



**Single Electricity Market
(SEM)**

**GENERATOR FINANCIAL PERFORMANCE IN THE SEM
FOR FINANCIAL YEAR 2018**

Report

SEM-20-021

8 April 2020

Table of Contents

1.	EXECUTIVE SUMMARY	3
1.1.	Key findings	3
2.	PURPOSE & CONTEXT	8
2.1.	Purpose.....	8
2.2.	Commodity Price Context.....	10
3.	FINANCIAL REPORTING FOR FY2018	12
3.1.	Breakdown by Generation Fuel Source.....	16
3.2.	Breakdown by Generation Type.....	36
3.3.	Revenue and Cost breakdown – FY2012 to FY2018.....	52
3.4.	Impairment.....	55
4.	SPARK AND DARK SPREAD ANALYSIS	56
APPENDIX A	FINANCIAL TERMS.....	58
APPENDIX B	BREAKDOWN OF REVENUE AND COSTS	59
B.1	Breakdown by Fuel Source	59
B.2	Breakdown by Generation Type.....	67

1. EXECUTIVE SUMMARY

This report, prepared by the Commission for Regulation of Utilities (CRU) and the Utility Regulator (UR), together known as the Regulatory Authorities (RAs), examines the financial performance of generation companies operating in the Single Electricity Market (SEM). This report provides an update to include the 2018 financial year (which runs up to March 2019 for some generators) and follows on from four previous reports published by the SEM Committee since 2013. The report provides aggregated information on the financial performance of generators in the SEM, as well as breakdowns by generation fuel source and generation type. The main objectives of the report are to:

- Provide greater insight into the financial performance of generators in the SEM, which may inform policy decisions; and
- Improve the level of market data available to all industry stakeholders, which should assist in providing market transparency.

The report respects and protects the commercial sensitivity of individual generators by presenting aggregated information only.

The new trading arrangements (“I-SEM project”) went live in October 2018. However, this report does not differentiate between the pre- and post- I-SEM performance of generators.

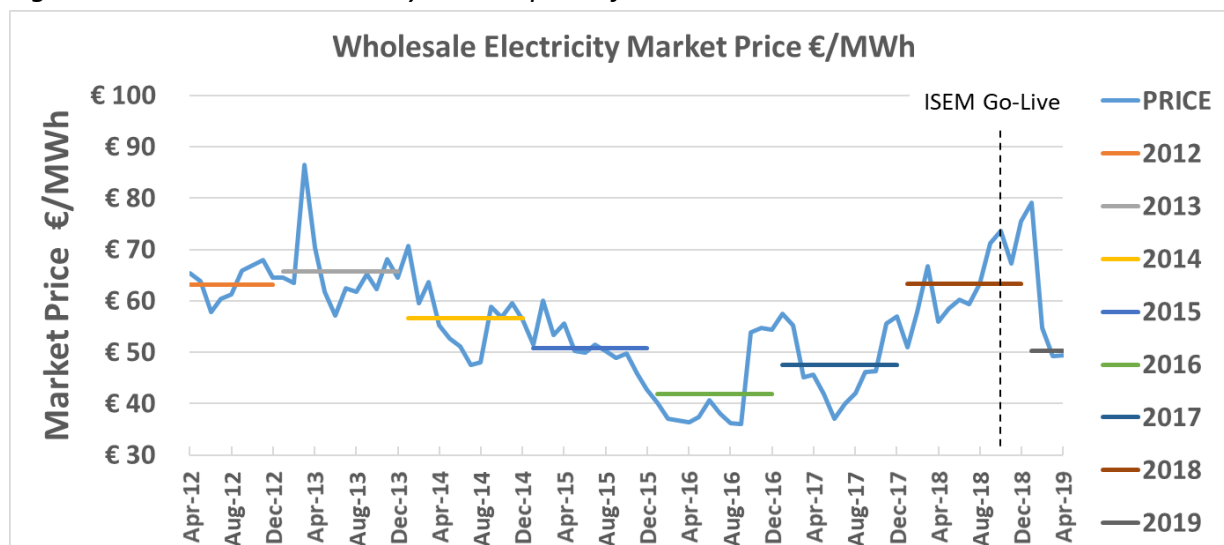
Following a public consultation in June 2019, the RAs published an update in August 2019 ([SEM-19-036](#)) to the requirements for generator financial reporting to the RAs, including amendments to the spreadsheet template to be used by generation companies for inputting data. The amended template incorporates changes in order to be consistent with new streams of revenue arising from the new trading arrangements in the SEM since October 2018, the introduction of the Capacity Remuneration Mechanism and generator revenues arising from EirGrid’s programme for a secure, sustainable electricity system - DS3.

1.1. KEY FINDINGS

Key finding 1: In 2018 overall revenues increased compared to 2017

The financial performance of generators in the SEM should best be scrutinised in the context of the associated fuel prices, which are a key factor in the costs of many generators, whilst also generally determining the wholesale market price and hence the revenues generators receive from energy sales. As can be seen from Figure 1.1, following a general decreasing trend in SEM wholesale market prices from 2013 to 2016, the average wholesale price increased by 14% in 2017 and by a further 33% in 2018. This increase is a key driver of increases in energy revenues for all generator types, irrespective of the fuel source. It is important to remember that this report covers mainly the period to the end of the financial year 2018, and that more recently wholesale prices have decreased which will factor into future reports.

Figure 1.1: Wholesale electricity market prices from 2012 to Q1 2019



The trend in wholesale electricity prices in the SEM is in line with wholesale gas prices during this period, given that wholesale electricity prices are set by the marginal generator which is typically a gas-fired power plant. When the fuel cost of the marginal generator increases, the wholesale energy price is expected to rise and vice-versa.

Table 1.1 below summarises the aggregated financial performance based on financial reporting templates submitted to the RAs by generators operating in the SEM since 2012, including the increase in revenue between 2017 and 2018.

Table 1.1: Summary of generator financial performance based on financial reporting templates

€ million	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Revenue	€2,928	€2,822	€2,657	€2,706	€2,329	€2,589	€2,914
Operating profit	€851	€870	€828	€906	€666	€710	€850
Operating profit margin	29%	31%	31%	34%	29%	27%	29%
Net profit	€76	€88	€303	€254	€158	-€361	€238
Net profit margin	3%	3%	11%	9%	7%	-14%	8%
Net profit excluding impairment charges	€335	€320	€303	€355	€190	€158	€287
Net profit margin excluding impairment charges	11%	11%	11%	13%	8%	6%	10%

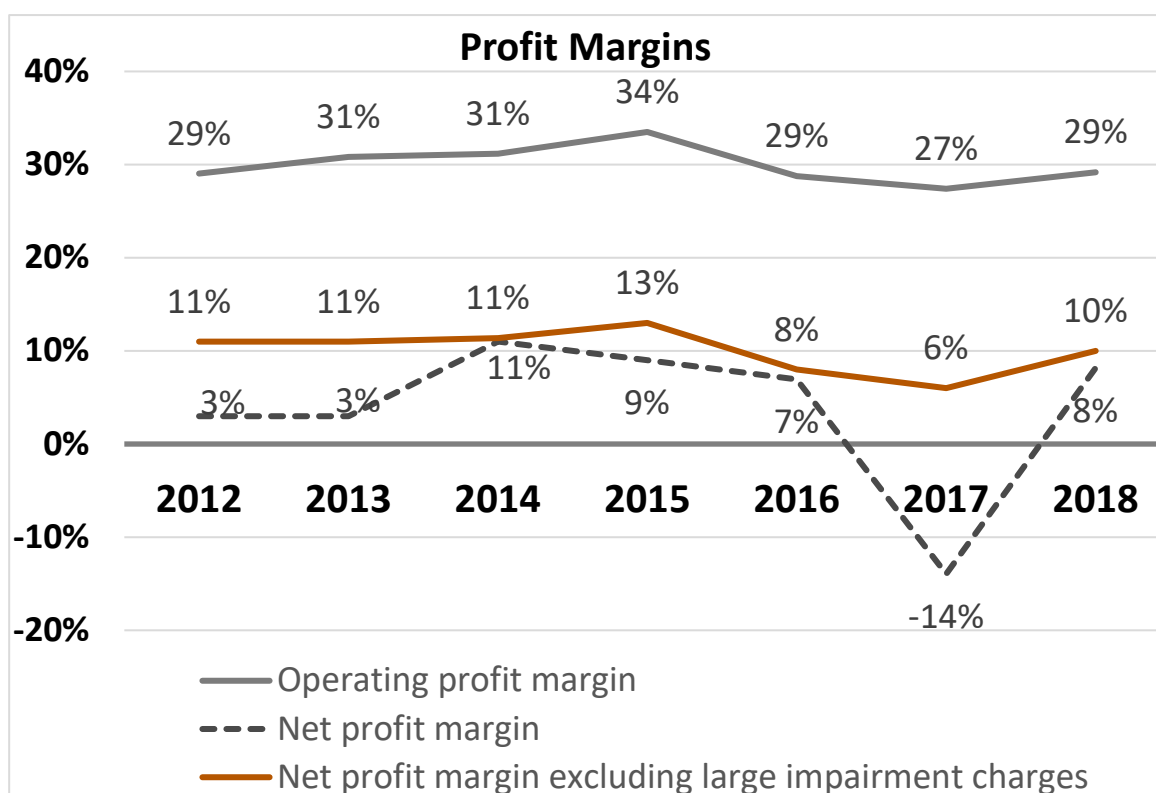
Key finding 2: Operating profits and operating profit margins in line with the trend levels

As shown in Table 1.1 and driven by higher annual revenue as per key finding 1, the overall operating profit increased from €710 million in FY2017 to €850 million in FY2018 and the operating profit margin increased from 27% in FY2017 to 29% in FY2018. These levels are consistent with those demonstrated in earlier years, as illustrated in Figure 1.2 below.

Key finding 3: Net profit margins return to the trend level in FY2018

As shown in Figure 1.2, from 2014 to 2016 net profit margins decreased from 11% to 7%. Following this, net profit margins decreased to -14% (i.e. a net loss of 14%) in FY2017 and recovered to 8% in FY2018. This change is in particular a result of an exceptionally large increase in impairment in FY2017 as is explained in the next finding.

Figure 1.2 Profit Margins from FY2012 to FY2018



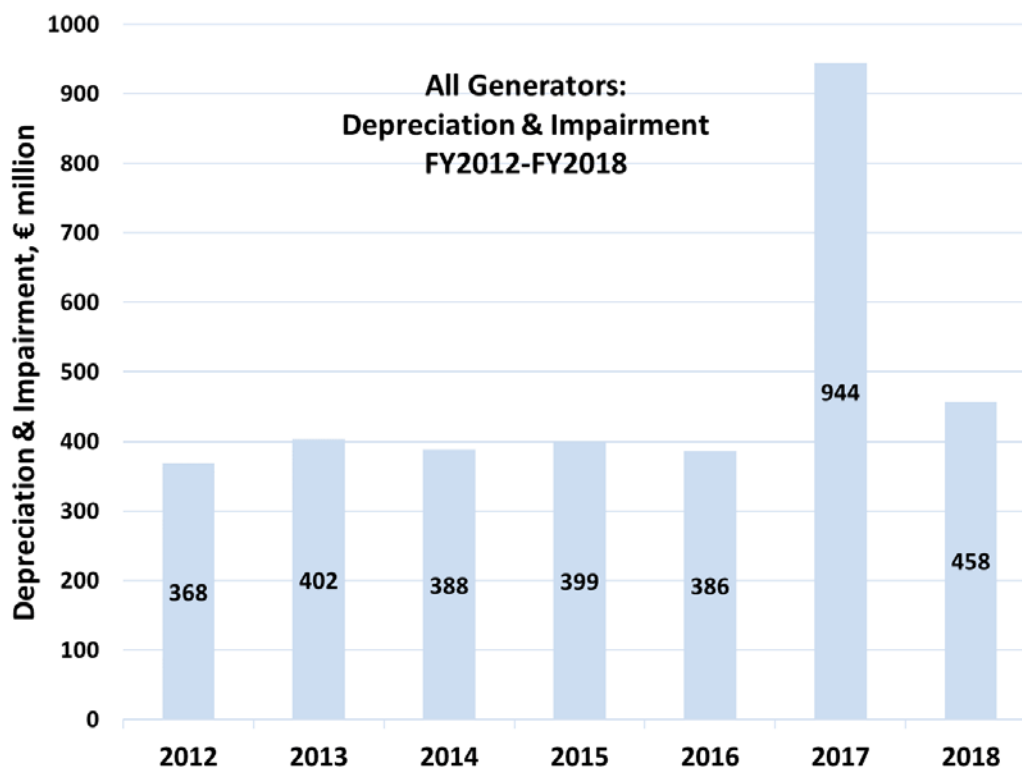
Key finding 4: Large decrease in impairments in FY2018

In FY2017, there were marked increases in the level of reported impairment, especially by mid-merit and peaker plants. This level of impairment was unprecedented in the SEM and had a very significant effect on the resulting negative net profitability for FY2017. However, as is evident in Figure 1.3 below, the overall level of reported Depreciation and Impairment reduced by €486 million from FY2017 to FY2018.

The impairment component in particular reduced from €520 million in FY2017 to €73 million in FY2018, a reduction of €447 million. This includes a partial reversal¹ of some FY2017 reported impairments in FY2018.

The increase in reported impairments in FY2017 played a major role in the change in overall net profit margin between the two years. When impairments are excluded, the overall net profit increased from 6% in FY2017 to 10% in FY2018 in line with trend levels.

Figure 1.3 Depreciation and Impairment from FY2012 to FY2018



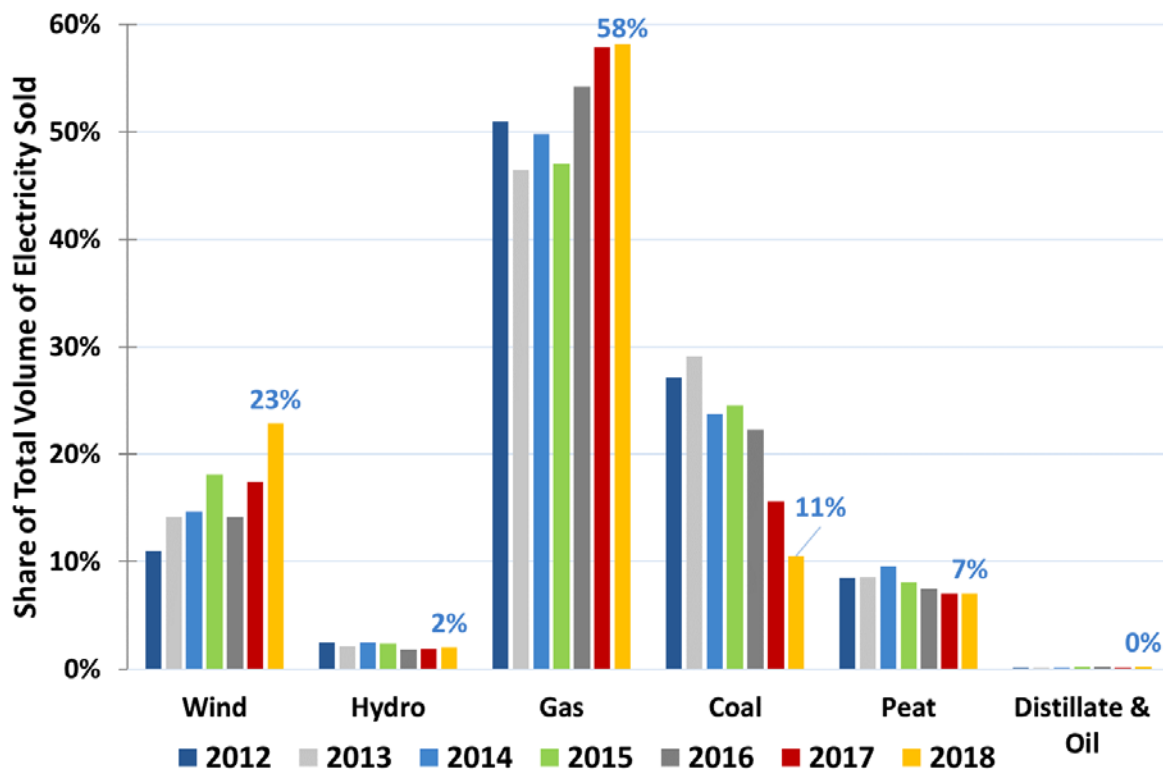
¹ Reporting of negative impairments may be reflective of the reversal or partial reversal of previously accounted and reported impairments.

Key finding 5: Increase in wind and decrease in coal generation

As illustrated in Figure 1.4 below, the upward trend in the reported volume of electricity sold by wind generation companies continued in FY2018, with a 23% increase from 5.9TWh in FY2017² to 7.3TWh in FY2018. This is consistent with a 35% increase in total revenue for wind generation, from €473 million in FY2017 to €640 million in FY2018. Overall, wind generation accounted for a 22% share of the total (all generation) revenue.

The downward trend in the reported volume of electricity sold by generation from coal continued in FY2018 with a 38% decrease from 5.3TWh (16% share) in FY2017 to 3.3TWh (11% share) in FY2018. This is consistent with an 18% decrease in total revenues accruing from coal generation, from €389 million in FY2017 to €319 million in FY2018. This decrease was impacted by forced outages of coal generation at the Moneypoint plant in Q4 2018.

Figure 1.4: Breakdown of volumes by fuel source – 2012 – 2018



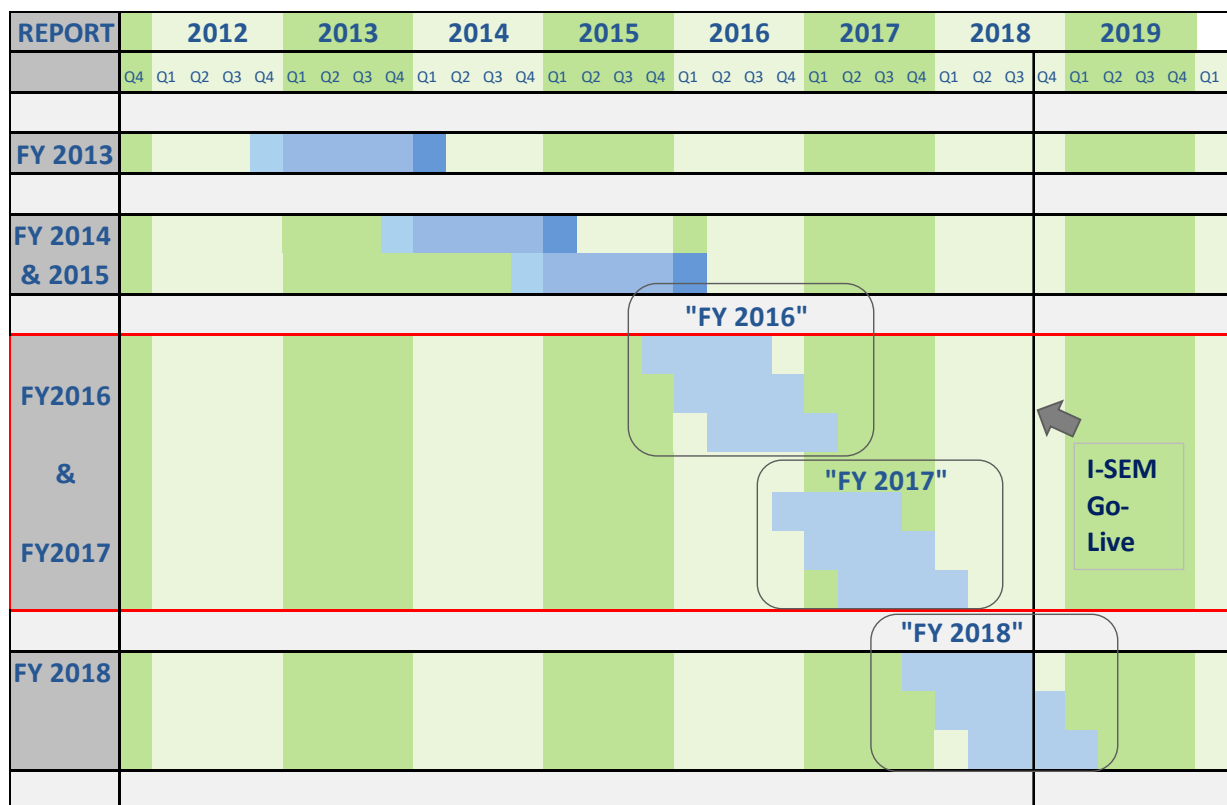
² This report corrects the FY2016 and FY2017 reporting for wind generation, as published in last year's FY2016-FY2017 report ([SEM-19-016](#)), by inclusion of data for circa 400MW of additional wind energy capacity which was omitted due to being received too late for inclusion in the combined FY2016 & FY2017 report by the RAs.

2. PURPOSE & CONTEXT

2.1. PURPOSE

This report, prepared by the Commission for Regulation of Utilities (CRU) and the Utility Regulator (UR), together known as the Regulatory Authorities (RAs), examines the financial performance of generation companies operating in the Single Electricity Market (SEM). This publication can be read in conjunction with reports published by the Market Monitoring Unit (MMU).³ The purpose of this report is to enhance transparency in the SEM and help in understanding the revenues accruing to categories of generators, while respecting individual generator commercial sensitivity by presenting aggregated information only.

Figure 2.1: Annual & Biennial Reports



As depicted in Figure 2.1 above, this is the fifth report to be published following the SEM Committee's "Decision Paper on Generator Financial Reporting in the SEM" (SEM/12/027). It follows a similar structure to the previous four reports⁴. However, some changes were introduced⁵ in August 2019 following a consultation in June, primarily to accommodate the new

³ Information on the MMU can be found [here](#) while publications produced by the MMU can be accessed [here](#)

⁴ SEM/19/016 Generator Financial Performance in the SEM (April 2019), available [here](#)

SEM/16/086 Generator Financial Performance in the SEM (November 2016), available [here](#)

SEM/14/111 Generator Financial Performance in the SEM (December 2014), available [here](#)

SEM/13/031 Generator Financial Performance in the SEM (May 2013), available [here](#)

⁵ SEM/19/036 Updates to Generator Financial Performance Reporting Requirements (August 2019), available [here](#)

markets under the new SEM trading arrangements from 1st October 2018 as well as the Capacity Remuneration Mechanism and generator revenues arising from EirGrid's DS3 programme for a secure, sustainable electricity system.

The reports are normally published annually. However, the previous report ([SEM-19-016](#)) incorporated two years of financial data, up to and including March 2018. Most generators in the SEM have their financial year-end in either September, December or March. This is indicated graphically in Figure 2.1 where the 12-month blue band periods may extend either side of the calendar year. In order to accommodate this variance, the report provides analysis for financial year 2018 as relates to the 12-month period up to December 2018 for generators with December year-end and up to March 2019 for generators with a March financial year-end, etc.

The new trading arrangements ("I-SEM") went live in October 2018. However, this report does not analyse or differentiate between the pre I-SEM and the post I-SEM performance of generators, as the purpose and design and data collection for the report is on the basis of single year increments (i.e. data collection and reporting applies for a period of 12-months).

This report provides aggregated information on the financial performance of the generators categorised by: a) generation fuel source; b) generation type; and c) all generation operating in the wholesale market. The report contains analysis as follows:

- Analysis based on generator financial reporting templates submitted by generators to the RAs. The previously published report included analysis from FY2012 to FY2017. This report includes analysis up to and including FY2018, which is broken down as follows:
 - Section 3.1: Breakdown by Generation Fuel Source;
 - Section 3.2: Breakdown by Generation Type (Baseload/Mid-Merit, Peak, etc);
 - Section 3.3: Revenue and cost breakdown – FY2012 to FY2018; and
 - Section 4: Clean spark and dark green spreads in the SEM: from 2012 to Q1 2019.

This report also updates the analysis in the previous report for FY2016 and FY2017 for wind generation, as published in last year's combined FY2016 & FY2017 report, by inclusion of data for circa 400MW of additional wind energy capacity which was omitted last year due to being received too late for inclusion in the report by the RAs.

Although this report focuses on annual financial generator performance, it should be remembered that electricity generation involves significant and long-term capital investment, with upfront costs often repaid over decades. Therefore, annual variations in generator profitability (up or down) should be considered in that context.

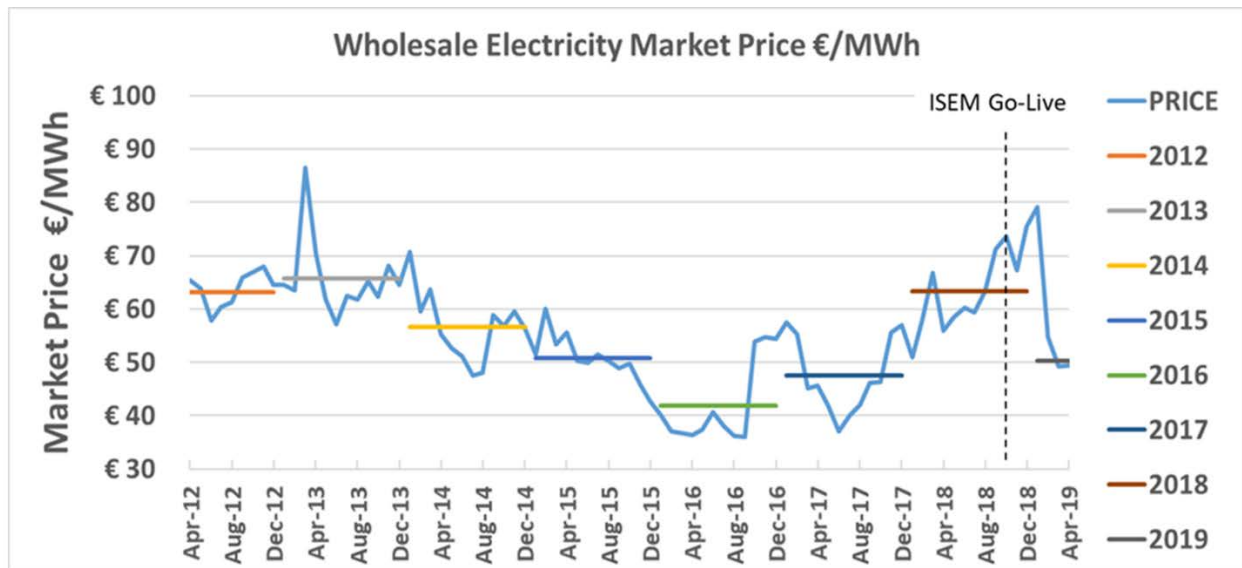
The analysis and figures in this report are based on the data collected by the RAs through the generator financial reporting templates and is subject to the 25MW aggregate threshold.

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

2.2. COMMODITY PRICE CONTEXT

Wholesale Market Price: Figure 2.2 below shows the evolution of the monthly average market prices in the SEM since 2012. Following the trend since the beginning of 2013, the average market price in the SEM continued to fall up to mid-2016. The average wholesale price increased by 14% in 2017 and by a further 33% in 2018. This increase is a key driver of significant increases in energy revenues in FY2018 for all generator types, irrespective of the fuel source.

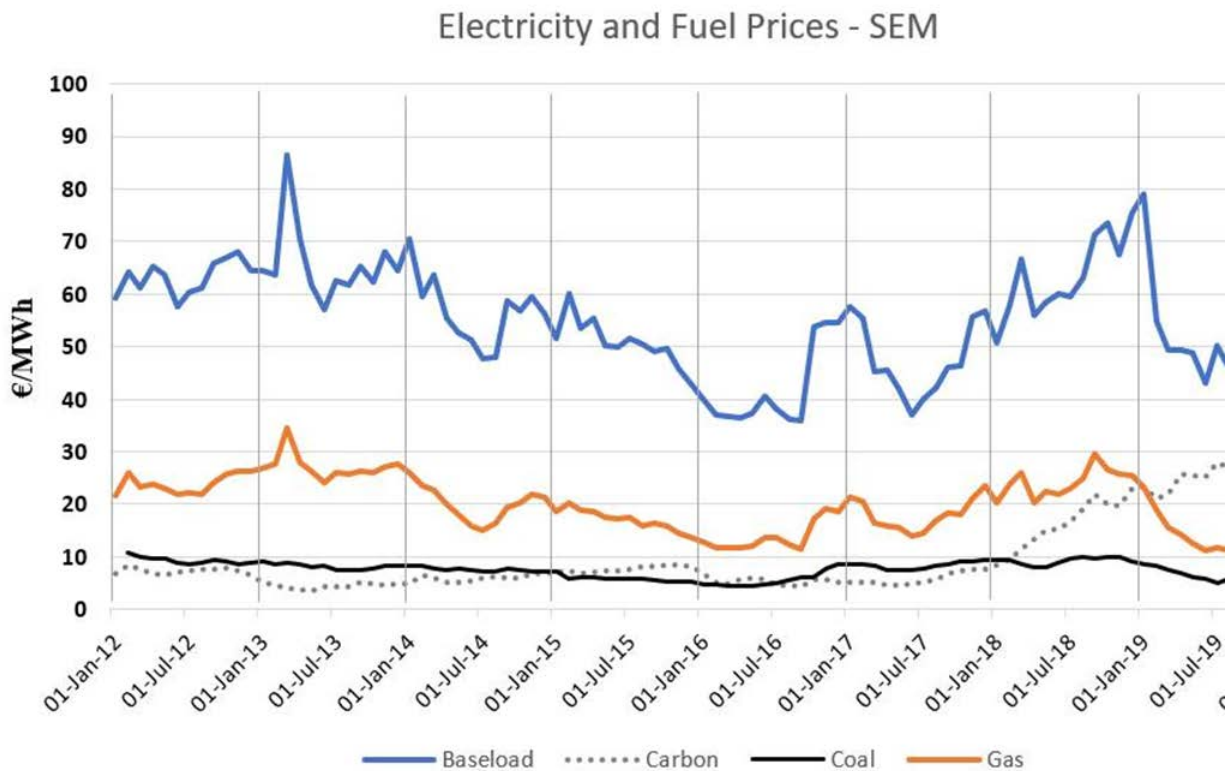
Figure 2.2: Wholesale electricity energy market prices from 2012 to Q1 2019



Gas has been the marginal fuel for much of the 2012-2018 period and, therefore, electricity energy prices often follow the shape of the gas prices as is evident from Figure 2.3. This is also the case during 2017 and 2018, where the trend of fluctuations in wholesale energy prices in SEM correlates, to a large extent, with gas prices which were higher in 2018. However, this correlation may be weakening with the increasing penetration of wind energy on the system.

Coal prices were also slightly higher in 2018 than in 2017. When combined with significant increases in carbon prices, coal-fired generation generally became more costly to operate in the market in 2018.

Figure 2.3: Electricity (SEM) and fuel prices from 2012 to Q1 2019



Carbon⁶: As can be seen in Figure 2.3, after several years of sustained low carbon prices of less than €10/tonne, prices rose throughout 2018, surpassed the €20/tonne mark in Q4 2018, and increased further in Q1 2019.

⁶ The price of carbon, as plotted in Figure 2.2, is denominated in €/tonne (i.e. not €/MWh) and is included in the chart to illustrate the general trend in carbon prices.

3. FINANCIAL REPORTING FOR FY2018

Following the decision papers in May 2012⁷ and August 2019⁸, as published by the RAs on the reporting of generator financial performance in the SEM, licensed generation companies with a combined ownership capacity greater than or equal to 25MW are required to complete an annual financial reporting template within six months of the end of their financial year. The uniformity of the template means that data can be relatively easily aggregated by the RAs across chosen generator categories. An example of the template is shown in Figure 3.1.

As can be seen from the financial reporting template, generators are asked to provide details on the volume of electricity sold (MWh), revenue, operating costs, depreciation & impairment, and interest & tax. A generator's Earnings before Interest, Tax, Depreciation & Impairment⁹ (EBITDI), Earnings before Interest & Tax (EBIT), as well as the generator's Profit Margins are derived from this data.

The reporting template uses the term 'Gross Margin' to refer to the margin calculated by dividing EBITDI by total revenue. A strict definition of 'Gross Margin' would involve using gross profit rather than EBITDI¹⁰. For the purpose of this report the margin EBITDI/total revenue is referred to as the Operating Profit Margin.

More detailed explanations of the constituent breakdown elements of: a) revenue; and b) cost, can be found in [SEM/19/036](#) "Updates to Generator Financial Performance Reporting Requirements".

⁷ Decision paper SEM-12-027 in 2012 on Generator Financial Reporting in the SEM available [here](#).

⁸ Decision paper SEM/19/036 in 2019 on Updates to Generator Financial Performance Reporting Requirements (August 2019), available [here](#).

⁹ In the UK, the term EBITDA is used to account for amortization: refer to Appendix A for definitions of impairment and amortization, as apply in the context of this report.

¹⁰ Gross profit is calculated as revenue minus the cost of goods sold, whereas EBITDI is calculated as gross profit minus fixed operating expenses.

Figure 3.1: Financial reporting template for FY2018 data collection

Ref.	INFORMATION REQUESTED (Refer to Appendix A of SEM-19-036 for explanation of fields)	Complete in either Euro or Sterling as appropriate	Explanatory Information (as appropriate)
1	Name of generation asset owner		
2	Company making this submission		
3	Name of Generation Site		
4	Name of Generation Unit		
5	Technology Class		
6	EIC W Code of the generation Unit		
7	Capacity (MW) of the Generation Unit		
8	Financial Year	FY2018	
9	Date of Generator's financial year-end		
10	Total Volume of Electricity Sold - MWh		
11	Currency	Euro	
12	Revenue	€000 or £'000	
13	Revenue from Electricity Markets	1	
14	<i>Net Energy Payments</i>	0	
18	<i>Net Constraints Payments</i>	0	
19	Revenue from CfDs and Contracts	0	
20	Revenue from Capacity Payments	0	
22	Total of Other Revenue, made up of:	0	
23	> Revenue from DS3 System Services	0	
24	> Revenue from Ancillary Services	0	
25	> Revenue from Support Mechanisms	0	
26	> Other Revenue Sources	0	
27	Total Revenue	1	
28	Operating Costs	€000 or £'000	
29	Fuel Related Operating Costs	0	
30	Non-fuel Operating Costs	0	
31	Total Operating Costs	0	
	Earnings & Profit	€000 or £'000	
32	EBITDI	1	
33	Depreciation	0	
34	Impairment	0	
35	EBIT	1	
36	Interest & Tax	0	
37	Net Profit	1	
38	Gross Margin	100.0%	
39	Net Margin	100.0%	

Legend

Data entry required, as applicable

Sub-totals - calculated

Totals - calculated

Total Revenue reported in the template is broken down into the following component parts:

- **Revenue from Electricity Markets** – All energy revenue earned from the sale of electricity through the SEM during the financial year, including constraint payments. This is sometimes referred to as “Electricity from SEM Pool” or “Energy Revenue from SEM”.
- **Revenue from CfDs and Contracts** – Difference payments from Contracts for Differences (CfDs) hedging arrangements in relation to the wholesale energy price with a supplier or another third party. These could be positive or negative for the generator. In addition, if generators enter into a Power Purchase Agreement (PPA) with an intermediary, the difference between revenue earned in the SEM by the intermediary and the payment to the electricity generator under the PPA is also included in this revenue category.
- **Revenue from Capacity Payments** – All payments received through the Capacity Payments Mechanism (CPM) are included here.
- **Other Revenue** – Any other revenues, for example revenue from ancillary services, are included here. The disaggregation of Other Revenues should also include revenues under the various support mechanisms such as the Public Service Obligation (PSO) levy in the Republic of Ireland and the Northern Ireland Renewables Obligation (NIRO).

Total Operating Costs - as reported - consist of:

- **Fuel Related Operating Costs** – All fuel costs incurred during the financial year in question for the purpose of electricity generation and any associated variable fuel transportation costs.
- **Non-fuel Operating Costs** – All additional plant operating costs, including fixed fuel transport charges, transmission network use of system charges (TUoS), plant maintenance, salaries and insurance.

Generators are also requested to provide information to the RAs in order to uniquely identify generation units via the Energy Identification Code (EIC) and to identify who is responsible for providing the requested financial information for the report.

In this section of the report the RAs present analysis of the financial performance of all generators which have submitted financial reporting templates (subject to aggregate generation capacity being equal to or greater than 25MW). A financial reporting template is completed for each individual generation unit. This allows the data to be grouped in different ways to understand how different categories of generators perform. In this report the RAs present financial performance analysis of generators grouped by: 1) fuel source; and 2) generation type.

Generation from the following **fuel** sources, in aggregated form, is included in the analysis:

- Wind
- Hydro
- Gas
- Coal
- Peat
- Distillate & Oil
- Pumped Storage

The financial performance is also analysed by generation **type**, in aggregated form, under the following categories:

- Baseload/Mid-Merit
- Peaker
- Price Taker
- Renewables

3.1. BREAKDOWN BY GENERATION FUEL SOURCE

Tables 3.1 and 3.2 below provide a breakdown of the financial reporting template data by generation fuel source for FY2017 and FY2018 respectively.

Table 3.1: Breakdown by generation fuel source – Financial Year 2017

Financial year 2017	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
Volume of Electricity Sold - MWh	33,663,749	5,885,220	642,883	19,515,282	5,262,474	2,380,199	44,763	(67,073)
Share of Electricity Sold (%)		17.4%	1.9%	57.9%	15.6%	7.1%	0.1%	-0.2%
Revenue	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Energy Revenue from SEM	€1,680,537	€325,633	€33,306	€917,688	€274,456	€116,482	€8,656	€4,316
Revenue from Contract/Difference Payments	€19,678	€5,130	-	(€6,004)	€20,552	-	-	-
Revenue from Capacity Payments	€425,791	€16,777	€6,178	€249,168	€65,790	€15,568	€61,747	€10,562
Other Revenue	€463,476	€125,937	€1,506	€171,726	€27,899	€117,803	€5,822	€12,782
Total Revenue	€2,589,481	€473,477	€40,990	€1,332,579	€388,697	€249,853	€76,225	€27,660
Operating Costs	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€1,255,201	€9,740	-	€906,260	€212,823	€119,617	€6,761	-
Non-fuel Operating Costs	€622,699	€137,259	€21,634	€246,816	€125,467	€44,710	€32,347	€14,467
Total Operating Costs	€1,879,849	€148,948	€21,634	€1,153,076	€338,290	€164,326	€39,108	€14,467
EBITDI	€709,636	€324,530	€19,356	€179,505	€50,407	€85,527	€37,118	€13,192
Depreciation & Impairment	€943,794	€201,449	€4,750	€340,981	€330,362	€40,302	€22,329	€3,621
EBIT	(€234,158)	€123,081	€14,607	(€161,476)	(€279,955)	€45,225	€14,788	€9,572
Interest & Tax	€127,143	€100,021	-	€19,466	€4,362	€198	€3,096	-
Net Profit	(€361,301)	€23,061	€14,607	(€180,941)	(€284,317)	€45,027	€11,692	€9,572
Gross Margin - %	27%	69%	47%	13%	13%	34%	49%	48%
Net Margin - %	-14%	5%	36%	-14%	-73%	18%	15%	35%

Table 3.2: Breakdown by generation fuel source – Financial Year 2018

Financial Year 2018	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
Volume of Electricity Sold - MWh	31,763,249	7,254,399	645,879	18,468,687	3,344,435	2,240,192	71,847	(262,191)
Share of Electricity Sold (%)		23%	2%	58%	11%	7%	0%	-1%
Revenue	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Energy Revenue from SEM	€2,032,532	€472,516	€43,263	€1,103,789	€244,445	€145,246	€16,706	€6,566
Revenue from Contract/Difference Payment	(€12,507)	€16,128	-	(€29,814)	€1,178	-	-	-
Revenue from Capacity Payments	€347,982	€9,530	€6,176	€204,925	€52,978	€18,256	€44,956	€11,161
Other Revenue	€546,247	€142,542	€4,494	€242,053	€20,425	€115,263	€5,521	€15,950
Total Revenue	€2,914,252	€640,714	€53,933	€1,520,953	€319,026	€278,766	€67,183	€33,677
Operating Costs	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€1,269,092	€465	-	€1,001,389	€121,490	€134,808	€10,940	-
Non-fuel Operating Costs	€792,845	€190,811	€20,625	€325,990	€167,619	€50,181	€23,070	€14,548
Total Operating Costs	€2,061,938	€191,278	€20,625	€1,327,379	€289,109	€184,989	€34,010	€14,548
EBITDI	€852,318	€449,441	€33,309	€193,574	€29,917	€93,777	€33,173	€19,129
Depreciation & Impairment	€457,674	€236,005	€4,819	€232,566	(€79,430)	€51,916	€8,216	€3,582
EBIT	€394,059	€212,850	€28,490	(€38,992)	€109,347	€41,861	€24,957	€15,547
Interest & Tax	€154,128	€131,154	€13	€14,221	€8,488	(€200)	€450	-
Net Profit	€239,931	€81,696	€28,477	(€53,214)	€100,859	€42,061	€24,506	€15,547
Gross Margin - %	29%	70%	62%	13%	9%	34%	49%	57%
Net Margin - %	8%	13%	53%	-3%	32%	15%	36%	46%

Tables 3.1 and 3.2 provide an overview of the financial reporting template data – aggregated by fuel source - for FY2017 and FY2018, respectively. The total gross margins for FY2017 and FY2018 were 27% and 29% respectively. The relatively stable gross margins reflect the fact that, in aggregate, the significant increase of 21% in energy revenue¹¹ from the SEM as a result of higher wholesale energy prices (refer to Figure 2.2) has been partially offset by higher operating costs of thermal generation, driven by higher fuel prices.

There are clear differences in gross and net margins across different fuel sources. Figure 3.2 and Figure 3.3 provide a comparison of gross and net margins by fuel source between FY2012 and FY2018. The main trends in profit margin from FY2017 to FY2018 are:

- **Hydro and Pumped Storage plants** benefit from low operating costs and low financing costs due to their age. Both types had strong net margins in FY2017 and FY2018. The gross margin for **Hydro** increased from 47% in FY2017 to 62% in FY2018 in line with greater energy revenues, despite little change in the volume of production. The gross margin for **Pumped Storage** increased from 48% in FY2017 to 57% in FY2018 in line with greater energy revenues.
- **Wind generation** experienced gross margin in excess of 68% in both FY2017 and FY2018. High gross margins for wind generators are driven by low operating costs. However, the net margin for wind generation is significantly lower, caused by high financing and depreciation/impairment costs. The net margin increased from 5% in FY2017 to 12% in FY2018.
- **Distillate & Oil generators** have previously earned the second highest net margin due to the fact that Distillate & Oil generators are peaking plants, which mostly generate electricity when demand is high, supply is scarce, and prices are high. From FY2017 to FY2018, the gross margin of circa 49% was maintained despite a significant drop of 27% in capacity payments. This was countered by a rise of 93% in energy revenue resulting from a 60% increase in electricity production. The net margin increased from 15% in FY2017 to 36% in FY2018. This increase in net margin was caused largely by significant decreases in costs for depreciation, impairment, interest and tax for most of these generators.
- **Gas-fired generators:** During 2017 and 2018, the trend of increasing wholesale energy prices in the SEM correlated to a large extent with increasing gas prices (refer to figure 2.3). The net margin of gas plants climbed from 3% in FY2013 to 8% in FY2016 as a result of higher volumes of electricity generated, lower fuel related costs and lower depreciation and 'interest and tax' costs. From FY2017 to FY2018 the net margin increased from -14% to -3%, driven by a significant reduction in impairment. When impairment is excluded the net margin increases to 3% in FY2017 and to 5% in FY2018 for gas plants.

¹¹ Total energy revenue from all sources increased from €1.68 billion in FY2017 to €2.03 billion in FY2018.

- **Coal generators:** The downward trend in the reported volume of electricity sold by coal generation companies continued in FY2018, with a 38% decrease from 5.3TWh in FY2017 to 3.3TWh in FY2018. This is consistent with an 18% decrease in total revenue from coal generation, from €389 million in FY2017 to €319 million in FY2018. This decrease is largely accounted for by the forced outage of 915MW of coal generation capacity in Q4 2018. Referring to Figure 3.2, coal generation experienced a continuation of the decline in gross margin from 18% in FY2016 to 13% in FY2017 and 9% in FY2018. Despite significantly lower running, non-fuel costs increased by 34% from €125 million in FY2017 to €168 million in FY2018. Coal and carbon prices were higher in 2018 than in 2017 (refer to figure 2.2) with the result that coal fired generation became increasingly more costly to operate and less competitive in the market.
- **Peat generators** reported a gross margin of 34% for FY2017. The gross margin sustained at 34% for FY2018: although market revenues increased for FY2018, these were offset by higher operating costs resulting from increased fuel costs. The net margin decreased from 18% to 15%, largely on account of increased Depreciation & Impairment charges.
- The overall **Total** net profit margin fell to -14% in FY2017, as shown in Table 3.1 and in Figure 3.1. This decline is linked to very significant impairments reported by several generators in FY2017. When the impairments are excluded for FY2017, the overall net profit margin was 6%.
- The overall net margin for FY2018, with impairments included, was 8%. Section 3.4 provides additional insight into impairments.

The trends from 2012 to 2018 in the breakdowns of the revenues and costs of each of the fuel categories of generation (Wind, Hydro, Gas, Coal, Peat, Distillate & Oil and Pumped Storage) are shown graphically in the Appendices: B.1.1 to B.1.7.

Figure 3.2: **Gross margin (%) by fuel source – FY2012 - FY2018**¹²

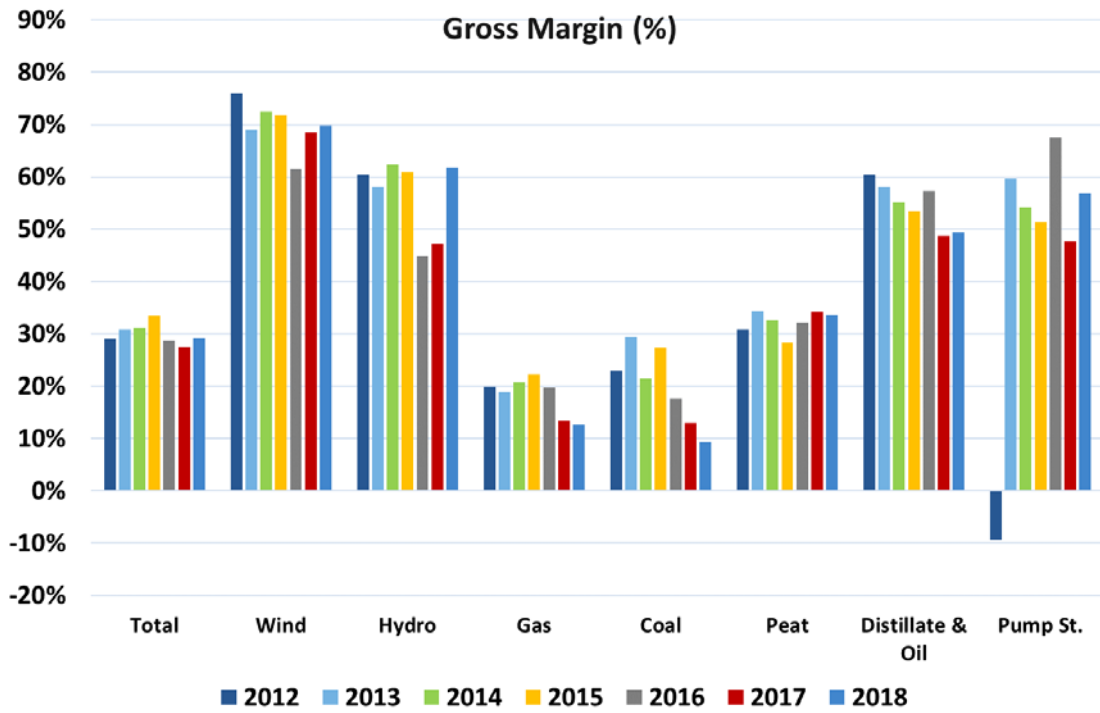
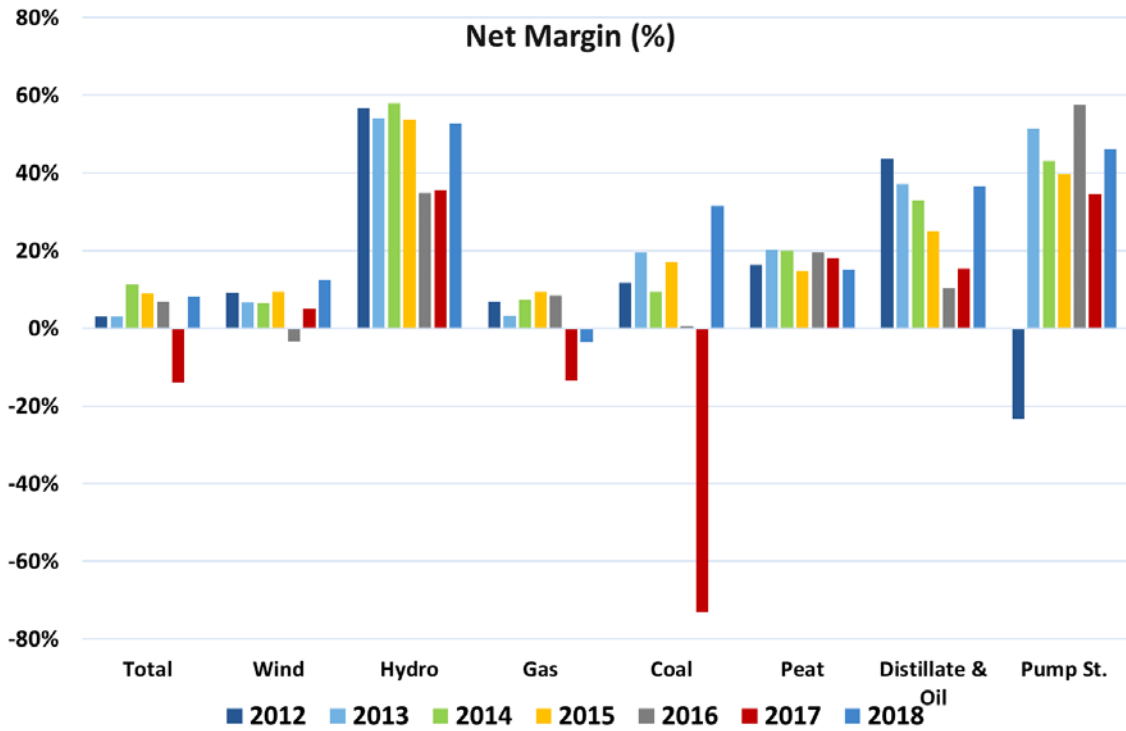


Figure 3.3: **Net margin (%) by fuel source – FY2012 - FY2018**



¹² The negative margin for Pumped Storage in FY2012 is associated with an extensive outage of the four pumped storage units in the first half on 2012.

The rise in average wholesale energy price in FY2017 and FY2018 has translated into increased average **Total** revenues of €77/MWh and €90/MWh of electricity sold as shown in Table 3.1.

Hydro generators have experienced significant decreases in their average revenue per MWh of electricity sold since 2014, decreasing from €90/MWh in FY2014 to €57/MWh FY2016, but has increased to €84/MWh in FY2018.

Coal generators experienced a decrease in revenue per MWh from €67/MWh in FY2015 to €49/MWh in FY2016, followed by an increase to €74/MWh in FY2017 and €95/MWh in FY2018. However, total revenue from coal was down by 18% in FY2018 due to lower sales of electricity from coal in the market, in line with a 36% drop in the volume of sales. The increase in revenue per MWh in FY2018 is consistent with the year-on-year increase of 33% in the average wholesale electricity price in the SEM from 2017 to 2018.

Similarly, **Gas** generators experienced a significant fall in average revenue per MWh of electricity sold since FY2013, decreasing from €117/MWh in FY2013 to €68/MWh in FY2017 and rising to €82/MWh in FY2018.

The very high revenue per MWh for **Distillate & Oil** generators (e.g. €935/MWh in FY2018) can be explained by the fact that these plants generate a relatively small volume of electricity in higher priced hours and also earn significant revenues from capacity payments (as also discussed in Section 3.1.2).

An increase in the revenue per MWh of electricity sold for **Peat** to €124/MWh is largely driven by the general rise in the wholesale electricity prices in FY2018 as well as stable revenues from support mechanisms for peat in the Republic of Ireland.

Overall, average revenue per MWh for total electricity generation decreased steadily from €103/MWh in FY2013 to €69/MWh in FY2016. The revenue per MWh increased to €77/MWh in FY2017 and €92/MWh in FY2018, primarily driven by the corresponding increase in wholesale energy prices in FY2017 and FY2018.

Table 3.1: Revenue *per MWh* of electricity sold – *by fuel source*¹³

Revenue per MWh of electricity sold	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Total	€100	€103	€98	€86	€69	€77	€92
Wind	€83	€83	€85	€73	€76	€80	€88
Hydro	€94	€87	€90	€72	€57	€64	€84
Gas	€105	€117	€100	€90	€68	€68	€82
Coal	€80	€73	€78	€67	€49	€74	€95
Peat	€101	€105	€106	€108	€97	€105	€124
Distillate & Oil	€2,629	€3,118	€3,206	€1,384	€1,220	€1,703	€935

3.1.1. Electricity Generation Volumes and Revenues by Fuel Source

Figure 3.5 presents the breakdown of electricity generation volumes by each fuel type for FY2017 and FY2018 respectively. In both FY2017 and FY2018, **Gas** generators made up the largest source of electricity generation, maintaining 58% of total electricity generation for both periods. The smallest contributions to electricity generation are from **Distillate & Oil**, and **Hydro** generators, which in combination provide around 1% of total electricity generation volumes. These fuel sources however earn the highest profit margins although they account for a relatively small share of the total market revenues (together, around 4% of total revenues). **Wind** generation has surpassed coal as the second highest contributor to electricity generation, with a 17% and 23% share of electricity generation in FY2017 and FY2018, respectively, though the share of generation from wind is under-represented, as explained at the end of this Section 3.1.1.

¹³ Pumped storage has been omitted from this table as it reports (negative) net electricity generation figures (electricity generated minus electricity used to pump water). Hence calculation of revenue and costs per MWh sold is not appropriate.

Figure 3.5: Breakdown of total volumes (MWh) by fuel source – Financial years 2017 and 2018

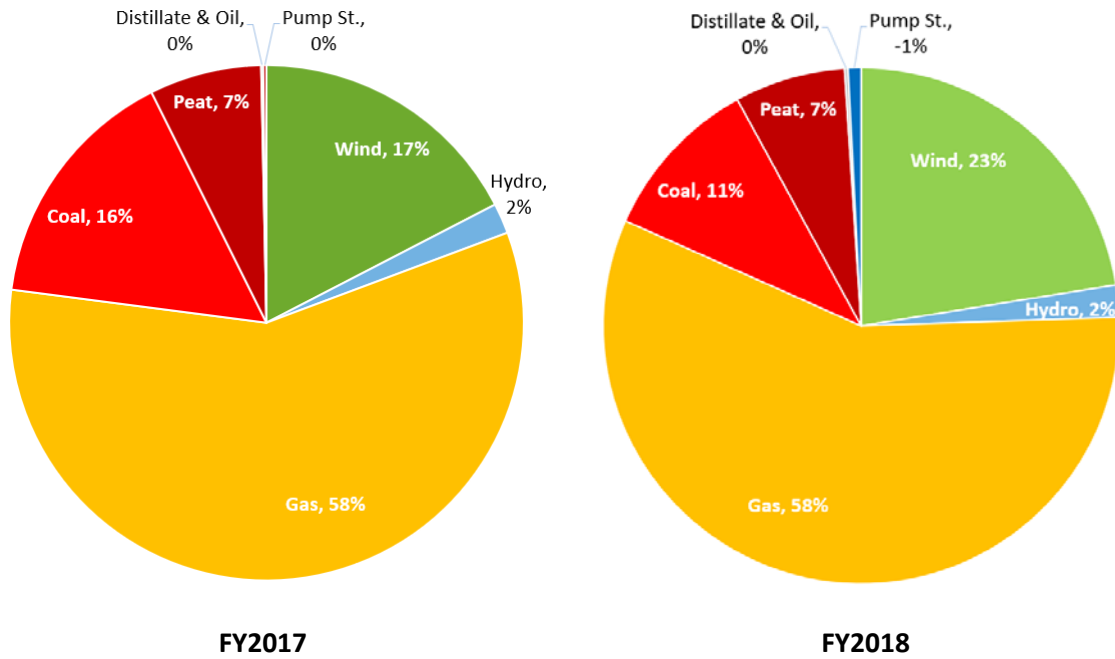
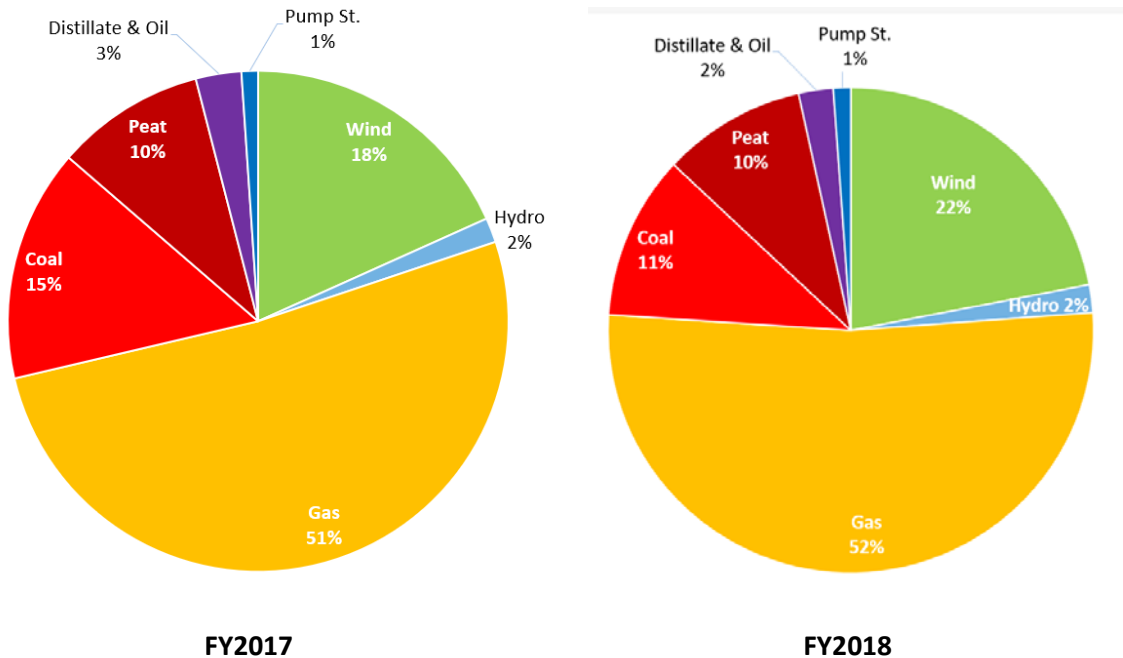


Figure 3.6 shows the breakdown of total revenue by fuel source for FY2017 and FY2018. As expected, there is generally a close correlation between the breakdown of total generation volumes by fuel source and the breakdown of total revenues by fuel source.

Figure 3.6: Breakdown of total revenues by fuel source – Financial years 2017 and 2018



Gas-fired generators earned the highest share of total revenues, with a circa 52% share in both FY2017 and FY2018. The portion of total revenues earned by **Coal-fired** generators mirrored their share of total sales volumes, accounting for 15% of total revenues in FY2017

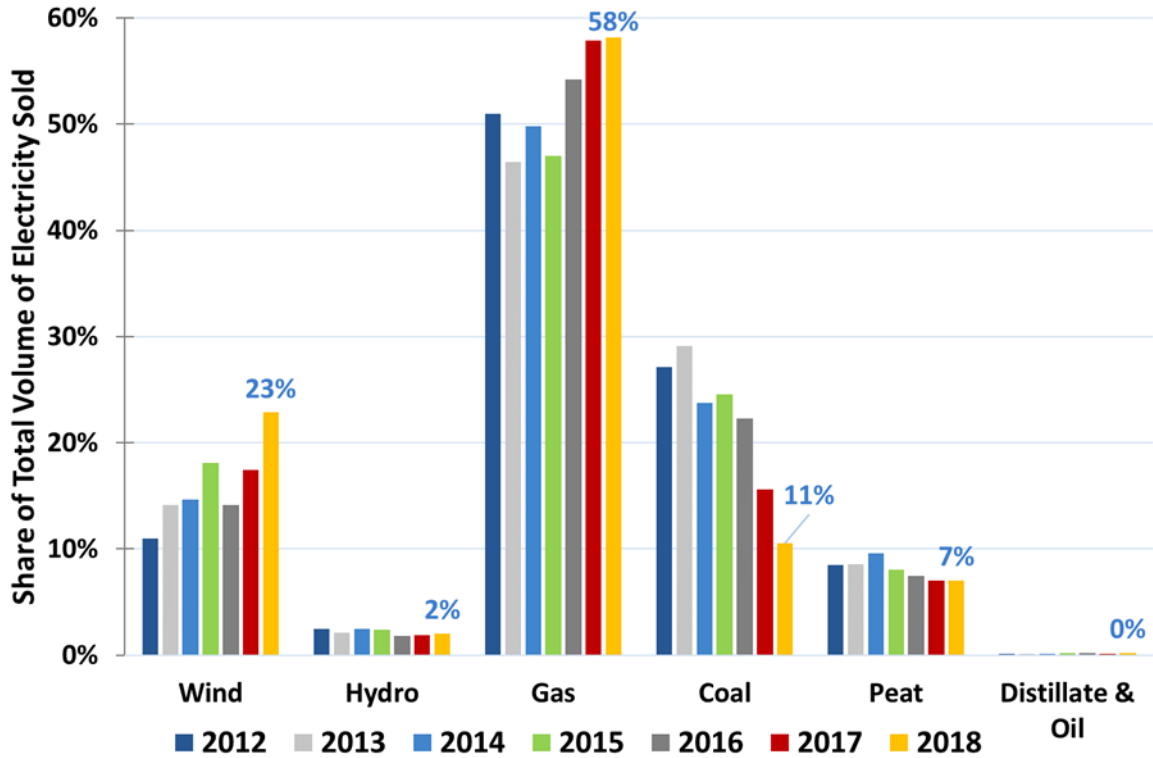
and 11% in FY2018 compared to 16% and 11% shares of total volume. Some coal-fuelled generators which were designated as Baseload type generators in FY2017 were re-designated to the **Mid-Merit** type generation category (see Table 3.9 in Section 3.2) on account of lower levels of running. **Distillate & Oil** received circa 2-3% of total revenues in FY2017 and FY2018, while their share of electricity generated was less than 1%. This is because they generate electricity mostly during peak hours when prices are high and receive a large proportion of their revenue through capacity payments. The share of total revenues for **Wind** and **Hydro** generators are similar to their share of total production output.

Figure 3.7 shows the breakdown of total volumes and revenue by fuel source during the period 2012 to 2018. **Coal** generation accounted for approximately 23% of total electricity generation from 2014 to 2016 but dropped to 15% in FY2017. A further decrease to 11% occurred in FY2018, driven by prolonged forced outages.

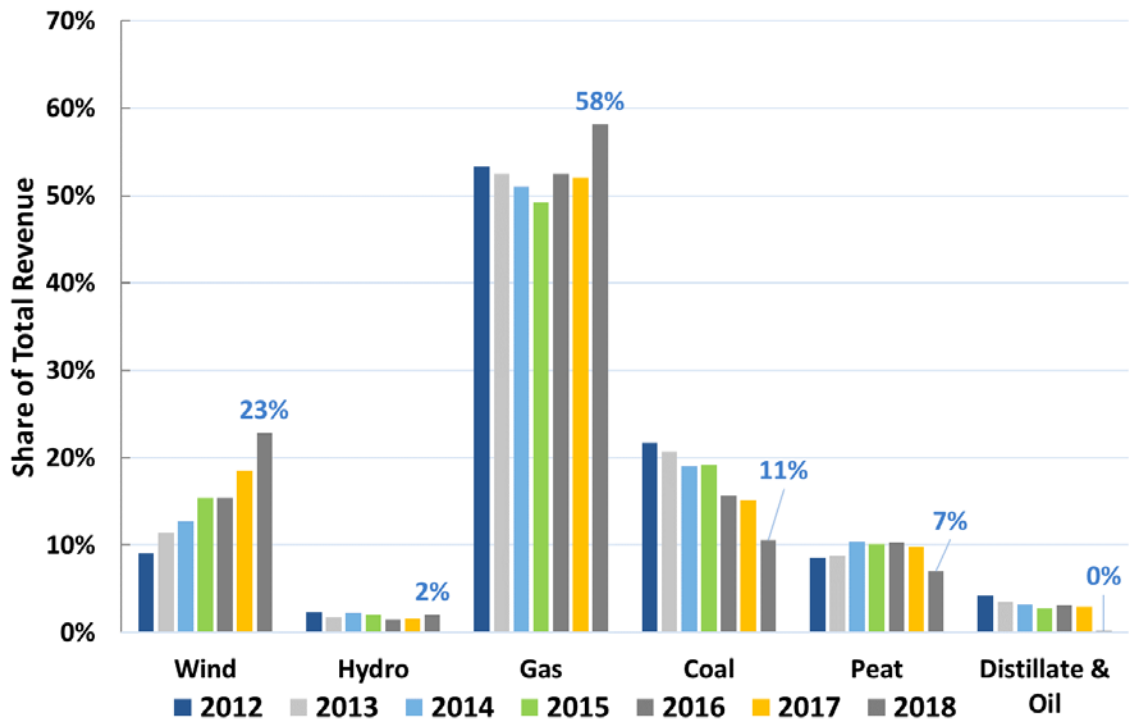
In contrast, **Gas** generation accounted for circa 46-50% of total electricity generation from 2012 to 2015 and increased to 58% in FY2017 and in FY2018. These increases in the share of total generation from gas reflect the increased utilisation of gas generation to provide flexibility, which complements variable wind generation.

Figure 3.7: Breakdown of total volumes and revenues **by fuel source** – FY2012 - FY2018

Breakdown of **volumes** by fuel source – 2012 – 2018

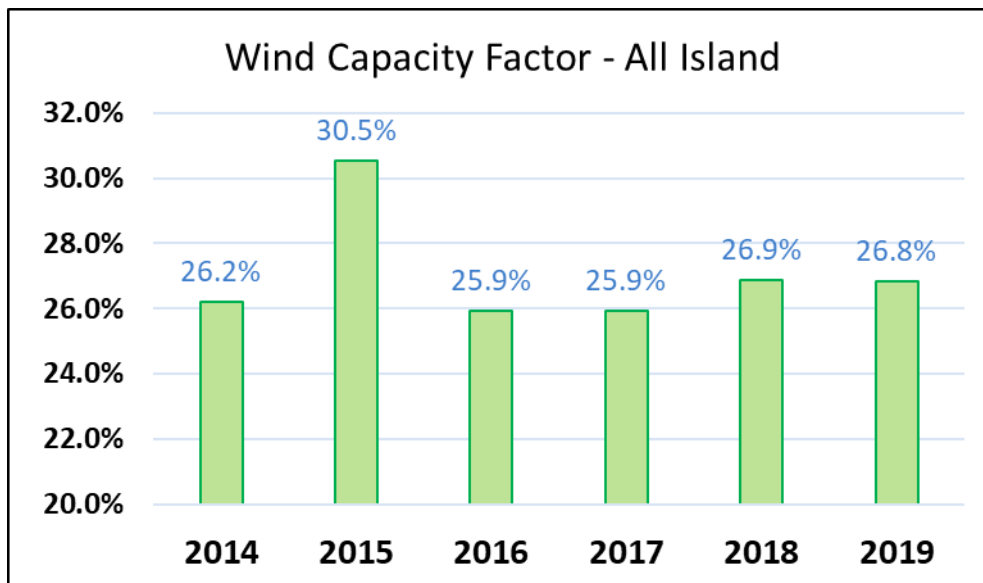


Breakdown of **revenue** by fuel source – 2012 – 2018



As can be seen from Figure 3.7, a notable trend is the gradually increasing share of **Wind** generation from FY2012 to FY2018 as installed wind capacity increases. Based on data submitted for this report, electricity generation from wind accounts for circa 23% of electricity generation in FY2018. The average capacity factor¹⁴ for wind powered generation on the island of Ireland over the period 2014 to 2018 was 27%. The high capacity factor of 30.5% in 2015, as shown in Figure 3.8, reflects very strong wind patterns in 2015, with a subsequent return to near average capacity factors in 2016, 2017 and 2018. This partially accounts for the drop (refer to Figure 3.7) in wind energy production volumes and revenues from 2015 to 2016.

Figure 3.8: Wind capacity factor Ireland 2014-2019¹⁵



The total aggregate capacity of wind generation reported for FY2018 was 3,166MW. However, the total installed all-island capacity was 4,790MW¹⁶. The “missing” 1,624MW of wind capacity in 2018 may be attributable to the exemption from reporting for those generation companies where the capacity ownership of the company is less than 25MW in aggregate.

It is also notable that the total reported volume of electricity sold decreased by 5% from 33.7TWh in FY2017 to 31.8TWh in FY2018. This is inconsistent with the increase in overall system demand in this period, noting that EirGrid’s combined all-island median Total Electricity Requirement indicate a growth of circa 3% per annum. However, this may be reflective of increasing numbers and capacities of wind farms below the 25MW aggregate threshold which do not report to the RAs: i.e. wind is under-represented.

¹⁴ The capacity factor is the total amount of energy a plant (in this case all wind energy in aggregate) produces during a period of time, divided by the amount of energy the plant could have produced if it was run at full capacity for the entirety of the same period.

¹⁵ Based on data sourced from EirGrid.

¹⁶ Refer to All-island Generation Capacity Statement 2018-2027 published by EirGrid: [Link](#).

Refer to All-island Generation Capacity Statement 2018-2027 published by EirGrid: [Link](#).

3.1.2. Revenues and Costs by Fuel Source

Within the financial reporting template generators are asked to disaggregate revenue into four categories:

- Energy payments from the SEM;
- Contract for Difference (CfD) payments;
- Capacity payments; and
- Other revenue.

Figure 3.9 and Figure 3.10 present the source of generator revenues by fuel source for FY2017 and FY2018. As expected, energy revenue from the SEM accounts for the majority of the total revenues earned by generators, with a share of 65% of total revenues in FY2017 increasing to 70% in FY2018. The next biggest revenue source is capacity payments, accounting for a share of 16% of total revenue in FY2017 but reducing significantly to 12% of total revenue in FY2018. This reduction is partially attributable to the lower overall capacity payments associated with the Capacity Remuneration Mechanism which came into effect on 1st October 2018. Revenue from CfDs, which accounted for 10% of total revenue in 2015, make up a relatively small proportion of total revenue in FY2017 and FY2018, with their share decreasing to circa 1%, reflecting the smaller effect of hedging contracts against higher wholesale energy price. Unlike all other generators which earn the majority of their revenue through the SEM, **Distillate & Oil** generators earn the majority of their revenue through capacity payments.

Figure 3.9: Source of generator revenue as a % of total revenue – Financial year 2017 by fuel source

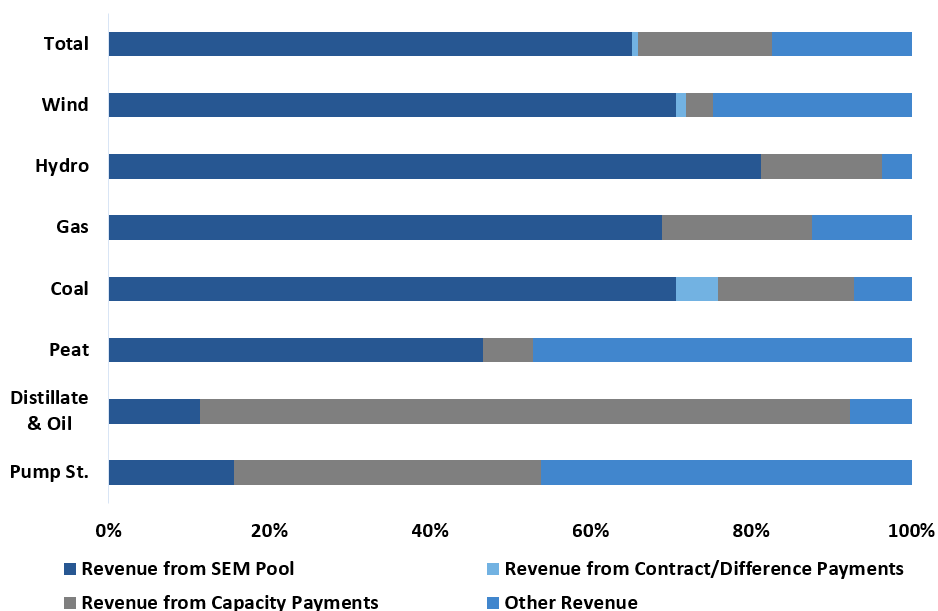
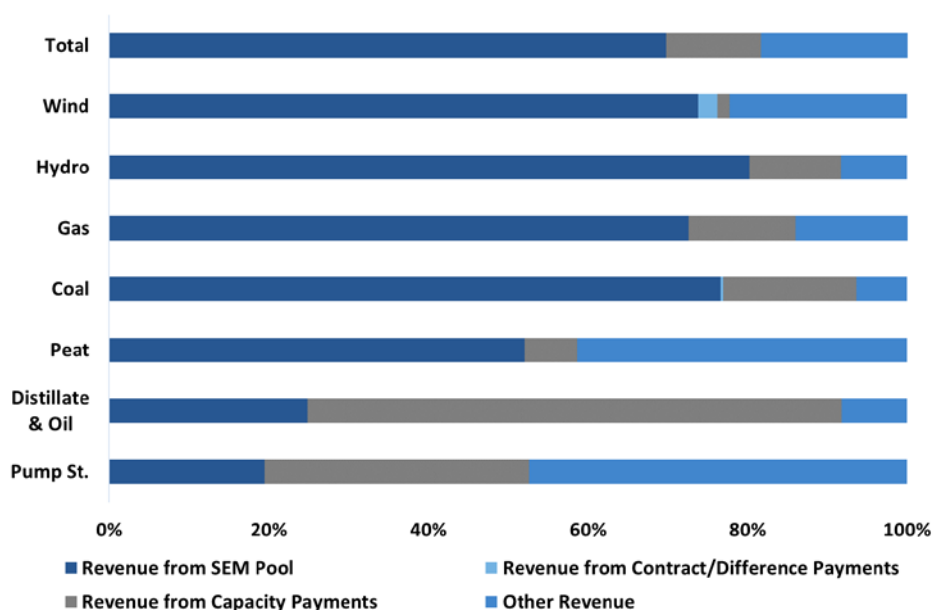


Figure 3.10: Source of generator revenue, % of total revenue – Financial year 2018 by fuel source



In addition, generators were also asked to report on the allocation of costs into four cost categories:

1. Fuel related operating costs;
2. Non-fuel operating costs;
3. Depreciation & Impairment; and
4. Interest & Tax.

Figure 3.11 and Figure 3.12 present the make-up of generator costs grouped under different fuel sources. Overall, fuel related operating costs represent 48% of **total costs** for FY2018. Non-fuel operating costs are the second largest contributor to total generator costs with a share of 27% in FY2016 and 21% in FY2017.

Unlike the breakdown of revenue analysis, the source of generator costs differs substantially between generators using different fuel sources. As expected, renewable electricity sources (Wind and Hydro) have negligible fuel related operating costs. **Wind** generators have relatively high capital costs, which is reflected in high proportions of ‘Interest & Tax’ and ‘Depreciation & Impairment’ costs, whereas the majority of **Hydro** and **Distillate & Oil** generator costs are accounted for by non-fuel operating costs. In contrast, fuel related operating costs were the largest overall costs for **Gas**, **Coal** and **Peat** generators. Overall, Depreciation & Impairment reduced from 49% of total costs in FY2017 to a “negative cost” share for FY2018. For explanation, refer to the coal generation cost breakdown in Appendix B.1.4 and the impairment analysis in Section 3.4. Prior to 2015, non-fuel operating costs generally accounted for the largest operating costs for **Distillate & Oil** generators. However, from FY2015 until FY2018 Depreciation & Impairment charges for Distillate & Oil plants increased substantially due to significant impairment costs reported by some generators.

Figure 3.11: Breakdown of generator costs, % of total costs – Financial year 2017 by fuel source

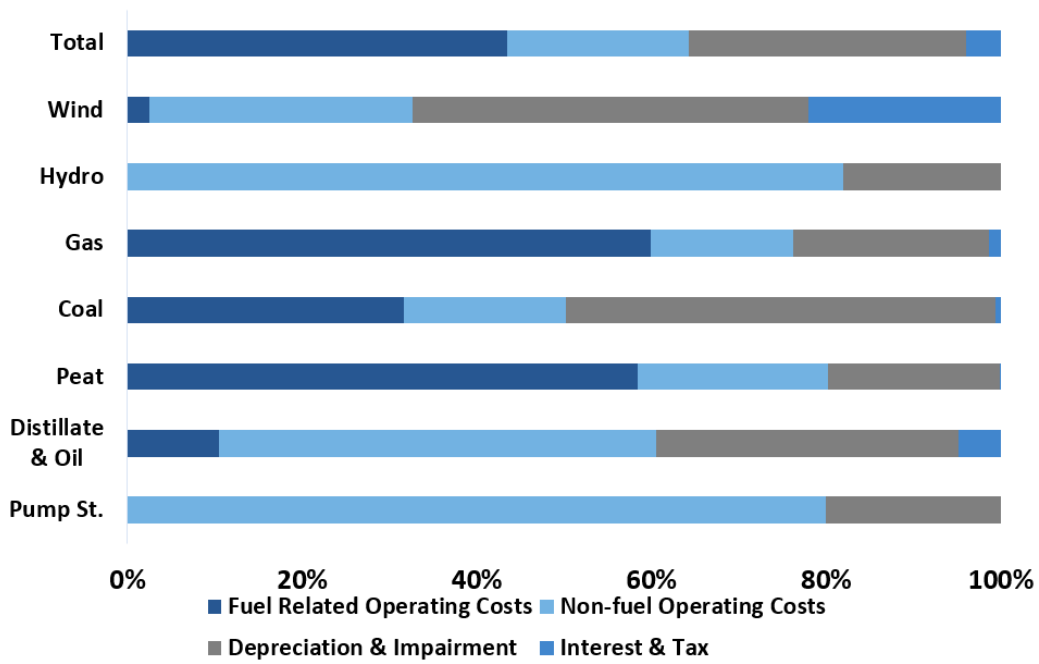
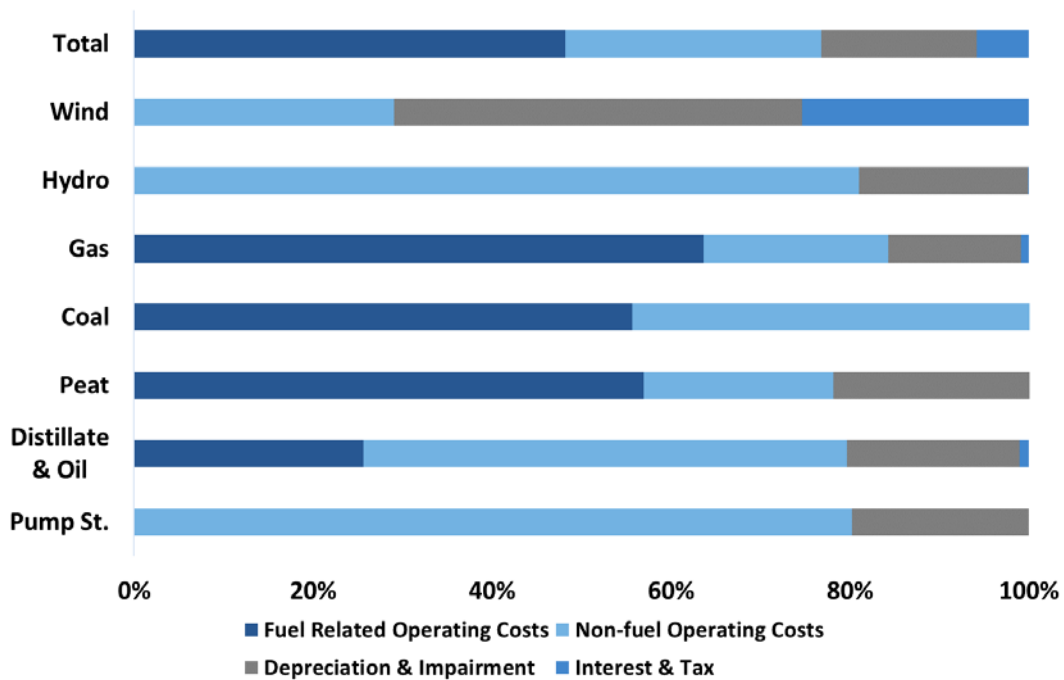


Figure 3.12: Breakdown of generator costs, % of total costs – Financial year 2018 by fuel source



Figures 3.13 and 3.14 below provide a percentage breakdown of generator revenue and costs by fuel source between FY2012 and FY2018. Over time it appears that the relative importance of each revenue stream fluctuates quite significantly, which is especially noticeable for CfD revenue. For example, the proportion of total revenue accounted for by CfD payments for **Wind** generation has varied from a high of 10% in FY2012, to lower than 2% in FY2016, FY2017 and FY2018. Also noticeable is the drop in revenue from capacity payments, which is most evident for **Gas** and for **Distillate & Oil** generators.

On the other hand, the make-up of generator costs across fuel sources has remained fairly constant since FY2012, when excluding impairment charges. Despite a general trend of falling fuel prices from 2013 up until Q4 2016, relatively stable shares of fuel costs have – for the most part – prevailed, because fuel costs vary with volumes of electricity generated much more than non-fuel costs. This means that when volumes of electricity generated increase the relative proportion of fuel costs in total operating costs goes up even when fuel unit costs decline.

Figure 3.13: Percentage breakdown of generator *revenue* by *fuel* source – FY2012 to FY2018

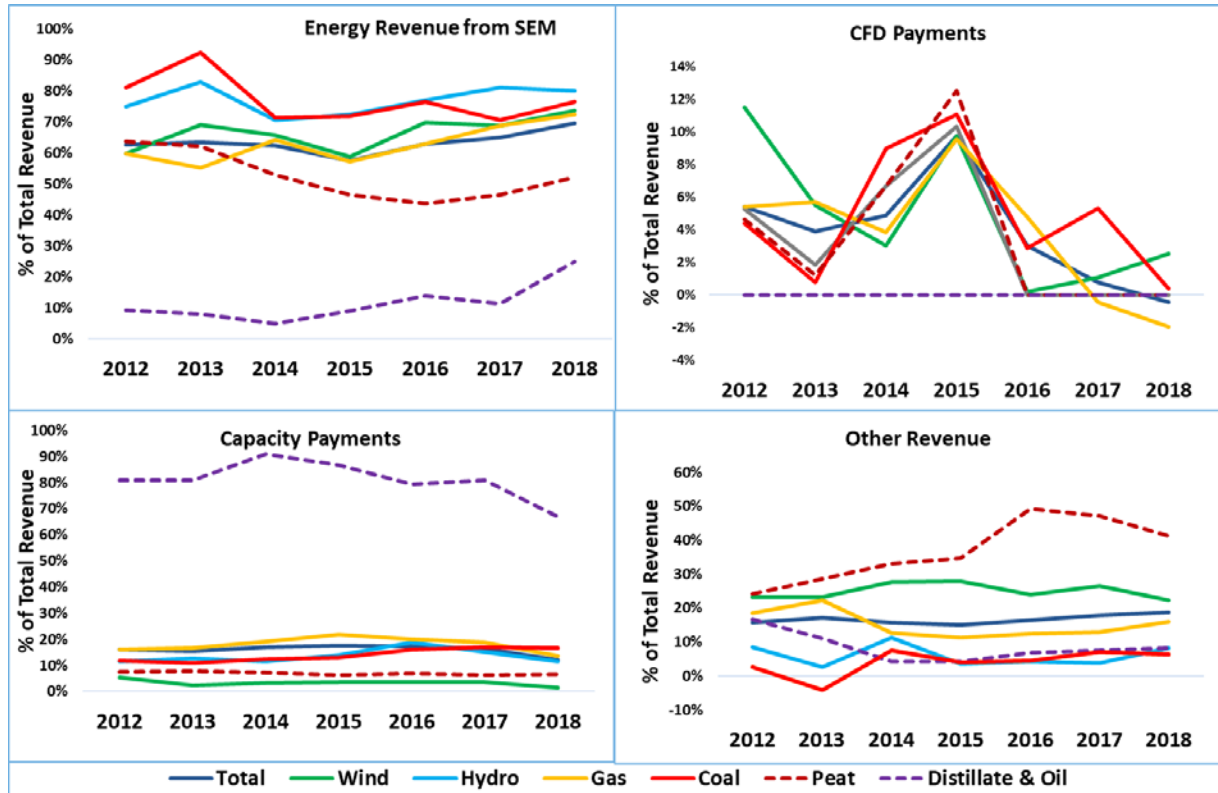
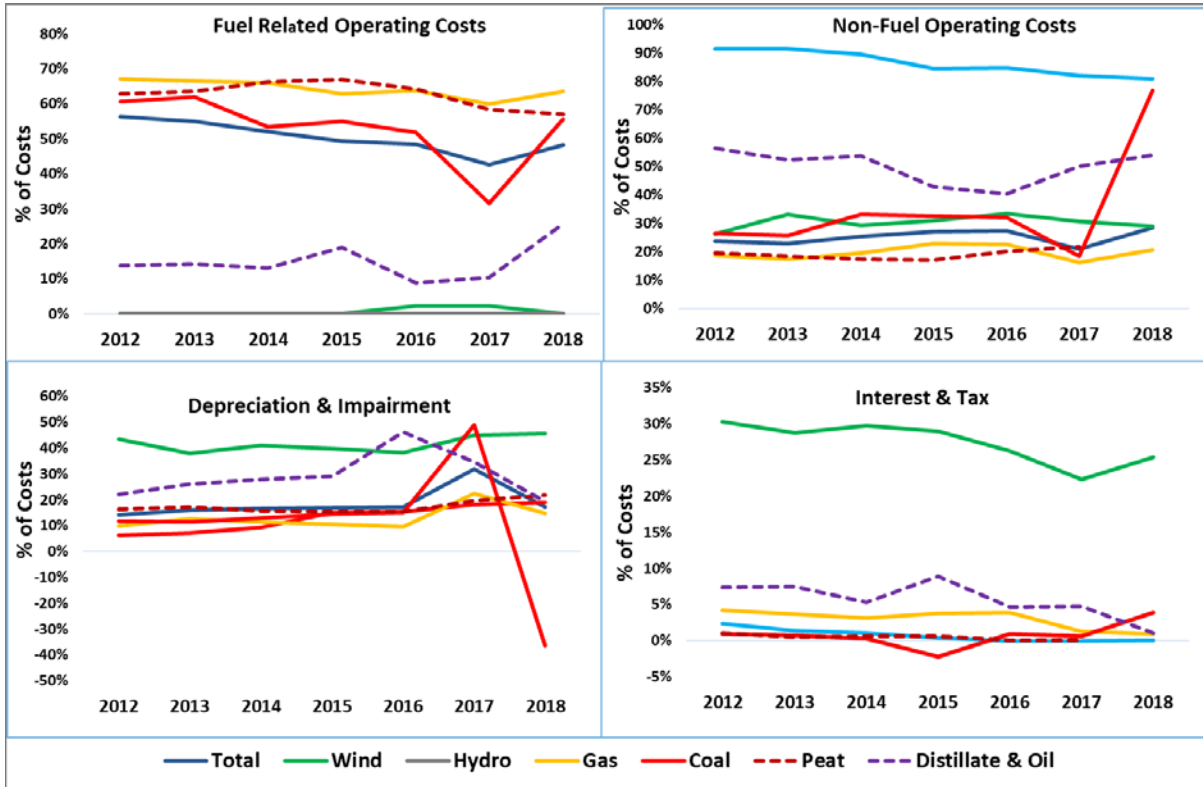


Figure 3.14: Percentage breakdown of generator costs by fuel source – FY2012 to FY2018



3.1.3. Breakdown of financial reporting template results by fuel source in MW terms

Tables 3.2 and 3.3 below provide a breakdown of the results by generation fuel source on a per MW of installed capacity basis for FY2017 and FY2018 respectively.

A crucial factor affecting the revenue per MW of installed capacity is the utilisation or load factor of each unit. Overall, apart from **Peat** and **Coal** generator categories, total revenue per MW of installed capacity has increased for all fuel sources between FY2017 and FY2018.

SEM-20-021 Generator Financial Performance Report FY2018

Table 3.2: Breakdown by fuel source on a per MW basis – Financial Year 2017

Financial Year 2017	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
Installed Capacity - MW	11,438	2,536	217	5,514	1,331	346	1,202	292
Volume of Electricity Sold - MWh per MW installed	19,463	2,321	2,963	3,539	3,954	6,879	37	(230)
Revenue (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€147	€128	€153	€166	€206	€337	€7	€15
Revenue from Contract/Difference Payments	€2	€2	-	(€1)	€15	-	-	-
Revenue from Capacity Payments	€37	€7	€28	€45	€49	€45	€51	€36
Other Revenue	€41	€50	€7	€31	€21	€340	€5	€44
Total Revenue	€226	€187	€189	€242	€292	€722	€63	€95
Operating Costs (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€110	€4	-	€164	€160	€346	€6	-
Non-fuel Operating Costs	€54	€54	€100	€45	€94	€129	€27	€50
Total Operating Costs	€164	€59	€100	€209	€254	€475	€33	€50
EBITDA (€'000/MW)	€62	€128	€89	€33	€38	€247	€31	€45
Depreciation & Impairment	€83	€79	€22	€62	€248	€116	€19	€12
EBIT (€'000/MW)	(€20)	€49	€67	(€29)	(€210)	€131	€12	€33
Interest & Tax	€11	€39	-	€4	€3	€1	€3	-
Net Profit (€'000/MW)	(€32)	€9	€67	(€33)	(€214)	€130	€10	€33

Table 3.3: Breakdown by fuel source on a per MW basis – Financial Year 2018

Financial Year 2018	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil	Pump St.
Installed Capacity - MW	12,177	3,206	213	5,587	1,331	462	1,086	292
Volume of Electricity Sold - MWh per MW installed	15,130	2,263	3,032	3,306	2,513	4,849	66	(898)
Revenue (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€167	€147	€203	€198	€184	€314	€15	€22
Revenue from Contract/Difference Payments	(€1)	€5	-	(€5)	€1	-	-	-
Revenue from Capacity Payments	€29	€3	€29	€37	€40	€40	€41	€38
Other Revenue	€45	€44	€21	€43	€15	€249	€5	€55
Total Revenue	€239	€200	€253	€272	€240	€603	€62	€115
Operating Costs (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€104	€	-	€179	€91	€292	€10	-
Non-fuel Operating Costs	€65	€60	€97	€58	€126	€109	€21	€50
Total Operating Costs	€169	€60	€97	€238	€217	€400	€31	€50
EBITDA (€'000/MW)	€70	€140	€156	€35	€22	€203	€31	€66
Depreciation & Impairment	€38	€74	€23	€42	(€60)	€112	€8	€12
EBIT (€'000/MW)	€32	€66	€134	(€7)	€82	€91	€23	€53
Interest & Tax	€13	€41	€1	€3	€6	(€4)	€4	-
Net Profit (€'000/MW)	€20	€25	€134	(€10)	€76	€91	€23	€53

NOTES:

- “€” indicates a positive value which is in the range 0/MWh to+ 0.5/MWh
- “(€)” indicates a negative value which is in the range 0/MWh to -0.5/MWh
- “-” generally indicates that no figure was reported for this breakdown category.

Tables 3.2 and 3.3 show the breakdown of costs and net profit per MW of installed capacity by fuel source. This is also shown graphically in Figures 3.13 and 3.14 below. The sum of net profit and costs is equal to total revenue. As a result, the entire length of each bar in these two figures represents total revenue earned by each fuel source per MW of installed capacity.

Peat-fired plants have the highest revenue for each MW of installed capacity, at €722,000 per MW in FY2017 and €603,000 per MW in FY2018. However, they also continue to have the highest costs per MW out of all fuel sources. Given that **Peat-fired** generators are price-takers, typically generating whenever they are available, then it follows that they also have the highest output per MW, and in turn the highest revenue and costs per MW, due to their high load factors.

Coal-fired generation was in second position in FY2017 with regard to highest revenue, recording €292,000 per MW of installed capacity. This dropped to €240,000 per MW in FY2018.

Hydro generators achieved the highest net profit per MW of installed capacity in FY2017 and FY2018. In FY2015 hydro generators achieved net profit of €134,000 per MW of installed capacity. However, net profit per MW for hydro decreased to €58,000 per MW in FY2016 but increased to €67,000 per MW in FY2017 and achieved €134,000 per MW in FY2018.

These results are very much driven by the load factor achieved by each respective fuel source, as fuel sources with a high load factor/utilisation are likely to earn relatively high revenues per MW of installed capacity compared to fuel types with a low load factor. This is reflected in the results, as **Peat** generators frequently earn the highest revenue and profit per MW of installed capacity and they achieved an average load factor of circa 80% in FY2016 and FY2017, reducing to 74% in FY2018.

Figure 3.14: Costs and net profit *per MW* of installed capacity – Financial year 2017 *by fuel source*

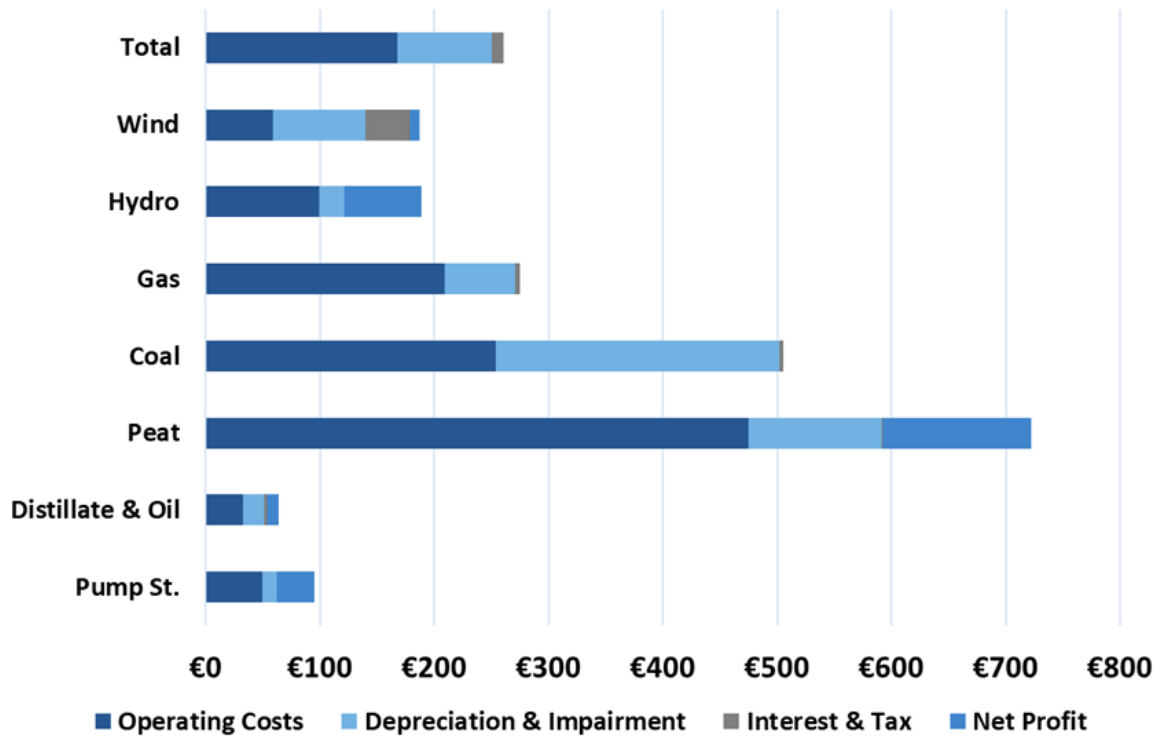
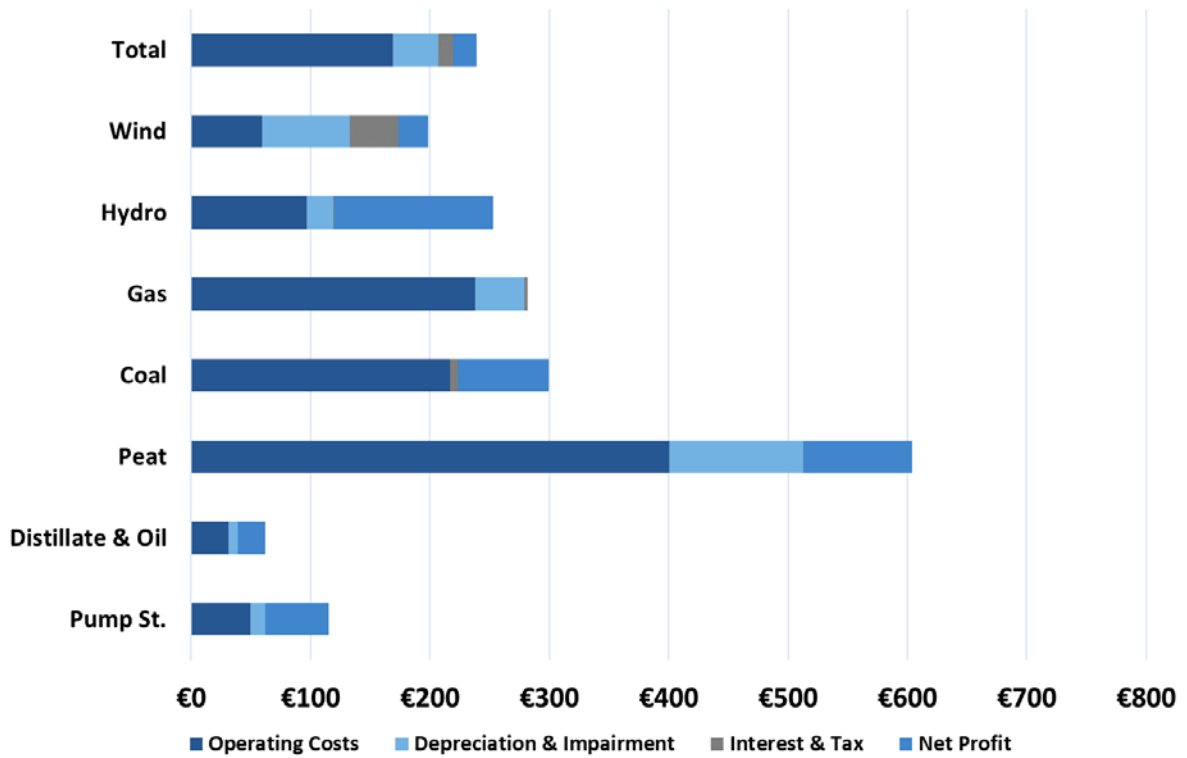


Figure 3.15: Costs and net profit *per MW* of installed capacity – Financial year 2018 *by fuel source*



3.1.4. Breakdown of financial reporting template data in MWh of electricity sold – by fuel source

Tables 3.4 and 3.5 below provide a breakdown of the financial reporting template data by fuel source in MWh of electricity sold for FY2017 and FY2018. This is useful in order to understand how much net profit different generators are earning on average for every MWh of electricity generated. Although this breakdown of data is useful for the majority of fuel sources, for pumped storage generators this is not so useful given the fact that they are net consumers of electricity. As a result, pumped storage generation is omitted from the per MWh analysis in this subsection.

In both FY2017 and FY2018, **Distillate & Oil** earned by far the highest net profit for every MWh of electricity generated due to the fact that they mostly generate electricity in peak times and earn the majority of their revenue through capacity payments. The net profit per MWh of electricity sold for **Distillate & Oil** generators achieved €261/MWh and €341/MWh in FY2017 and FY2018 respectively. This high profitability is due to a number of factors, including:

- Higher energy revenue per MWh sold in the SEM, due to the rise in average wholesale energy price in 2017 and 2018;
- High capacity payments per MWh generated – as fixed capacity payments are spread over a small volume of electricity generated;

Hydro generators - earning €44/MWh and having zero fuel costs and low depreciation - earned the second highest profit per MWh of electricity sold.

It can also be observed that energy revenue per MWh sold in the SEM has increased significantly for all fuel sources in FY2018 compared to FY2017. This is not surprising considering the 33% rise in average wholesale energy price over the period. Similarly fuel related operating costs per MWh for **Gas** have also increased given higher fuel prices, whereas the per-MWh fuel cost for **Coal** generators reduced by circa 10% from €40/MWh to €36/MWh.

SEM-20-021 Generator Financial Performance Report FY2018

Table 3.4: Breakdown by per MWh of electricity sold – by fuel source (FY2017)

Financial Year 2017 (per MWh of electricity sold)	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil
Volume of Electricity Sold - MWh	33,730,821	5,885,220	642,883	19,515,282	5,262,474	2,380,199	44,763
Revenue	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Revenue from SEM Pool	€50	€55	€52	€47	€52	€49	€193
Revenue from Contract/Difference Payments	€1	€1	-	(€.3)	€4	-	-
Revenue from Capacity Payments	€12	€3	€10	€13	€13	€7	€1,379
Other Revenue	€13	€21	€2	€9	€5	€49	€130
Total Revenue	€76	€80	€64	€68	€74	€105	€1,703
Operating Costs	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Fuel Related Operating Costs	€37	€1.66	-	€46	€40	€50	€151
Non-fuel Operating Costs	€18	€23	€34	€13	€24	€19	€723
Total Operating Costs	€55	€25	€34	€59	€64	€69	€874
EBITDI	€21	€55	€30	€9	€10	€36	€829
Depreciation & Impairment	€28	€34	€7	€17	€63	€17	€499
EBIT	(€7)	€21	€23	(€8)	(€53)	€19	€330
Interest & Tax	€4	€17	-	€1	€1	€0.08	€69
Net Profit	(€11)	€4	€23	(€9)	(€54)	€19	€261

Table 3.5: Breakdown¹⁷ by per MWh of electricity sold – by fuel source (FY2018)

Financial Year 2018 (per MWh of electricity sold)	Total	Wind	Hydro	Gas	Coal	Peat	Distillate & Oil
Volume of Electricity Sold - MWh	32,025,440	7,254,399	645,879	18,468,687	3,344,435	2,240,192	71,847
Revenue	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Revenue from SEM Pool	€63	€65	€67	€60	€73	€65	€233
Revenue from Contract/Difference Payments	(€.39)	€2	-	(€1.6)	€3.5	-	-
Revenue from Capacity Payments	€11	€1	€10	€11	€16	€8	€626
Other Revenue	€17	€20	€7	€13	€6	€51	€77
Total Revenue	€90	€88	€84	€82	€95	€124	€935
Operating Costs	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Fuel Related Operating Costs	€40	€0.06	-	€54	€36	€60	€152
Non-fuel Operating Costs	€24	€26	€32	€18	€50	€22	€321
Total Operating Costs	€64	€26	€32	€72	€86	€83	€473
EBITDI	€26	€62	€52	€10	€9	€42	€462
Depreciation & Impairment	€14	€33	€7	€13	(€24)	€23	€114
EBIT	€12	€29	€44	(€2)	€33	€19	€347
Interest & Tax	€5	€18	€0.02	€1	€3	(€0.09)	€6
Net Profit	€7	€11	€44	(€3)	€30	€19	€341

¹⁷ “-” indicates that no figure was reported for this breakdown category.

3.2. BREAKDOWN BY GENERATION TYPE

In addition to organising the financial reporting template data by fuel source the report also breaks down the data by generation type, namely: Renewables, Price-takers, Baseload, Mid-Merit and Peakers. The **Renewables** grouping includes all Wind, Hydro and Pumped Storage plants. Note that electricity generated by **Pumped Storage** may not be renewable as this depends on the renewable credentials of the electricity used to pump water into the upper reservoir. The variable renewable fraction of the electricity generated is a function of the fuel mix of the electricity instantaneously used to pump water into the upper reservoir. Nevertheless, for the purpose of the By Type analysis in this report, pumped storage has been grouped with renewables.

Price-takers are defined as conventional plants that operate as a price taker in the market, i.e. peat plants.

The remaining plants are sorted into **Baseload, Mid-Merit and Peaking** plants based on their load factor over the year, whilst seeking to spot any anomalies. The general criteria shown in Table 3.6 below are used to allocate plants into their respective categories.

Table 3.6: Plant type and load factors

Plant type	Load factor
Baseload	75% or above
Mid-Merit	16% - 74%
Peak	15% or below

This is the same method as has been employed in previous reports.

Based on these thresholds several classifications have changed from the previous report as follows.

- Whitegate CCGT and Aghada AD2 CCGT were classified as Baseload plants in FY2017. However, for FY2018 their load factors dropped to below 75% and are therefore included in the Mid-Merit classification.
- Synergen (Gas) and Aughinish (Gas) were classified as Baseload plants in FY2017. For FY2018 their load factors were above 75% which qualified them as Baseload. However, in order to protect the confidentiality of sensitive information of the two plants, the RAs have included these in the Mid-Merit classification.

As a result there are no plants included in the Baseload category for the FY2018 analysis.

The resulting classification of generation plants is shown in Table 3.7 below.

Table 3.7: Plant type categorisation and fuel source

Baseload	Mid-Merit	Peak
FY2017 and FY2018		
	<ul style="list-style-type: none"> • Ballylumford C station (Gas) • Coolkeeragh (Gas) • Moneypoint – MP1 (Coal) • Moneypoint – MP2 (Coal) • Moneypoint – MP3 (Coal) • Kilroot K1 & K2 (Coal) • Tynagh (Gas) • Great Island CCGT (Gas) • Huntstown 1 (Gas) • Huntstown 2 (Gas) 	<ul style="list-style-type: none"> • Ballylumford B station (Gas) • Ballylumford OCGTs (Gas) • Kilroot (KGT1 – KGT4) (Distillate & Oil) • Aghada AD1 (Gas) • Aghada AT1, AT2 and AT4 (Gas) • Marina (Gas) • Northwall Unit 5 (Gas) • Poolbeg (Gas) • Tarbert (Distillate & Oil) • Rhode (Distillate & Oil) • Tawnaghmore (Distillate & Oil)
FY2017 only		
<ul style="list-style-type: none"> • Whitegate CCGT (Gas) • Aghada AD2 CCGT (Gas) • Synergen (Gas) • Aughinish (Gas) 		
FY2018 only		
	<ul style="list-style-type: none"> • Synergen (Gas) • Aughinish (Gas) 	

Table 3.8 and Table 3.9 below provide an overview of the financial reporting template data by generation type for FY2017 and FY2018. **Mid-Merit** plants account for the largest share of volumes and revenues, which were augmented in FY2018, partially on account of the reclassification of Whitegate CCGT, Aghada AD2, Synergen and Aughinish from Baseload to Mid-Merit. Moreover, renewable energy plants - recording gross margins in excess of 67% for both FY2017 and FY2018 - had by far the highest gross profit margin across all generation types, which is expected given their low operating costs. In FY2018, **Renewables** had the highest net profit margin at 17%.

Price-takers continued to experience strong net profit margin, despite decreasing slightly from 18% in FY2017 to 15% in FY2018.

Mid-Merit plants reported net-profit margin of -1% in FY2015, -9% in FY2016, -36% in FY2017 and 8% in FY2018. This is largely due to the reporting of high impairment charges. When these charges are excluded, the net profit margins of Mid-Merit generators were 6% in FY2015, -9% in FY2016, 1% in FY2017 and 4% in FY2018. The removal of the impairments amounts in FY2018 result in a decrease in net profit margin from 8% to 4%. The reason for this apparent irregularity is instances of negative reporting of impairments in FY2018. Section 3.4 provides further details on the impact of impairment on net profitability. Mid-Merit plants are often the marginal price setting generator in the market due to their place in the merit order, which means that they tend to earn less inframarginal rent from the units of electricity sold relative to lower cost generators. In contrast to Peak plants, they also tend to earn relatively less revenue per unit of electricity generated from capacity payments.

Another factor driving changes between FY2017 and FY2018 is the re-classification – by type - of a number of Baseload plants in FY2017 and in FY2018 as outlined earlier in this subsection. This results in larger capacities included in the Mid-Merit category.

SEM-20-021 Generator Financial Performance Report FY2018

Table 3.8: Breakdown by generation type – Financial Year 2017

Financial Year 2017	Total	Renewables	Price Taker	Baseload	Mid Merit	Peak
Volume of Electricity Sold - MWh	33,730,821	6,528,103	2,380,199	9,981,808	14,746,107	94,604
Revenue	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€1,676,222	€358,939	€116,482	€403,682	€740,699	€56,420
Revenue from Contract/Difference Payments	€19,678	€5,130	-	€	€14,548	-
Revenue from Capacity Payments	€415,230	€22,956	€15,568	€69,086	€171,444	€136,176
Other Revenue	€450,694	€127,443	€117,803	€938	€181,932	€22,577
Total Revenue	€2,561,822	€514,467	€249,853	€473,706	€1,108,623	€215,173
Operating Costs	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€1,255,201	€9,740	€119,617	€370,592	€720,964	€34,288
Non-fuel Operating Costs	€608,232	€158,893	€44,710	€61,441	€240,974	€102,214
Total Operating Costs	€1,865,382	€170,582	€164,326	€432,033	€961,938	€136,502
EBITDI	€696,443	€343,886	€85,527	€41,673	€146,685	€78,672
Depreciation & Impairment	€940,173	€206,199	€40,302	€24,851	€527,120	€141,701
EBIT	(€243,730)	€137,688	€45,225	€16,822	(€380,435)	(€63,029)
Interest & Tax	€127,143	€100,021	€198	€1,060	€21,011	€4,853
Net Profit	(€370,872)	€37,667	€45,027	€15,762	(€401,447)	(€67,882)
Gross Margin - %	27%	67%	34%	9%	13%	37%
Net Margin - %	-14%	7%	18%	3%	-36%	-32%

Table 3.9: Breakdown by generation type – Financial Year 2018

Financial Year 2018	Total	Renewables & PS	Price Taker	Baseload [#]	Mid Merit*	Peak
Volume of Electricity Sold - MWh	31,763,249	7,638,088	2,240,192	-	21,607,850	277,119
Revenue	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€2,032,532	€522,345	€145,246	-	€1,325,935	€39,005
Revenue from Contract/Difference Payments	(€12,507)	€16,128	-	-	(€28,635)	-
Revenue from Capacity Payments	€347,982	€26,867	€18,256	-	€201,940	€100,918
Other Revenue	€546,247	€162,986	€115,263	-	€243,301	€24,697
Total Revenue	€2,914,252	€728,324	€278,766	-	€1,742,541	€164,621
Operating Costs	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€1,268,977	€351	€134,808	-	€1,115,407	€18,412
Non-fuel Operating Costs	€752,230	€185,370	€50,181	-	€443,336	€73,344
Total Operating Costs	€2,060,567	€225,080	€184,989	-	€1,558,742	€91,756
EBITDI	€850,268	€499,828	€93,777	-	€183,799	€72,865
Depreciation & Impairment	€457,674	€244,405	€51,916	-	€25,822	€135,530
EBIT	€392,009	€254,836	€41,861	-	€157,976	(€62,665)
Interest & Tax	€154,128	€131,167	(€200)	-	€22,731	€430
Net Profit	€237,881	€123,669	€42,061	-	€135,246	(€63,095)
Gross Margin - %	29%	69%	34%		11%	44%
Net Margin - %	8%	17%	15%		8%	-38%

*Note: Two Baseload plants are included in the Mid-Merit category for FY 2018.

Table 3.10 below presents the revenue (i.e. the sum of all revenues from SEM, capacity payments, and other sources) per MWh of electricity sold, organised by generation type. As expected, **Peak** generators earn by far the most per MWh of electricity given they only generate electricity when demand is high and prices are high.

Total revenue per MWh across the SEM fell gradually from 2013 until the latter end of 2016 driven by decreasing wholesale energy price. However, in FY2017 and FY2018 this trend changed, with Total Revenue-per-MWh increasing, reflecting an upturn in wholesale energy prices.

Table 3.10: Revenue per MWh of electricity sold – by generation type

Revenue per MWh of electricity sold	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Total	€100	€103	€98	€86	€70	€77	€92
Renewables	€92	€95	€96	€80	€82	€84	€95
Price Taker	€101	€105	€106	€108	€97	€105	€124
Baseload	€78	€72	€64	€62	€45	€47	N/A
Mid-Merit	€86	€83	€85	€76	€70	€75	€81
Peak	€595	€654	€652	€757	€772	€2,274	€594

3.2.1. Revenues by Generation Type

Figure 3.15 and 3.16 below show total generation volumes and revenues broken down into generation type for FY2017 and FY2018. It is worth noting the small share of electricity generated accounted for by **Peaking** plants despite the relatively large numbers of plants classified in this category as shown in Table 3.7. While **Peak** generators provided circa 1% of total generation, they accounted for 8% and 6% of total revenues in FY2017 and FY2018 respectively. These differences are because peaking plants operate in very few hours during peak demand when the wholesale market prices for electricity are higher.

Renewables, Mid-Merit and **Price Taker** generators continue to provide approximately the same share of electricity as they earn in revenue. This is shown in Figure 3.17, which provides a breakdown of total volumes and revenue by generation type between FY2012 and FY2018.

Figure 3.15: Breakdown of total volumes (MWh) by generation type – Financial year 2017 and 2018

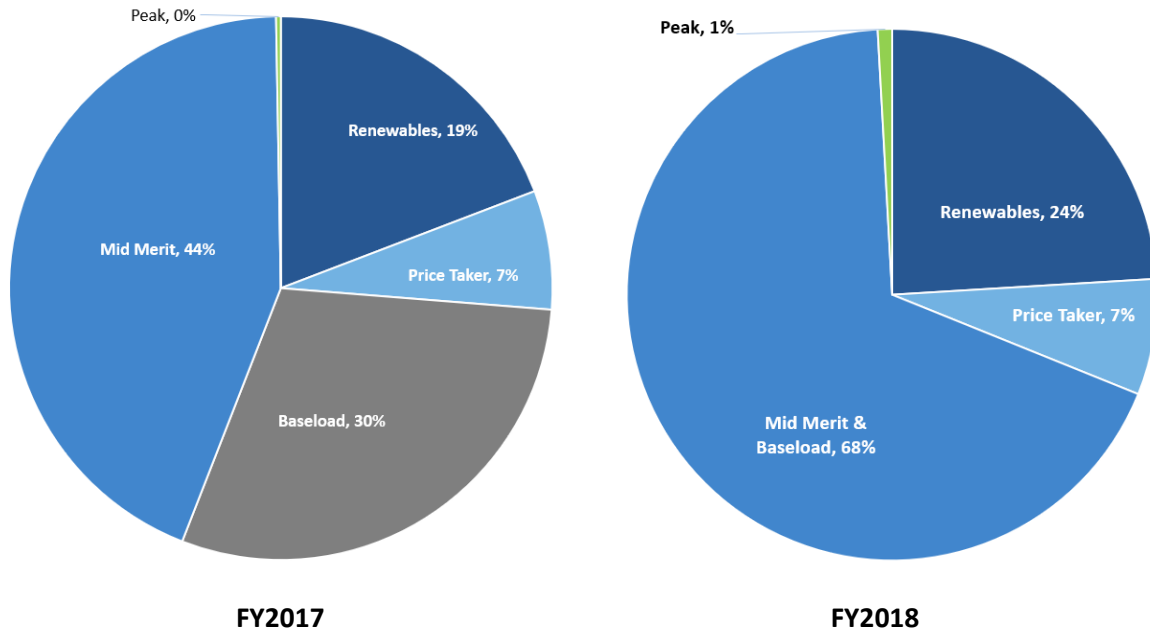
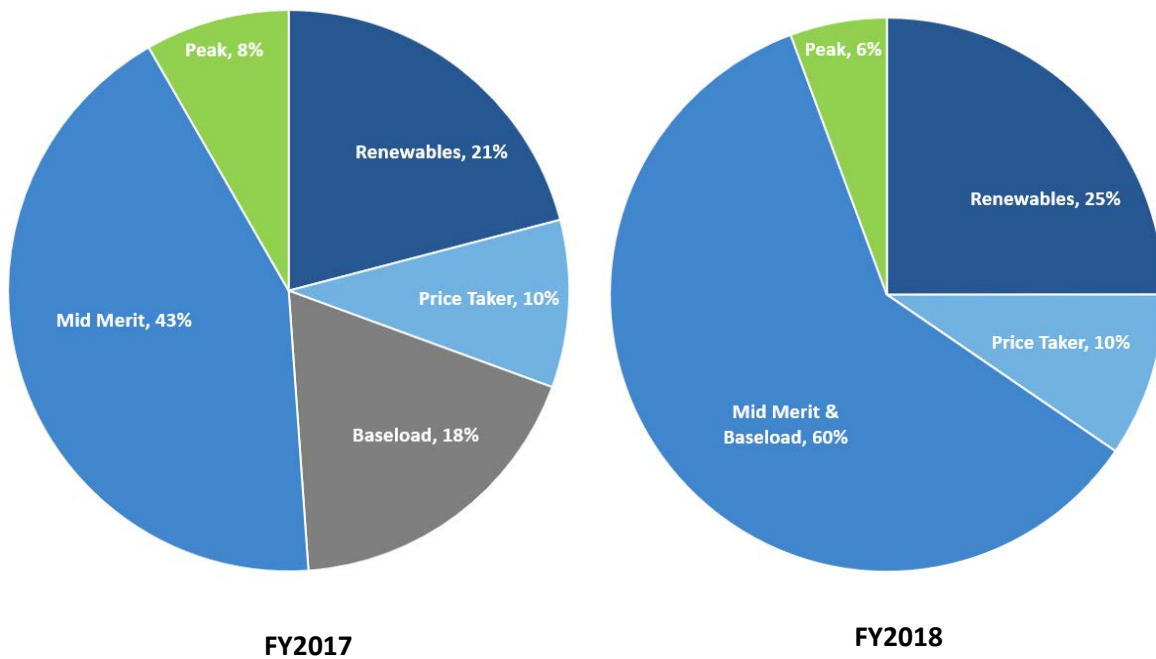


Figure 3.16: Breakdown of total revenues by generation type – Financial year 2017 and FY2018

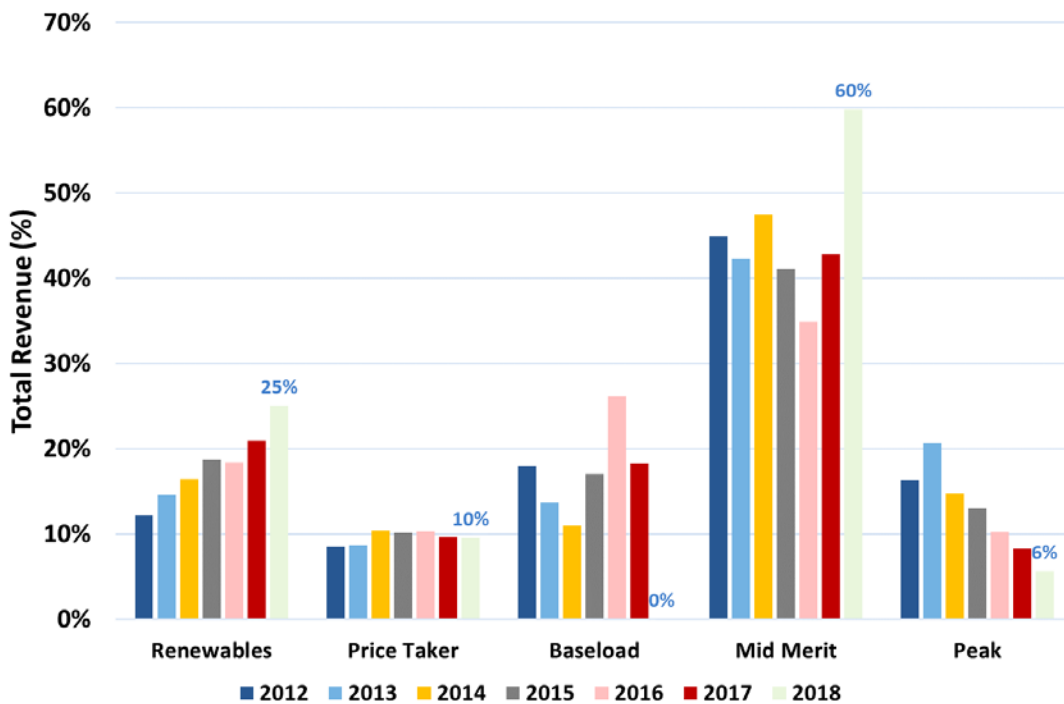
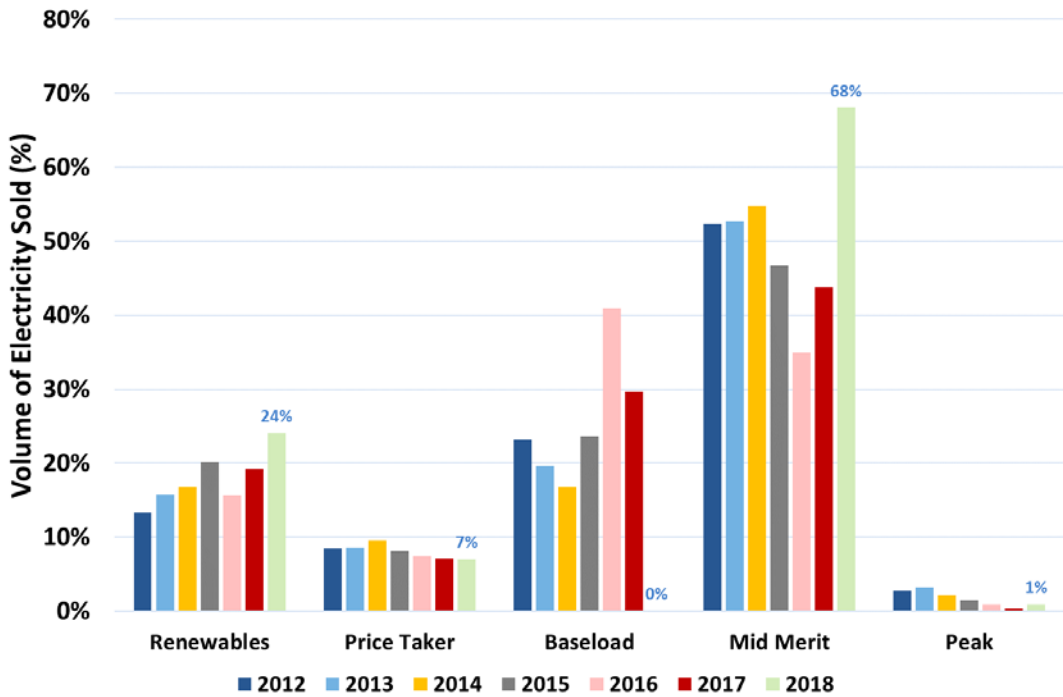


The share of total revenue received by **Mid-Merit** generators dipped from 47% of total revenue for FY2015 to 36% in FY2016 but rose to 43% in FY2017 and 60% in FY2018. A contributor to the rise in FY2018 was the classification of Whitegate and Aghada AD2 plants from Baseload in FY2017 to Mid-Merit in 2018 and the inclusion of Synergen and Aughinish in the Mid-Merit category, as explained at the start of this section.

The share of total revenue earned by Peaking Plants continued to decline from 13% in FY2015, to 10% in FY2016, to 9% in FY2017 and to 6% in FY2018.

Similarly, the share of revenues earned by renewable generation has generally increased every year since FY2012, in line with increasing volumes of electricity produced from renewable sources.

Figure 3.17: Breakdown of total **volumes** and **revenue** by generation **type** – FY2012 to FY2018



3.2.2. Revenues and Costs by Generation Type

Figures 3.20 and 3.21 below show the composition of revenue received by each generation type for FY2017 and FY2018, respectively. Energy revenue from the SEM contributed 65% and 70% of generators’ total revenue overall in FY2017 and FY2018, respectively. **Peaking** plants tend to receive most of their revenue from capacity payments while **Baseload** plants earn the vast majority of their revenue from energy payments from the SEM. The share of energy revenue earned by Peaking plants from the SEM has declined from 46% in FY2014, to 33% in FY2016, 26% in FY2017 and 24% in FY2018. As shown in Figure 3.1.7, this falling trend is mainly driven by declining volumes of electricity sold by peaking plants. **Price-takers** and **Renewable** generators earned a large proportion of their revenue from other revenue sources largely reflecting support mechanisms for renewables and security of supply.

Figure 3.20 Source of revenue as a % of total revenue – Financial year 2017 by generation type

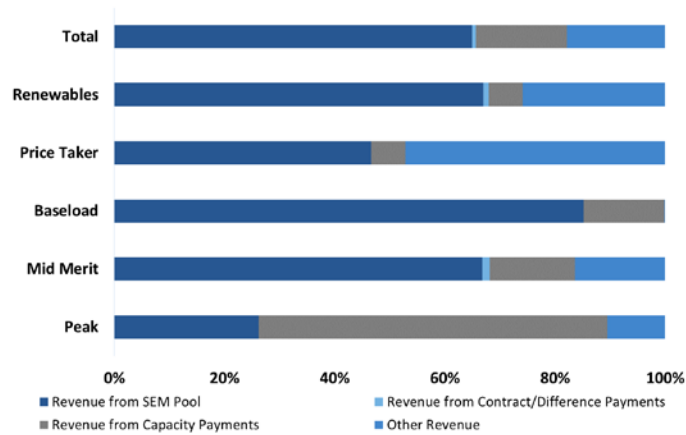
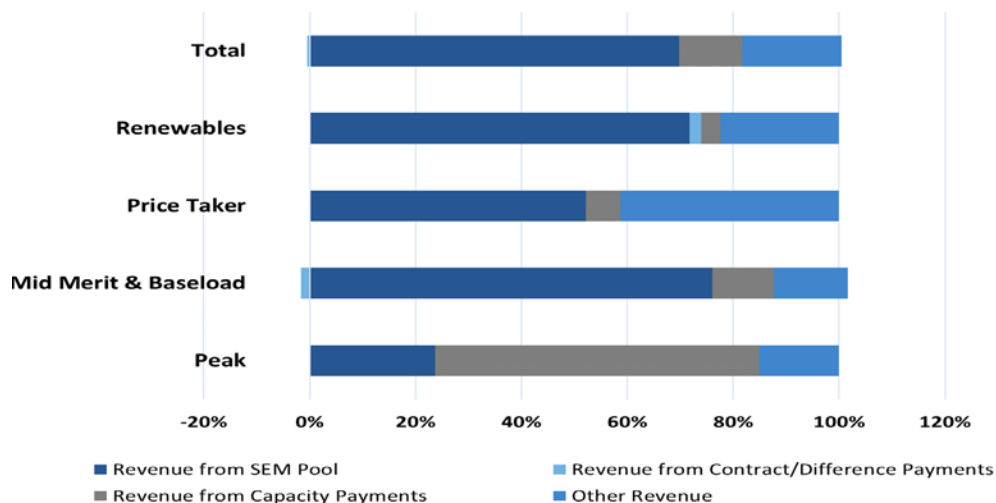


Figure 3.21: Source of revenue as a % of total revenue – Financial year 2018 by generation type



Figures 3.22 and 3.23 below provide a breakdown of costs by generation type for FY2017 and FY2018. Each generation type has a very different make-up of costs. As expected, **Renewable** generators have minimal fuel related operating costs. In contrast the majority of Peak, Mid-Merit, Baseload, and Price Taker costs are fuel related. For example, greater than 80% of **Baseload** plants' costs were fuel related in FY2017. **Renewable** and **Peaker Plants** generators have high proportions of 'Depreciation & Impairment' and 'Interest & Tax' costs out of all generation types, with the latter caused by relatively higher capital and financing costs. Overall, **Mid-Merit** plants reported a significant decrease in Depreciation & Impairment for FY2018, with the small level of reported impairment in the chart reflecting actual reversals – for some plants – of previously reported impairments.

Figure 3.22 Breakdown of generator costs, % of total costs – Financial year 2017 by generation type

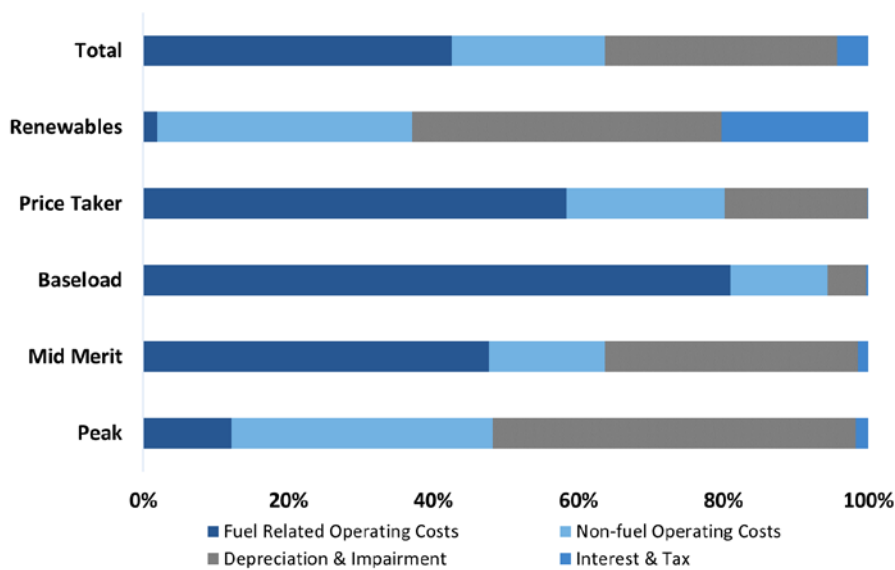


Figure 3.23 Breakdown of generator costs, % of total costs – Financial year 2018 by generation type

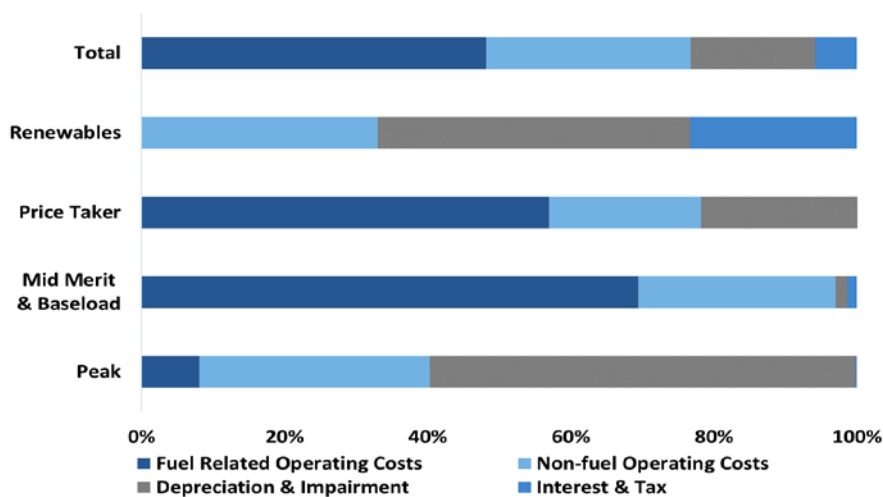


Figure 3.24 below shows the percentage breakdown of generator revenue by generation type between FY2012 and FY2018. The general increase in the share of energy revenues from the SEM in FY2016 and FY2018 ended a downward trend for the majority of generation types. This trend is consistent with the general increases in wholesale market prices in 2017 and in 2018 as previously remarked on in Section 2.2. The share of revenue earned by generators from CfD payments is volatile but has generally decreased in FY2016, FY2017 and FY2018 as electricity prices in the SEM picked up. The proportion of revenue accounted for by capacity payments has dipped for the majority of generation types in FY2018. This may be partly on account of the reduction – commencing Q4 2018 - in the overall capacity-related revenues resulting from the introduction in the capacity remuneration mechanism. Also see Appendix B.2.4. for further breakdowns.

Figure 3.24 Percentage breakdown of revenue by generation type – FY2012 to FY2018¹⁸

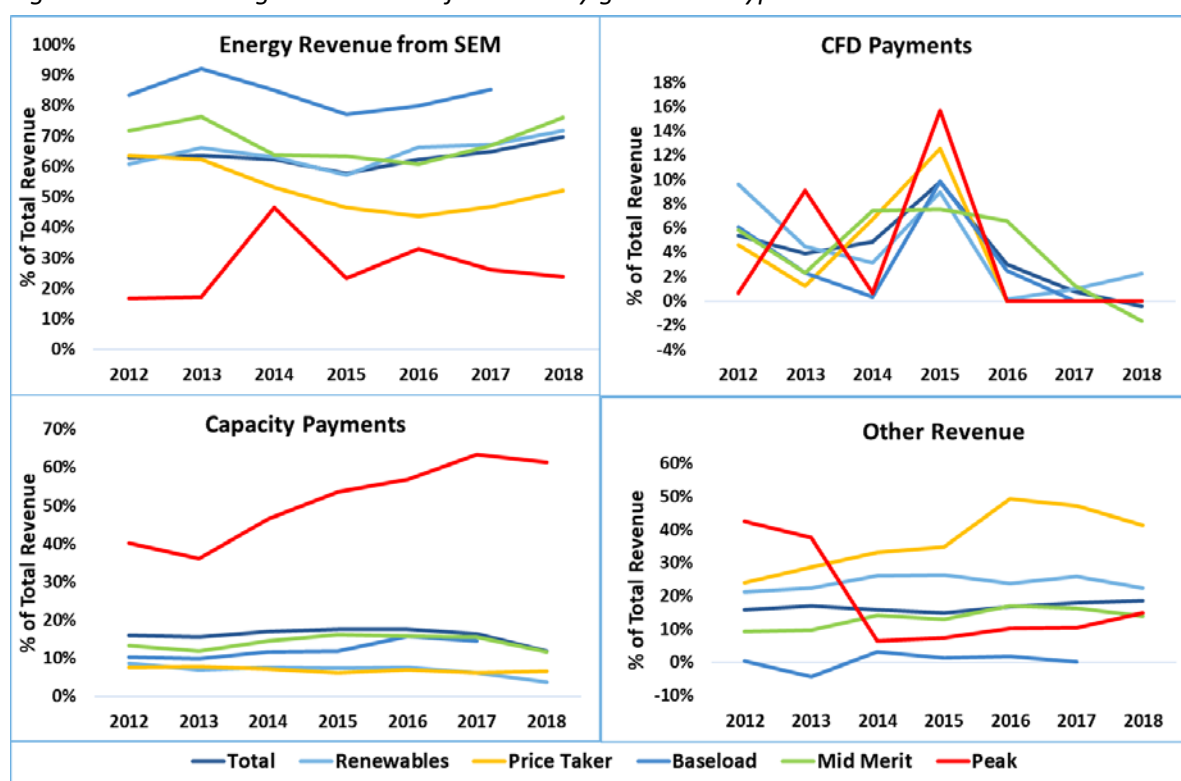
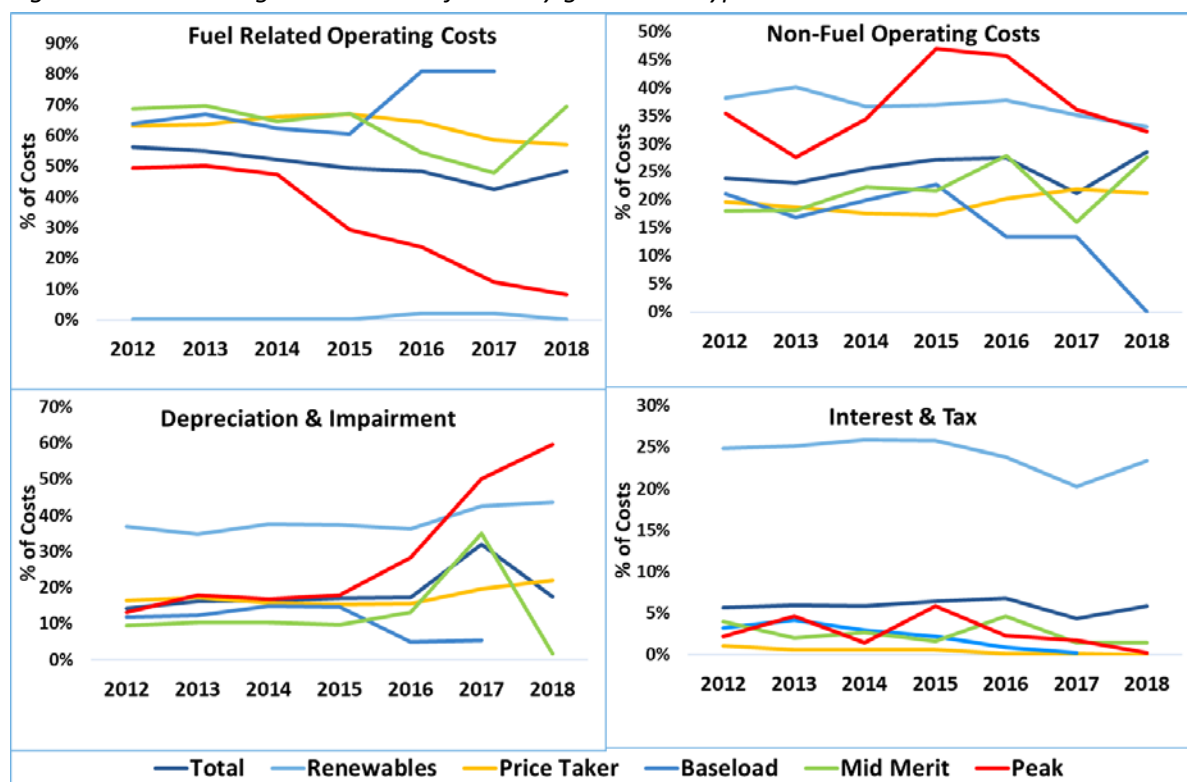


Figure 3.25 below shows the percentage breakdown of generator costs by generation type between FY2012 and FY2018. Up to FY2015, the proportion of each cost category tended to remain reasonably stable over time, when excluding impairment charges, with only a couple of exceptions. However, Mid-Merit plants have reported significant volatility in the share of costs attributed to depreciation & impairment, rising sharply from FY2016 to FY2017 and then dropping back in FY2018. This is partly due to the exceptionally large impairments reported in FY2017 (refer to Section 3.4) and the reversal of some impairments in FY2018. Whereas depreciation & impairment accounted for circa 18% of total costs for Peaking plants in

¹⁸ Note that no units have been designated as Baseload for FY2018. See explanation in section 3.2.

FY2013, FY2014 and FY2015 it increased substantially since then, accounting for circa 50% of costs in FY2017 and 60% in FY2018. Also see Appendix B.2.4 and B.2.5 for further breakdowns.

Figure 3.25 Percentage breakdown of costs by generation type – FY2012 to FY2018¹⁹



3.2.3. Breakdown of financial reporting template results by generation type in MW terms

Table 3.14 and Table 3.15 below provide a breakdown of the reporting template results by generation type on a per MW of installed capacity basis. Note that the Renewables installed capacity figure, mostly comprising wind generation, has been obtained by aggregating the capacity of all wind farms that have submitted financial reporting templates. The capacity of some new windfarms increases incrementally during build out. The total capacity estimated may thus not capture situations where the capacity of some of the wind farms has changed during the period covered by the reporting templates. Windfarms may also be under-represented also on account of the 25MW (in aggregate) ownership threshold for reporting to the RAs.

¹⁹ Note that no units have been designated as Baseload for FY2018. See explanation in section 3.2.

SEM-20-021 Generator Financial Performance Report FY2018

Table 3.11: Breakdown by generation type on a per MW basis – Financial Year 2017

Financial Year 2017	Total	Renewables	Price Taker	Baseload	Mid Merit	Peak
Installed Capacity - MW	11,438	3,045	346	1,397	3,763	2,887
Electricity Sold - MWh per MW installed	2,943	2,122	6,879	7,145	3,919	33
Revenue (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€147	€119	€337	€289	€197	€20
Revenue from Contract/Difference Payments	€2	€2	-	€	€4	-
Revenue from Capacity Payments	€37	€11	€45	€49	€46	€47
Other Revenue	€41	€46	€340	€1	€48	€8
Total Revenue	€226	€178	€722	€339	€295	€75
Operating Costs (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€110	€3.20	€346	€265	€192	€12
Non-fuel Operating Costs	€54	€57	€129	€44	€64	€35
Total Operating Costs	€164	€61	€475	€309	€256	€47
EBITDI (€'000/MW)	€62	€117	€247	€30	€39	€27
Depreciation & Impairment	€83	€69	€116	€18	€140	€49
EBIT (€'000/MW)	(20)	€48	€131	€12	(101)	(22)
Interest & Tax	€11	€33	€1	€1	€6	€1.68
Net Profit (€'000/MW)	(32)	€16	€130	€11	(107)	(24)

Table 3.12: Breakdown by generation type on a per MW basis – Financial Year 2018

Financial Year 2018	Total	Renewables & PS	Price Taker	Baseload	Mid Merit*	Peak
Installed Capacity - MW	12,177	3,711	462	-	5,465	2,539
Electricity Sold - MWh per MW installed	2,608	2,058	4,849	-	3,954	109
Revenue (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000
Revenue from SEM Pool	€167	€141	€314	-	€243	€15
Revenue from Contract/Difference Payments	(1)	€4	-	-	(5)	-
Revenue from Capacity Payments	€29	€7	€40	-	€37	€40
Other Revenue	€45	€44	€249	-	€45	€10
Total Revenue	€239	€196	€603	-	€319	€65
Operating Costs (€'000/MW)	€'000	€'000	€'000	€'000	€'000	€'000
Fuel Related Operating Costs	€104	€1.13	€292	-	€204	€7
Non-fuel Operating Costs	€65	€61	€109	-	€81	€29
Total Operating Costs	€169	€61	€400	-	€285	€36
EBITDI (€'000/MW)	€70	€135	€203	-	€34	€29
Depreciation & Impairment	€38	€66	€112	-	€5	€53
EBIT (€'000/MW)	€32	€69	€91	-	€29	(25)
Interest & Tax	€13	€35	(.4)	-	€4	€1.17
Net Profit (€'000/MW)	€20	€34	€91	-	€25	(25)

*Note: Two Baseload plants are included in the Mid-Merit category for FY2018.

“€” indicates a positive value which is in the range 0/MWh to+ 0.5/MWh
“(€)” indicates a negative value which is in the range 0/MWh to -0.5/MWh
“-” generally indicates that no figure was reported for this breakdown category.

A crucial factor affecting the revenue-per-MW of installed capacity is the utilisation or load factor of each unit. With the exception of Peaker and Price Taker generation types, all other generator types have experienced an increase in their total revenue per MW of installed capacity in FY2018 compared to FY2017. Figures 3.26 and 3.27 provide a graphical breakdown of revenues into different costs and net profit, by generation type on a per MW of installed capacity basis for FY2017 and FY2018. **Price Taker** plants earn the highest revenue per MW of capacity, surpassing €600,000 per MW in FY2017 and FY2018. In turn, they also have the highest costs and net profit per MW of capacity. **Peak** generators have the lowest revenue per MW of capacity, which is a result of their low load factor.

The trend from 2012 to 2018 in the breakdown of the revenues and costs of each of the Type categories of generation (Baseload, Mid-Merit, Peak, Renewable, Price Taker) are shown graphically in the Appendix: B.2.1 to B.2.5.

Figure 3.26 Costs and net profit per MW of installed capacity– **FY2017** by generation **type**

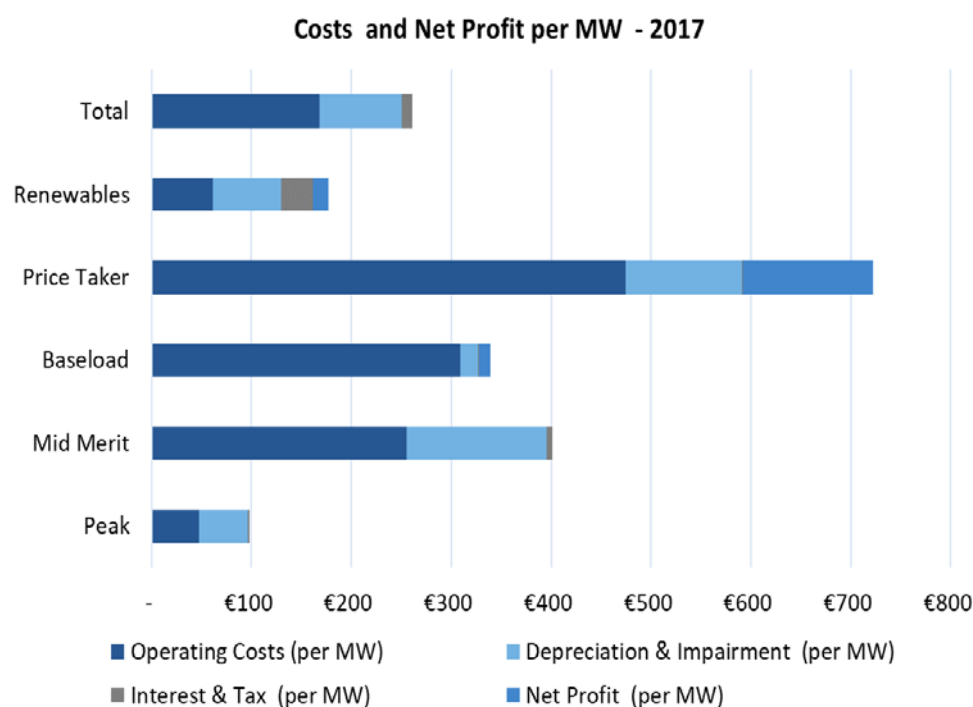
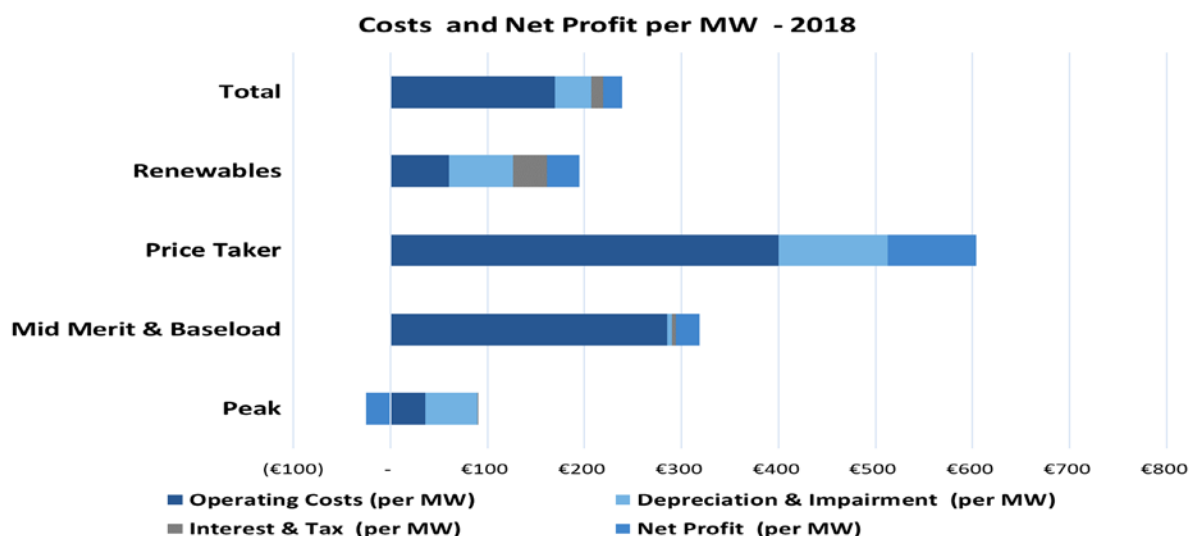


Figure 3.27 Costs and net profit per MW of installed capacity – **FY2018** by generation **type**



3.2.4. Breakdown of financial reporting template data in MWh of electricity sold – by generation type

Table 3.13 and Table 3.14 provide a breakdown of financial reporting template data in MWh of electricity sold by generation type.

Apart from Peakers, the **Total** revenue per MWh for all of the other generation-type categories increased by more than 10% from €76/MWh in FY2017 to €92/MWh in FY2018.

This is consistent with the general trend of increasing wholesale market prices in these periods. However, this is countered by total/overall operating costs per MWh increasing from €55/MWh in FY2017 to €65/MWh in FY2018.

Large impairments - and subsequent reversals - had a distortionary impact on the trend in net profitability. Volatile net profit per MWh have resulted from the reporting of large impairment charges for FY2017 and FY2018. This is very evident for FY2017 when very high levels of impairment resulted in a **Total** net profit per MWh of minus €11/MWh (i.e. overall, a net loss of €11 per MWh sold). However, significant reductions in the levels of impairments - including a reversal²⁰ of impairments - as reported to the RAs for FY2018, especially for Baseload, Mid-Merit and Peak generator types, resulted in an increase in the **Total/overall** net profit per MWh to €7/MWh in FY2018.

Peakers have experienced volatility in net profit (per MWh) on account of reported levels of impairment. On a per MWh basis, Peakers earned net profit of €131/MWh in FY2016, net loss per MWh of €718/MWh in FY2017 and net loss of €228/MWh in FY2018. It is also notable that the revenues and costs in relation to Peak generators are less correlated than other generation types with the quantity of electricity sold into the market. Hence the per MWh figures tend to be very sensitive to changes in the quantity of electricity sold into the market.

Renewables achieved a net profit of €6/MWh in FY2017, increasing to €16/MWh in FY2018.

Mid-Merit plants showed a marginal net loss in FY2015, a net loss of €6/MWh in FY2016 and €27/MWh in 2017. In FY2018 net profit of €6/MWh was reported, noting that two baseload plants were included in the Mid-Merit category in FY2018.

²⁰ Reporting of negative impairments is reflective of the reversal – or partial reversal - of previously accounted and reported impairments.

SEM-20-021 Generator Financial Performance Report FY2018

Table 3.13: Breakdown in MWh terms by generation type – FY2017

Financial Year 2017 per MWh of electricity sold	Total	Renewables	Price Taker	Baseload	Mid Merit	Peak
Volume of Electricity Sold - MWh	33,730,821	6,528,103	2,380,199	9,981,808	14,746,107	94,604
Revenue	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Revenue from SEM Pool	€50	€55	€49	€40	€50	€596
Revenue from Contract/Difference Payments	€1	€1	-	€	€1	-
Revenue from Capacity Payments	€12	€4	€7	€7	€12	€1,439
Other Revenue	€13	€20	€49	€	€12	€239
Total Revenue	€76	€79	€105	€47	€75	€2,274
Operating Costs	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Fuel Related Operating Costs	€37	€1.49	€50	€37	€49	€362
Non-fuel Operating Costs	€18	€24	€19	€6	€16	€1,080
Total Operating Costs	€55	€26	€69	€43	€65	€1,443
EBITDI	€21	€53	€36	€4	€10	€832
Depreciation & Impairment	€28	€32	€17	€2	€36	€1,498
EBIT	(€7)	€21	€19	€2	(€26)	(€666)
Interest & Tax	€4	€15	€0.08	€	€1.42	€51.29
Net Profit	(€11)	€6	€19	€2	(€27)	(€718)

Table 3.14: Breakdown in MWh terms by generation type – FY2018

Financial Year 2018 per MWh of electricity sold	Total	Renewables & PS	Price Taker	Baseload	Mid Merit*	Peak
Volume of Electricity Sold - MWh	31,763,249	7,638,088	2,240,192	-	21,607,850	277,119
Revenue	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Revenue from SEM Pool	€64	€68	€65		€61	€141
Revenue from Contract/Difference Payments	(€)	€2	-		(€1)	-
Revenue from Capacity Payments	€11	€4	€8		€9	€364
Other Revenue	€17	€21	€51		€11	€89
Total Revenue	€92	€95	€124		€81	€594
Operating Costs	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh	€/MWh
Fuel Related Operating Costs	€40	€0.06	€60		€52	€66
Non-fuel Operating Costs	€25	€30	€22		€21	€265
Total Operating Costs	€65	€30	€83		€72	€331
EBITDI	€27	€66	€42		€9	€263
Depreciation & Impairment	€14	€32	€23		€1	€489
EBIT	€12	€34	€19		€7	(€226)
Interest & Tax	€5	€17	(€0.09)		€1.05	€1.55
Net Profit	€8	€16	€19		€6	(€228)

*Note: Two Baseload plants are included in the Mid-Merit category for FY 2018.

3.3. REVENUE AND COST BREAKDOWN – FY2012 TO FY2018

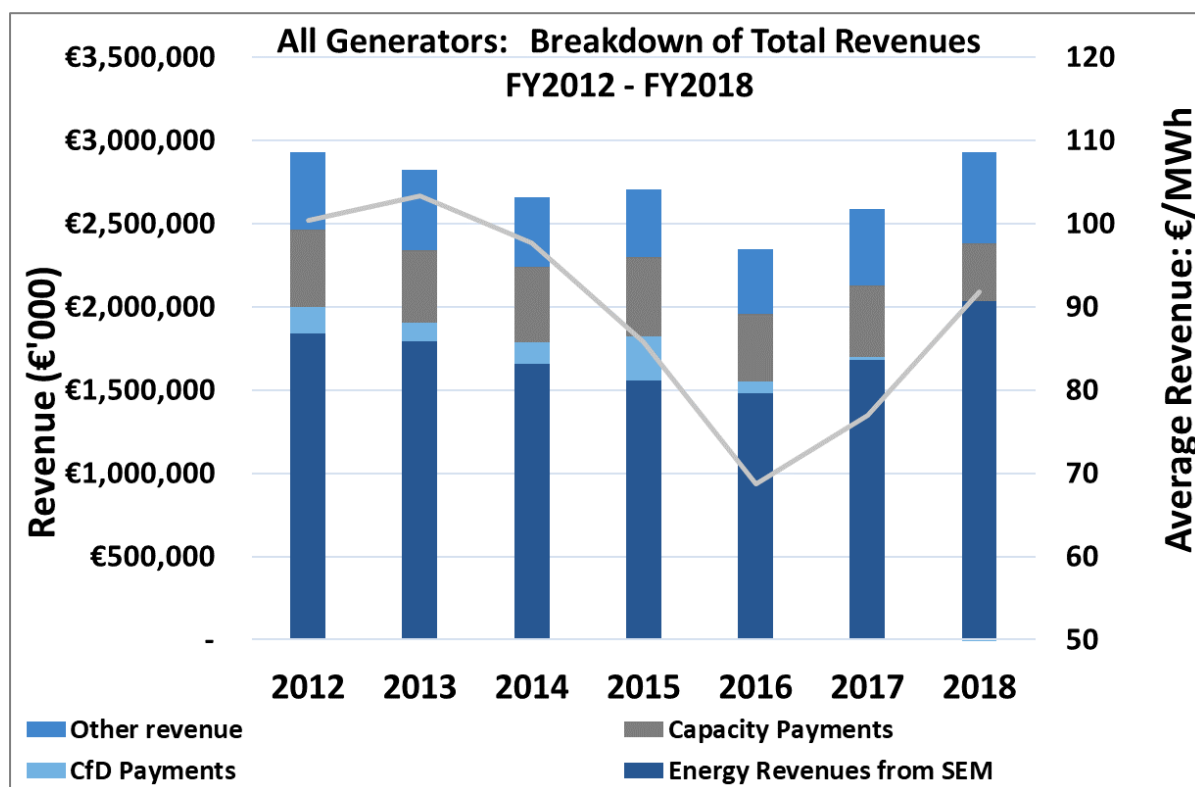
Figures 3.28 and 3.29 present a breakdown in revenues and costs across all generators between FY2012 and FY2018. Total revenues have been on a downward trend from FY2012 to FY2016 in line with decreasing wholesale energy and gas prices over the same period. This has been matched by a decrease in costs of a similar magnitude.

In FY2017 and FY2018 total revenues increased in line with an upturn in wholesale energy prices, which in turn is consistent with an upturn in wholesale gas prices.

As can be seen from Figure 3.28 below, energy revenues from the SEM are the largest contributor to total generator revenues. Capacity payments and revenue from “other” sources tend to contribute similar, but smaller, amounts to total revenue. Contract and CfD payments are the smallest revenue stream out of those studied, contributing less than 4% of total revenues in FY2016, FY2017 and FY2018.

The average revenue per MWh of electricity sold was likewise on a significant downward trend up to FY2016, falling to €70/MWh in FY2016, before picking up to €92/MWh in FY2018.

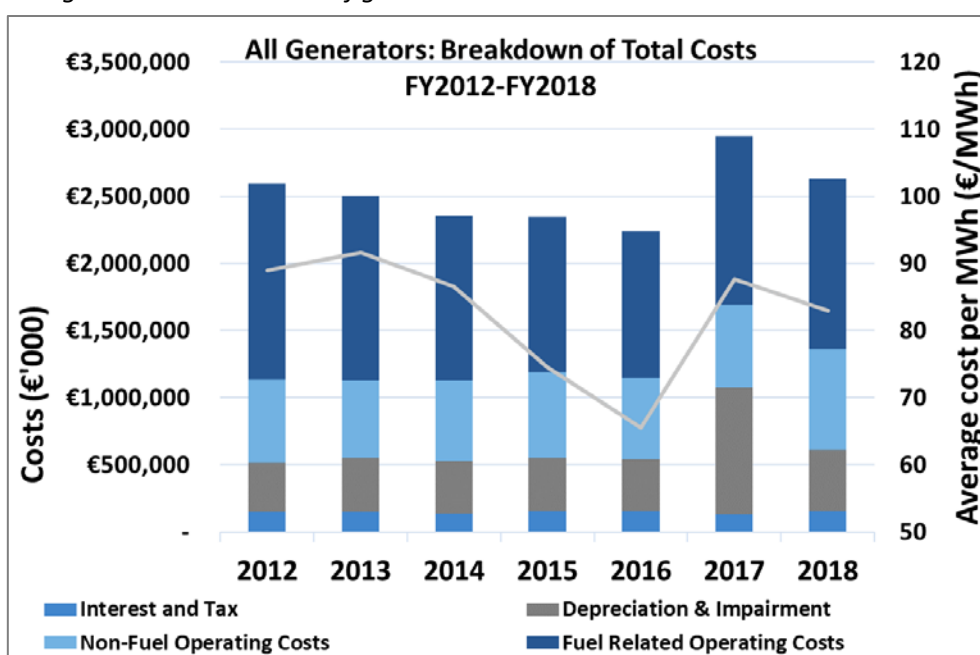
Figure 3.28: Breakdown of generator total revenues from FY2012 to FY2018



Turning to generator costs, as shown in Figure 3.29, total costs were also on a downward trend from FY2013 to FY2016. Average cost per MWh of electricity sold decreased from €92 in FY2013 to €65 in FY2016 but increased to circa €88/MWh in FY2017 before decreasing to €83/MWh in FY2018. Fuel related operating costs are the most significant cost category followed by non-fuel related operating costs. Interest & tax costs are fairly negligible, only accounting for less than 6% of total costs in FY2016, FY2017 and FY2018. Large impairments reported in FY2017 - and partial reversals in FY2018 - had a distortionary impact on the trend in (all) costs and not profits. This is very evident for FY2017 when very high levels of impairment resulted in a **Total** net profit per MWh of minus €11/MWh (i.e. overall, a net loss of €11 per MWh sold). However, significant reductions in the levels of impairments - including a reversal of impairments - as reported to the RAs for FY2018, especially for Baseload, Mid-Merit and Peak generator types, resulted in an increase in the total/overall net profit per MWh to €7/MWh in FY2018.

A more detailed breakdown of revenues and costs for each fuel source and for each generation type is presented in Appendix B.

Figure 3.29: Breakdown of generator total costs between FY2012 and FY2018

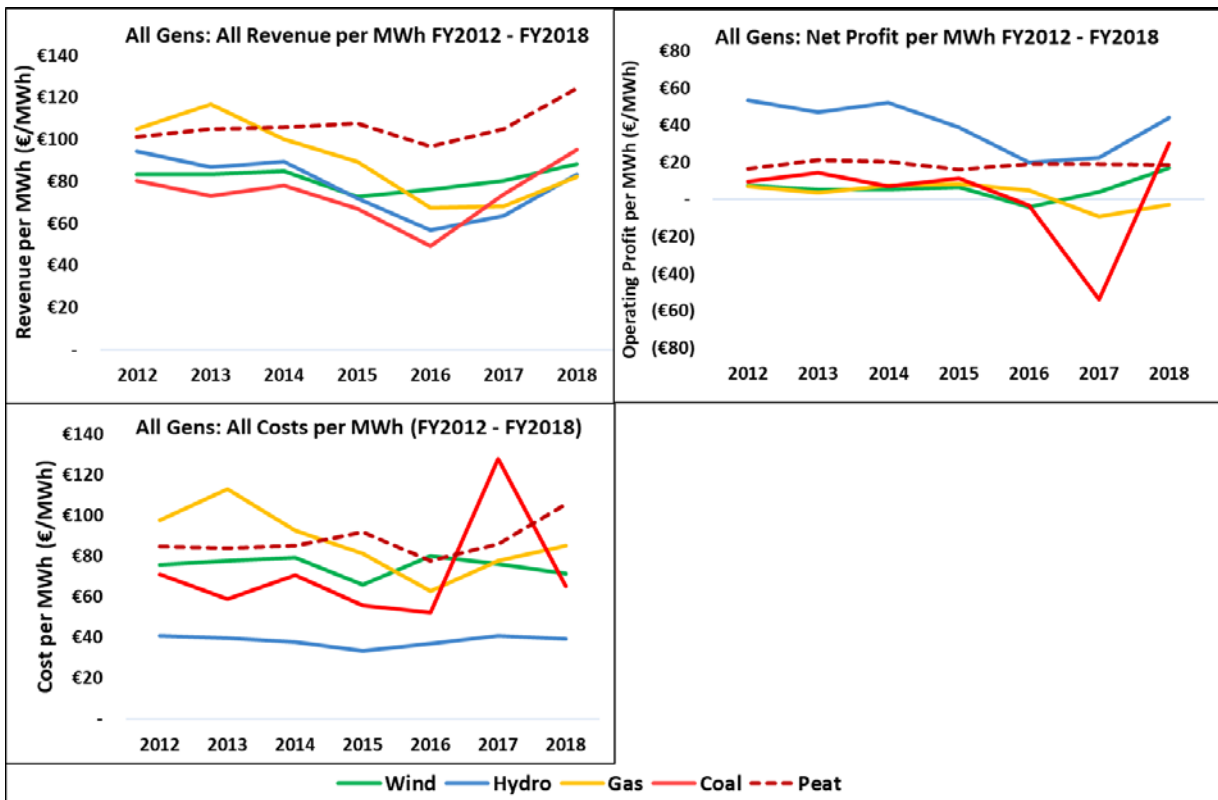


For each fuel source category of generation, Figure 3.30 below presents the trend - per MWh of electricity sold - in: 1) All Revenues; 2) All Costs²¹ and 3) Net Profit.

Since FY2016, the revenues (from all sources) per MWh for generators of all fuel source categories have increased. However, the costs per MWh for **Peat** and **Gas** plants – in aggregate – also increased. This resulted in relatively static net profits for peat, but net losses (per MWh) for **Gas** plants. The impact of impairment is particularly evident in the spike in cost/MWh (see footnote) of **Coal** generation in FY2017, which in FY2018, coinciding with lower reported levels of impairment, reverted back to nearer the general 2012-2016 trend.

²¹ "All Costs" includes fuel and non-fuel operating costs, depreciation, impairment, interest and tax.

Figure 3.30: Trend in **All Revenue, All Costs and Net Profit per MWh** from FY2012 to FY2018 by **fuel type**



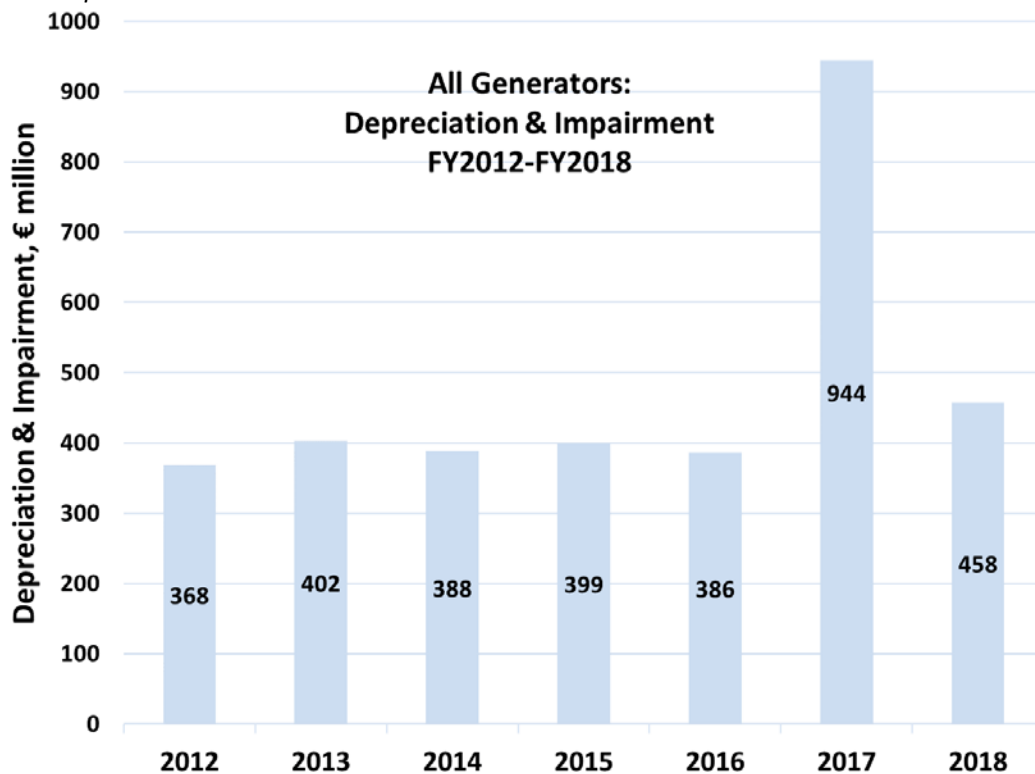
3.4. IMPAIRMENT

In FY2017 there were marked increases in the levels of reported impairment, especially by mid-merit and peaker plants. In aggregate, the exceptionally large level of impairment was unprecedented in the SEM and had a very significant effect on the resulting negative net profitability for FY2017. However, as is evident in Figure 3.31 below, the overall level of reported Depreciation and Impairment reduced by €486 million from €994 million in FY2017 to €458 million in FY2018 resulting in a return to an overall FY2018 net profit margin of 8% for all generation.

The impairment component in particular reduced from €520 million in FY2017 to €73 million in FY2018, a reduction of €447 million. This includes reporting of some negative impairments in FY2018, indicating potential partial reversal²² of some impairments reported for FY2017.

The surge in reported impairments in FY2017 played a major role in the change in overall net profit margin between the two years. When impairments are excluded the overall net profit increased from 6% in FY2017 to 10% in FY2018 driven by higher wholesale prices, market revenue and operating profit.

Figure 3.31: Impairment costs between FY2012 and FY2018



²² Reporting of negative impairments may be reflective of the reversal, or partial reversal, of previously accounted and reported impairments.

4. SPARK AND DARK SPREAD ANALYSIS

Of significance to thermal generators are spreads between power prices and fuel/input costs. This section presents the following two spreads:

- **Clean Spark Spread:** The spark spread is the theoretical gross margin of a gas-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity, with an efficiency of 49.13%. The *clean spark spread* (which is also known as the "*spark green spread*") reduces the spark spread by taking the cost of carbon into account.
- **Dark Green Spread:** The dark spread is the gross margin of a coal plant accounting for the coal input and the assumed efficiency level of 35%; the *dark green spread* (which is also known as the "*clean dark spread*") reduces the dark spread by taking the cost of carbon into account.

These spreads are the theoretical gross income of a plant selling a unit of electricity, which must recover all of its additional costs (operation, maintenance, capital) from this spread to be able to break even or earn a profit.



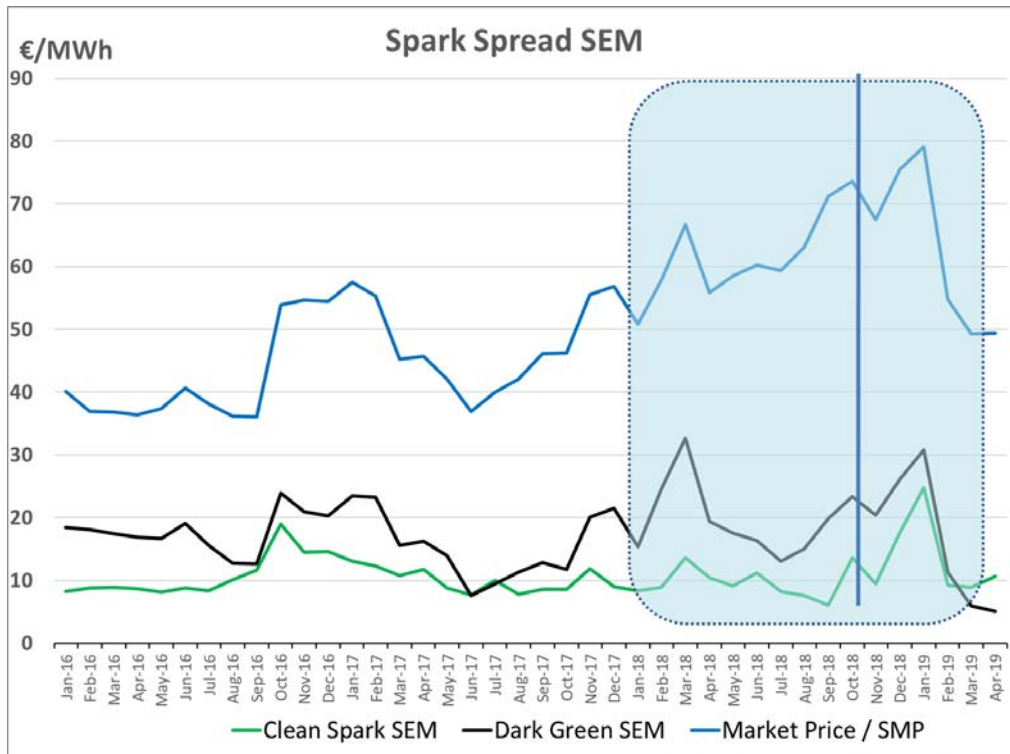
The clean/green spreads include the costs of carbon permits as demonstrated through spot prices of the European Carbon Emission Allowances.

Figure 4.1 presents the clean spark spread (for gas) and the dark green spread (for coal) levels in the SEM over the period 2012 to March 2019.

When analysing and comparing spreads, it is worth considering the following points:

- Higher/lower spreads do not necessarily translate into higher/lower generator profits. This is because the total revenue earned from energy production depends on the level of utilisation of the plant (i.e. the production volume). When the utilisation level goes down, the generator is likely to require a higher spread in order to cover its fixed costs, start up and maintenance costs.
- The gross profit of each individual thermal generator is also related to the individual generator's specific efficiency level rather than the assumed standard mid-range generator efficiency level of 49.13% used in the aggregated analysis in this report.

Figure 4.1: Spark spread - SEM (2012 to Q1'2019)



- Capacity payments or fuel transportation costs have not been included in the calculation of the SEM spark spreads. This is consistent with the methodology used in common practice.
- In relation to the profitability of gas generation, the clean spark spread – calculated on the basis of monthly averages - is shown in Figure 4.1. The spread generally lay within the range €8-€12 per MWh over the FY2017 and FY2018 periods, except for Q1 2019 when it increased for a period up to circa €24/MWh. The variation in spread would therefore – in general - indicate a small impact on year-on-year change in profitability of gas generators for the FY2017 and FY2018 periods.
- The peaks in Q1 2018 and Q1 2019 in the dark green spread – calculated on the basis of monthly averages - is a contributory factor in potentially greater energy revenues for coal generation over the same period, but only where coal is in merit.

APPENDIX A FINANCIAL TERMS

The following are brief explanations of financial terms and abbreviations, as relate to the context and scope of this report.

Amortization refers to the process of writing down the value of either a loan or an intangible asset.

Depreciation is a method of allocating the cost of an asset over its useful life. It reflects the decrease in the value of the asset over time due to wear and tear.

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

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

Gross Profit: the total generator revenue received from all sources minus the fuel and non-fuel operating costs.

Gross Margin: gross profit expressed as a percentage of total revenue.

Impairment of an asset reflects a substantial reduction in the estimated value of the asset. For a non-current asset, it is included under expenses when the book value exceeds the future cash flow or benefit of the asset. For an intangible asset, it is included under expenses when the asset is deemed less valuable than is stated on the balance sheet after amortization.

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

Operating Profit 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 as a percentage of total revenue.

APPENDIX B BREAKDOWN OF REVENUE AND COSTS

B.1 Breakdown by Fuel Source

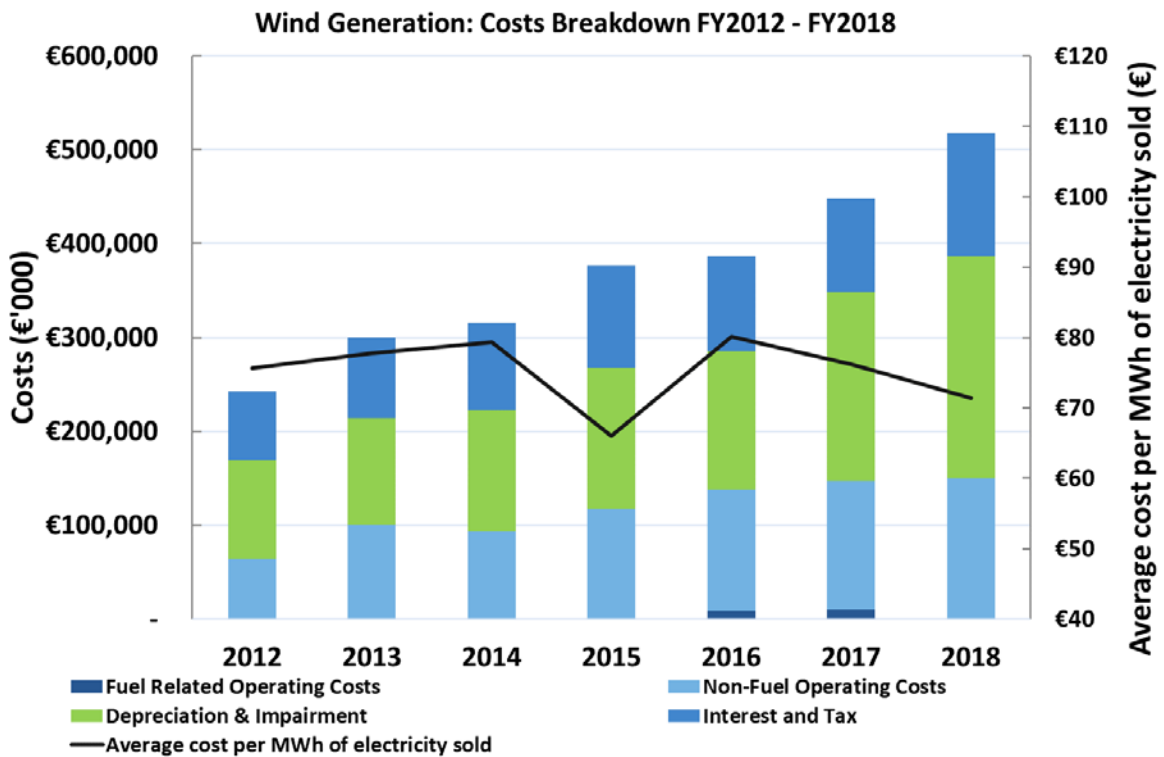
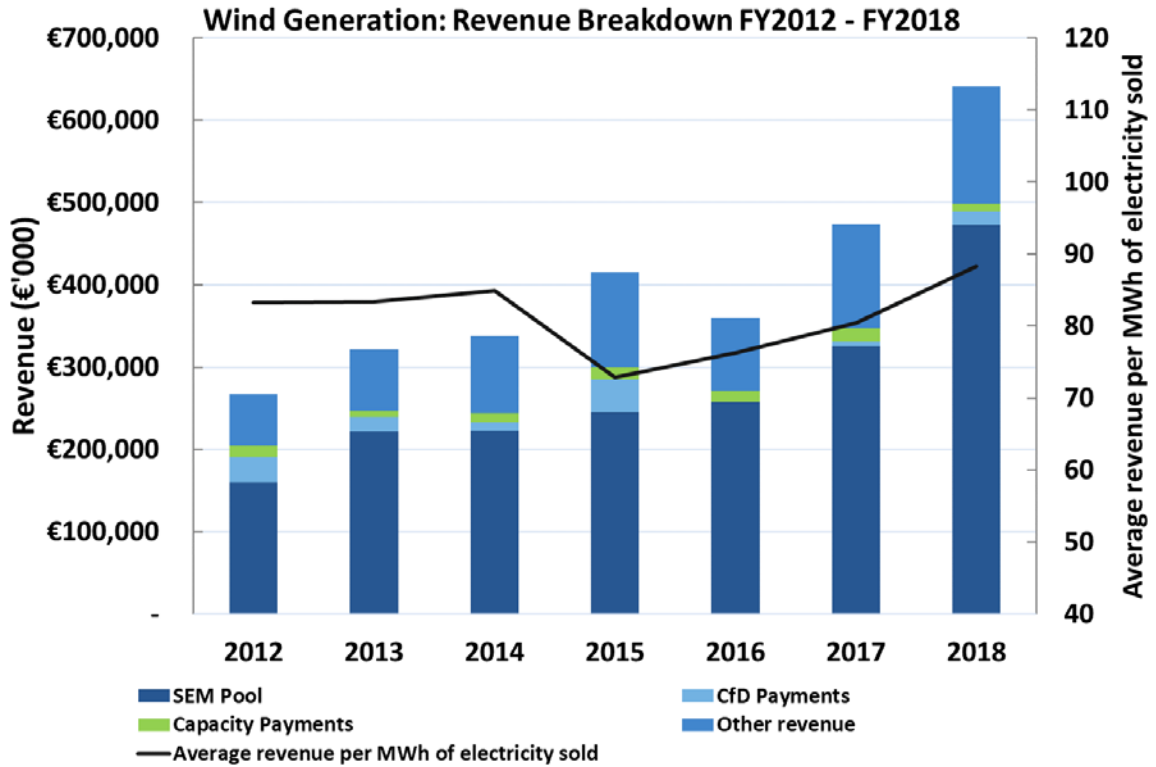
This section presents revenue and costs breakdown by fuel source from FY2012 to FY2018.

In each of the revenue breakdown charts, the average revenue for each MWh of electricity sold is plotted to give an indication of whether revenue is moving in line with the volume of electricity generation.

Similarly, in each cost breakdown chart, the average costs for each MWh of electricity sold is plotted to give an indication of whether total costs are moving in line with the volume of electricity generation.

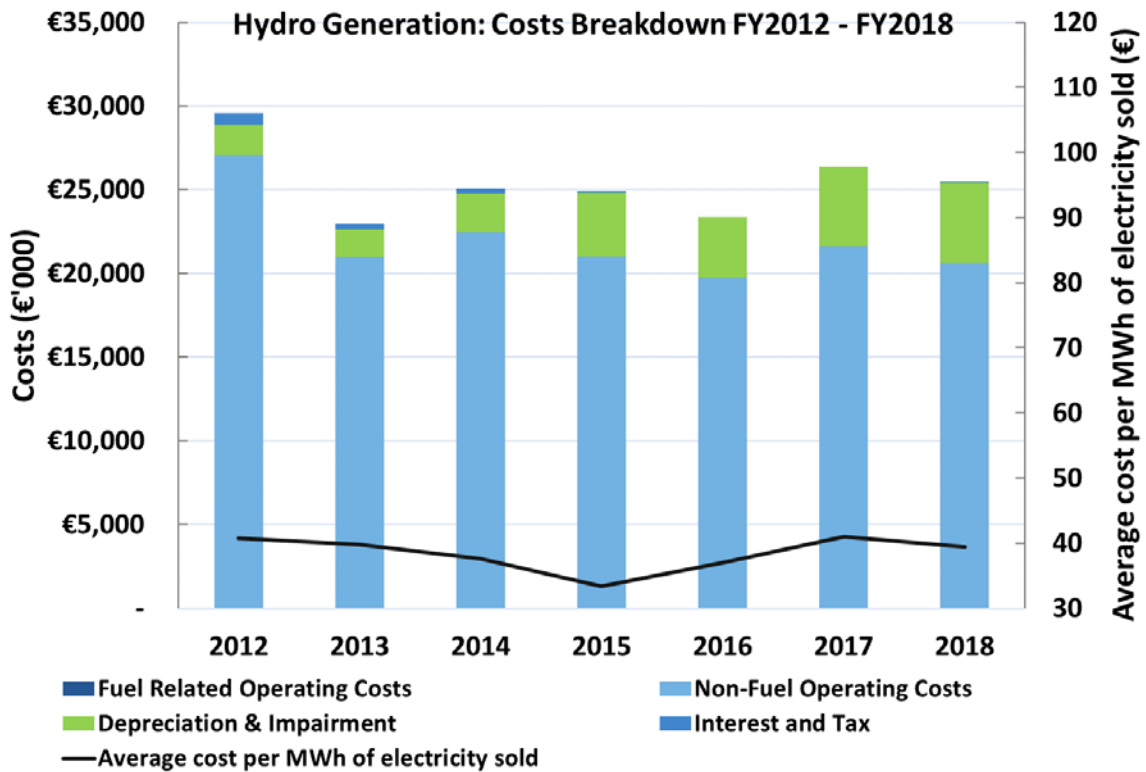
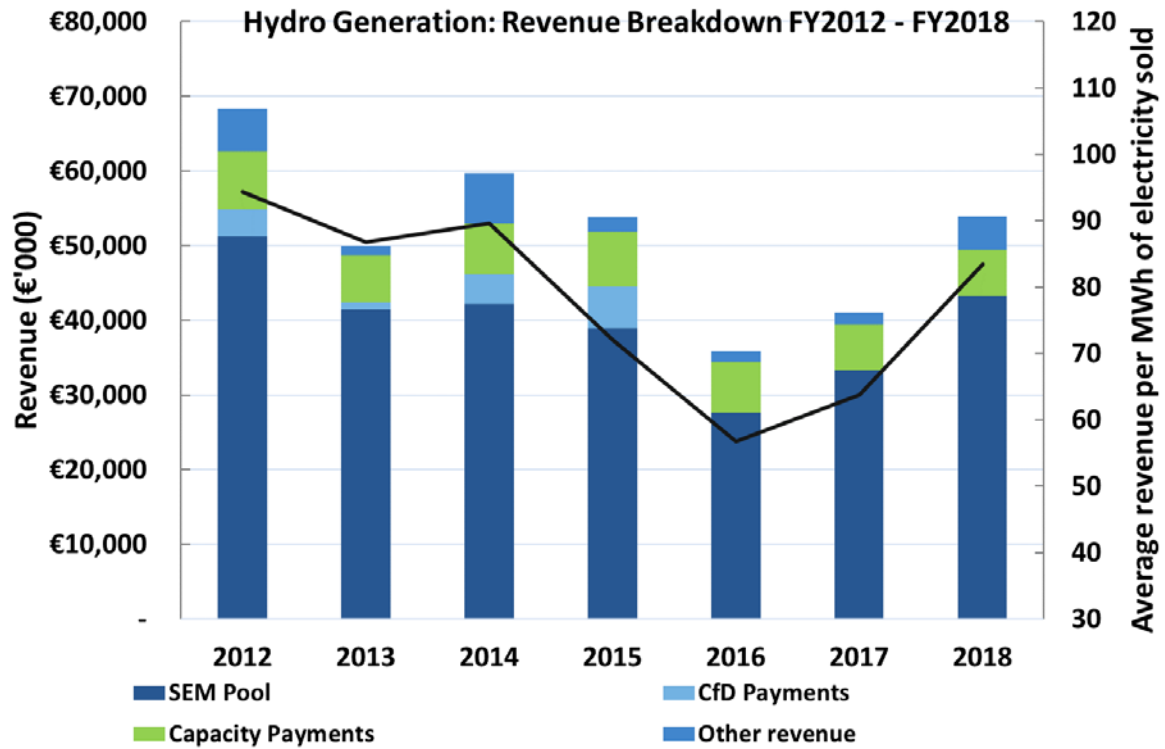
B.1.1 Wind Generation

Figure B.1.1: Wind Generation – Revenue and Costs Breakdown FY2012 to FY2018



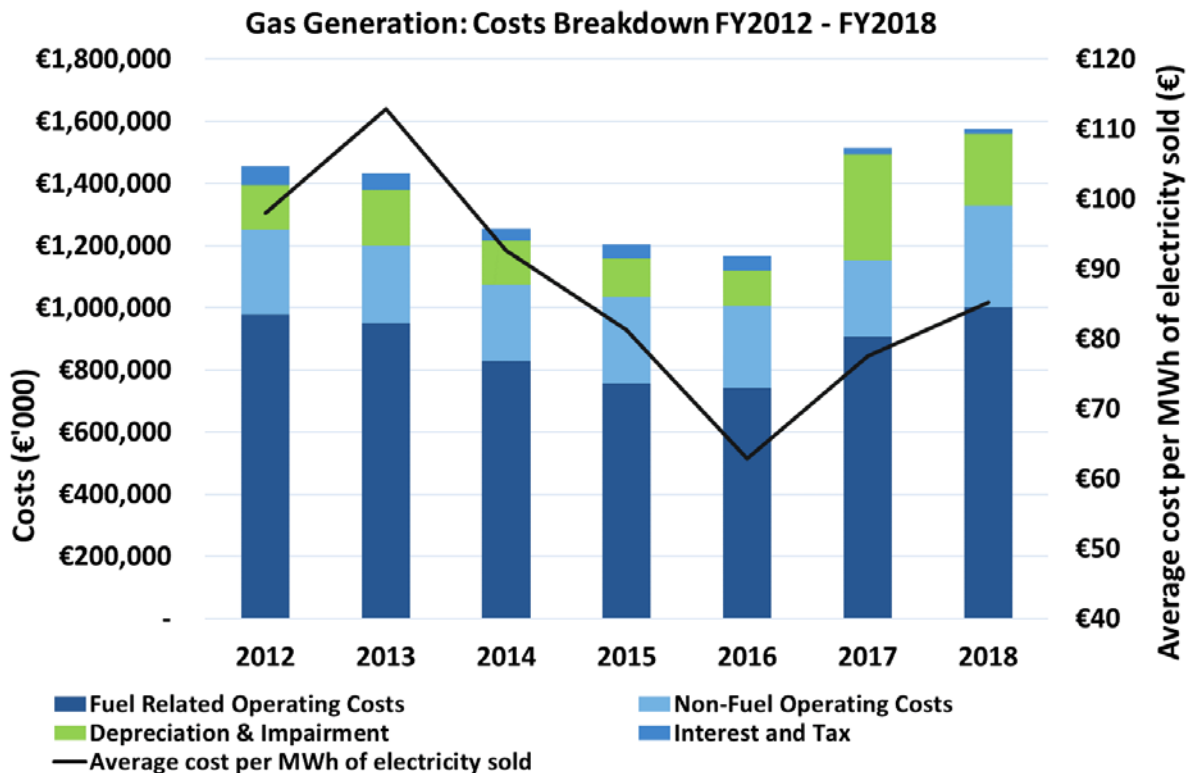
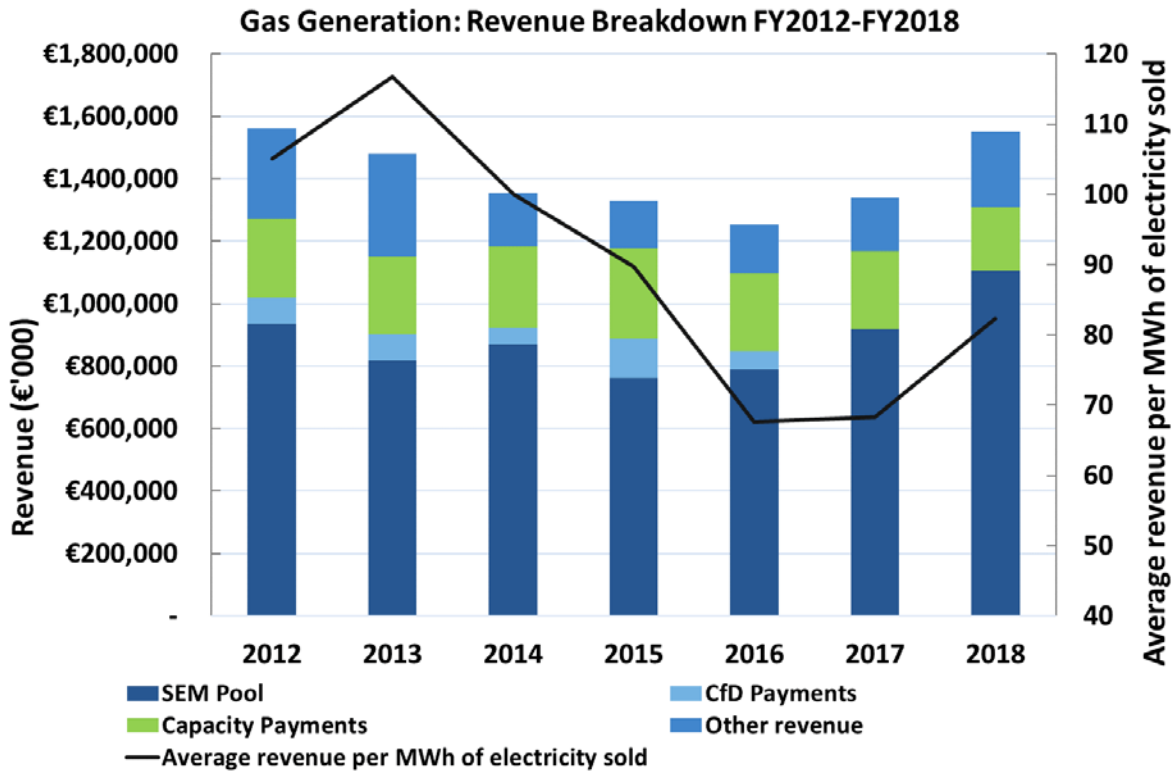
B.1.2 Hydro Generation

Figure B.1.2: Hydro Generation – Revenue and Costs Breakdown FY2012 to FY2018



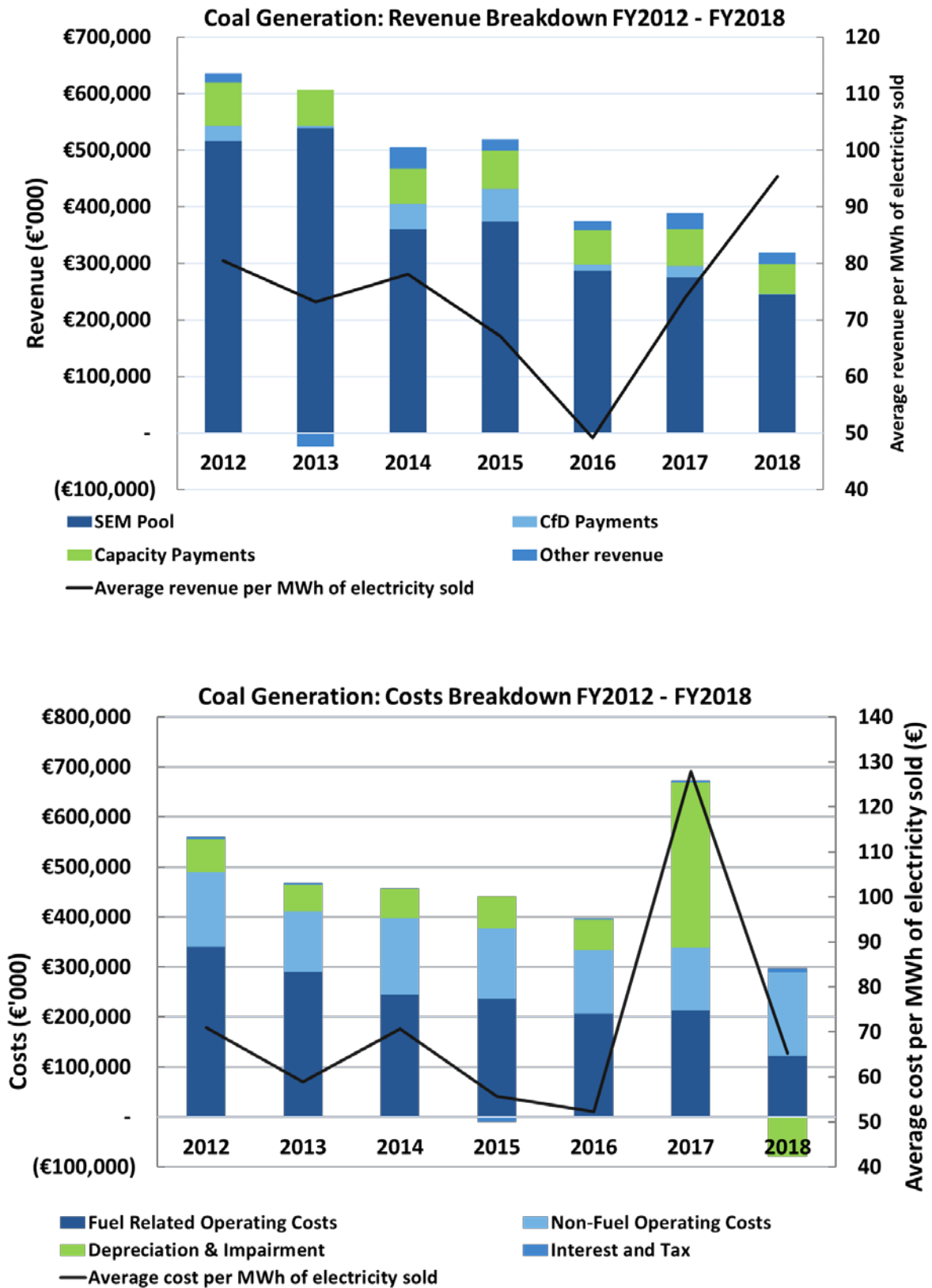
B.1.3 Gas Generation

Figure B.1.3: Gas Generation – Revenue and Costs Breakdown FY2012 to FY2018



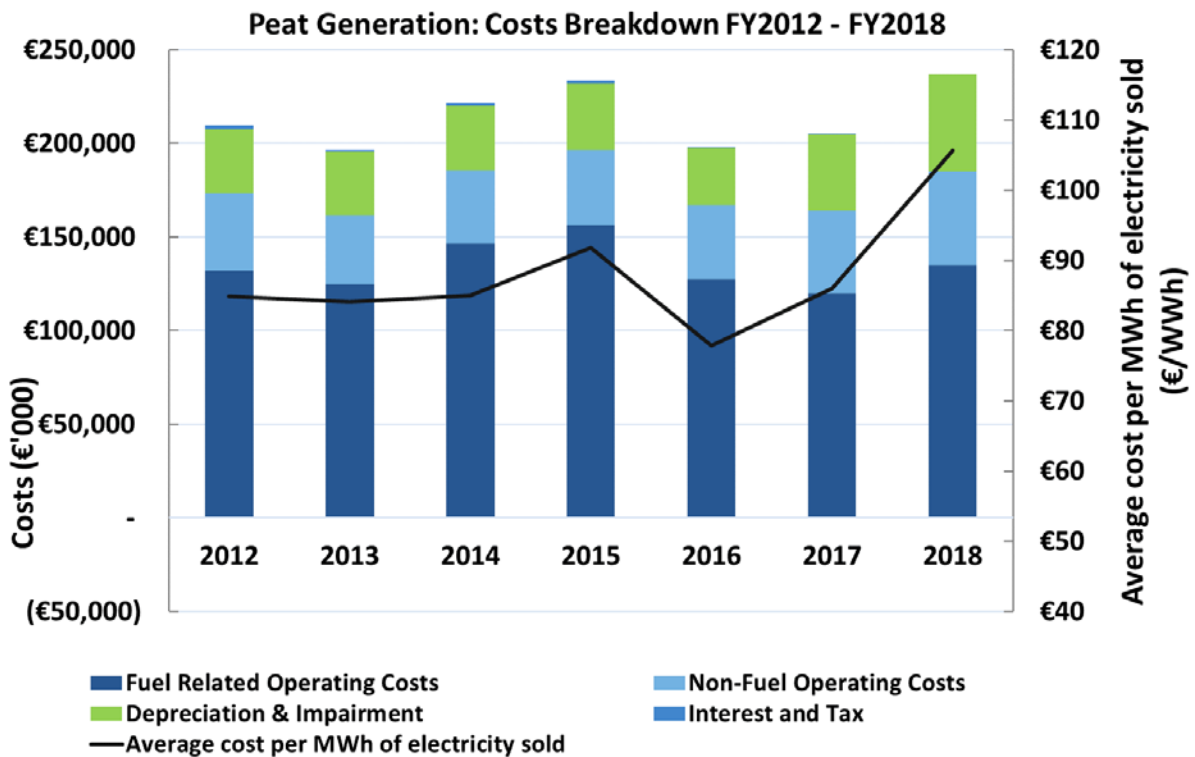
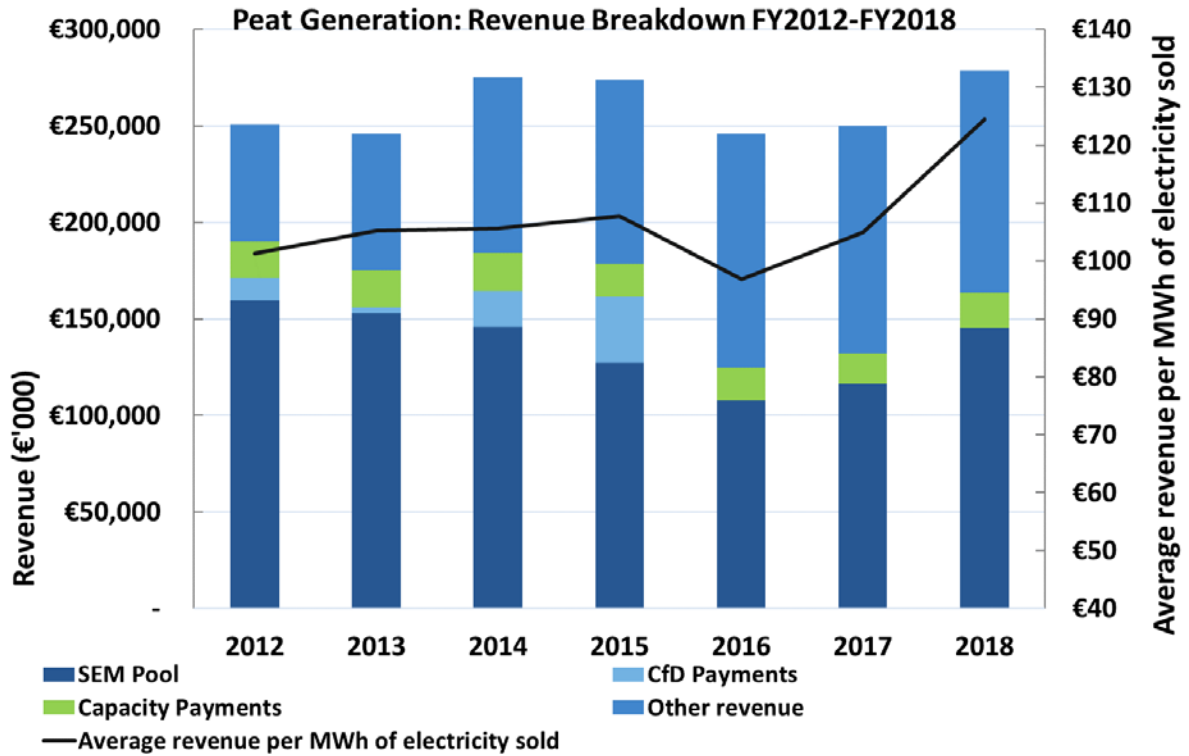
B.1.4 Coal Generation

Figure B.1.4: Coal Generation – Revenue and Costs Breakdown FY2012 to FY2018



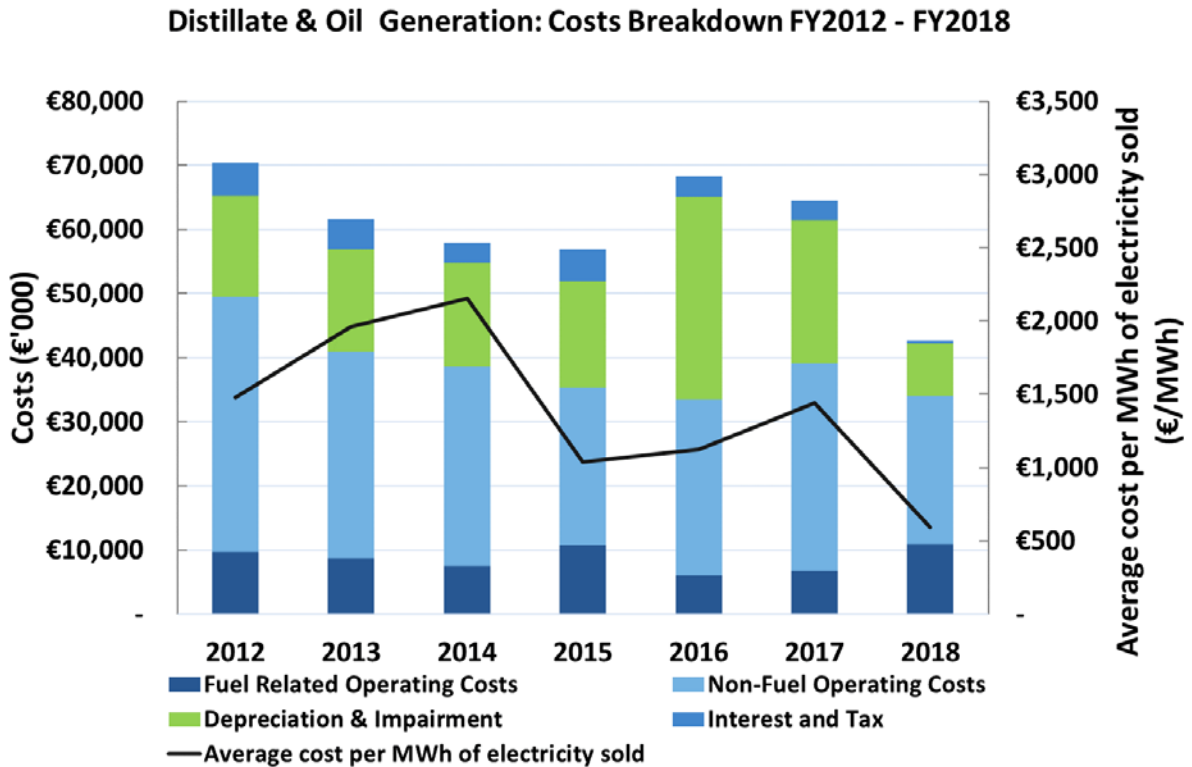
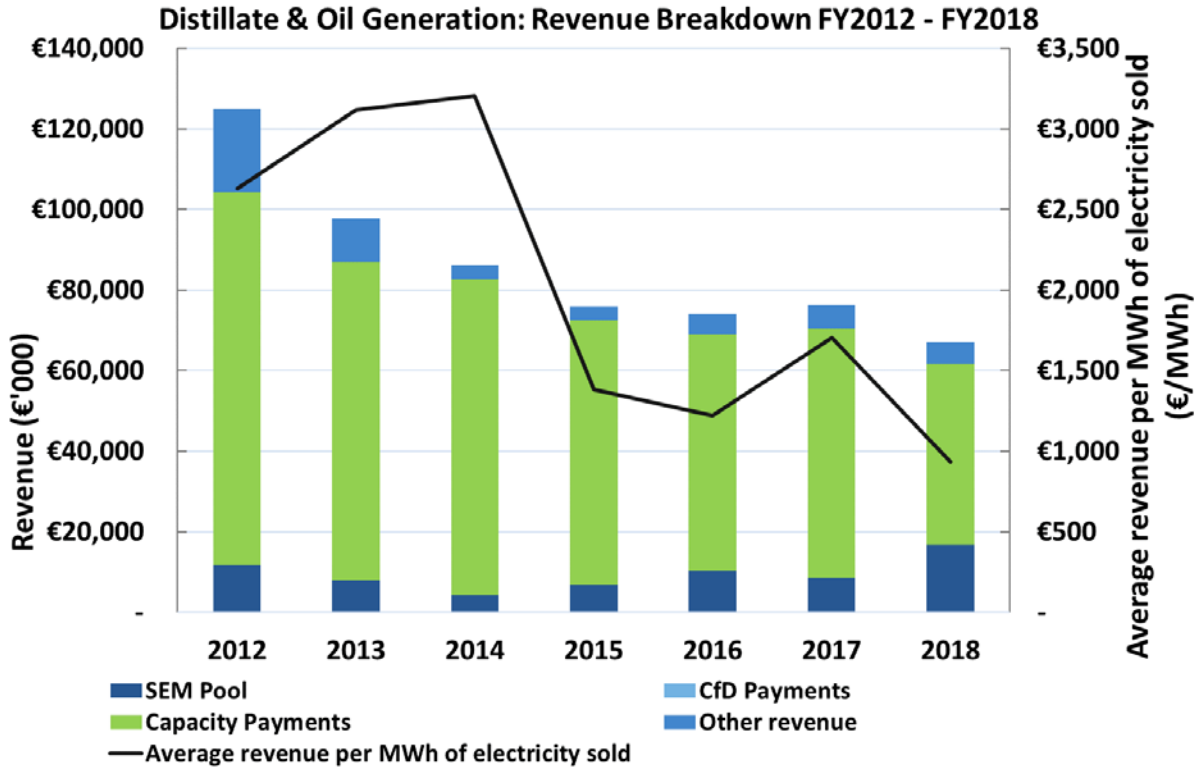
B.1.5 Peat Generation

Figure B.1.5: Peat Generation – Revenue and Costs Breakdown FY2012 to FY2018



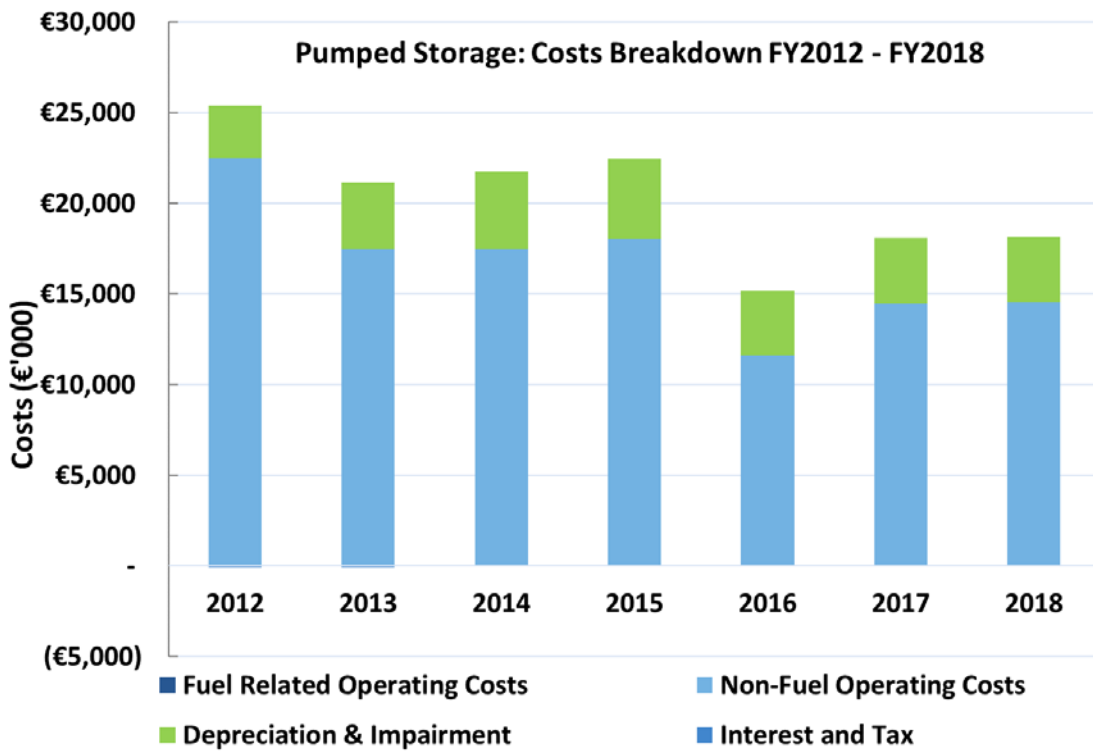
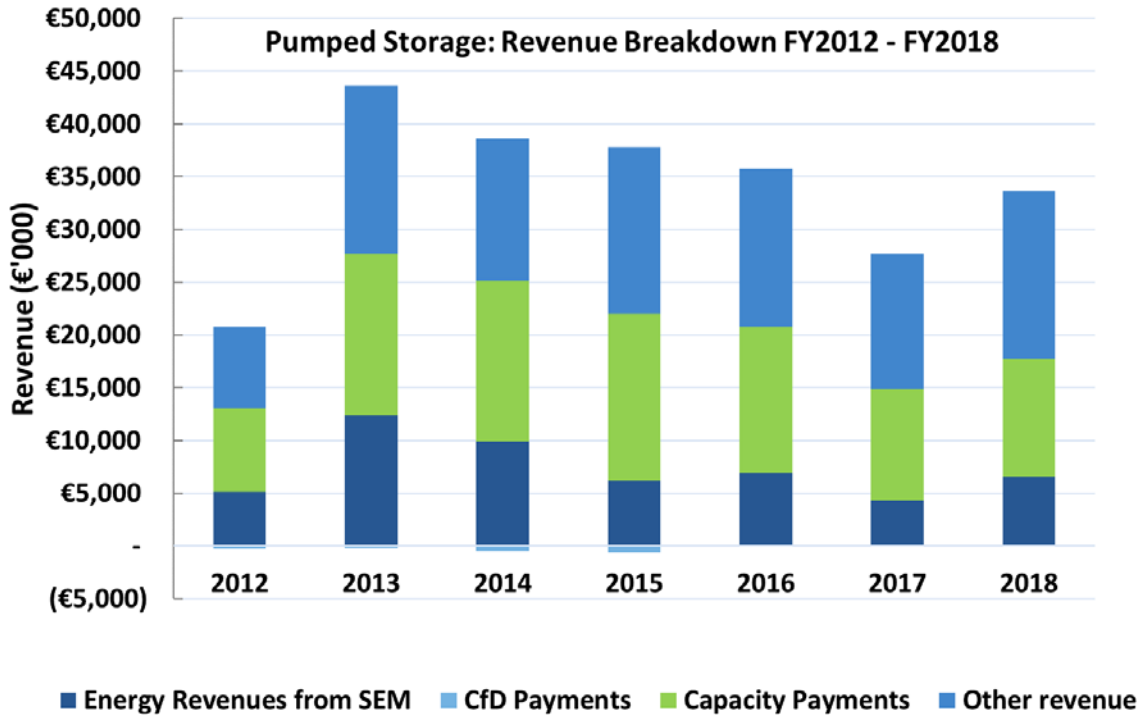
B.1.6 Distillate & Oil Generation

Figure B.1.6: Distillate & Oil Generation – Revenue and Costs Breakdown FY2012 to FY2018



B.1.7 Pumped Storage Generation

Figure B.1.7: Pumped Storage – Revenue and Costs Breakdown FY2012 to FY2018



B.2 Breakdown by Generation Type

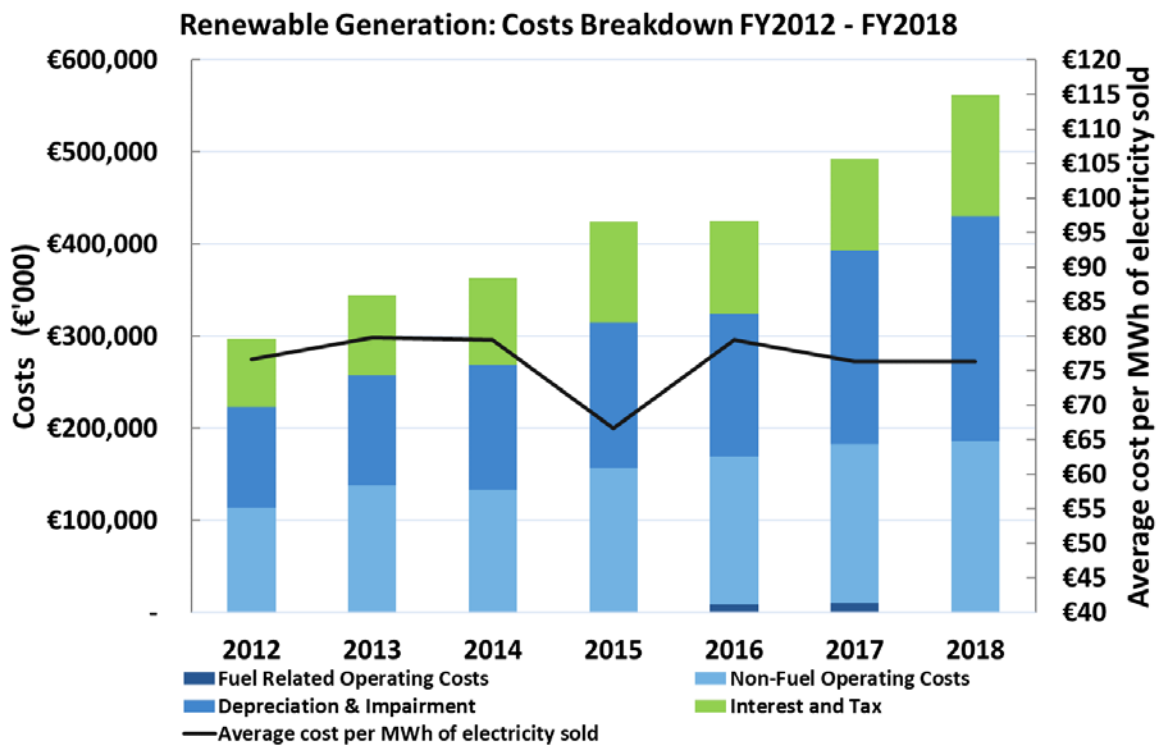
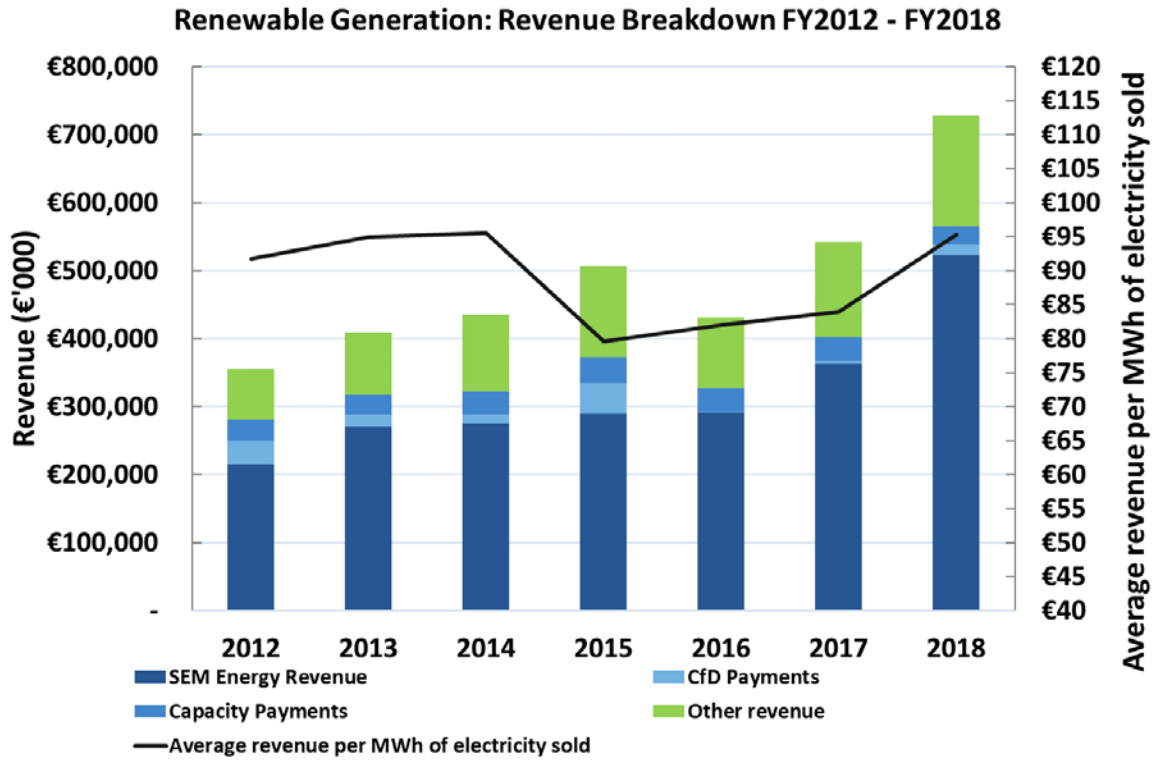
This section presents revenue and costs breakdown, by generation type, from FY2012 to FY2018.

In each of the revenue breakdown charts, the average revenue for each MWh of electricity sold is also plotted to give an indication of whether revenue is moving in line with the volume of electricity generation.

Similarly, in each cost breakdown chart, the average costs for each MWh of electricity sold is plotted to give an indication of whether total costs are moving in line with the volume of electricity generation.

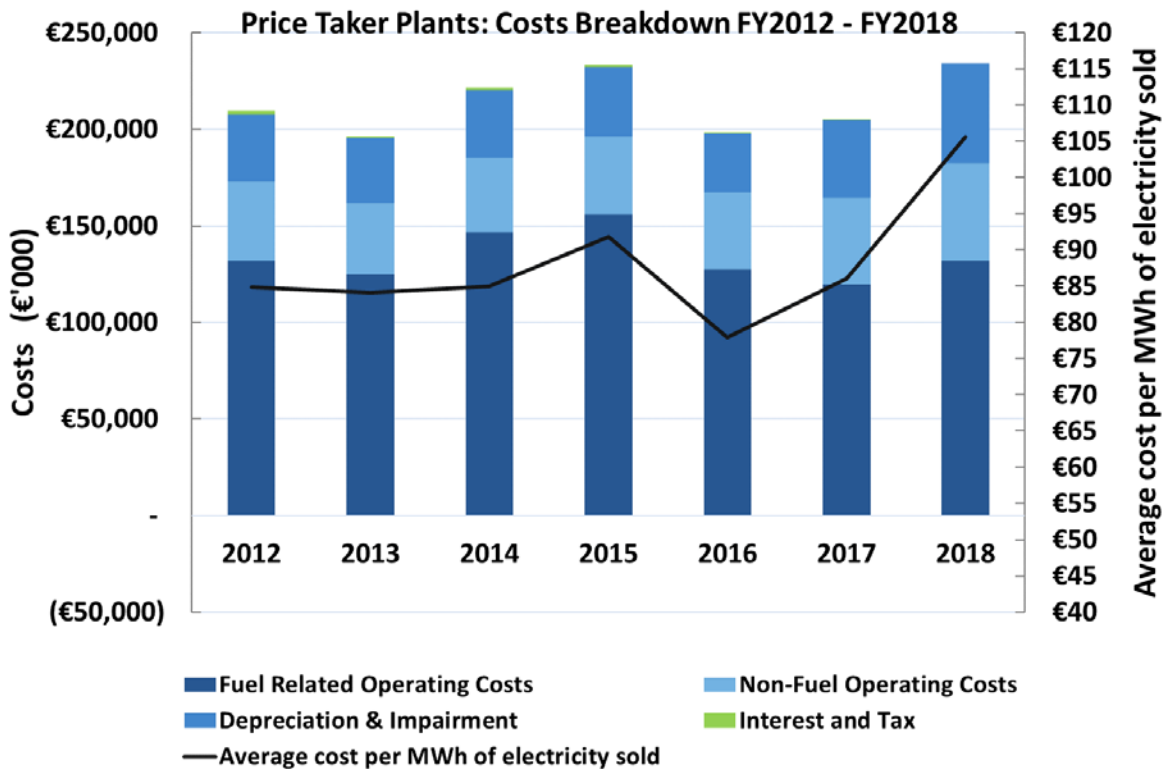
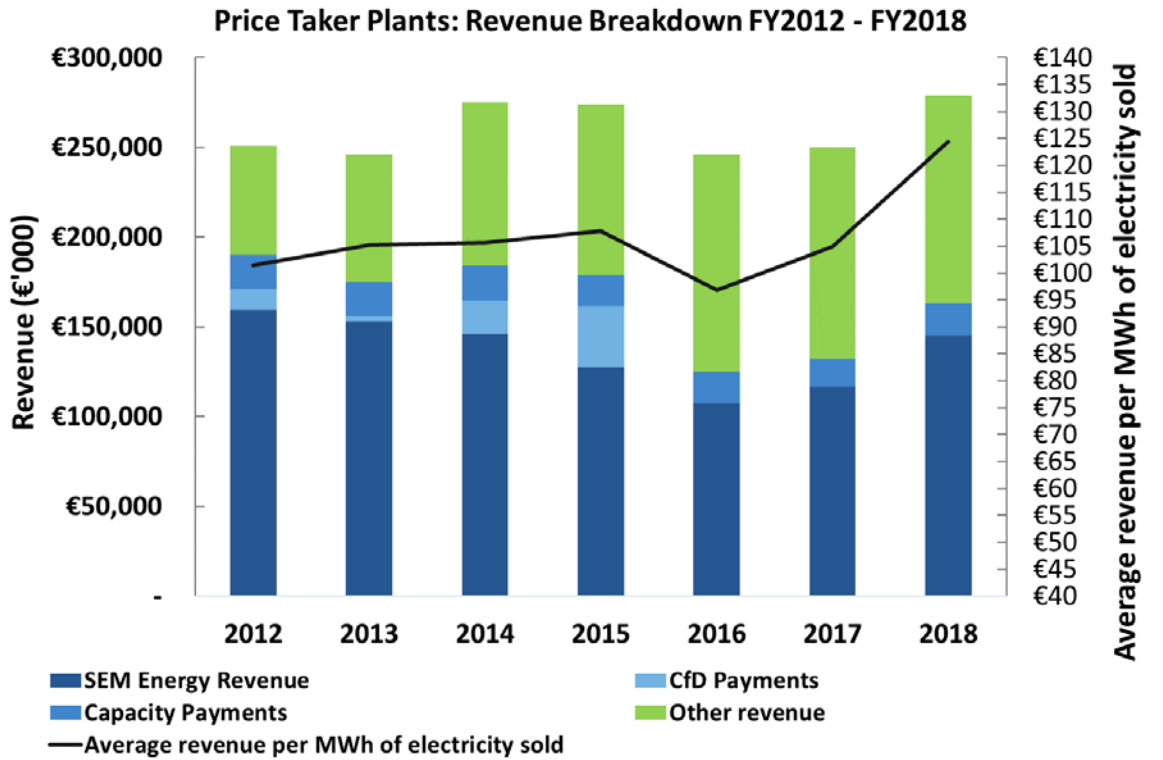
B.2.1 Renewable Generation Plants

Figure B.2.1: Renewable Plants – Revenue and Costs Breakdown FY2012 to FY2018



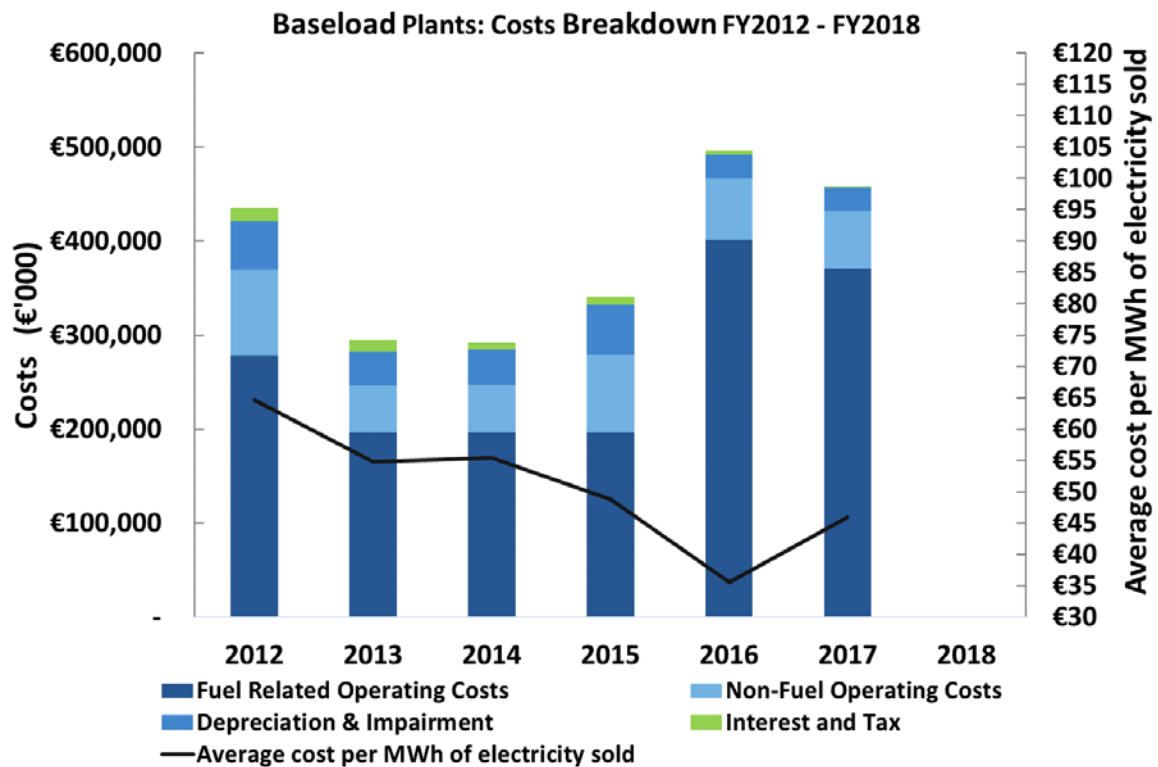
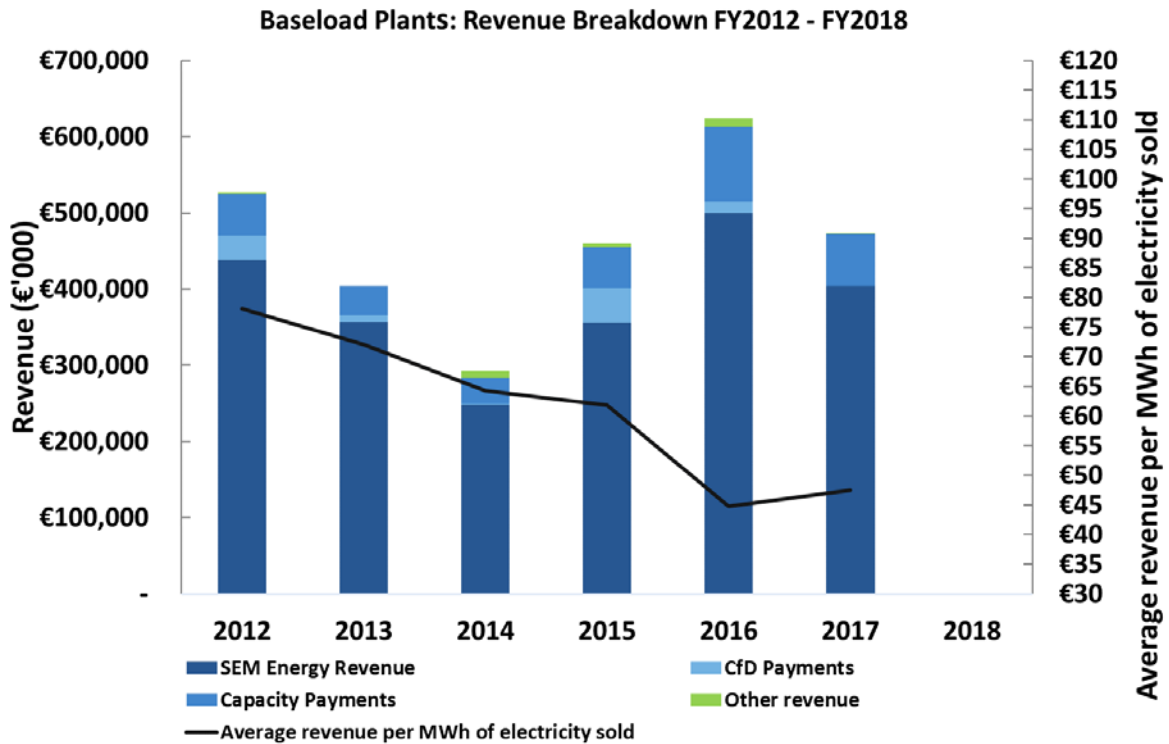
B.2.2 Price-Taker Generation Plants

Figure B.2.2: Price-Taker Plants – Revenue and Costs Breakdown FY2012 to FY2018



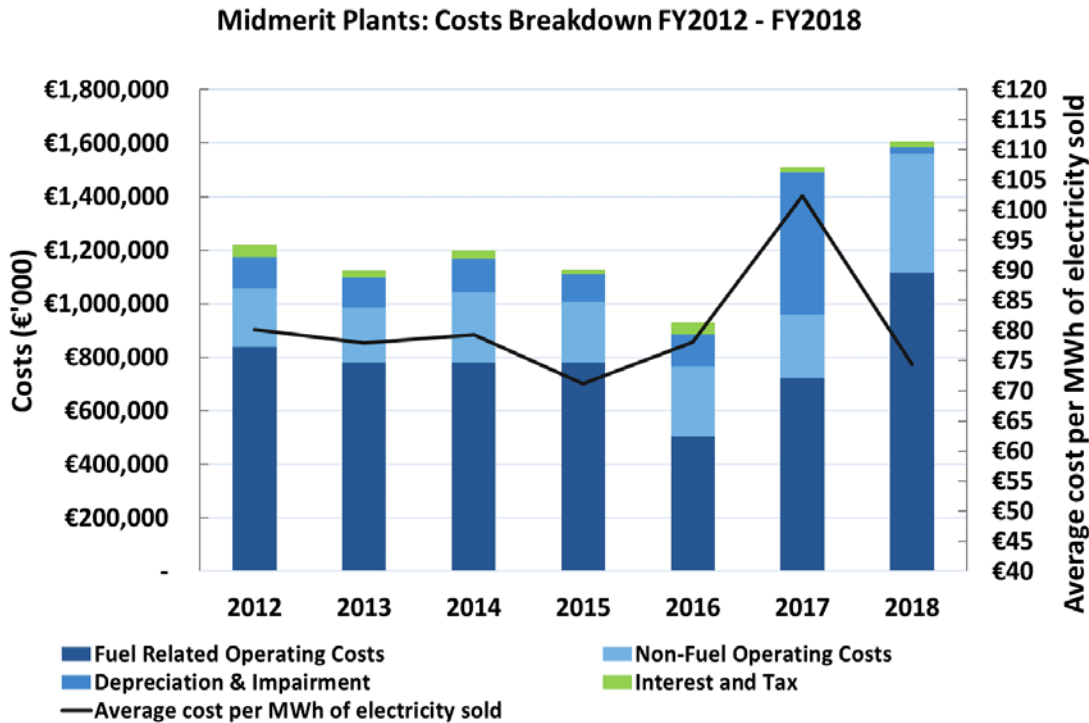
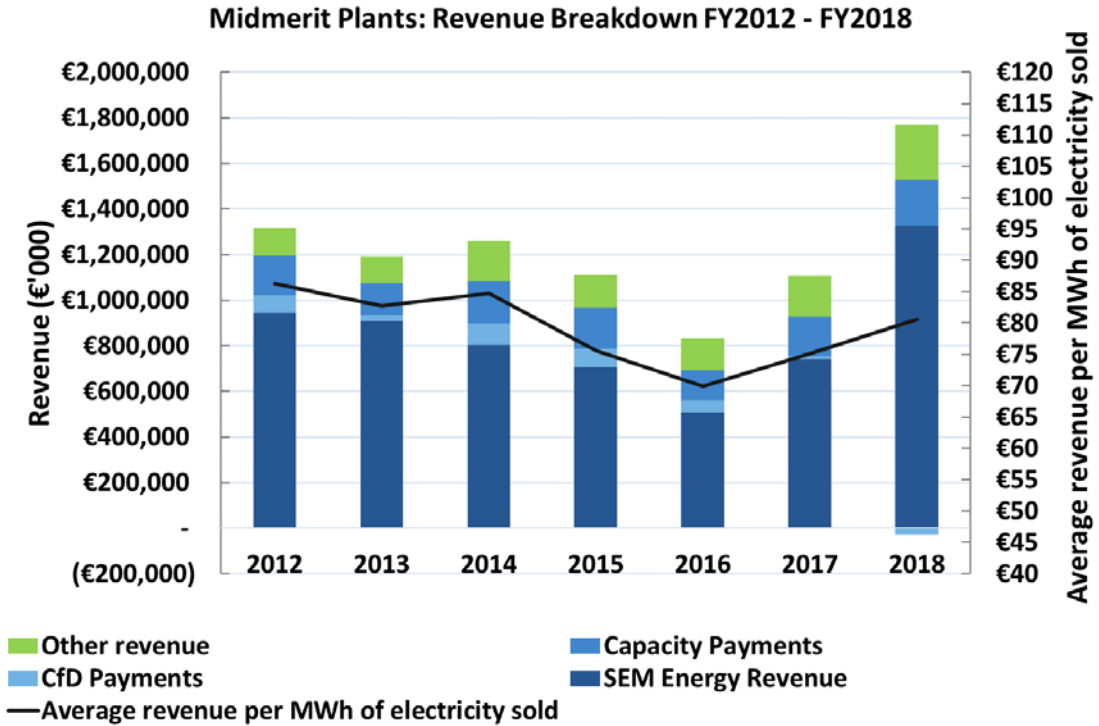
B.2.3 Baseload Generation Plants

Figure B.2.3: Baseload Plants – Revenue and Costs Breakdown FY2012 to FY2018



B.2.4 Mid-Merit Generation Plants

Figure B.2.4: Mid-Merit Plants – Revenue and Costs Breakdown FY2012 to FY2018²³



²³ Two plants which qualify as Baseload are included in the Mid-Merit category for FY2018 as explained in Section 3.2

B.2.5 Peak Generation Plants

Figure B.2.5: Peak Plants – Revenue and Costs Breakdown FY2012 to FY2018

