Generator Financial Performance in the Single Electricity Market (SEM)

RAs' Market Modelling Group (MMG) Financial Analysis Report

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SEM/13/031

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1. Executive Summary

1.1 Scope of Report

This Regulatory Authority (RA) report from the Market Modelling Group (MMG) examines the financial performance of generation companies operating in the SEM. This report is the first to be published following the RA "Decision Paper on Generator Financial Reporting in the SEM", SEM/12/027[1]. Its purpose is to improve SEM transparency while respecting individual generator commercial sensitivity. It is divided into four parts:

1. An analysis of the historic aggregate financial performance of generators for each year from 2008 to 2011 inclusive, by reference to generators' regulated accounts submitted to the RAs;

2. An aggregate analysis of the financial reporting templates submitted by generators to the RAs for the financial year ending on either the 31st December 2011 or 31st March 2012. This is a requirement from SEM/12/027, which set out the financial reporting template to be completed by generation companies with a combined capacity greater than or equal to 25 MW. This section of the report breaks down the reporting templates received in order to examine the levels of aggregate profitability of different generation groups by fuel type and generation type;

3. An analysis of the historic financial performance of generators from 2008 to 2011 by reference to the SEM pool only (i.e. excluding CfDs);

4. An analysis of generator clean spark and dark green spreads in SEM from 2008 to 2012 and a comparison with those in BETTA.

For an explanation of some of the financial terms used in this report please refer to Appendix A. While this report focuses on annual financial generator performance, it should be remembered that generators typically represent 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.

1.2 Overall Report Results

As can be seen in the following sections, there is a strong relationship between gas fuel prices and generator profits in the SEM. This is 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 * Demand, rising gas prices therefore tends to lead to higher aggregate generator revenues.

Furthermore, because the marginal plant has a relatively higher gas fuel cost (due to its relative low efficiency) 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 bid costs.

Hence a rise in gas prices tends to increase generator industry gross profits (which excludes generator semi-fixed and fixed costs such as wages and finance/depreciation) and net profits (which includes semi-fixed and fixed costs), and vice versa, as shown in this report. 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 market.

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

Overall, the regulatory accounts in this report show that aggregate generator profits were highest in 2009 given record fuel prices and SMP in 2008 and the lag from forward contracting for differences (CfDs) set in that year. The regulatory accounts show that in 2010 aggregate generator net profit margins fell dramatically, to 11%, in line with the lower fuel prices and SMP in 2009. In 2011 overall industry net margins increased to 16% as fuel prices and SMP rebounded in 2010. New generator entry to SEM and lower demand have helped offset some of the impact of higher fuel prices since 2009 on SMP and hence generator revenues/profits – in other words, generator revenues and profits would have been higher from 2009 were it not for these factors.

The pool analysis (which excludes CfDs) also shows aggregate industry profitability being heavily influenced by the gas price, as one would expect, with gross industry profits at a high in 2008 before dramatically reducing in 2009 and increasing somewhat since then to 2011, with new generator entry offsetting some of the impact of higher fuel prices since 2009. An interesting trend is that, even though gross industry profits have risen from 2009 to 2011, net profitability for key selected generators overall has declined in total, from 13% to 9%. This is likely to be driven by new generator entry and more competition, reducing the running of many generators, thereby reducing their individual revenue/profits and putting pressure on them to reduce their costs.

The RAs will continue to monitor the financial position of generators, with a further updated report planned for publication in Q1 next year.

1.2.1 Analysis of Historical Financial Performance

Based on generators' regulated accounts received by the RAs, the following table shows the total operating profit and net profit margins for generators over the four years to 2011, with the key messages summarised underneath.

Table 1: Overview of Generator Financial Performance from Regulatory Accounts

	2008	2009	2010	2011
PBIT*	€579	€754	€341	€484
Profit After Tax*	€440	€616	€248	€371
Op. Profit Margin	19%	30%	15%	21%
Net Profit Margin	15%	25%	11%	16%

- There is a lag between the profits reported in the regulated accounts and those seen by the same companies in the pool (see later) of approximately one year. This can be explained by the hedging, i.e. CfDs, the majority of which have historically been sold by generators approximately a year-ahead. However, this effect may be diluted in the near future as more contracts are offered closer to the date the contracts cover and/or out-turn SMP is closer to the CfD price. The CfD year-ahead lag does explain why average profits in the regulated accounts rose from 2008 and 2009 even as fuel prices and SMP fell and why lower profits in the 2010 accounts reflect the lower fuel prices and SMP seen in 2009.

- The table above shows that profits rose across the various SEM generation companies from 2008 to 2009, with average net profit margins rising from 15% in 2008 to 25% in 2009, before falling dramatically to 11% in 2010.

- The 2011 accounts show that generators' aggregate net margins increased on the 2010 accounts to 16%, reflecting the increase in fuel prices and SMP in 2010. The 2011 net profit margins are similar to 2008. However absolute profits are still around 15% lower than at that time.

- Comparisons can be made with 2009 and 2010 financial data and analysis on generators in Great Britain published by Ofgem. This shows that the average Operating Profit Margin for generators in the GB market were 19% in 2009 and 14% in 2010, compared to 30% and 15% respectively in the SEM. Although there are only two years to compare, it would appear that generator margins are becoming more similar between the two markets. However this analysis is based on only two years comparison. As more data becomes available the RAs will be able to track whether year-on-year changes in profit levels align between the two markets.

1.2.2 Analysis of Financial Reporting Templates for 2011

In May 2012 the RAs published the Decision paper on generator financial reporting in the SEM (SEM/12/027), which set out new reporting requirements for generators in the SEM. The document set out a new financial reporting template that must be completed by generation companies with a combined capacity greater than or equal to 25 MW.

- Templates have been received for all conventional plant above the threshold in Ireland.
- Templates have been received for the majority of wind generation plants above the threshold in Ireland. Data for circa 1,130 MW of wind generation capacity – from an estimated 1600 MWs of capacity above the 25 MW threshold has been received.
- Templates have been received for almost half of the wind generation plants above the threshold in Northern Ireland. Data for 150 MW of wind generation capacity – from an estimated 400 MWs of capacity above the 25 MW threshold has been received.

The table below groups the collected templates by fuel types:

Table 2: Overview of 2011 Template Data by Fuel Source (for plants >25 MW)

Financial Year - 2011	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil
Electricity Sold - MWh	26,568,867	3,258,317	629,587	16,939,566	3,503,588	2,164,282	73,528
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 1,706,118	€ 152,081	€ 43,819	€ 1,115,330	€ 242,068	€ 135,881	€ 16,939
CfD	€ 87,040	€ 38,650	€ 1,713	€ 30,584	€ 9,534	€ 6,559	€ -
Capacity	€ 397,893	€ 15,757	€ 7,385	€ 232,810	€ 53,231	€ 17,513	€ 71,197
Other	€ 190,551	€ 47,218	€ 2,606	€ 44,990	€ 25,580	€ 67,255	€ 2,901
Total Revenue	**€ 2,381,602**	**€ 253,705**	**€ 55,524**	**€ 1,423,715**	**€ 330,413**	**€ 227,208**	**€ 91,037**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Op. Costs	€ 1,158,646	€ 8,920	€ -	€ 869,020	€ 176,120	€ 97,637	€ 6,949
Non-fuel Op. Costs	€ 435,699	€ 44,181	€ 21,173	€ 202,738	€ 73,927	€ 44,176	€ 33,760
Total Operating Costs	**€ 1,594,345**	**€ 53,101**	**€ 21,173**	**€ 1,071,757**	**€ 250,047**	**€ 141,813**	**€ 40,709**
EBITDI	**€ 787,257**	**€ 200,605**	**€ 34,351**	**€ 351,957**	**€ 80,366**	**€ 85,394**	**€ 50,328**
Dep. & Imp.	€ 332,411	€ 91,386	€ 1,390	€ 130,264	€ 53,222	€ 42,325	€ 12,098
EBIT	**€ 454,846**	**€ 109,218**	**€ 32,961**	**€ 221,694**	**€ 27,144**	**€ 43,069**	**€ 38,230**
Int & Tax	€ 154,629	€ 63,337	€ 601	€ 77,995	€ 3,343	€ 1,436	€ 7,917
Net Profit	**€ 300,216**	**€ 45,881**	**€ 32,361**	**€ 143,698**	**€ 23,801**	**€ 41,633**	**€ 30,313**
Gross Margin - %	33%	79%	62%	25%	24%	38%	55%
Net Margin - %	13%	18%	58%	10%	7%	18%	33%

The table shows that the net profit margin across all generators was 13%, which is broadly in line with the 16% shown in 2011 regulated accounts above. However, there was a wide spread between the different fuel types: hydro plants had the highest 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 and 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 and Coal plants whose net profit margins were the lowest, but who earned the largest shares of revenue.

The body of the report also analyses the breakdown between different types of generator (peak, mid-merit, baseload, etc.), as well as examining the performance of each type in terms of each MW of capacity.

1.2.3 Analysis of SEM Pool and Capacity - Financial Performance 2008-2011

The third part of this report examines the financial position of generators from 2008 to 2011 based on pool and capacity payments in the SEM. Thus this section allows readers to understand the financial performance of generators purely by reference to the core SEM energy/capacity markets.

The gross profits are based on the costs generators submitted to the pool and the revenues they receive from it[2] along with capacity payments, i.e. it ignores the CfD/contracting impact referred to earlier, as well as Ancillary Services, Constraint Payments or "out of market" generator revenues or costs. The actual market data for the gross profit analysis has been collected from the MMU's databases[3]. Based on regulatory accounts received by the RAs from generators, semi-fixed and fixed costs are then derived to calculate the operating and net profit positions for selected generators in the market.

Table 3 below shows the high level results, with some key messages:

- Total SEM revenues and gross profits for all generators generally follow the broad trends in the underlined fuel markets (see earlier). In other words SEM revenues declined very significantly from a circa €3.7 billion high in 2008 to a €2.2 billion low in 2009 due to the collapse in fuel prices - and hence SMP - at that time. Since then SEM generator revenues have rebounded to circa €2.7 billion in 2011 as fuel prices and SMP rose again. Similarly total gross profits fell from a circa €1.7 billion high in 2008 to a €1.2 billion low in 2009, moderately increasing to €1.3 billion by 2011.

- New generator entry to SEM and lower demand since 2009 have helped offset some of the impact of higher fuel prices on SMP and hence generator revenues and gross profits – in other words, generator revenues and gross profits would have been higher from 2009 were it not for these factors.

- For non-wind generators in SEM, the above trends were similar to those for all generators (including wind), although gross profit levels were lower. This shows how more wind on the system increases gross margins. This is because the fuel cost bids for wind are zero, pushing total gross industry profits closer to total revenues. Of course, wind has higher fixed costs to be paid for by the gross profits.

[2] Constraint payments and costs as well as out of market revenues and costs are not included in this analysis.
[3] While every effort has been made to ensure the correctness of data these figures should be treated as indicative.

Table 3: Summary of Total Gross Profits by SEM Pool and Capacity

All Generators	2008	2009	2010	2011
Total Revenue	3,672	2,248	2,549	2,733
Gross Profits	1,673	1,190	1,244	1,312
Gross Profit Margin	46%	53%	49%	48%
All Generators excluding wind	**2008**	**2009**	**2010**	**2011**
Total Revenue (excluding wind)	3,476	2,105	2,386	2,459
Gross Profits (excluding wind)	1,477	1,048	1,081	1,038
Gross Profit Margin (excluding wind)	42%	50%	45%	42%

The following table takes the above gross profits results, which exclude generator semi-fixed and fixed costs, for example wages and finance/depreciation, and focuses on the operating and net profits (which include semi-fixed and fixed costs) for key selected generators in SEM based on regulatory account data. The table shows the figures for the selected generators firstly excluding the free carbon allowances, as issued under the Irish and UK National Allocation Plans, and then including them. The free carbon allowances reduced the selected generators' actual costs relative to their market bids, increasing their profits[4]. It should be noted that from January 2013 generators will no longer receive free carbon allowances.

Table 4: Summary of Operating and Net Profit from SEM Pool for Key SEM Generators

Selected Generators[5] – Before Free Carbon Allocation				
	2008	**2009**	**2010**	**2011**
Operating Profit (€M)	672	233	177	206
Operating Profit Margin (%)	22%	13%	9%	10%
Net Profit (€M)	483	128	98	105
Net Profit Margin (%)	14%	6%	4%	4%
Selected Generators – After Free Carbon Allocation				
	2008	**2009**	**2010**	**2011**
Operating Profit (€M)	936	389	315	356
Operating Profit Margin (%)	30%	23%	16%	18%
Net Profit (€M)	713	273	226	234
Net Profit Margin (%)	21%	13%	9%	9%

This table shows the following trends:

- Despite moderately rising aggregate gross industry profits since 2009 to 2011, operating and net profit margins for the selected key generators have fallen. For example, net profit margins for the key generators have fallen from 13% in 2009 to 9% in 2011.

[4] This analysis assumed that generators in Northern Ireland with Generator Unit Agreements with NIE PPB did not receive this benefit. It also accounted for the carbon levy imposed on generators in Ireland between July 2010 and May 2012 - the 2011 figures in the table are based on an estimate of the carbon levy paid by the selected generators.

[5] ESB PG, ESBI, Viridian, Endesa, AES Ballylumford, AES Kilroot, Tynagh and Bord Gáis, accounting for approximately 75% of SEM total market share.

- A key factor here is likely to be increased competition as a result of new generation entry into the SEM - essentially more generators are competing for the pool revenue and so selected generator running levels and revenues/profits margins are lower. As a result operating and net profit margins have fallen for the selected generators even as aggregate industry revenues and gross profits have risen. This is likely to put pressure on generation companies to reduce their costs.

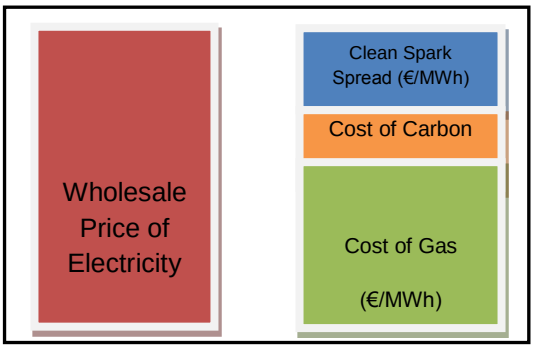
1.2.4 Spark and Dark Spread Analysis 2008 to 2012

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 2012.

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%.

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 the generator's actual running in the market, in order to derive the generator's net profit position. Figure 1 below provides an illustration of clean spark spreads.

Figure 1: 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 close, 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.

Figure 2 below shows the monthly clean spark spreads in the SEM and BETTA markets from January 2008 up to December 2012. Figure 2 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 and actually went negative in BETTA in the second half of 2012.

Figure 2: Clean Spark Spread SEM vs. GB

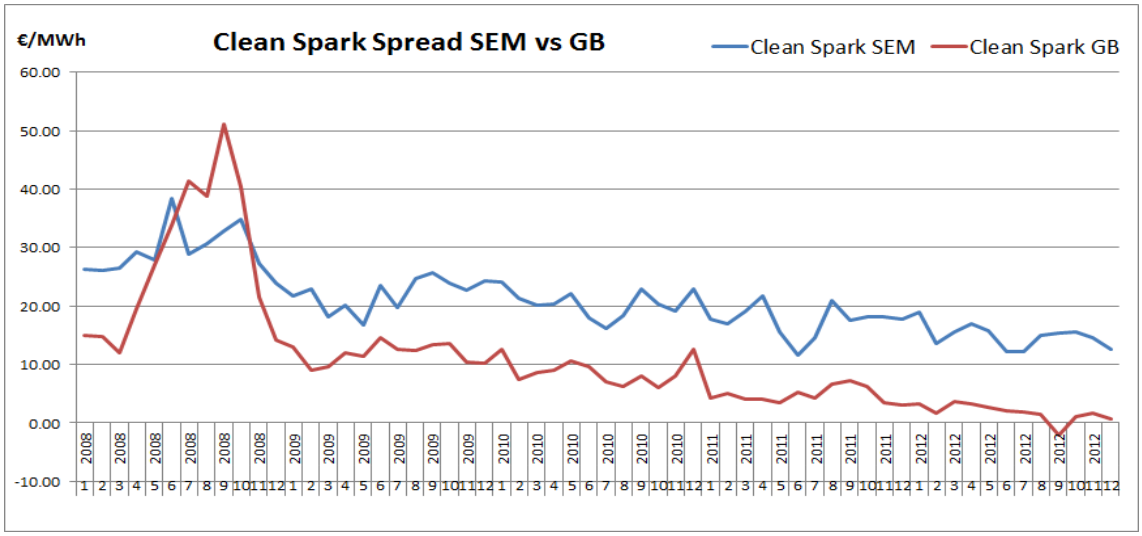
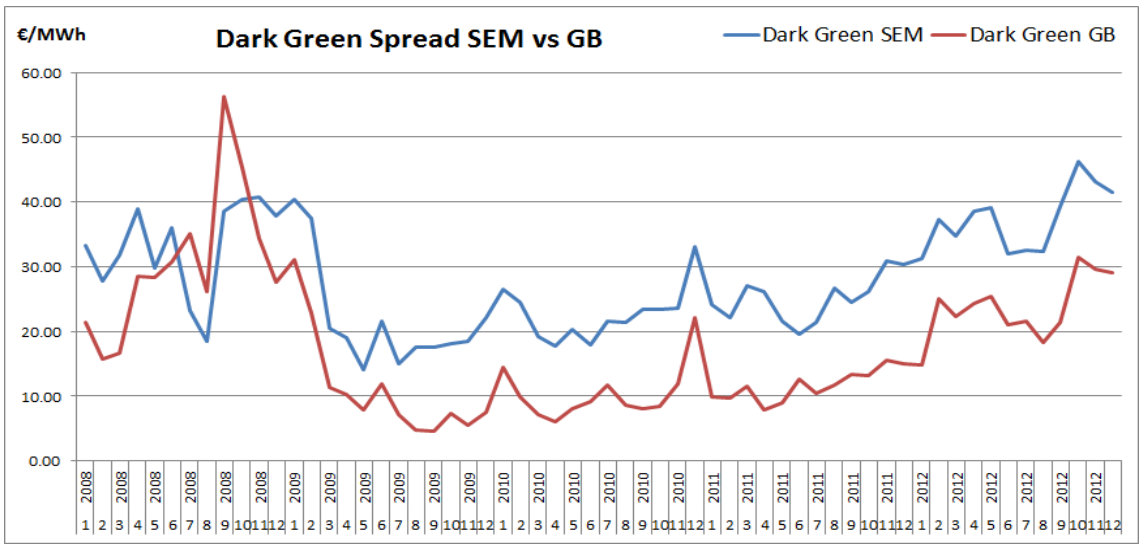


Figure 3 below shows the monthly dark green spreads in the SEM and BETTA markets from January 2008 up to December 2012. Figure 3 shows that the dark green spread was higher in the SEM for the first half of 2008, then higher in BETTA for the second half of 2008. Since 2009 the dark green spread has been consistently higher in SEM and has been increasing in both markets, which is related to the relatively low cost of coal compared to gas

Figure 3: Dark Green Spread SEM vs. GB



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

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. The effects can be seen in previous sections on profitability, showing that even though aggregate gross industry profits have increased from 2009 to 2011 net generator profit margins for key selected generators have fallen; essentially, new generator entry means that more generators are sharing the "gross profit pie" in SEM, reducing their utilisation rate and hence net profits. 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.

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.

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.

2. Introduction and Background

2.1 INTRODUCTION

This Regulatory Authority (RA) report from the Market Modelling Group (MMG) examines the financial performance of generation companies operating in the SEM. This report is the first to be published following the RA "Decision Paper on Generator Financial Reporting in the SEM", SEM/12/027[6]. Its purpose is to improve SEM transparency while respecting individual generator commercial sensitivity. It is divided into four parts:

1. An analysis of the historic aggregate financial performance of generators for each year from 2008 to 2011 inclusive, by reference to generators' regulated accounts submitted to the RAs;

2. An aggregate analysis of the financial reporting templates submitted by generators to the RAs for the financial year ending on either the 31st December 2011 or 31st March 2012. This is a requirement from SEM/12/027, which set out the financial reporting template to be completed by generation companies with a combined capacity greater than or equal to 25 MW. This section of the report breaks down the reporting templates received in order to examine the levels of aggregate profitability of different generation groups by fuel type and generation type;

3. An analysis of the historic financial performance of generators from 2008 to 2011 by reference to the SEM pool only (i.e. excluding CfDs);

4. An analysis of generator clean spark and dark green spreads in SEM from 2008 to 2012 and a comparison with those in BETTA.

In terms of financial performance, this report focuses on two measures of profitability, Operating/Net Profit Margin and Return on Assets.[7] For an explanation of some of the financial terms used in this report please refer to Appendix A.

While this report focuses on annual financial generator performance, it should be remembered that generators typically represent 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 a further updated report planned for publication in Q1 next year.

2.2 BACKGROUND

The RAs have received regulated accounts from generators for the full operational years of the SEM for 2008 through to 2011. The year 2008 saw record prices for fossil fuels which fed through to a very high System Marginal Price (SMP) in the SEM – the reason for this is explained in section 2.3. In line with the economic downturn, 2009 saw significant reductions in fuel prices, electricity demand and SMP. In 2010 fuel prices and SMP recovered somewhat from their 2009 lows and this trend has continued with further increases in 2011/12 – as shown below in the table and graphs:

6 Decision Paper on Generator Financial Reporting in the SEM – SEM/12/027

7 More precisely, this study tends to focus in more on Return on Fixed Assets (ROFA), which ignores current assets, such as stock and debtors.

Table 5: Average SMP and Percentage Change

Year	Avg. SMP	Change
2008	€ 80.39	
2009	€ 43.45	-46%
2010	€ 53.83	24%
2011	€ 61.77	15%
2012	€ 63.16	2%

Figure 4: January 2007 to December 2012 Average Gas and Oil Prices

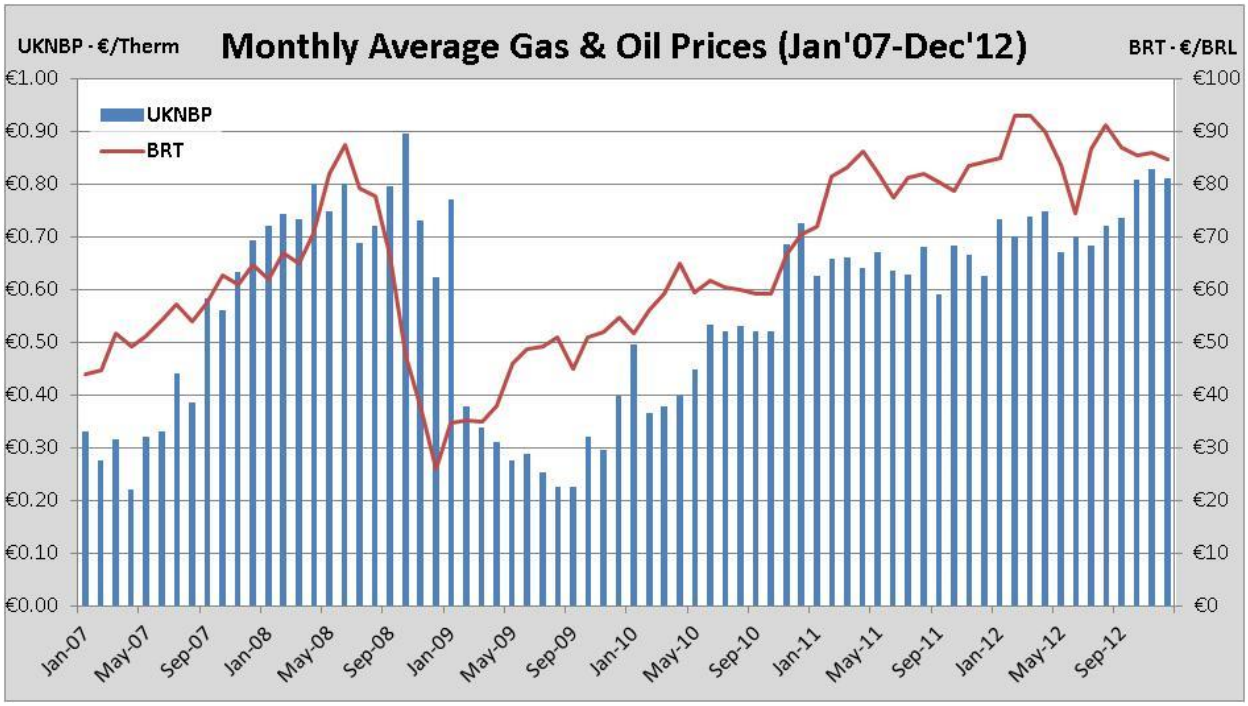


Figure 5: 2008 to 2012 Monthly Average SMP

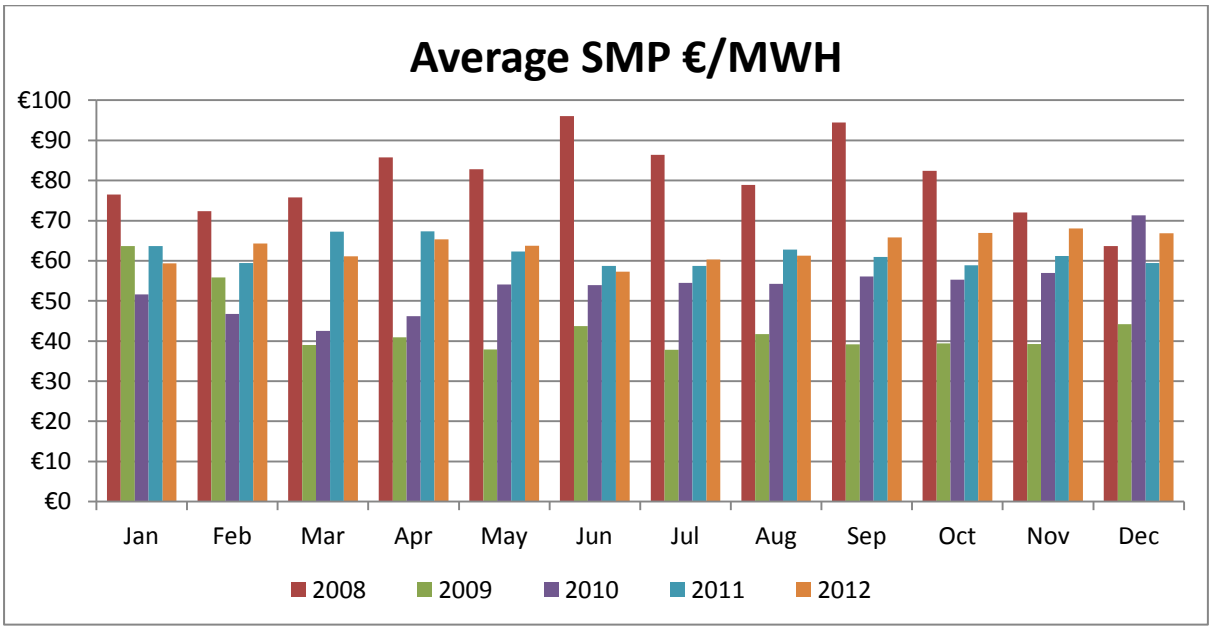
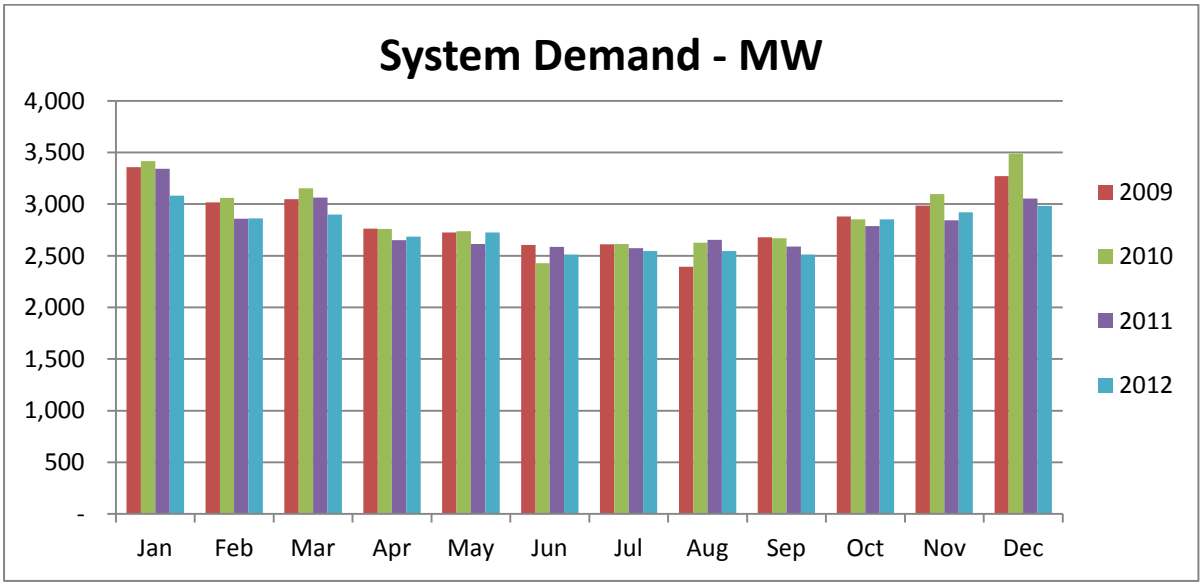


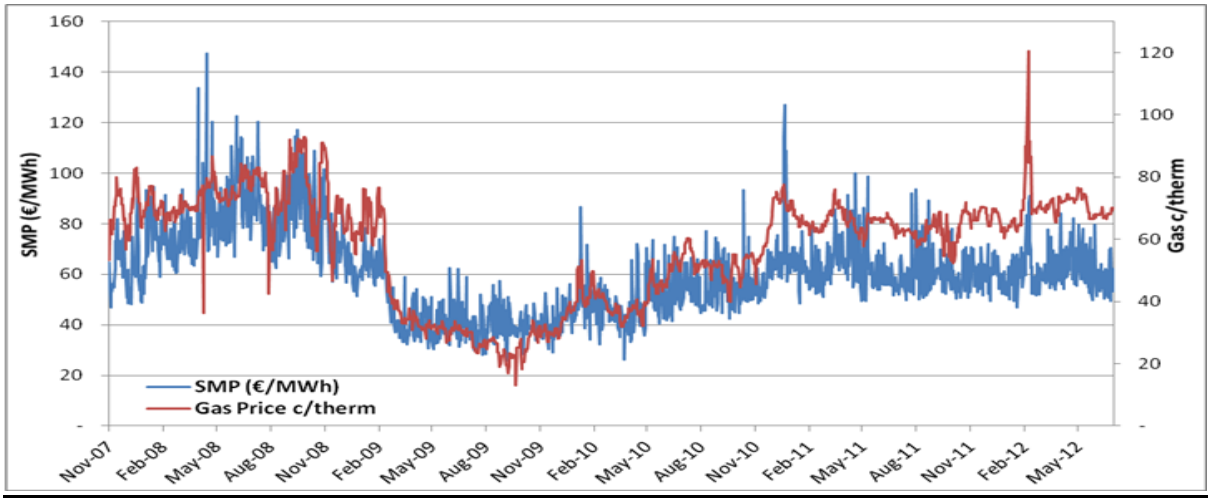
Figure 6: 2009 – 2012 Monthly System Demand



2.3 SMP AND GROSS PROFITS

As can be seen in this report, there is a strong relationship between gas fuel prices and generator profits in the SEM. This is 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 7 below.

Figure 7: SMP and Gross Profit



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.

Furthermore, because the marginal plant has a relatively higher gas fuel cost (due to its relative low efficiency) than the majority of plants that are run, a rise in the gas cost generally results in a greater increase in SMP (and hence total pool revenue) than in most generators' fuel bid costs.

Hence a rise in gas prices tends to increase generator industry gross profits (which exclude generator semi-fixed and fixed costs such as wages and finance/depreciation) and net profits (which includes semi-fixed and fixed costs), and vice versa, as shown in this report. Factors which have helped to mitigate against this relationship in recent years in SEM, particularly the entry of efficient new generation, are discussed later in this report. This new generation entry has been encouraged by the transparent and cost-reflective nature of the market.

3. Generator Regulated Accounts

3.1 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 2008 to 2011 inclusive.

3.2 Overview of Accounts

The following table shows the operating profit and net profit margins for generators over the past four years, with some key messages summarised underneath. The data is presented in aggregate form. For an explanation of some of the financial terms please refer to Appendix A.

Table 6: Overview of Generator Financial Performance from Regulatory Accounts

	2008	2009	2010	2011
PBIT*	€579	€754	€341	€484
Profit After Tax*	€440	€616	€248	€371
Op. Profit Margin	19%	30%	15%	21%
Net Profit Margin	15%	25%	11%	16%

One aspect of the financial reports that should be noted is the fact there is a lag between the profits reported in the regulated accounts and those seen by the same companies in the pool of approximately one year. This can be explained by the hedging, i.e. CfDs, the majority of which have historically been sold by generators approximately a year-ahead. However, this effect will be diluted as more contracts are offered closer to the date the contracts cover. The CfD year-ahead lag explain why average profits in the regulated accounts rose from 2008 and 2009 even as fuel prices fell and why lower profits in the 2010 accounts reflect the lower fuel prices seen in 2009.

The regulatory accounts in this report show that aggregate generator profits were highest in 2009 given record fuel prices and SMP in 2008 and the lag from forward contracting (CfDs) set in that year. The regulatory accounts show that in 2010 aggregate generator net profit margins fell significantly to 11% in line with the lower fuel prices and SMP in 2009. In 2011 overall industry profits and gross margins increased to 16% as fuel prices and SMP rebounded somewhat in 2010. The 2011 net profit margins are similar margins to 2008, although absolute profits are still around 15% lower than in 2008.

New generator entry to SEM and lower demand have helped offset some of the impact of higher fuel prices since 2009 on SMP and hence generator revenues/profits – in other words, generator revenues and gross profits would have been higher from 2009 were it not for these factors.

3.3 Profitability

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 we have assessed the Operating and Net Profit Margins (OPM and NPM) of generation companies. Operating Profit Margin is calculated as Gross Margin minus Operating

Costs[8]. 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 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", inventories such as secondary fuel oil distillate, etc.

- ROCE 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 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 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.

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 75% of the market.

Table 7: Generator Profit/Return Totals

Profitability	2007	2008	2009	2010	2011	Average
Profit Before Interest & Tax (£m)	485.1	578.5	754.3	341.3	484.4	528.7
Profit After Tax (£m)	376.1	440.1	616.4	248.0	370.5	410.2
Return on Sales						
Operating Profit Margin (PBIT/Turnover)	18%	19%	30%	15%	21%	21%
Net Profit Margin (PAT/Turnover)	14%	15%	25%	11%	16%	16%
Return on Investment						
Return on Capital Employed (PBIT/Capital Employed)	24%	27%	23%	11%	15%	19%
Return on Fixed Assets (PAT/Fixed Assets)	16%	17%	18%	8%	11%	14%
Return on Assets (PAT/Total Assets)	12%	12%	14%	6%	9%	11%

Overall profits rose across the various SEM generating companies from 2008 to 2009, with average Net Profit Margin rising from 15% in 2008 to 25% in 2009. This may initially appear surprising given that 2008 was the year of very high SMP compared to 2009 which was much lower. It is likely due to the fact that plant revenues were in part based on contracts (CfDs), and the price of these for 2009 would have been set based on the high SMP seen in 2008. Hence, with this lag effect, the collapse in SMP in 2009 can be seen in generators' profits in 2010 with the average Net Profit Margin dropping

[8] 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.

to 11%. As might be expected given the increase in fuel prices from 2010 onwards, the 2011 accounts show that overall profits margins have begun to increase.

Financial results can be compared with financial data and analysis on generators in Great Britain (GB) published by Ofgem[9]. The Ofgem publications show that the average Operating Profit Margin for generators in the GB market was 19% in 2009 and 14% in 2010, compared to 30% and 15% respectively in the SEM. Although there are only two years to compare, it would appear that generator margins are becoming more similar between the two markets. As more data becomes available the RAs will be able to track whether year-on-year changes in profit levels align between the two markets.

3.4 SUMMARY

Overall, the regulatory accounts in this report show that aggregate generator profits were highest in 2009, as expected given record fuel prices and SMP in 2008 and the circa 1-year lag from forward contracting (CfDs) set in that year. The regulatory accounts show that in 2010 aggregate generator net profit margins fell significantly to 11% in line with the lower fuel prices and SMP in 2009. In 2011 overall industry profits and gross margins increased to 16% as fuel prices and SMP rebounded somewhat in 2010. New generator entry to SEM and lower demand have helped offset some of the impact of higher fuel prices since 2009 on SMP and hence generator revenues/profits; in other words, generator revenues and gross profits would have been higher from 2009 were it not for these factors.

[9] The 2012 Report was not published at time of publishing this paper. Reports available at http://www.ofgem.gov.uk/Markets/RetMkts/rmr/Pages/rmr.aspx

4 Financial Reporting Templates

4.1 INTRODUCTION

In May 2012 the RAs published a decision paper on generator financial reporting in the SEM[10], which set out new reporting requirements for generators in the SEM. The document set out a new financial reporting template that must be completed 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 ensures that generators provide financial data in a uniform way and as it must be provided on a site basis; as such the profitability of different generation types can be examined which would not be possible when group accounts are received.

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	**€ -**

4.1.2 Notes on Dataset

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. As some generators financial year runs until the 31st March, all completed templates were not due until the end of September 2012.

To date not all reporting templates from generators who are required to provide one have been received. The fact that there is not a complete data set must be taken into account when examining the results shown in this report. Therefore please note the following:

- Templates have been received for all conventional plant above the threshold in Ireland and Northern Ireland.

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

- Templates have been received for circa 1,130 MW of wind generation capacity in Ireland from an estimated 1,600 MWs of capacity above the 25 MW threshold.
- Templates have been received for 150MWs of wind generation capacity in Northern Ireland from an estimated 400 MWs of capacity above the 25 MW threshold.

Also, in some of the larger generation groups there had to be assumptions made as to how certain costs were 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 cost into the sub categories should be taken as indicative.

4.2 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 8 below shows the amalgamated results of several fuel types, namely: Wind, Hydro, Gas, Coal, Peat, and Distillate & Oil. Pumped storage has not been included as Turlough Hill was not operational during 2011. The following sections break this down into more detail.

Table 8: Overview of 2011 Template Data by Fuel Source (for plants >25 MW)

Financial Year - 2011	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil
Electricity Sold - MWh	26,568,867	3,258,317	629,587	16,939,566	3,503,588	2,164,282	73,528
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 1,706,118	€ 152,081	€ 43,819	€ 1,115,330	€ 242,068	€ 135,881	€ 16,939
CfD	€ 87,040	€ 38,650	€ 1,713	€ 30,584	€ 9,534	€ 6,559	€ -
Capacity	€ 397,893	€ 15,757	€ 7,385	€ 232,810	€ 53,231	€ 17,513	€ 71,197
Other	€ 190,551	€ 47,218	€ 2,606	€ 44,990	€ 25,580	€ 67,255	€ 2,901
Total Revenue	**€ 2,381,602**	**€ 253,705**	**€ 55,524**	**€ 1,423,715**	**€ 330,413**	**€ 227,208**	**€ 91,037**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Op. Costs	€ 1,158,646	€ 8,920	€ -	€ 869,020	€ 176,120	€ 97,637	€ 6,949
Non-fuel Op. Costs	€ 435,699	€ 44,181	€ 21,173	€ 202,738	€ 73,927	€ 44,176	€ 33,760
Total Operating Costs	**€ 1,594,345**	**€ 53,101**	**€ 21,173**	**€ 1,071,757**	**€ 250,047**	**€ 141,813**	**€ 40,709**
EBITDI	**€ 787,257**	**€ 200,605**	**€ 34,351**	**€ 351,957**	**€ 80,366**	**€ 85,394**	**€ 50,328**
Dep. & Imp.	€ 332,411	€ 91,386	€ 1,390	€ 130,264	€ 53,222	€ 42,325	€ 12,098
EBIT	**€ 454,846**	**€ 109,218**	**€ 32,961**	**€ 221,694**	**€ 27,144**	**€ 43,069**	**€ 38,230**
Int & Tax	€ 154,629	€ 63,337	€ 601	€ 77,995	€ 3,343	€ 1,436	€ 7,917
Net Profit	**€ 300,216**	**€ 45,881**	**€ 32,361**	**€ 143,698**	**€ 23,801**	**€ 41,633**	**€ 30,313**
Gross Margin - %	33%	79%	62%	25%	24%	38%	55%
Net Margin - %	13%	18%	58%	10%	7%	18%	33%

While the total net profit margin across all generators was 13%, which is broadly in line with the 2011 regulated accounts of 16%, there was a wide spread between the different fuel types. As might have been expected Hydro plants had the highest 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 and Coal plants whose net profit margins were the lowest, but who earned the largest shares of revenue.

4.2.1 Revenues by Fuel Source

Figures 8 and 9 show the breakdown of output volumes by each fuel type and the total revenues earned by each as well. As can be seen there is a 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 closely related to 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 4% of the total revenues.

Figure 8: Breakdown of Total Volumes by Fuel

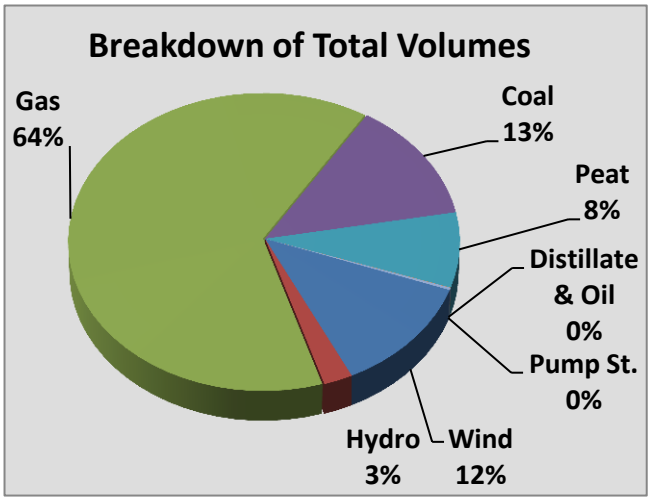
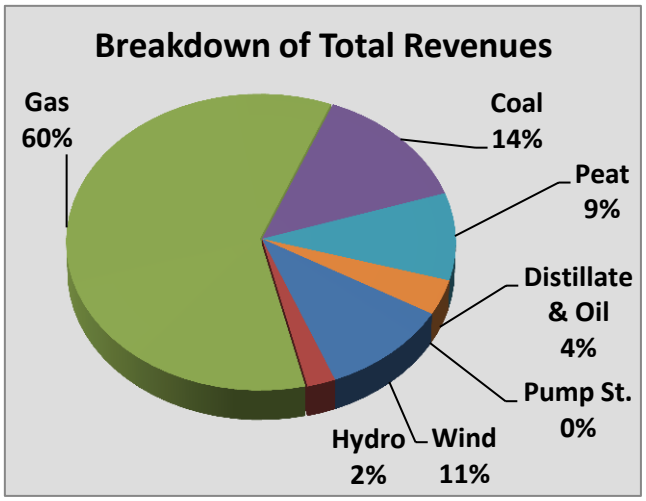


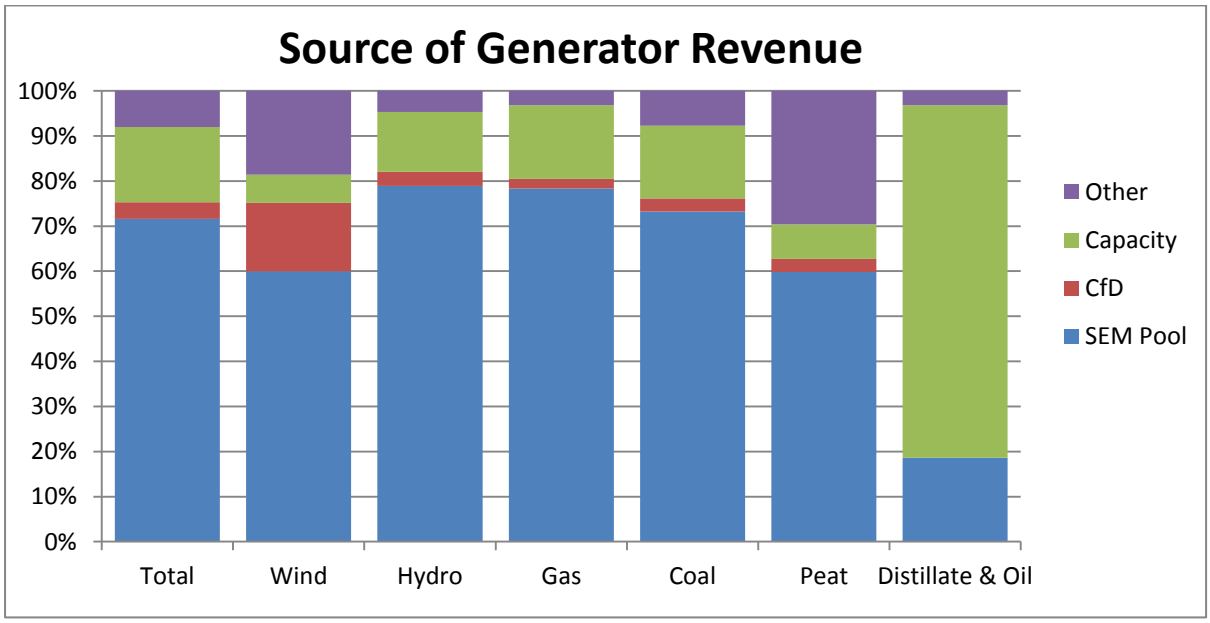
Figure 9: Breakdown of Total Revenues by Fuel



4.2.2 Generator Revenues and Costs

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 Figure 10 below, SEM Pool revenue accounts for 72% of the total revenues earned by generators, with capacity payments accounting for a further 17%. CfDs make up a relatively small portion of generators overall revenue (<4%) in 2011; this could be because, unlike in previous years, CfDs in 2011 were fairly close to the out-turn SMP.

Figure 10: Percentage Breakdown of Generator Revenues

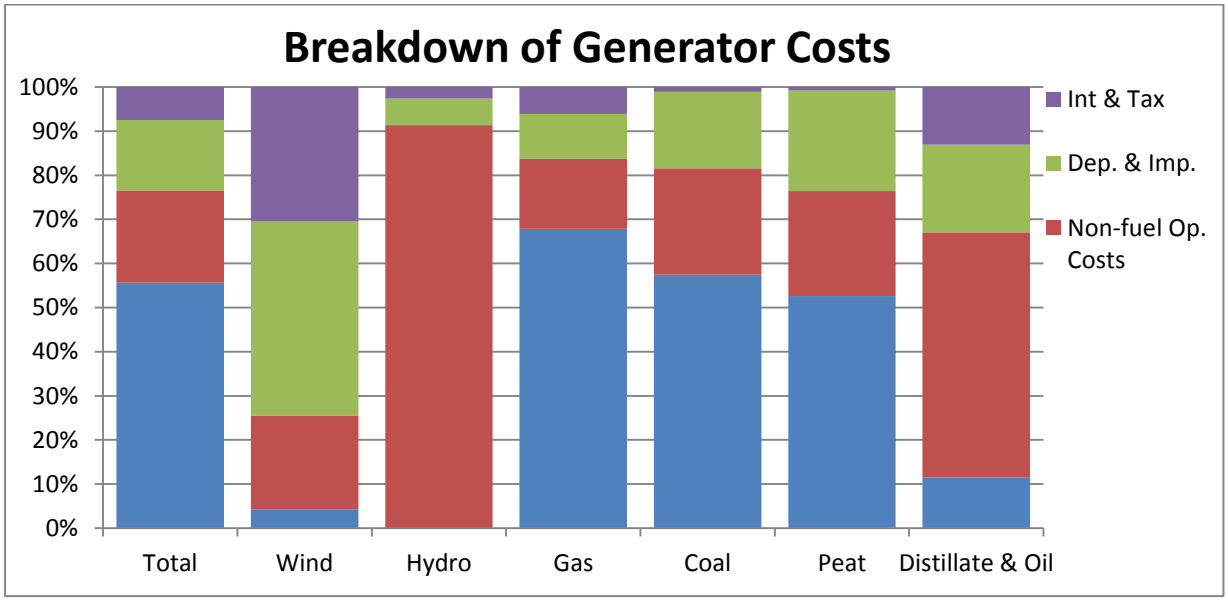


Generators were also given four categories into which costs were to be allocated: Fuel Related Operating Costs, Non-fuel Operating Costs, Depreciation and Impairment, Interest and Tax.

Figure 11 below shows that there is a wide variance in the make-up of costs between the generators with different fuel types. Wind generators have high capital costs and therefore 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 and Coal generators.

One interesting observation is that fuel related costs made up only 56% of the total costs for all generators.

Figure 11: Percentage Breakdown of Generator Costs



4.3 BREAKDOWN BY GENERATION FUEL SOURCE IN MW TERMS

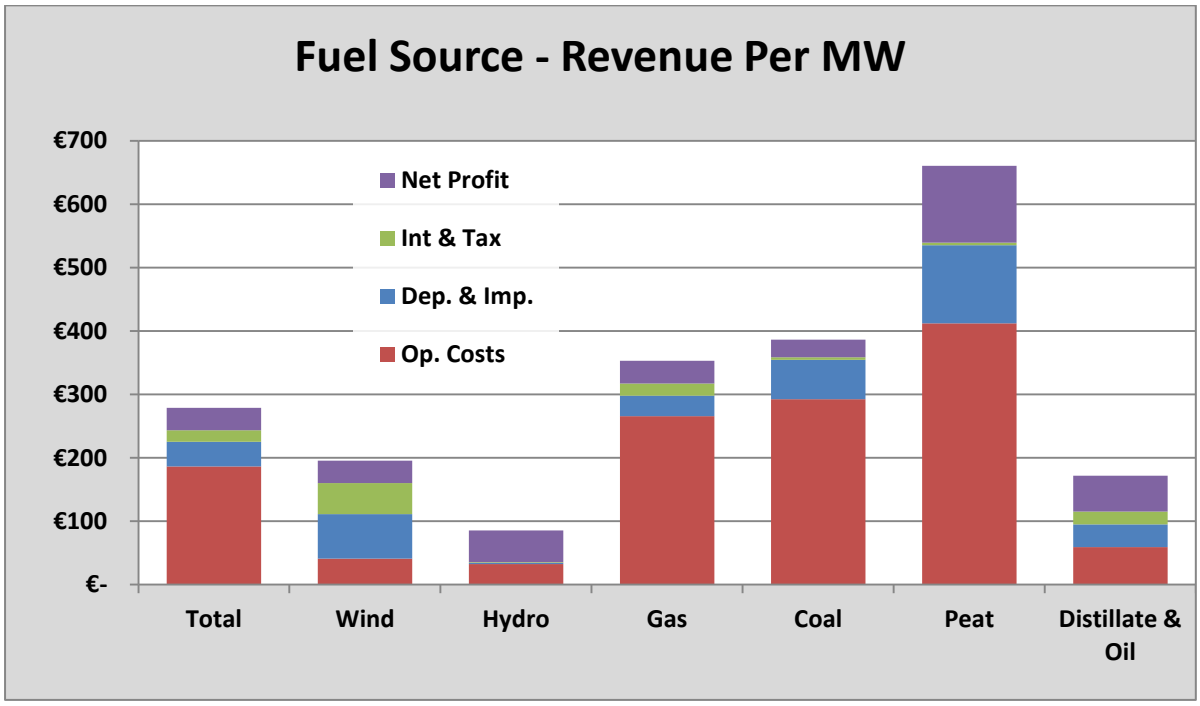
The breakdown of generators' revenues and costs set out above provides insights into how the different types of generators fare relative to one another. In order to gain a more in-depth understanding of this, Table 9 below has further broken down the data by looking at the figures on a per MW basis. The table shows the total number of MWs of capacity for each generator type and what the revenues and costs were per MW.

Table 9: Overview of Template Data by Fuel Source per MW

Total MWs	8,548	1,298	648	4,035	855	344	1,076
Financial Year - 2011	**Total**	**Wind**	**Hydro**	**Gas**	**Coal**	**Peat**	**Distillate & Oil**
Electricity Sold - MWh	3,108	2,509	972	4,199	4,098	6,292	106
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 200	€ 117	€ 68	€ 276	€ 283	€ 395	€ 25
CfD	€ 10	€ 30	€ 3	€ 8	€ 11	€ 19	€ -
Capacity	€ 47	€ 12	€ 11	€ 58	€ 62	€ 51	€ 140
Other	€ 22	€ 36	€ 4	€ 11	€ 30	€ 196	€ 7
Total Revenue	€ 279	€ 195	€ 86	€ 353	€ 386	€ 660	€ 172
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Op. Costs	€ 136	€ 7	€ -	€ 215	€ 206	€ 284	€ 10
Non-fuel Op. Costs	€ 51	€ 34	€ 33	€ 50	€ 86	€ 128	€ 49
Total Operating Costs	€ 187	€ 41	€ 33	€ 266	€ 292	€ 412	€ 59
EBITDI	**€ 92**	**€ 154**	**€ 53**	**€ 87**	**€ 94**	**€ 248**	**€ 113**
Dep. & Imp.	**€ 39**	**€ 70**	**€ 2**	**€ 32**	**€ 62**	**€ 123**	**€ 36**
EBIT	**€ 53**	**€ 84**	**€ 51**	**€ 55**	**€ 32**	**€ 125**	**€ 77**
Int & Tax	**€ 18**	**€ 49**	**€ 1**	**€ 19**	**€ 4**	**€ 4**	**€ 21**
Net Profit	**€ 35**	**€ 35**	**€ 50**	**€ 36**	**€ 28**	**€ 121**	**€ 57**

As can be seen from Table 9 above and Figure 12 below, Peat plants earn the highest revenues for each MW of capacity and they incur 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 while they also have a significant amount of 'Other Revenue' which could possibly include PSO payments. The Peat generators are followed by Gas and Coal generators, which is not unexpected given that all of the coal plant and approximately 75% of the gas capacity operate as baseload plant and therefore have high output per MW of capacity.

Figure 12: Breakdown of Generator Revenues per MW of Capacity



4.4 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 types, namely: Renewables, Price Takers, Baseload, Mid-Merit and Peakers. Table 10 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.

As would be expected Baseload plant accounts 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). Mid-Merit is shown as the least profitable, although there is only one plant listed as Mid-Merit and therefore caution must be exercised in drawing any conclusions from the data. In terms of the profit margins earned (both gross and net), Renewables and Price takers outperform the other plant types. It will be interesting to see if this remains the case as more wind comes into the market creating downward pressure on SMP.

Table 10: Overview of Financial Template Data by Generation Type

Financial Year - 2011	Total	Renewables	Price Taker	Baseload	Mid Merit	Peak
Volume of Electricity Sold - MWh	26,534,775	3,853,812	2,164,282	17,633,527	8,935	2,874,219
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€1,704,130	€ 193,913	€ 135,881	€1,170,367	€ 1,988	€ 201,982
CfD	€ 87,040	€ 40,363	€ 6,559	€ 52,137	€ 24	€ (12,044)
Capacity	€ 397,893	€ 23,142	€ 17,513	€ 217,543	€ 6,289	€ 133,406
Other	€ 190,515	€ 49,788	€ 67,255	€ 2,989	€ 22,994	€ 47,489
Total Revenue	**€2,379,578**	**€ 307,205**	**€ 227,208**	**€1,443,037**	**€ 31,295**	**€ 370,833**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Operating Costs	€1,158,646	€ 8,920	€ 97,637	€ 851,258	€ 19,908	€ 180,922
Non-fuel Operating Costs	€ 435,183	€ 80,582	€ 44,176	€ 215,906	€ 9,571	€ 84,948
Operating Costs	**€1,593,829**	**€ 89,502**	**€ 141,813**	**€1,067,164**	**€ 29,479**	**€ 265,870**
EBITDI	**€ 785,750**	**€ 217,703**	**€ 85,394**	**€ 375,873**	**€ 1,816**	**€ 104,963**
Dep. & Impair.	€ 331,414	€ 93,504	€ 42,325	€ 159,943	€ 292	€ 35,349
EBIT	**€ 454,336**	**€ 124,199**	**€ 43,069**	**€ 215,930**	**€ 1,524**	**€ 69,615**
Interest & Tax	€ 154,311	€ 63,620	€ 1,436	€ 71,053	€ 9	€ 18,193
Net Profit	**€ 300,025**	**€ 60,579**	**€ 41,633**	**€ 144,876**	**€ 1,515**	**€ 51,421**
Gross Margin - %	33%	71%	38%	26%	6%	28%
Net Margin - %	13%	20%	18%	10%	5%	14%

4.4.1 Revenues by Fuel Source

When output and revenues is broken into the groups of generators, as shown in Figures 13 and 14 below, it can be seen that while Baseload and Renewables make up over 80% of the total output, they receive only 74% of revenues. Mid-Merit and Peak plant take a higher relative share of revenues as they operate primarily at times of high prices.

Figure 13: Breakdown of Output by Generation Type

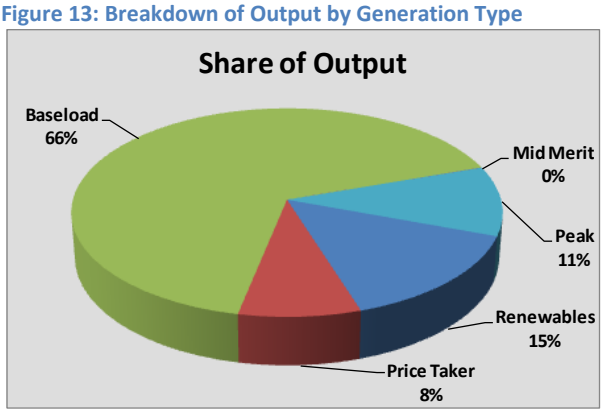
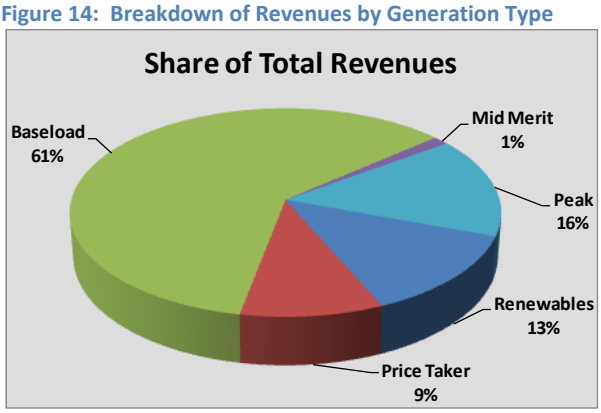


Figure 14: Breakdown of Revenues by Generation Type



4.4.2 Generator Revenues and Costs

Figure 15 below shows the breakdown of revenue received by each group. As highlighted previously, the SEM pool makes up over 70% of generators total revenues, although this varies between generator groups. Renewable generators earn a greater share of their revenue from CfDs (possibly PSO) than any other groups, while in 2011 Peakers experienced a net loss on CfDs.

As would have been expected, Peakers earned a large share of their revenue from capacity payments. Other revenue accounted for a significant share of Mid Merit's total revenue.

Figure 15: Percentage Breakdown of Generator Revenues

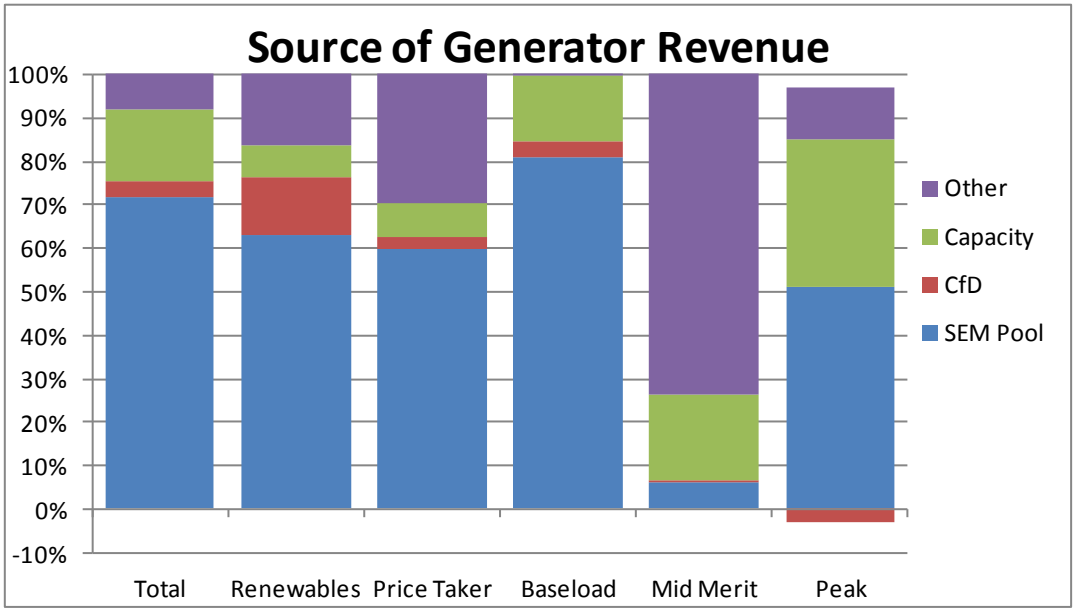
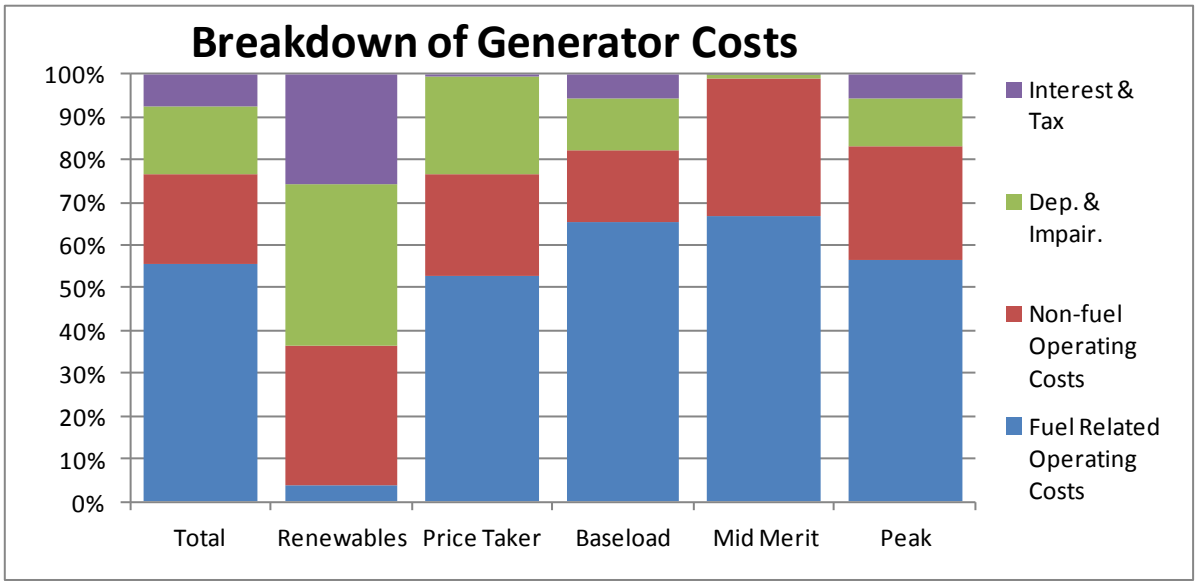


Figure 16 below shows how the different Generator groups costs were made up. As can be seen there is a significant difference between the different groups and in particular between Renewable generators and the other groups of generators.

Figure 16: Percentage Breakdown of Generator Costs



4.5 GENERATION TYPE IN MW TERMS

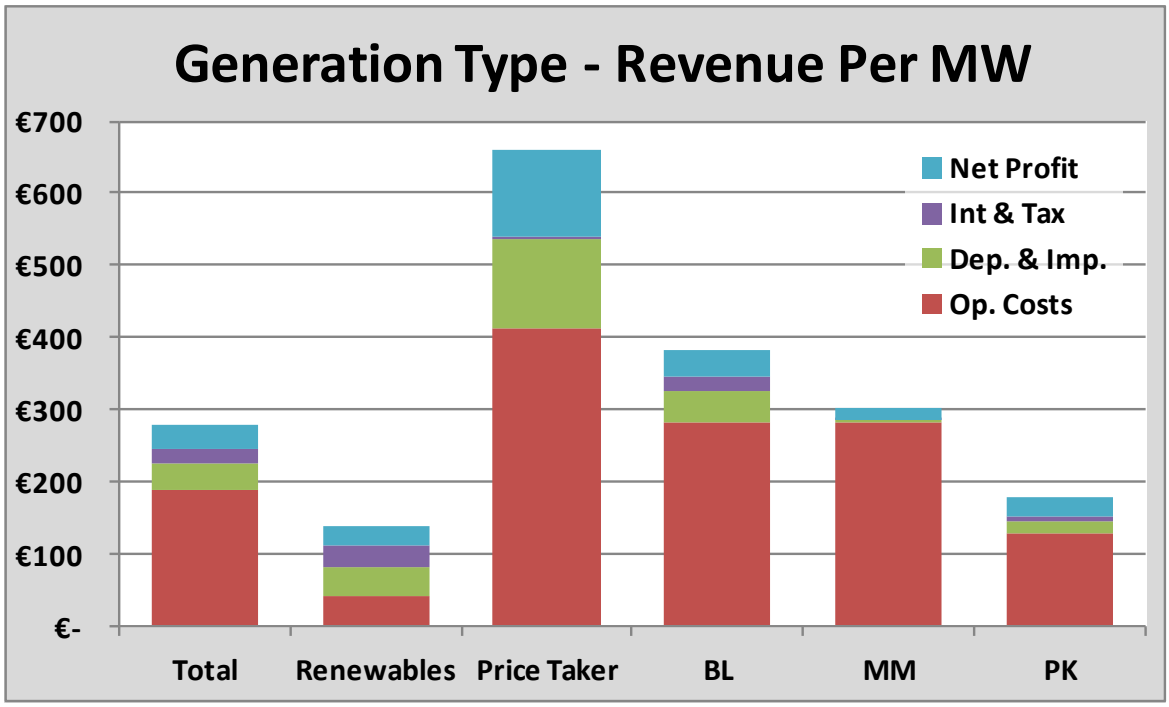
Table 11 below breaks down the figures detailed above to show each category in terms of what the costs and revenues are for each MW of capacity.

Table 11: Overview of Template Data by Fuel Source per MW

Total MWs	**8,535**	**2,226**	**344**	**3,766**	**104**	**2,096**
Financial Year - 2011	**Total**	**Renewables**	**Price Taker**	**Baseload**	**Mid Merit**	**Peak**
Electricity Sold - MWh	3,109	1,731	6,292	4,683	86	1,371
Revenue	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
SEM Pool	€ 200	€ 87	€ 395	€ 311	€ 19	€ 96
CfD	€ 10	€ 18	€ 19	€ 14	€ 0	€ (6)
Capacity	€ 47	€ 10	€ 51	€ 58	€ 60	€ 64
Other	€ 22	€ 22	€ 196	€ 1	€ 221	€ 23
Total Revenue	**€ 279**	**€ 138**	**€ 660**	**€ 383**	**€ 301**	**€ 177**
Operating Costs	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**	**€,000**
Fuel Related Op. Costs	€ 136	€ 4	€ 284	€ 226	€ 191	€ 86
Non-fuel Op. Costs	€ 51	€ 36	€ 128	€ 57	€ 92	€ 41
Total Operating Costs	**€ 187**	**€ 40**	**€ 412**	**€ 283**	**€ 283**	**€ 127**
EBITDI	**€ 92**	**€ 98**	**€ 248**	**€ 100**	**€ 17**	**€ 50**
Dep. & Imp.	€ 39	€ 42	€ 123	€ 42	€ 3	€ 17
EBIT	**€ 53**	**€ 56**	**€ 125**	**€ 57**	**€ 15**	**€ 33**
Int & Tax	€ 18	€ 29	€ 4	€ 19	€ 0	€ 9
Net Profit	**€ 35**	**€ 27**	**€ 121**	**€ 38**	**€ 15**	**€ 25**

In Table 11 above and Figure 17 below it can be seen that as well as earning the highest revenues for each MW of capacity Price Takers also have the highest costs. This is to be expected, given that the Peat plants make up the Price Takers grouping. They also have the highest net profits. While Baseload plant earned lower net margins than either Renewables or Peakers (10% vs. 20% & 14%), in terms of their net profit per MW, Baseload outperforms both of them.

Figure 17: Breakdown of Generator Revenues by each MW of Capacity



5 SEM Pool and Capacity Financial Performance 2008 to 2011

5.1 INTRODUCTION

This section of the report examines the financial position of generators from 2008 to 2011 based on pool and capacity payments in the SEM. This allows readers to understand the financial performance of generators purely by reference to the core SEM energy/capacity markets.

The gross profits are based on the costs generators submitted to the pool and the revenues they receive from it[11] along with capacity payments, i.e. it ignores the CfD/contracting impact referred to earlier, as well as Ancillary Services, Constraint Payments or "out of market" generator revenues or costs. The actual market data for the gross profit analysis has been collected from the MMU's databases[12]. Based on regulatory accounts received by the RAs from generators, semi-fixed and fixed costs are then derived to calculate the operating and net profit positions for selected generators in the market.

Section 5.2 shows the high-level financial results for generators from the analysis.

5.2 OVERALL FINANCIAL POSITION

Table 12 below shows the high level financial results, with some key messages:

- Total SEM revenues and gross profits for all generators generally follow the broad trends in the underlined fuel markets (see earlier). In other words SEM revenues declined very significantly from a circa €3.7 billion high in 2008 to a €2.2 billion low in 2009 due to the collapse in fuel prices - and hence SMP - at that time. Since then SEM generator revenues have rebounded to circa €2.7 billion in 2011. Similarly total gross profits fell from a circa €1.7 billion high in 2008 to a €1.2 billion low in 2009, moderately increasing to €1.3 billion by 2011.

- New generator entry to SEM and lower demand since 2009 have helped offset some of the impact of higher fuel prices on SMP and hence generator revenues and gross profits – in other words, generator revenues and gross profits would have been higher from 2009 were it not for these factors.

- For non-wind generators in SEM, the above trends were similar to those for all generators (including wind), although gross profit levels were lower. This shows how more wind on the system increases gross margins. This is because the fuel cost bids for wind are zero, pushing total gross industry profits closer to total revenues. Of course, wind has higher fixed costs to be paid for by the gross profits.

[11] Constraint payments and costs as well as out of market revenues and costs are not included in this analysis.
[12] While every effort has been made to ensure the correctness of data these figures should be treated as indicative.

Table 12: Summary of Total Gross Profits by SEM Pool and Capacity

All Generators	2008	2009	2010	2011
Total Revenue	3,672	2,248	2,549	2,733
Gross Profits	1,673	1,190	1,244	1,312
Gross Profit Margin	46%	53%	49%	48%
All Generators excluding wind	**2008**	**2009**	**2010**	**2011**
Total Revenue (excluding wind)	3,476	2,105	2,386	2,459
Gross Profits (excluding wind)	1,477	1,048	1,081	1,038
Gross Profit Margin (excluding wind)	42%	50%	45%	42%

The following table takes the above gross profits results, which exclude generator semi-fixed and fixed costs, and focuses on the operating and net profits (which include semi-fixed and fixed costs) for key selected generators in SEM based on regulatory account data. The table shows the figures for the selected generators firstly excluding the free carbon allowances, as issued under the Irish and UK National Allocation Plans, and then including them. The free carbon allowances reduced the selected generators' actual costs relative to their market bids, increasing their profits[13]. It should be noted that from January 2013 generators will no longer receive free carbon allowances.

Table 13: Summary of Operating and Net Profit for Key SEM Generators by SEM Pool

Selected Generators[14] – Before Free Carbon Allocation	2008	2009	2010	2011
Operating Profit (€M)	672	233	177	206
Operating Profit Margin (%)	22%	13%	9%	10%
Net Profit (€M)	483	128	98	105
Net Profit Margin (%)	14%	6%	4%	4%
Selected Generators – After Free Carbon Allocation	**2008**	**2009**	**2010**	**2011**
Operating Profit (€M)	936	389	315	356
Operating Profit Margin (%)	30%	23%	16%	18%
Net Profit (€M)	713	273	226	234
Net Profit Margin (%)	21%	13%	9%	9%

The following are the main messages from the above table:

- Despite moderately rising aggregate gross industry profits since 2009 to 2011 (in the previous table), operating and net profit margins for the selected key generators have fallen. For example, net profit margins for the key generators have fallen from 13% in 2009 to 9% in 2011.
- A key factor here is likely to be increased competition as a result of new generation entry into the SEM - essentially more generators are competing for the pool revenue and so selected generator running levels and revenues/profits margins are lower. As a result operating and net profit margins have fallen for the selected generators even as aggregate industry revenues and

[13] This analysis assumed that generators in Northern Ireland with Generator Unit Agreements with NIE PPB did not receive this benefit. It also accounted for the carbon levy imposed on generators in Ireland between July 2010 and May 2012 - the 2011 figures in the table are based on an estimate of the carbon levy paid by the selected generators.

[14] ESB PG, ESBI, Viridian, Endesa, AES Ballylumford, AES Kilroot, Tynagh and Bord Gáis, accounting for approximately 75% of SEM total market share.

gross profits have risen. This is likely to put pressure on generation companies to reduce their costs.

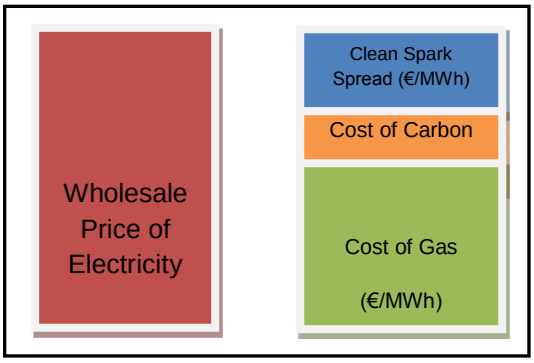
6 Spark and Dark Spread Analysis 2008 to 2012

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 2012.

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%.

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 close, 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.

Figure 19 below shows the monthly clean spark spreads in the SEM and BETTA markets from January 2008 up to December 2012. Figure 19 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 and actually went negative in BETTA in the second half of 2012.

Figure 19: Clean Spark Spread - SEM vs. GB

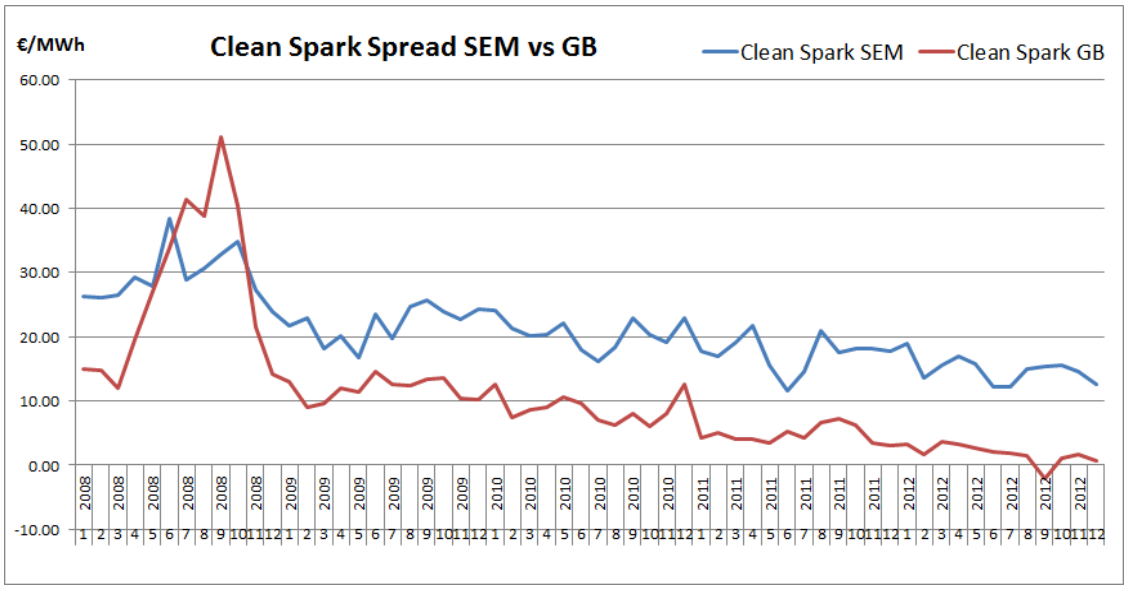
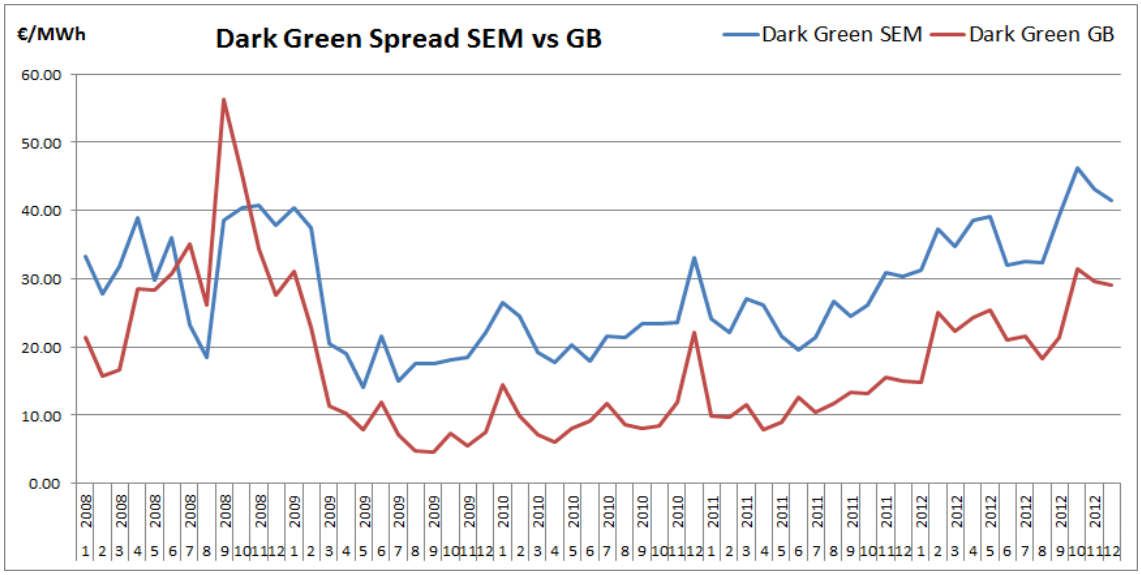


Figure 20 below shows the monthly dark green spreads in the SEM and BETTA markets from January 2008 up to December 2012. It shows that the dark green spread was higher in the SEM for the first half of 2008, then higher in BETTA for the second half of 2008. Since 2009 the dark green spread has been consistently higher in SEM and has been increasing in both markets, which is related to the relatively low cost of coal compared to gas.

Figure 20: Dark Green Spread - SEM vs. GB



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

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. The effects can be seen in previous sections on profitability, showing that even though aggregate gross industry profits have increased from 2009 to 2011 net generator profit margins for key selected generators have fallen; essentially, new generator entry means that more generators are sharing the "gross profit pie" in SEM, reducing their utilisation rate and hence net profits. 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.

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.

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

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.