down its wholesale price more than in SEM. In addition, BETTA has natural economies of scale associated with a larger market, such that its supply curve of plant to meet demand is less steep when it comes to prices than in SEM, helping to keep its wholesale prices lower.

2. *Market Differences:*

Another explanation for the differential may be structural differences in the GB market, where margins may be higher in the retail market to compensate for relatively lower margins in their generation market.

APPENDIX A: DEFINITION OF FINANCIAL TERMS

EBIT (Earnings before interest and tax): the Gross Profit minus operating costs minus depreciation. In the previous report PBIT (profit before interest and tax) was reported. In that case PBIT referred to the total revenue plus any profits on disposal of assets or interest receive, minus operating and minus the cost of goods sold.

EBITDI (Earnings before interest tax, depreciation and impairment): the Gross Profit minus operating costs minus depreciation and minus impairment.

EBT (Earnings before tax): the money retained before deducting the payment of taxes. EBT includes the money paid for interest. Thus, it can be calculated by subtracting the interest from EBIT.

Gross Profit: the total generator revenue received through the pool *minus* the cost of the generator bids (fuel costs etc.), referred to as inframarginal rent, to which the capacity payments received by generators are then added.

Gross Margin: gross profit expressed in terms of a % of revenue.

Operating Profit: the gross profit minus semi-fixed costs such as insurance and salaries but excluding finance costs.

Operating Margin: operating profit expressed in terms of a % of revenue.

Net Profit: the gross profit minus semi-fixed and fixed costs such as depreciation/finance.

Net Margin: net profit expressed in terms of a % of revenue.

Return on Sales and Return on Investment: For each of the profitability ratios, a higher ratio indicates greater profitability.

ROCE (return on capital employed) measures the return earned on the total capital employed (Total Assets less Current Liabilities) in the business and should be higher than the rate at which the company borrows; otherwise any increase in borrowing will reduce shareholders' earnings.

ROFA (return on fixed assets) measures the return earned by a company on non-current assets, including property, plant and equipment and intangible assets. Given the varying levels of current assets held by each company, this can offer a better insight into the profitability derived from a company's core assets.

ROA (return on assets) measures the return (profit after tax) earned by a company on all its assets, whether financed with liabilities, debt, or equity - the higher the ratio, the more income is generated by a given level of assets.

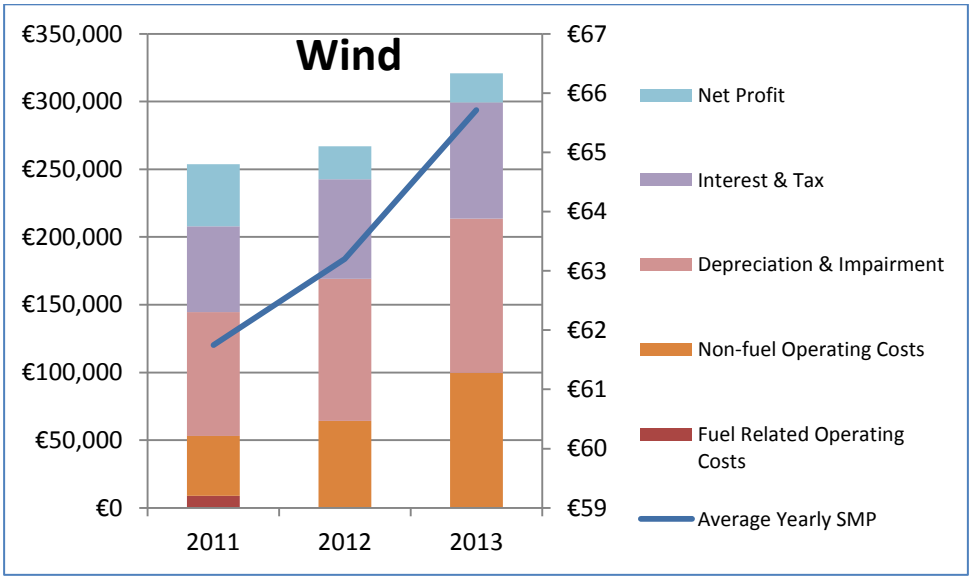
Impairment of assets is the diminishing in quality, strength amount, or value of an asset. It is included under expenses when the book value of a non-current asset exceeds the recoverable amount.

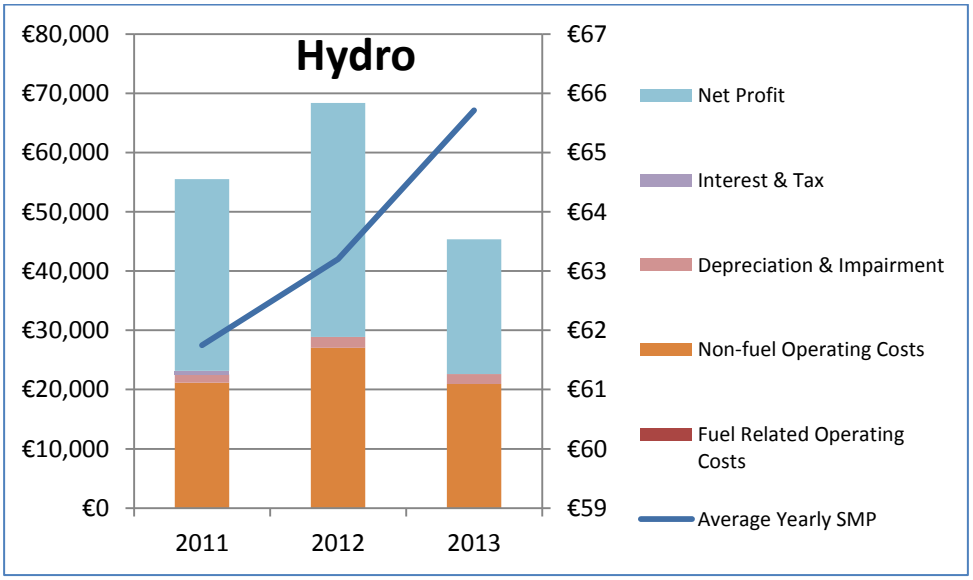
APPENDIX B: BREAKDOWN OF COSTS AND REVEUNES – FINANCIAL REPORTING TEMPLATE DATA

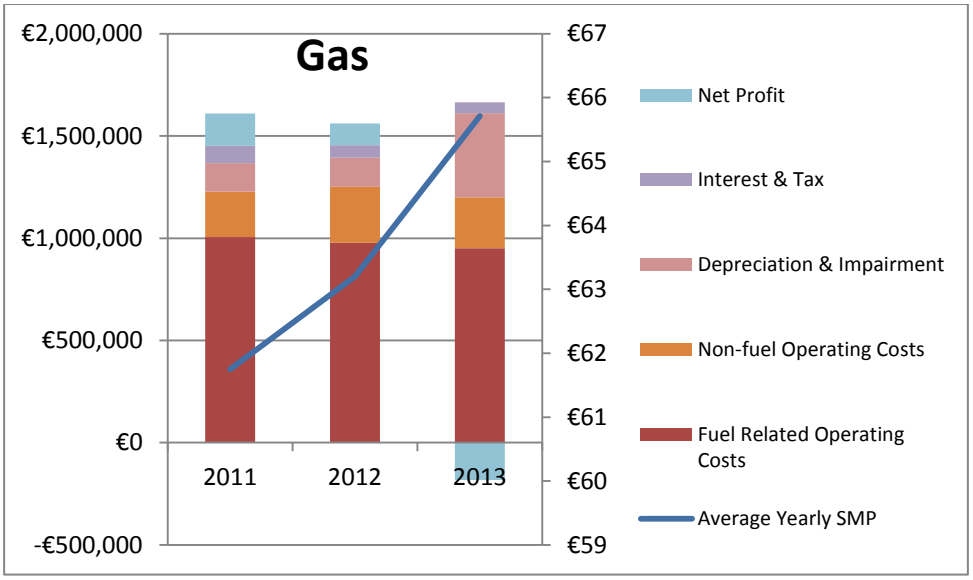
B.1 Costs Breakdown

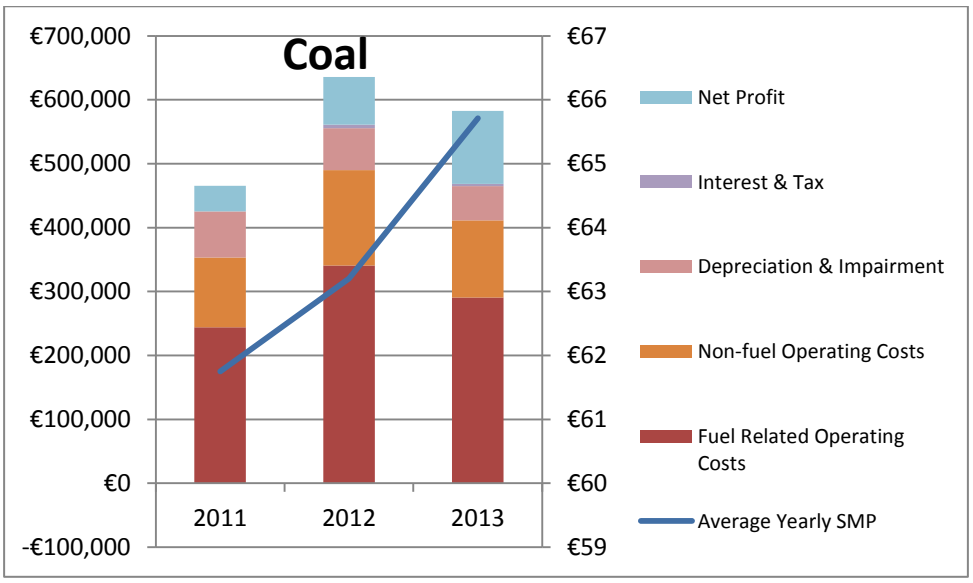
B.1.1 Breakdown by Fuel Type

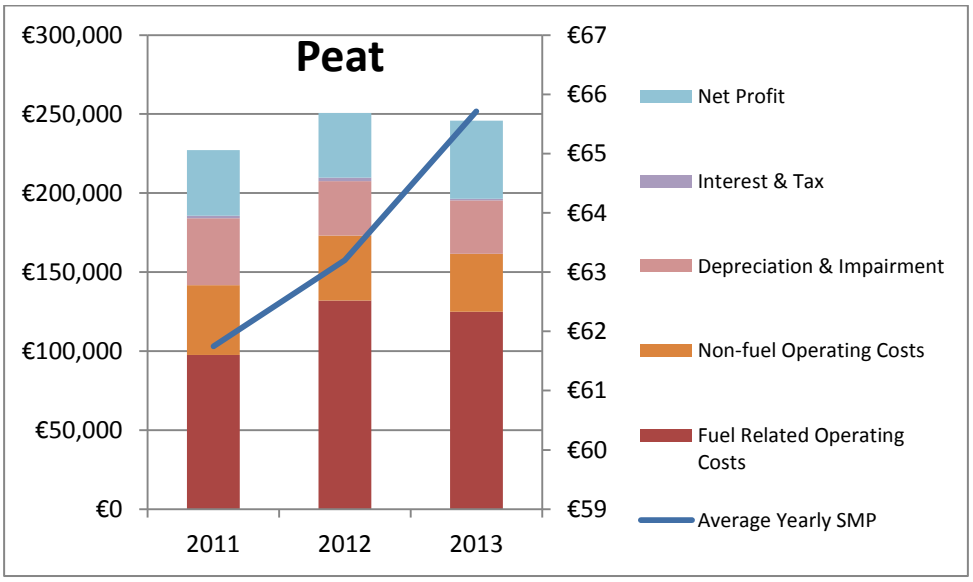
The following graphs show the cost breakdown by fuel type across each of the years that templates were received. Net profit is also included in addition to cost.

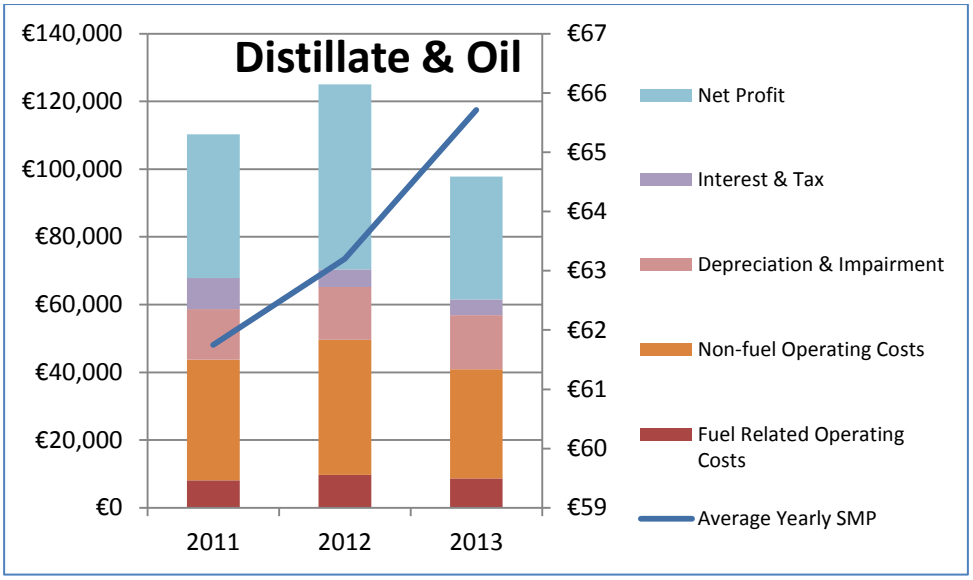


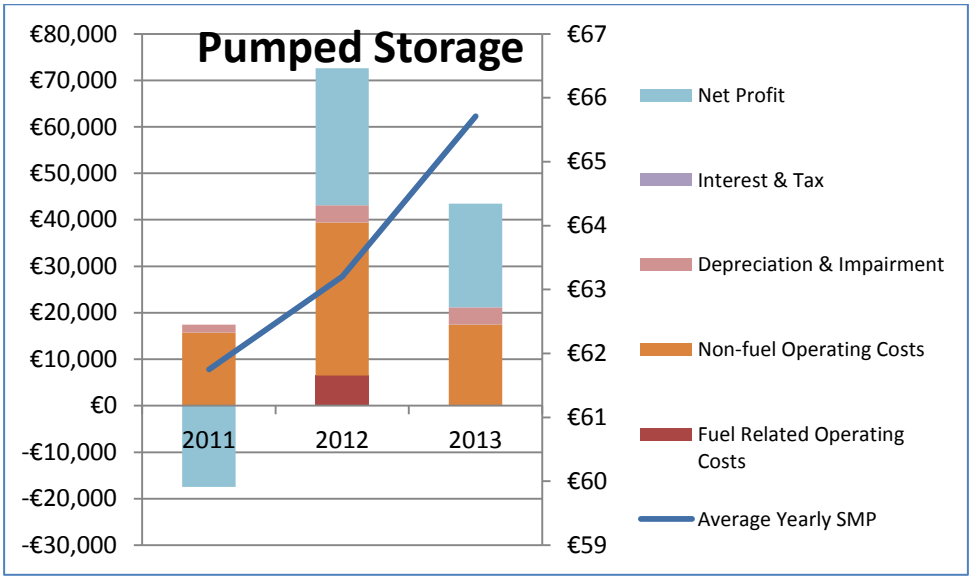



Gas
€2,000,000
€1,500,000
€1,000,000
€500,000
€0
-€500,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP


Coal
€700,000
€600,000
€500,000
€400,000
€300,000
€200,000
€100,000
€0
-€100,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

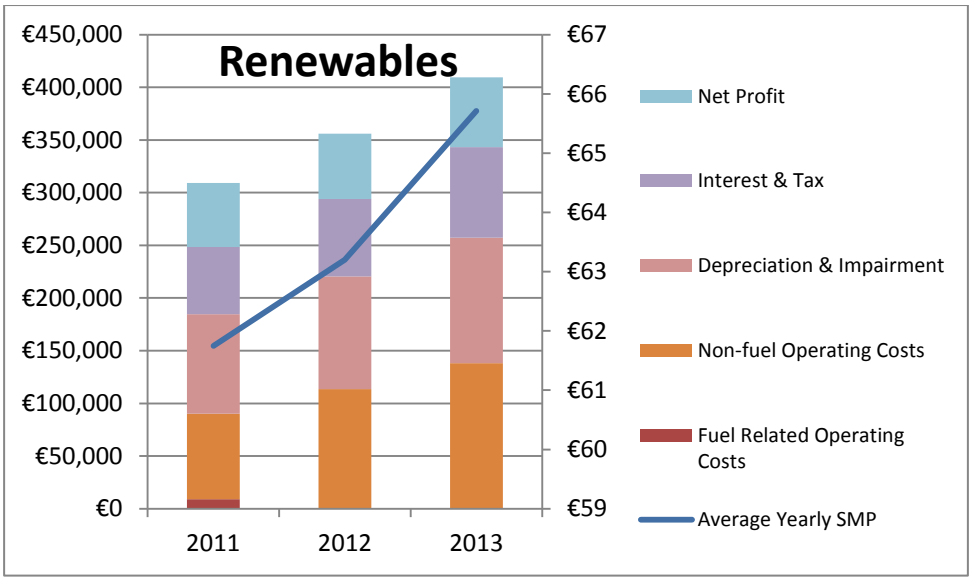

Peat
€300,000
€250,000
€200,000
€150,000
€100,000
€50,000
€0
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

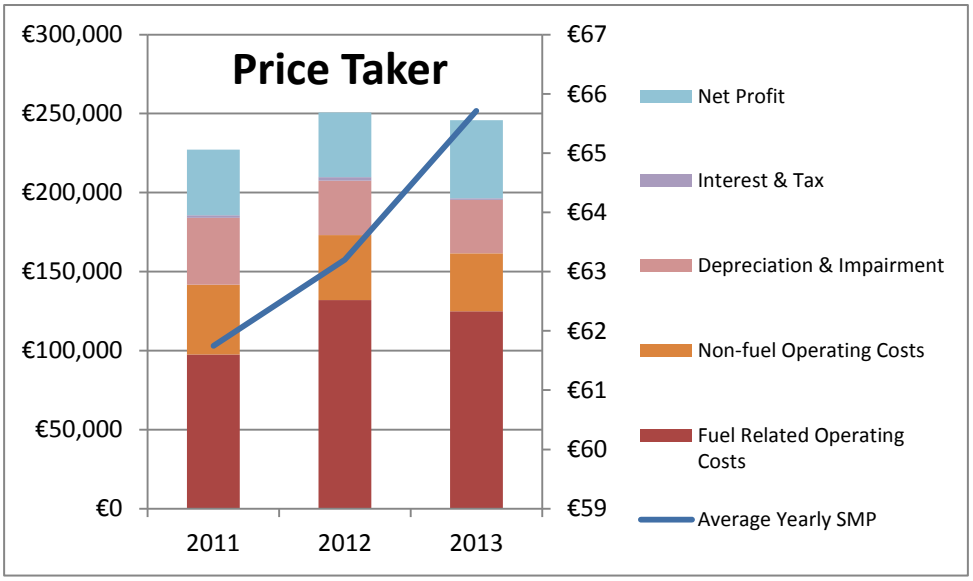

Distillate & Oil
€140,000
€120,000
€100,000
€80,000
€60,000
€40,000
€20,000
€0
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

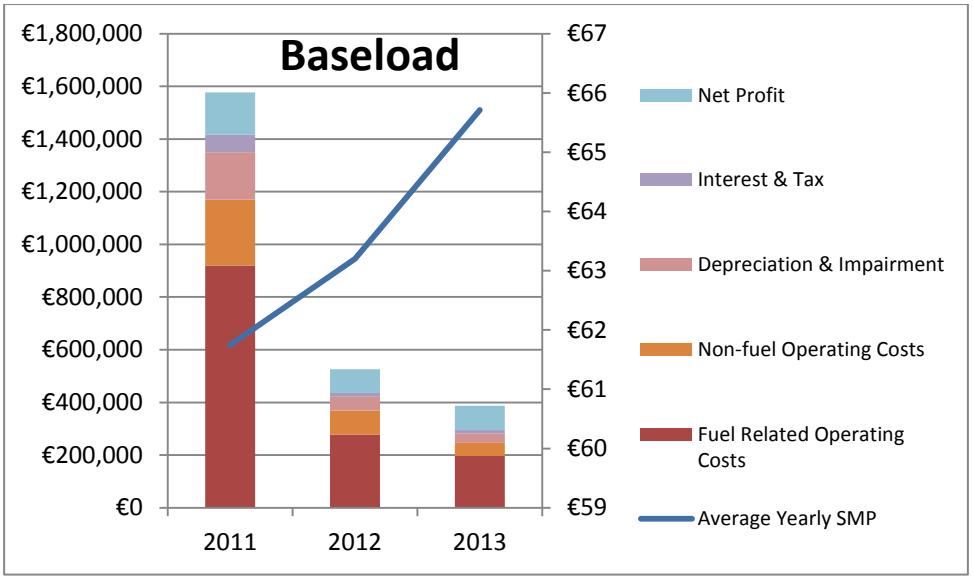

Pumped Storage
€80,000
€70,000
€60,000
€50,000
€40,000
€30,000
€20,000
€10,000
€0
-€10,000
-€20,000
-€30,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

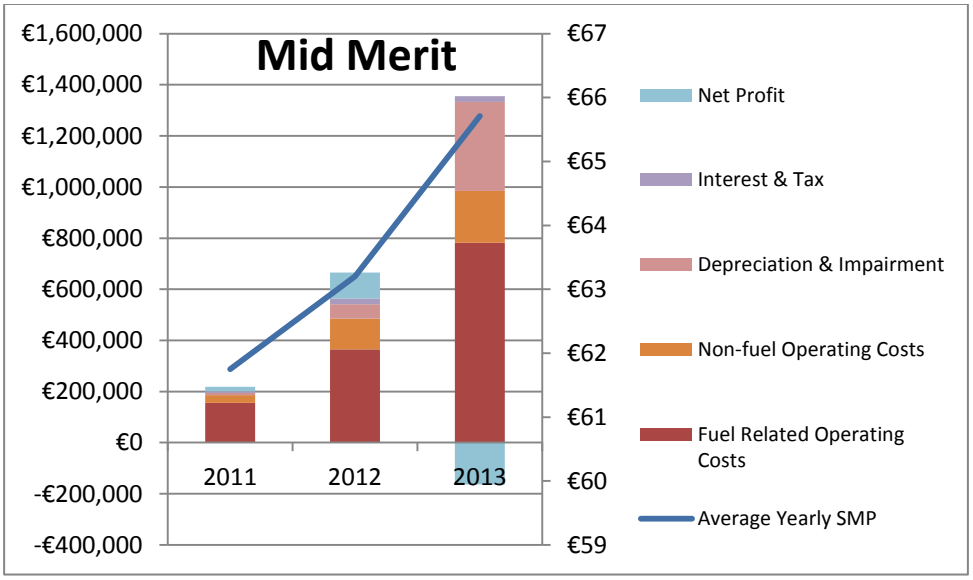
B.1.2 Breakdown by Generation Type

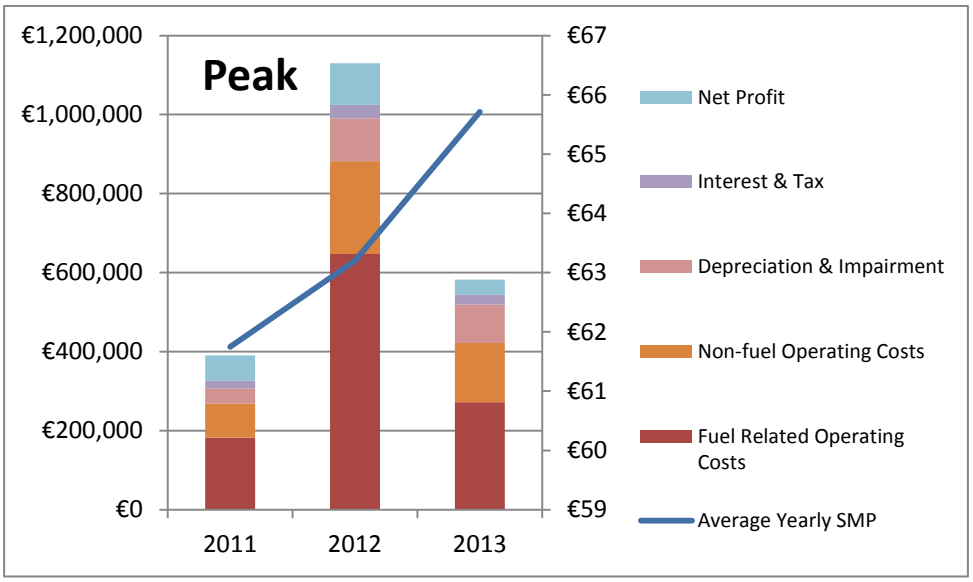
The following graphs show the cost breakdown by generation type across each of the years that templates were received. Net profit is also included in addition to cost.






Baseload
€1,800,000
€1,600,000
€1,400,000
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€0
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

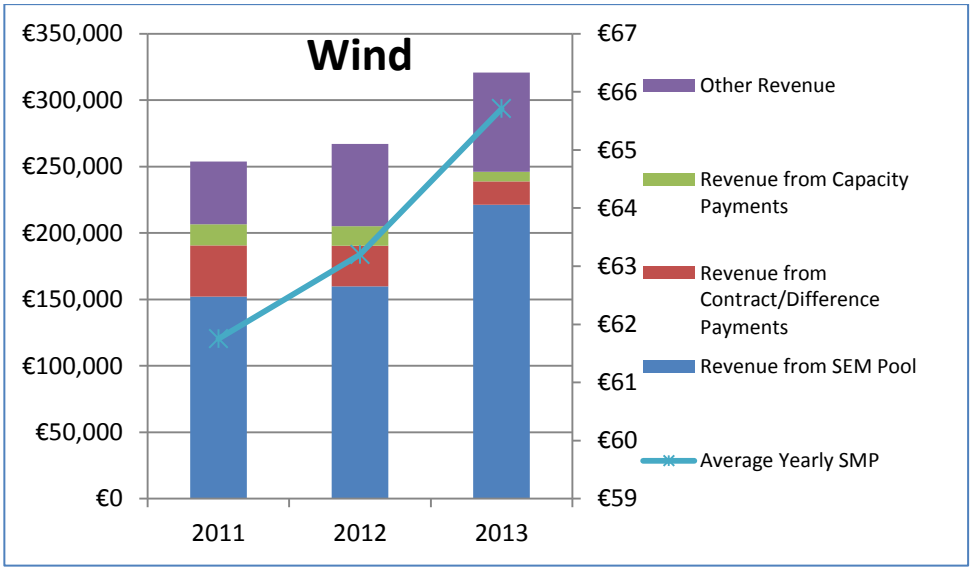

Mid Merit
€1,600,000
€1,400,000
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€0
-€200,000
-€400,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

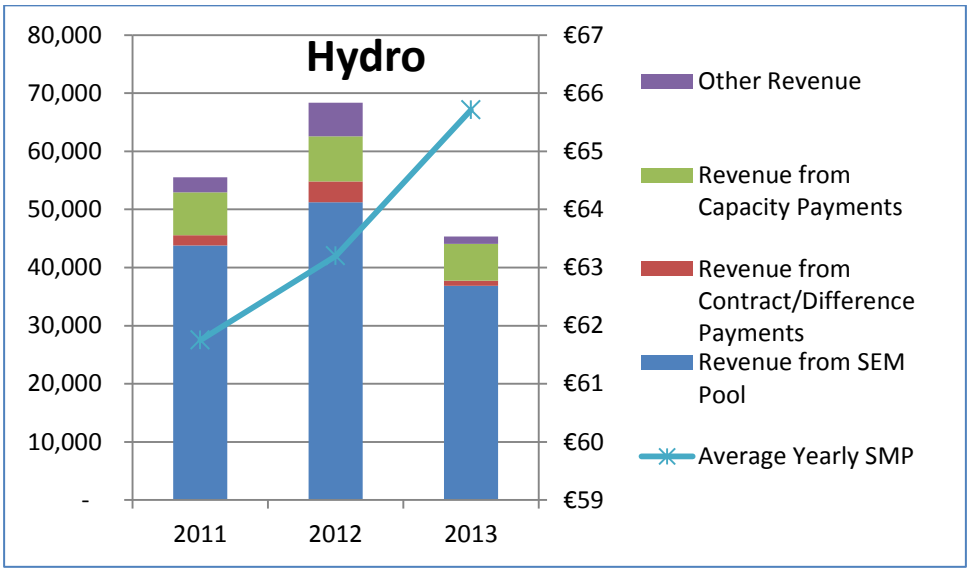

Peak
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€0
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Net Profit
Interest & Tax
Depreciation & Impairment
Non-fuel Operating Costs
Fuel Related Operating Costs
Average Yearly SMP

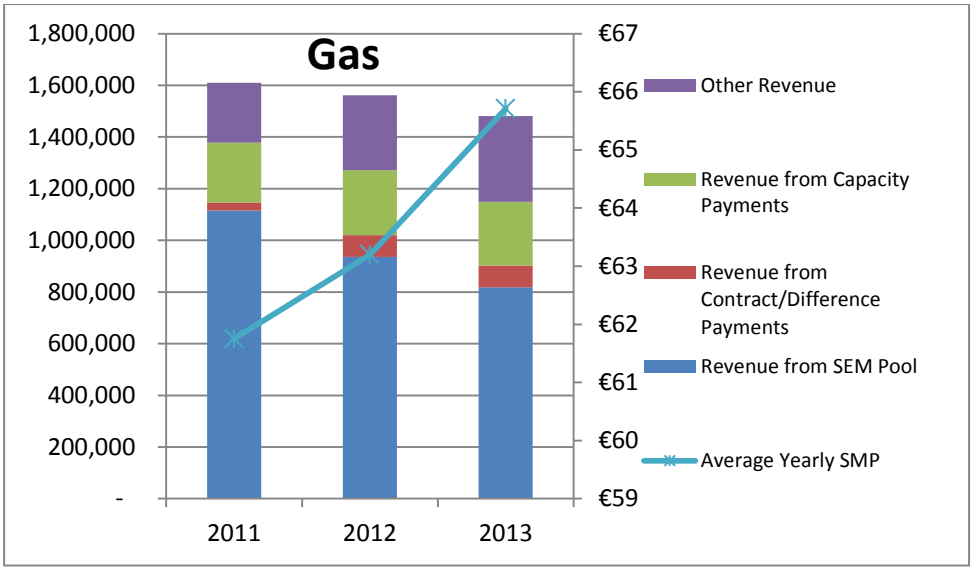
B.2 Revenue Breakdown

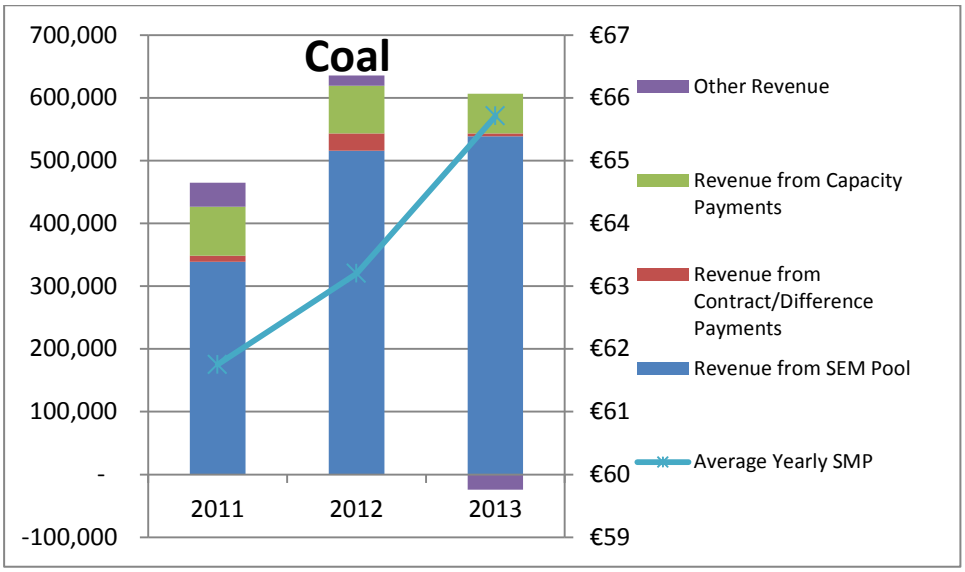
B.2.1 Breakdown by Fuel Type

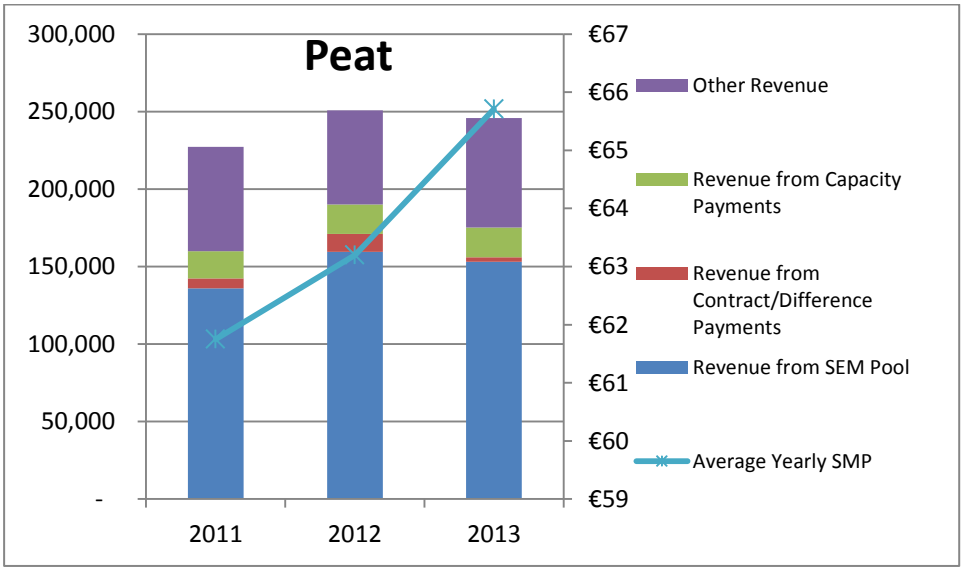
The following graphs show the revenue breakdown by fuel type across each of the years that templates were received.

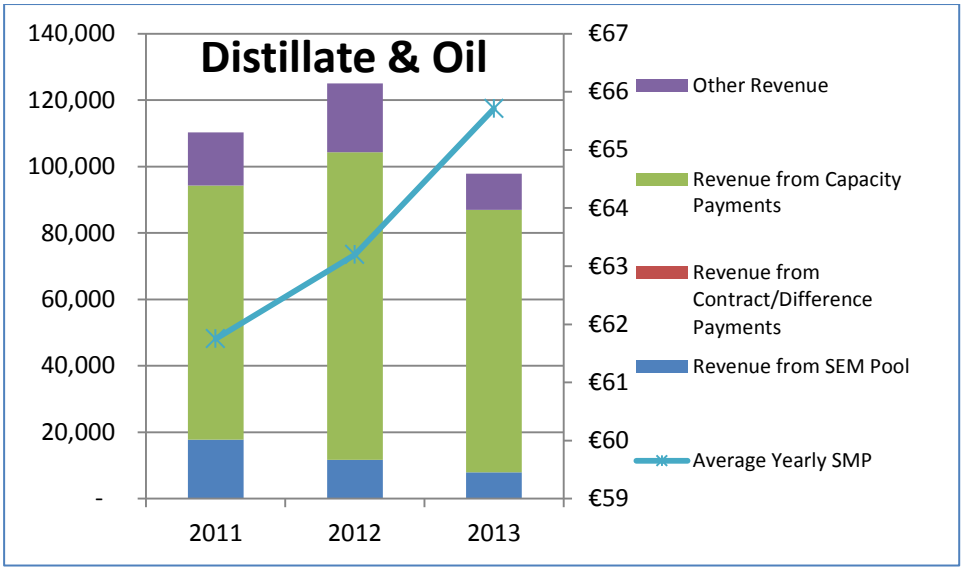


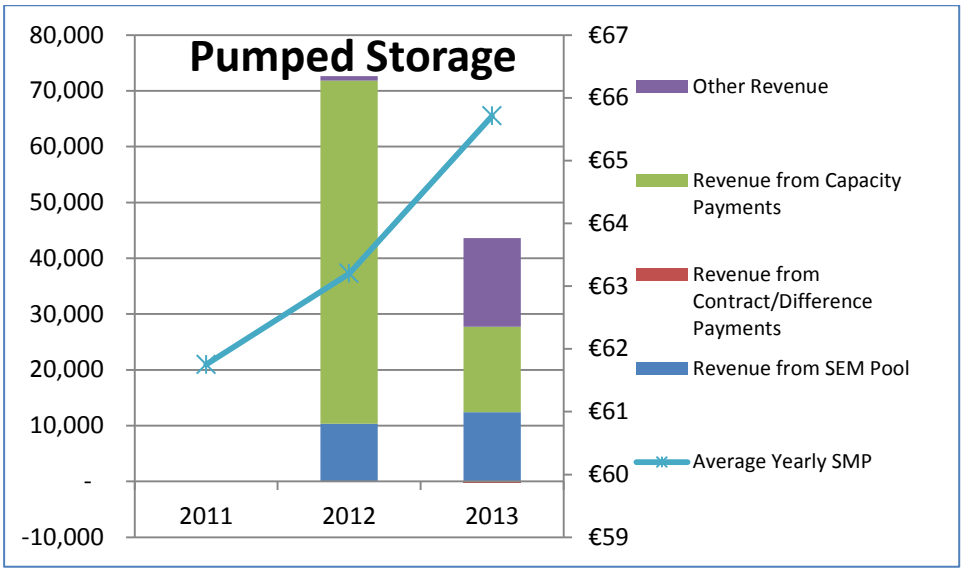



Gas
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP


Coal
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
-100,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP

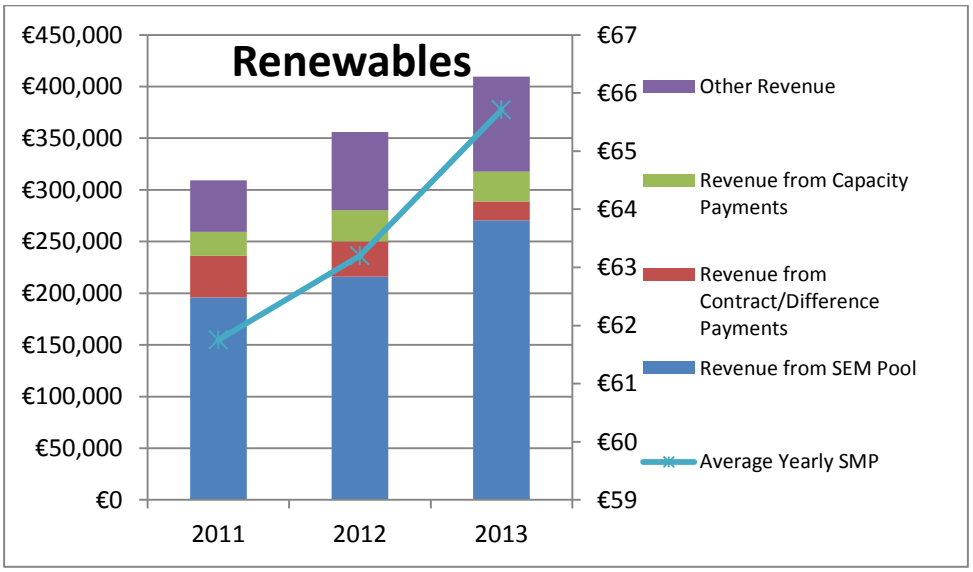

Peat
300,000
250,000
200,000
150,000
100,000
50,000
-
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP

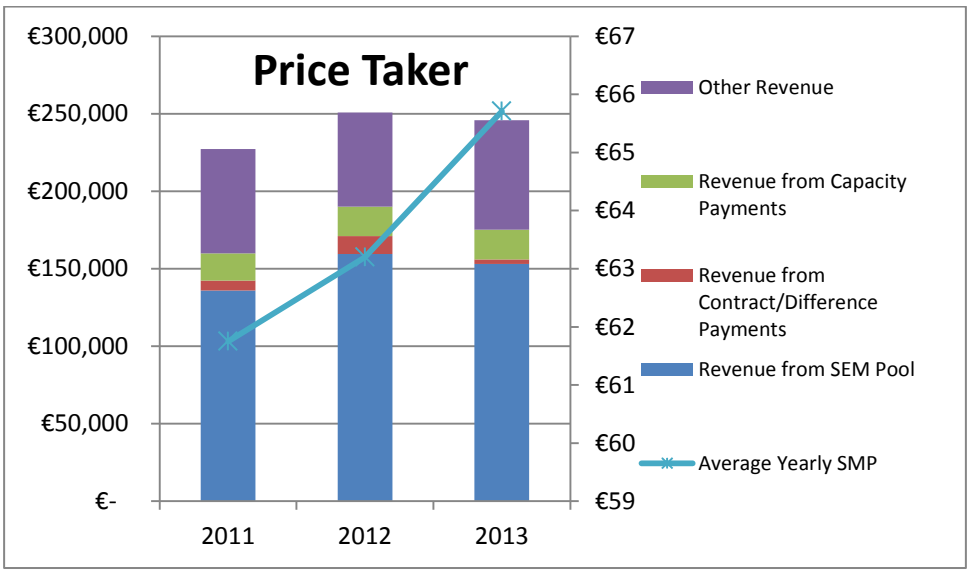

Distillate & Oil
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP

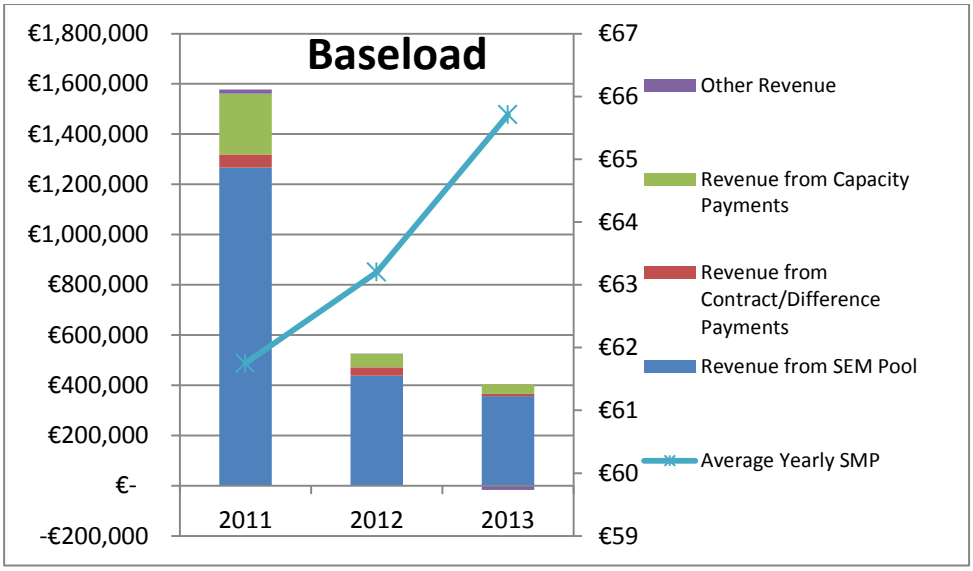

Pumped Storage
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
-10,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP

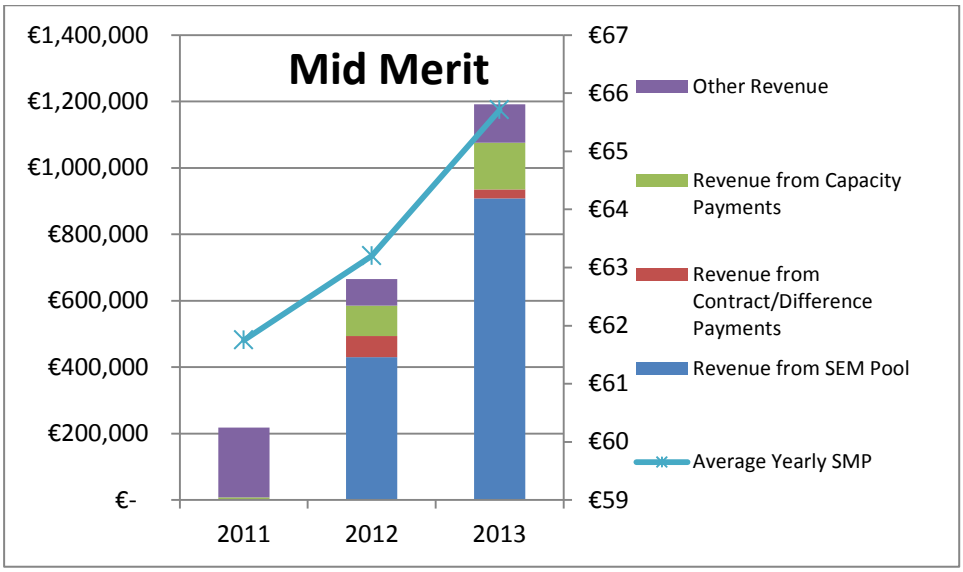
B.2.2 Breakdown by Generation Type

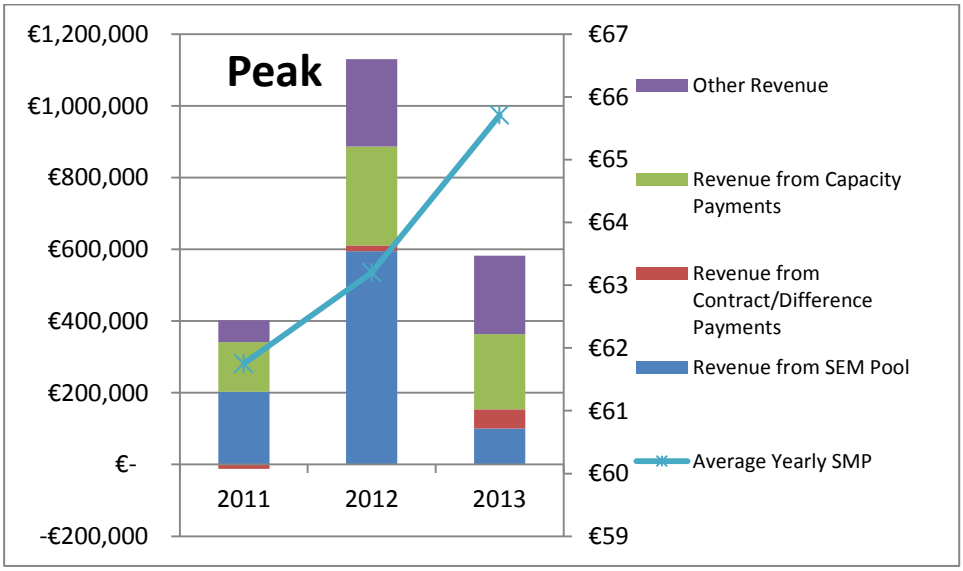
The following graphs show the revenue breakdown by generation type across each of the years that templates were received.






Baseload
€1,800,000
€1,600,000
€1,400,000
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€-
-€200,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP


Mid Merit
€1,400,000
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€-
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP


Peak
€1,200,000
€1,000,000
€800,000
€600,000
€400,000
€200,000
€-
-€200,000
€67
€66
€65
€64
€63
€62
€61
€60
€59
2011
2012
2013
Other Revenue
Revenue from Capacity Payments
Revenue from Contract/Difference Payments
Revenue from SEM Pool
Average Yearly SMP