Energy Supply Costs
Information Paper

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www.cru.ie
Public/ Customer Impact Statement

This information note is a follow on to the CRU’s review of competition in the electricity and gas retail markets (CER/17019), published in February 2017. The CRU took an action based on the findings of this paper to review and further understand the components of supplier costs.

The paper is split into three sections. The first section of the paper looks at the breakdown of Supply Costs between 2015 and 2016 for both electricity and gas while the second section of the paper looks in detail at a number of elements of supplier costs and the breakdown of obligatory costs faced by suppliers. Retail margins are also considered separately here.

The last section of the paper presents the CRU’s retail model in terms of the components of the final retail bill including wholesale costs, network costs, supply costs, taxes and levies and how these cost components appear to have changed over time. These cost components are compared to the cost components provided by suppliers.

Key findings

The main findings of this Information paper are as follows.

Supply Costs

- Supply costs refer to supplier’s operating costs for their businesses. These operating costs include for example obligatory costs from regulations and government policies, facilities and insurance costs and sales and advertising costs. Supplier margins and taxes and levies are not included here.

- The supply component of total costs (including fuel and network costs) amounts to approximately 9% of total costs.

- The majority of costs relate to acquiring and retaining customers (3%), bad debt (1%), PAYG costs (1%) and costs of running supplier businesses including facilities, insurance, buildings etc (4%).
Detailed Supply Cost Analysis

- The lowest and highest advertising spend of suppliers differs on a per customer basis by a factor of 3, and larger suppliers generally spend less per customer than suppliers with less than 5% market share, which indicates benefits of scale for larger suppliers.

- The total weighted average cost of bad debt across suppliers decreased between 2015 and 2016. This may reflect improvements in economic conditions as shown in the falling numbers of disconnections and financial hardship Pay as You Go installs, as reported in the CRU’s Retail Market Monitoring Reports.

- On a weighted average basis across suppliers, Obligatory costs accounted for 1% of total costs (including fuel and network costs).

- The CRU has also inferred Supplier margins from the data submitted by Suppliers. Whilst the average retail margin is higher than when Supplier margins were regulated, they are not a cause of concern. Nonetheless, the CRU will continue to monitor margins in line with its market monitoring duties.

- The majority of obligatory costs relate to the Energy Efficiency Obligation Scheme (76%), Meter Tampering & Revenue protection (16%), Regulation Human Resources (4%) and the CRU’s Supplier Handbook (3%).

CRU Final Bill breakdown

- The CRU has updated its retail tariff model to reflect the latest changes in wholesale prices and updated network cost assumptions for gas.

- The CRU’s Retail Model estimates that the supply cost component of total costs for both electricity and gas total costs have risen between 2012 and 2016.

- Between 2016 and 2017 the electricity supply cost component of total electricity costs appears to have decreased.
Process of review

The CRU conducted an in-depth review of the development of competition in the electricity and gas retail markets in order to assess the extent to which competition is providing beneficial outcomes for consumers and what further policy actions may be required in each of the areas considered in the review. This review was a result of an action in the 2015 White Paper on energy policy published by the Department of Communications, Climate Action and Environment.

This information note specifically focuses on the findings of Chapter 5 of the review of competition which looked at the development of retail prices in the market. The CRU took an action based on the finding of this chapter that supply costs appear to have increased over time, to further understand the components and drivers of supply costs and identify whether any new policies are required to ensure that all customers benefit from competition.

The specific action taken by the CRU was to ‘Conduct an examination to understand the components of supplier costs and the responsiveness of the energy component of retail prices to changes in wholesale market, and how reductions in wholesale prices are passed on to all final customers.’ This action is addressed in Section 5 of this paper.

On the 15th of May 2017 the CRU issued a Request for Information to Electricity and Gas suppliers seeking a further breakdown of the total costs faced by suppliers.

This information note presents a summary of the analysis carried out regarding supply costs in order to provide a clearer picture of the final components of bills for electricity and gas customers.

The aim of the analysis presented in this information note is to inform consumers about the cost components of their energy bills and the cost drivers of supply costs, in order to increase understanding and transparency in the energy market.
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1 Introduction

1.1 Background

The Commission for Regulation of Utilities (CRU) is Ireland’s independent energy and water regulator. The CRU was established in 1999 and now has a wide range of economic, customer protection and safety responsibilities in energy. The CRU is also the regulator of Ireland’s public water and wastewater system. One of the functions of the CRU is retail market monitoring, which entails monitoring the electricity and gas retail markets to ensure that they are functioning in the interests of energy consumers. Information on the CRU’s role and relevant legislation can be found on the CRU’s website at www.CRU.ie.

On the 9th February 2017 the CRU published its ‘Review of Competition in the Electricity and Gas Retail Markets’ (CER/17/019). As part of this review the components of final retail prices were considered, specifically wholesale, network and supply costs. Taxes and levies were excluded from this analysis.

In the Review of Competition, the difference between the combination of wholesale costs plus network costs and the final retail price represented supply costs, including the net profit margin earned by suppliers. The review noted that supply costs are not the same as profits, as suppliers have additional operating costs separate from wholesale commodity costs and network costs that need to be paid from the total revenue of final retail prices. Therefore, the CRU undertook an action to conduct additional analysis to better understand the components and cost drivers of supply costs.

This information note is the outcome of analysis that the CRU has undertaken in this area over the last number of months. The purpose of this document is to increase transparency on the Supply Costs that make up part of all energy customers’ bills.
This paper is split into three main areas;

**Action 1**

The first part of this report presents supply cost information submitted by suppliers at an aggregate level. This considers supply costs in the context of total costs (including wholesale and network costs).

**Action 2**

The second part of this report looks at a number of supply cost components in detail, including sales, advertising, customer retention and acquisition costs, bad debt and obligatory costs. Information on supplier margins is also presented separately in this section.

**Action 3**

The CRU has updated the analysis presented in Chapter 5 of the Review of Competition to reflect updated assumptions and recent movements in cost components such as wholesale costs. This gives rise to a breakdown of the costs of a customer’s final retail bill, based on the CRU’s internal retail tariff methodology. This includes estimated wholesale costs, network costs, supply costs and taxes and levies.

**Related Documents**

- CER17019 Review of Competition in the Electricity and Gas Retail Markets
- CER17060 Review of the Supplier’s Handbook Decision Paper
- CER14344 Market Monitoring Framework 2014 Decision Paper
- CER16014 Debt Management Decision Paper
- CER15205 Green Source Products Decision Paper
- CER15181 Fuel Mix and CO2 Emissions Disclosure
- CER17042 Review of Typical Consumption Figures – Decision Paper
- Energy Efficiency Obligation Scheme Consultation Decision Paper
- OFGEM Energy Companies’ Consolidated Segmental Statements (CSS)
2 Supply Costs Analysis

This section of the paper is focused on the Supply Costs element of the final retail bill. Overall costs include wholesale/fuel costs, network costs and supplier’s operating costs, excluding retail margins. Wholesale and network costs are broadly outside of the control of suppliers and thus the focus of this section is on supplier’s operating costs. We use the term “Supply Costs” in this paper when referring to these costs.

The term “total energy costs” refers to the sum of wholesale (electricity or gas), network and supply costs faced by Suppliers.

The aim of the analysis presented in this chapter is threefold;

1. Understand what is driving changes in supply costs across each year, in particular by focusing on a breakdown of supply costs.

2. Analyse what element of Supply Costs is composed of obligatory costs, either those required by the CRU as the energy regulator or by government or European policies.

3. Increase overall understanding for energy customers of the components of their final retail bill so as to increase transparency in the electricity and gas markets. This is further addressed in chapter 5 which focuses on the CRU’s model of final retail prices and the estimated components of electricity and gas prices.

As part of the Supply Cost analysis presented in this paper the CRU undertook a Request for Information (RFI) with Suppliers in the market. As all energy Suppliers must hold a license from the CRU, this permits the CRU to request information from Suppliers where such information is required for the CRU to fulfil its statutory functions.

Detail on a range of cost components was requested from suppliers, including gross operating costs (including wholesale, network and supply costs). Further breakdowns were requested for obligatory policy costs and for sales & advertising.

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1 However suppliers may hedge against wholesale price volatility, in particular in gas.
2 Examples specified included the CER Supplier Handbook, Supplier Audits, Energy Efficiency Scheme
3 This includes aspects such as discounts, renegotiations and acquisitions
Table 1 of the appendix details all categories of costs requested from Suppliers. This includes information submitted separately for electricity and for gas. Some Suppliers are only active in one market i.e. electricity or gas.

Additionally, a number of operating costs are incurred by suppliers as a total business rather than split between electricity and gas so the focus of the CRU's analysis is at this level.

2.1 Total Energy Costs (including wholesale and Network Costs)

The percentage contribution of wholesale, network and supply costs to total costs is presented below. Readers should note that these percentages will be different from the CRU's model presented in chapter 4 which focuses on domestic customers because this is based on supplier data that was submitted to the energy markets division on costs only for domestic and non-domestic customers and does not include margins, taxes or levies. A comparison between the CRU's model and a breakdown of costs as reported by suppliers is presented in Chapter 4.

Figure 2.1 presents blended total costs reported by suppliers across electricity and gas for 2015 and 2016.
As shown in figure 2.1, based on supplier submissions the majority of total costs faced by suppliers relate to network and fuel costs.

Analysis of information provided from suppliers in terms of the average costs across suppliers for electricity and gas is presented in figure 2.2. Cost have been compared based on the weighted average across suppliers which takes account of the number of customers per supplier and the different scales of suppliers in terms of total revenue. The supply component of total costs amounts to approximately 9%, excluding any margin.

Figure 2.2 presents a breakdown of supplier cost components for electricity and gas for 2016. Network costs account for 49.98% of electricity costs, compared to 39.56% of gas costs, while fuel costs account for 41.16% of electricity costs compared to 47.37% of gas costs.

**Figure 2.2, electricity and gas total costs, 2016**

### 2.2 Supply Cost Components

A further breakdown of supply costs (which exclude fuel and network costs) is presented in figure 2.3 below.

**Summary of total electricity costs -2016**

- Network Costs: 49.98%
- Fuel Costs: 41.16%
- Supply Costs: 8.87%

**Summary of gas costs 2016**

- Network Costs: 39.56%
- Fuel Costs: 47.37%
- Supply Costs: 13.07%

**Margin is a measure of profitability. It refers to the difference between the operating costs and the total revenues of a Supplier.**

**Business related costs refer to the operating business costs. This includes facilities, rent, insurance etc.**
In 2016, 38.5% of supply costs were comprised of business related costs (which include facilities, rent and insurance for example), with 35.7% of costs accounted for by sales, advertising, customer retention and acquisition costs. Obligatory costs and bad debt each accounted for just under 10% of supply costs while costs of installing PAYG meters accounted for 6.5% of costs (however this cost only applies to suppliers that offer PAYG as a lifestyle choice option).

PAYG costs here refer to the costs of PAYG installations and maintenance for suppliers offering these as lifestyle choice options. Pay as You Go costs are only incurred by suppliers offering this as a lifestyle choice option however as all costs are presented as a weighted average across suppliers they are included here.

![Total Supply Costs Components (electricity and gas) for 2015 and 2016](image)

**Figure 2.3 Total supply cost components (electricity and gas) for 2015 and 2016**

A breakdown of supply cost components was requested from suppliers in the following areas:

- **Obligatory costs**: These include costs imposed through regulatory or government policy decisions.

- **Sales and advertising, customer acquisition and retention costs**: These include the costs which suppliers, according to their specific commercial strategies, may spend on acquiring and retaining electricity and gas customers.
- **PAYG costs**: The cost of installing and maintaining PAYG meters for suppliers that offer this as a lifestyle choice option.

- **Bad debt**: The cost associated with customers in arrears and on payment plans or for non-payment of bills.

- **Business Related Costs**: The day to day costs associated with supply businesses including facilities, insurance etc.

Table 2.1 looks at some of the changes in supply cost drivers between 2015 and 2016. On a weighted average basis across suppliers, Obligatory costs increased by 0.8% between 2015 and 2016. Bad debt decreased by 3.1%. Overall total supply costs decreased by 8.4% (in terms of the weighted average total figure for supply costs as reported by suppliers) from 2015 to 2016.

Table 2.1, % change in energy costs between 2015 and 2016

- **Key Points and Summary of Findings**
  - This chapter has presented weighted average costs for electricity and gas across suppliers, including fuel costs, network costs, operating costs and obligatory costs.
➢ Supply costs comprise approximately 9% of total faced by suppliers. Wholesale costs account for circa 42% and network costs account for 48% of these total costs.

➢ Focusing on supply costs (which include obligatory, sales and advertising and customer retention and acquisition, PAYG, bad debt and business related costs), these costs have reduced by 8.4% between 2015 and 2016.
3 Detailed supply cost analysis

This section presents detailed information on a number of areas related to the supply costs presented in chapter 2, including sales and advertising and customer retention and acquisition costs, bad debt and obligatory costs.

### 3.1 Sales, Advertising, Customer Retention and Acquisition Costs

Sales, advertising, customer retention and acquisition costs accounted for 3% of total supplier costs in 2015 and 3.4% in 2016. Of supply specific cost components (excluding network costs and fuel costs) they accounted for 37% in 2015 and 36% in 2016.
The CRU has conducted analysis on the total spend of suppliers based on their market share, in order to try to ascertain how economies of scale in advertising may impact on smaller supplier’s ability to compete. As with any market, a larger supplier may have a better ability to spread costs over a larger customer base.

<table>
<thead>
<tr>
<th>Sales, advertising customer retention and acquisition costs</th>
<th>2015 ratio between lowest and highest cost</th>
<th>2016 ratio between lowest and highest cost</th>
<th>% Difference between lowest and highest advertising spend (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity €/customer</td>
<td>1:3</td>
<td>1:2</td>
<td>63%</td>
</tr>
<tr>
<td>Gas €/customer</td>
<td>1:3</td>
<td>1:3</td>
<td>67%</td>
</tr>
</tbody>
</table>

Table 3.1

Table 3.1 presents the ratio between the lowest reported spend on a per customer basis versus the highest reported spend on a per customer basis across suppliers in gas and electricity combined.

The highest spend was 3 times as much as the lowest spend on sales, advertising, customer retention and acquisition on a per customer basis in electricity and is similar in gas. However, in terms of monetary spend it is observed that supplier’s per customer spend in gas is generally higher. This may be due to the lower number of gas customers than electricity customers.

However, it should be noted that differences in electricity and gas may be due to apportionment of costs between suppliers’ electricity and gas customers, and many suppliers internally recognise such costs as one total spend rather than split between each market. For example, many suppliers offer dual fuel (both electricity and gas) and so costs in this area would be incurred at a total energy customer level.

In order to look at economies of scale in sales and advertising costs, we have split suppliers into those with market shares in terms of customer numbers (for both electricity and gas) of less than 5%, between 5% and 20% and greater than 20%.
From figure 3.1, on average suppliers with greater than 5% market share in terms of customer numbers in electricity and gas have a lower spend per customer on sales, advertising, customer retention and acquisition costs per customer than those with less than 5% market share.

Due to the nature of the breakdown of costs in this area however it is difficult to draw general conclusions on the correlation between a supplier’s size and spend in each particular area on a per customer basis. However, the CRU notes the following:

1. Suppliers may focus their spending in this area on providing high discounts to acquire customers, or on marketing and branding. For example, if data was available showing the split between sales and advertising and customer retention and acquisition costs further trends across different sizes of suppliers might be available.

2. The CRU has considered the data available in terms of customer numbers, the length of time suppliers have been in the electricity and gas retail markets, the switching and renegotiations rate per year for each supplier and the total revenue of each supplier but has not drawn any significant conclusions in this area.

3. Sales, advertising, marketing and indeed the strategies suppliers adopt to acquire and retain customers can be dynamic and as such budgets and costs
in each area can change over time. The information presented here only presents a snapshot of information that the CRU has used to present the cost drivers of supply.

### 3.2 Bad debt

Bad debt accounted for 12.7% of total supply costs in 2015 and 9.6% of total costs in 2016. The total weighted average cost of bad debt decreased by 3.1% between 2015 and 2016. This may reflect improvements in economic conditions, as shown in the falling number of disconnections and financial hardship PAYG installs as published in the CRU’s quarterly market monitoring reports.

It should be noted that some of bad debt cost reported by supplier is associated with CRU energy customer protection in terms of debt management, debt transfer and debt flagging.

![Graph showing total number of PAYG installs and total (Domestic and Business) NPA disconnections from Q1 2014 to Q4 2017.](image)

**Figure 3.2**

Research from the UK energy market indicates that there has been an increase in overall bad debt in the UK energy market, from £400m in 2011 to £640m in 2015 with UK Water firms showing a similar trend from £263m to £379m.

Only the Telecom sector showed a marginal improvement with debt levels dropping by £20m to £560m over the same period.
An Coimisiún um Rialáil Fóntas  
Commission for Regulation of Utilities

<table>
<thead>
<tr>
<th></th>
<th>Bad debt per customer</th>
<th>Bad debt per customer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electricity</strong></td>
<td>€16.62</td>
<td>€14.61</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>€3.84</td>
<td>€8.40</td>
</tr>
</tbody>
</table>

**Table 3.2**

As such, it appears that the level of bad debt per customer is lower in Ireland than the UK based on 2015 data.

![Bad debt per customer Ireland & UK](chart.png)

**Figure 3.3**

However, the level of bad debt across Suppliers is only one indicator that illustrates whether energy customers have difficulty in paying their bills.

CRU market monitoring data shows that while 9-14% of customers were in arrears in Q1 2017, only 1% of customers in electricity and gas were on payment plans at this time.

**Arrears refers to monies that are owed from energy customers to Suppliers.**
3.3 Obligatory Costs

A key objective of this information paper is to increase understanding and transparency in the energy market, by detailing and explaining the nature of supply cost drivers.

As part of this understanding the CRU is interested in the financial impact associated with the implementation of statutory and regulatory policy obligations. As part of deeper analysis a number of these obligations were identified for the purposes of identifying specific costs associated with either requirements imposed on Suppliers either as a result of regulatory or government policy. Each Supplier was requested to submit the project costs e.g. installation of IT hardware and ongoing costs such as personnel so that a full analysis of costs could be conducted.

Each category of costs reported on for this RFI is outlined below with an indication of whether the obligatory cost is driven by regulatory or government policy. A full description is found in Appendix 2.

<table>
<thead>
<tr>
<th>Obligatory Costs</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency Obligation Scheme</td>
<td>Government</td>
</tr>
<tr>
<td>Free Electricity and Gas Allowance</td>
<td>Government</td>
</tr>
<tr>
<td>Supplier Handbook</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Meter tampering, revenue protection and disconnection process</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Green source products, Audits and Fuel Mix</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Regulation Human Resources</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Annual CRU Audits</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Market Monitoring</td>
<td>Regulatory</td>
</tr>
</tbody>
</table>

Obligatory costs are presented in figure 3.4 as a total across electricity and gas supply businesses. Although information was provided broken down into electricity and gas obligatory costs based on direct and indirect apportionment methods, a number of these costs have been incurred across the entirety of each business so it is important to compare obligatory costs at a total level.
The majority of obligatory costs in 2015 and 2016 related to the Energy Efficiency Obligations Scheme, which increased from 72% to 76% of total obligatory costs.

Costs associated with meter tampering, revenue protection and the disconnection process were also significant, accounting for just under 16% of obligatory costs in 2016 but these costs have decreased since 2015.

The CRU requires compliance with a number of regulatory requirements, including direct obligatory costs through the Supplier Handbook, Green Source Products Audits and Fuel Mix, Supplier Audits, which together amounted to 8% of obligatory costs in 2016. Requirements for customer protection as set out in the Supplier Handbook also contribute to costs associated with the disconnection process.

Figure 3.4, Total Obligatory Costs
As shown in figure 3.5 below, there are a number of differences between obligatory costs reported for gas and electricity. This may be due to the allocation of costs different suppliers have submitted based on internal cost reporting across each business. For the purposes of anonymity of supply costs the majority of figures in this paper are also presented in terms of percentages and on an aggregate basis, which does not give a complete picture of the scale of cost differences between gas and electricity.

For example, the cost associated with the EEOS amount to 86% of obligatory costs in electricity and 38% of costs in gas. Disconnections and revenue protection accounts for 9% of obligatory costs in electricity and 45% of costs in gas. This may also demonstrate different procedures that may apply due to safety differences between both energy sources. The total cost reported for disconnections and revenue protection for 2016 across all suppliers was €2,762,000 for electricity compared to €4,233,000 for gas.

Figure 3.5, Obligatory Electricity and Gas Costs

Overall obligatory costs have increased by 0.8% between 2015 and 2016. While these costs have increased, total obligatory costs amount to circa 1% of the overall costs (0.7% in 2015 and 0.9% in 2016). The table below illustrates how these Supply Costs have changed between both years.
<table>
<thead>
<tr>
<th>Category</th>
<th>% of obligatory costs 2016</th>
<th>% change between 2015 and 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEOS</td>
<td>76%</td>
<td>3.67%</td>
</tr>
<tr>
<td>Electricity &amp; Gas Allowance</td>
<td>0.03%</td>
<td>-0.01%</td>
</tr>
<tr>
<td>Supplier Handbook</td>
<td>3%</td>
<td>0.23%</td>
</tr>
<tr>
<td>Meter Tampering, Revenue Protection &amp; disconnection process</td>
<td>16%</td>
<td>-4.46%</td>
</tr>
<tr>
<td>Green Source Products Audits &amp; Fuel Mix Disclosure</td>
<td>0.19%</td>
<td>0.13%</td>
</tr>
<tr>
<td>Regulation Human Resources</td>
<td>4%</td>
<td>0.75%</td>
</tr>
<tr>
<td>CRU Supplier Audits</td>
<td>0.22%</td>
<td>-0.04%</td>
</tr>
<tr>
<td>Retail Market Monitoring</td>
<td>0.65%</td>
<td>-0.33%</td>
</tr>
<tr>
<td>LTCA</td>
<td>0.34%</td>
<td>-0.05%</td>
</tr>
<tr>
<td>PAYG certificate</td>
<td>0.18%</td>
<td>0.11%</td>
</tr>
</tbody>
</table>

**Table 3.3, % change in energy costs between 2015 and 2016**

**Drivers of change**

Below we outline some of the principle areas where costs have changed between both years in addition to the CRU’s understanding of what may have driven such changes in costs between years.

- 2016 was the final year for Suppliers to meet their requirements under the current EEOS scheme. As such, the increased costs may be reflective of a ramping up by Suppliers in order to meet their requirements.
- Between 2015 and 2016 a review and consultation process of the Supplier Handbook took place, during which time suppliers took part in a number of workshops and responded to consultations as part of this process.
- A decision on green source products was made in 2015 requiring suppliers to complete an audit on any green source products they offer.
- Revised retail market monitoring requirements were introduced in 2015 and the project costs associated with this would mainly have been incurred by suppliers in this year, explaining the decrease in cost between 2015 and 2016.
- Between 2015 and 2016 there was an increase in the costs of PAYG meters for suppliers who provide such meters as a business model. This was due to a requirement for safety certification of the meter installs imposed on Suppliers. It should be noted that as not all Suppliers operate such a business model, this cost was faced only by some Suppliers.
Energy Efficiency Obligations Scheme

The EEOS requires all energy distributors and suppliers with sales above a certain volume to achieve a defined amount of energy savings each year by working with energy users in the residential, commercial or public sector.

The purpose of the Energy Efficiency Obligation Scheme is to help Ireland meet its obligations under Article 7 of the Energy Efficiency Directive in a cost-effective way. Ireland has opted to use a combination of a supplier obligation scheme and a suite of alternative policy measures to satisfy its overall target.

As noted in the preceding sections of this paper, the Energy Efficiency Obligations Scheme accounts for the majority of obligatory costs, which together account for approximately 1% of total supply cost components. However, Obligatory costs account for approximately 10% of supplier specific costs excluding fuel and network costs.

Analysis of the ratio of cost per KWh of the EEOS based on supplier submissions from 2015 and 2016 is shown below. This shows the ratio between either end of the cost scale in terms of delivery of energy efficiency. However, it should be noted that this illustration is based on an inferred supplier’s share of the total energy target within a year (550 GWh). This does not take into account any over-delivery of savings that may have been made in the two years for which the CRU has Supplier data.

<table>
<thead>
<tr>
<th>EEOS per MWh</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>1 : 2</td>
<td>1 : 4</td>
</tr>
</tbody>
</table>

Table 3.4

The average cost per kWh of the EEOS scheme was 4.4c per kWh in 2015 and 5.6c per kWh in 2016, an increase of 27% overall. However, from the data provided to the CRU there is a large range in the cost of the EEOS scheme across different suppliers.

In inferring this average cost the CRU has divided the total costs provided by suppliers for the EEOS scheme by its inferred supplier shares of the EEOS targets for obligated parties. Obligated parties include those in the oil, peat, electricity and

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gas energy areas. As such, suppliers in the gas and electricity market only make up a proportion of the total obligations across energy distributors. Again it should be noted that this does not take into account any savings that may have been made above the targets for electricity/gas suppliers.

**Sectoral targets**

A total obligation of 550GWh annual savings target applies across all obligated parties. This target is sub-sectoralised as 75% non-residential, 20% residential and 5% energy poverty residential, with cumulative targets being applied.

The average EEOS costs per kWh saved, calculated above, do not distinguish between the three targets. It is the CRU's understanding that energy efficiency savings can generally be achieved at a lower costs in the non-domestic sector, and this is reflected in the buyout prices for each sector.

While the cost of delivering energy savings is typically higher in the domestic sector and higher again in the energy poverty sector, energy suppliers can choose to achieve some or all of these targets by working in partnership with existing government grant schemes, such as Better Energy Homes and Better Energy Communities. These grant schemes provide up to 30% of the funding towards residential measures and up to 95% of the funding for homes in energy poverty.

Any obligated party can choose to purchase up to 30% of their required energy savings by paying into a fund operated by the Minister for Communications, Climate Action and Environment. The buy-out price for each category of energy savings is set at the approximate cost borne by the Government in delivering energy savings directly through the SEAI-administered, “Better Energy Programme”.

These buy-out prices act as a price ceiling, since any obligated party faced with a higher cost of delivery could choose to avail of the buy-out price. To date, no obligated party has decided to buy-out any of their energy savings target.

From the CRU’s analysis it appears that all suppliers are able to deliver the required energy savings below the buy-out price in each category.

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5 6c per kWh of energy saved in the non-domestic sector, 20.4c per kWh in domestic, 88c per kWh in energy poverty.
## Percentage of Obligatory Costs 2016

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency Obligation Scheme</td>
<td>0.03%</td>
</tr>
<tr>
<td>Free Electricity and Gas Allowance</td>
<td></td>
</tr>
<tr>
<td>Supplier Handbook</td>
<td>3%</td>
</tr>
<tr>
<td>Meter tampering, revenue protection and disconnection process</td>
<td>16%</td>
</tr>
<tr>
<td>Green Source Products Audits &amp; Fuel Mix Disclosure</td>
<td>0.19%</td>
</tr>
<tr>
<td>Regulation Human Resources</td>
<td>4%</td>
</tr>
<tr>
<td>Annual CER Supplier Audits</td>
<td>0.22%</td>
</tr>
<tr>
<td>Retail Market Monitoring</td>
<td>0.65%</td>
</tr>
</tbody>
</table>

Obligatory Costs have increased by 20% between 2015 and 2016. However, they still only amount to circa 1% of overall costs and help achieve energy efficiency and increase consumer protection.

The EEOS accounts for 76% of total Obligatory Costs. This is a 26% increase from 2015. Which could reflect 2016 being the trial year for Suppliers to meet their requirements under the current EEOS scheme.

Costs associated with the Supplier Handbook and Regulation Human resources also increased this could be linked to revised requirements on these items being introduced in 2015.
3.4 Future Obligatory Costs

One of the key aims of this paper is to understand what element of Supply Costs is composed of Obligatory Costs, either those required by the CRU as the regulator or by government or European policies. Increasing transparency and understanding the costs associated with policy decisions helps to inform policy decisions.

A number of Obligatory Costs have been discussed in this chapter and there are a range of areas where additional costs may be imposed on suppliers based on future policies or the implementation of recent decisions. As such, the CRU may be interested in tracking the cost impact of implementing these policy decisions in future.

Three policy areas where future obligatory costs may arise for suppliers are detailed below.

**Smart Metering**

The National Smart Metering Programme (NSMP) is a plan for transforming how electricity and gas retail markets operate. It involves the roll out by ESB Networks and Gas Networks Ireland of new meters, a communications network to support them, and investment in new IT systems by ESBN, GNI and Electricity and Gas Suppliers.

**Supplier Handbook**

The review of the Suppliers' Handbook began in 2015 and the CRU published a consultation paper on proposed changes in February 2016. After an open consultation process, the CRU published a Supplier Handbook Decision and a further Consultation paper in November 2016 (CER/16/287). That paper set out the CRU’s policy decisions while also outlining some further decision areas, primarily related to implementation.

The final Decision Paper published in April 2017 followed an extensive process of engagement with stakeholders including suppliers, consumer interest groups and external agencies such as the Consumer & Competition Protection Commission, the Economic & Social Research Institute (ESRI) Price Lab and the Central Bank of Ireland.

Implementation of a number of these decisions may have associated costs in terms of the additional information suppliers will be required to provide to consumers. The CRU is interested in potentially monitoring specific costs associated with Supplier Handbook implementation.
EEOS

In 2016, the Department of Communications, Climate Action and Environment (DCCAE) ran a public consultation on the Energy Efficiency Obligation scheme. The consultation sought input on whether the Department should consider any changes to the operation of the next phase of the Energy Efficiency Obligation Scheme.

As a result of this consultation, three main changes are being made to the scheme as of 2017. These are to:

- Increase the collective energy savings target from 550GWh per annum to 625GWh in 2017, rising to 700GWh for each year 2018-2020;
- Reduce the threshold for participation in the scheme from 600GWh annual final energy sales to 240GWh annual final energy sales; &
- Lengthen the next phase from 3 to 4 years.

These changes may also have an impact on supplier costs.

Key Points and Summary of findings

- Sales, advertising, customer acquisition and retention costs form a significant part of total supplier costs, and depending on the supplier these costs can be focused on branding, acquiring new customers through discounted price plans or retaining customers. The information presented in this paper on these costs is only a snapshot in time and this is a dynamic and constantly changing area for suppliers.

- It appears from the CRU’s analysis that there are economies of scale for sales and advertising costs, with suppliers with less than 5% market share spending more on a per customer basis as they try to gain new customers.

- Bad debt accounted for 12.7% of total supply costs in 2015 and 9.6% of total supply costs in 2016. The total weighted average cost of bad debt decreased by 3.1% between 2015 and 2016.

- This may reflect improvements in economic conditions, as shown in the falling number of disconnections and financial hardship PAYG installs as published in the CRU’s quarterly market monitoring reports.

- Obligatory costs account for just under 10% of supply costs and approximately 1% of total costs and appear to have increased between 2015 and 2016. These increased costs are associated with energy efficiency and increased customer protection, both measures which are required to ensure Ireland meets its climate change targets as well as
ensure that customers disconnections are undertaken in a standardised process across all suppliers.

- Obligatory costs have increased by 0.8% between 2015 and 2016.
- The Energy Efficiency Obligations Scheme accounts for 76% of total obligatory costs and increased by 3.67% between 2015 and 2016.
- Meter tampering, revenue protection and the disconnection process accounts for 16% of obligatory costs followed by regulation human resources (4%) and the Supplier Handbook (3%).
4 Retail Margins

As part of the request for information from suppliers, the CRU has received information on total revenues and total costs of electricity and gas. From this data the CRU can calculate an inferred margin across suppliers. The weighted average margins across all suppliers are indicated below for the two years of submitted data.

<table>
<thead>
<tr>
<th>Inferred Retail Margins</th>
<th>2015 average</th>
<th>2016 average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2.32%</td>
<td>3.48%</td>
</tr>
</tbody>
</table>

Table 4.1

In addition to the RFI, the CRU also receives audited accounts from Suppliers and data on retail margins from suppliers with above 5% market share. The CRU has compared inferred margins calculated for 2015 and 2016 across suppliers to audited accounts from suppliers on retail margins for 2014 and 2015. Data for 2016 is not yet available.

Broadly, the inferred margins for 2015 fall within the same range as the audited accounts submitted by Suppliers above a 5% market share.

CRU analysis

In order to conduct analysis the CRU has compared the inferred margins against regulated margins seen in either Ireland or in other jurisdictions. Before full deregulation of the gas and electricity retail markets, the CRU was responsible for setting the final tariff that gas and electricity customers paid, which included a regulated margin.

In addition, we have assessed the inferred margins against margins seen in the UK energy market, and against data available from the services industry.

Prior to price deregulation, the regulated margins for Bord Gáis Energy (gas) and ESB Public Electricity Supply were 2% and 1.3% respectively. At the time of these margins the CRU considered that this was an appropriate margin, given that there was no volume risk associated with being regulated i.e. if the company did not recover its full costs within a year then it would be recovered in future periods. Comparative retail margins in Northern Ireland (UR) and the UK are also shown below to illustrate the range of comparable regulated margins in the water and energy sectors.
In contrast, in a competitive market a Supplier does face competitive pressures. This is because they face an element of volume risk in the market i.e. forecasts may not match actual demand, leaving a shortfall in expected revenue.

For example, the CRU has compared the margins seen with those in the UK energy market and in other (non-energy sectors).

In the UK, Ofgem (the UK energy regulator) requires the “Big six” energy suppliers to publish yearly reports indicating, amongst other things their supply margins. The average margins across the Big 6 was 3.06%, with a range between -1.6% and 5.7% margin. The inferred margins from Irish suppliers is at a level that is not dissimilar to the average UK margin.

Energy retail margins (in percentage terms) are lower than other sectors, but are based on high volume transactions. For example, the Office of National Statistics (ONS) in the UK indicates that the margin in the UK services industry in 2016 is c. 17%. However, there are large differences in other sectors. For example, the UK Oil & gas average margin in 2016 was 4.2%.

6 A simple average has been applied, as opposed to a weighted average
• In summary, the CRU concludes the following;

• The inferred retail margins are, on average across Suppliers at a level that is higher than previously regulated margins. Given that we might expect margins in a competitive market to differ from those of a highly regulated market, this is not of itself a cause for concern at this point.

• However, the CRU does note that the inferred margin did increase between 2015 and 2016 from 2.3% to 3.4%. The CRU recognises that margins vary over time depending on the timing of changes in prices and costs and it is important to note that the data set is short. However, the CRU has compared the data set to the margins received from Suppliers through its current market monitoring function which are currently available for 2015. Broadly speaking the inferred and actual margins are comparable.

• From the data presented there is a marked difference between electricity and gas with a higher inferred margin growth in gas, particularly in the dual fuel sector. It appears that the margin on electricity is lower.

• Indications from the CRU’s own retail model which has been updated for the purposes of this paper indicate that supply costs, and potentially margins were reduced in the year compared to 2016, underlining the need to monitor this trend over a longer period of time. Where such monitoring indicates that changes in prices are not reflective of underlying cost changes, then the CRU will take action to ensure customer’s interests are protected. This will include monitoring differences in margin levels between electricity and gas retail markets.

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### Key Points and Summary of findings

- Average margins were 2.32% in 2015 and 3.48% in 2016 and have been compared to regulated retail margins in electricity and gas and margins across other industries.

- CRU data has been compared to inferred margins for 2015 and 2016 calculated from supplier submissions of total revenues and total costs as part of this RFI.

- Whilst these margins are not a cause for concern at this time, the CRU will continue to monitor changes in final retail prices, to ensure they are reflective of underlying cost changes.
5 Components of a final retail bill

This chapter presents information on the components of a final customer’s retail bill based on the CRU’s model. Updates to this model since the Review of Competition are also published here.

All final retail bills are made up of a number of components (wholesale gas or electricity, network charges and supply costs). Wholesale costs continuously change as they are impacted by movements in the market, such as the trading price for natural gas in a given period.

In the CRU’s Review of Competition a breakdown of electricity and gas cost components over time was presented based on the CRU’s internal Retail tariff model. Analysis conducted for both electricity and gas found that there appeared to be an increase in the difference between the total wholesale and network costs and the average retail price between 2013 and 2015. For the purposes of this information note, the CRU has updated the gas and electricity models to reflect suggestions for improvements received from stakeholders in responses to the review of Competition and to present analysis over a longer time period. This aspect is covered by Action 3 of this Information Note.

The CRU also concluded that more work was required to understand the components of supply costs separate to wholesale and network costs. This aspect is covered by Action 1 and Action 2 of this Information Note.

The calculations presented in this model are also compared to a breakdown of weighted average components of the final retail bill inferred from submissions from suppliers.
5.1 Final Price Components

Before electricity or gas is delivered to the final customer’s home it passes through a number of stages. Therefore, the final retail price seen on a bill reflects the generation or extraction of energy, the selling of that energy on wholesale markets, the cost of delivery to a household (network costs) and the cost to serve the customer (supply costs). In addition, a margin is included. Below illustrates the various stages in the energy supply chain.

<table>
<thead>
<tr>
<th></th>
<th>Upstream</th>
<th>Wholesale Market</th>
<th>Networks</th>
<th>Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas</strong></td>
<td>Gas is extracted from production fields globally and within Ireland. It can be transported via pipelines or LNG ships.</td>
<td>A virtual hub where gas is bought and sold for delivery.</td>
<td>Gas Shippers pay the network operator to enter and exit gas onto the transmission and distribution systems.</td>
<td>The supply chain ends when Suppliers compete to sell the gas to customers.</td>
</tr>
<tr>
<td><strong>Electricity</strong></td>
<td>Electricity is generated from a number of sources including coal, gas, wind and hydro. Ireland also imports and exports electricity to Britain via interconnectors.</td>
<td>Generators bid their costs into the SEM and half hourly prices are formed.</td>
<td>Suppliers pay the network operator to transmit energy through the wires in the network.</td>
<td>The supply chain ends when Suppliers compete to sell electricity to customers.</td>
</tr>
</tbody>
</table>
Wholesale costs refer to the commodity price for gas traded in the wholesale market. For electricity, wholesale refers to the price set by the mandatory pool where all generation must bid their costs. This price is known as the System Marginal Price (SMP).

Wholesale costs

One of the primary components of final retail prices is the cost of wholesale energy. The variation in wholesale market prices is outside the control of suppliers and the CRU. As the Irish energy mix is highly dependent on natural gas, this is a major factor in determining final retail prices as the price of electricity will often reflect movements in the natural gas price.

Up until the end of 2015 Ireland imported circa. 95% of all gas requirements from Britain via subsea interconnectors with the remainder coming from the Kinsale gas fields off the coast of Cork. Therefore the wholesale price of gas in Ireland was set by reference to the wholesale price at the trading hub in Britain (National Balancing Point or NBP) plus the cost of transport to Ireland via the interconnectors. In December 2015, commercial gas from the Corrib gas fields in Mayo began production and now provides up to 60% of peak day gas demand in Ireland.

Although Ireland is now primarily supplied by indigenous gas sources, the wholesale price has continued to be set by reference to the wholesale price at the NBP. The map below illustrates the three points where gas enters the Irish gas network.

Hedging

Gas can be sold at the trading hub for delivery at different times. This can include Month Ahead, Day Ahead and Within Day gas products. For example, a Supplier may wish to purchase part of its customers demand for the forthcoming year based on patterns of consumption from previous years. This is called hedging and can help to reduce price volatility for customers.

An example is shown below where a percentage of the gas requirements for delivery in each month is bought gradually ahead of the month in which the gas will be required. This hedging strategy is a simplified example, as it illustrates a 10
month strategy, with equal amounts of gas requirements bought each month. This is known as a laddered approach to hedging, as illustrated by the green shaded area.

Suppliers develop different hedging strategies which aim to smooth the impact of buying gas at different prices and allow price stability for customers.

<table>
<thead>
<tr>
<th>Month</th>
<th>Oct-16</th>
<th>Nov-16</th>
<th>Dec-16</th>
<th>Jan-17</th>
<th>Feb-17</th>
<th>Mar-17</th>
<th>Apr-17</th>
<th>May-17</th>
<th>Jun-17</th>
<th>Jul-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-16</td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Nov-16</td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Dec-16</td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Jan-17</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>Feb-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Mar-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>Apr-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>May-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
<td>80%</td>
</tr>
<tr>
<td>Jun-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>90%</td>
</tr>
</tbody>
</table>

**Figure 5.2**

As a large proportion of electricity requirements are generated from natural gas there is a correlation between natural gas prices and SMP in electricity.

In addition, the Single Electricity Market (SEM) has interconnection (interconnectors are the physical links which allow the transfer of electricity across borders) with the British wholesale market via the Moyle Interconnector and the East West Interconnector (EWIC) which can influence the price.

**Network costs**

Network providers in Ireland are monopoly service providers, meaning they do not face competition from other operators. Therefore, the revenues they are permitted to earn and the tariffs they may charge are the subject of regulation by the CRU. This ensures that the investments made are efficient and in the interest of all energy customers.

Network activities such as electricity transmission and distribution are considered to be natural monopolies requiring price regulation.
<table>
<thead>
<tr>
<th>Company</th>
<th>Responsibility</th>
<th>How their revenues are recovered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>EirGrid</td>
<td>Transmission System Operator&lt;br&gt;Plans the development of the transmission network</td>
<td>Transmission Use of System (TUoS) Charges</td>
</tr>
<tr>
<td>ESB Networks</td>
<td>A subsidiary within ESB Group&lt;br&gt;Finances, builds and maintains the transmission system&lt;br&gt;Finances, builds operates, maintains and develops the distribution system</td>
<td>Distribution Use of System (DUoS) charges</td>
</tr>
<tr>
<td>Gas Networks Ireland</td>
<td>Transmission System Operator&lt;br&gt;Distribution System Operator&lt;br&gt;Develops, plans and operates the transmission and distribution systems</td>
<td>Capacity Charges&lt;br&gt;Commodity Charges</td>
</tr>
</tbody>
</table>

The CRU undertakes revenue reviews known as “Price Controls” or “Price Reviews” for EirGrid and ESB Networks in electricity, and for Gas Networks Ireland in gas. These revenue reviews consider the costs of developing, maintaining and operating the electricity and gas systems. On the basis of these five yearly revenue controls, the CRU approves the level of charges that the network operators may levy.

Each supplier is charged on a per customer basis for access to the electricity or gas networks. Each supplier has discretion in terms of how they pass these costs through to their final customers.

In the last number of years for electricity there has been an increase in the network component of the final retail bill. Between 2015 and 2016 the network element increased by 5%. This reflects additional investment in the network, in particular to facilitate increasing levels of renewable generation.
Gas distribution tariffs increased marginally by 0.2% between 2015 and 2016, whereas gas transmission tariffs fell by 1.3% in the same period.

Supply Costs

There are a number of operating costs faced by Suppliers including obligatory costs such as government policy and regulatory costs. In addition, there are costs to serve customers for aspects such as advertising, customer care and billing. This is the focus of this Information Note.

Taxes and Levies

In addition to recovering the costs associated with wholesale, network and supply costs, there are other taxes and levies that suppliers are required to levy on customers. This includes the PSO levy, carbon tax and VAT.

The PSO for example, is a subsidy charged to all electricity customers in Ireland. It is designed by the Irish government and consists of various subsidy schemes to support national policy objectives related to renewable energy, indigenous fuel (peat) and security of energy supply. The proceeds of the levy are used to contribute to the additional costs incurred by PSO-supported electricity generators which are not recovered in the electricity market.

The Carbon tax was introduced in 2010 and applies to mineral oils, natural gas and solid fuels supplied for combustion in Ireland. All gas suppliers must apply this tax to customer’s bills. This energy tax was introduced as a means to incentivise manufacturers and suppliers to provide low carbon services and products to the household consumer market.
5.2 CRU Electricity Model

Previous Electricity Model assumptions
The assessment carried out for the Review of Competition used a bottom up calculation of the costs to serve a customer. This included data collected on the System Marginal Price (SMP) per MWh of electricity between 2013 and 2016, and the annual average bill of electricity customers based on 5,300\(^7\) KWh of consumption to estimate the wholesale energy cost component of the average annual bill.

The weighted average SMP price based on a half hourly domestic consumption profile was calculated to give the price for 5,300 KWh of consumption over one year, and the wholesale price was estimated by including market operator costs, capacity costs, imperfection costs, and taking into account distribution loss adjustment factors for distribution connected customers.

Network costs were calculated by including transmission charges and distribution charges between 2013 and 2016.

The weighted average retail price for each year was calculated based on the average annual standard bill of all suppliers, excluding PSO and VAT, taking into account the number of customers per supplier for each year, taken from a point in time each year between 2013 and 2016.

Updates to Electricity Model
The CRU has updated the electricity model since the publication of its review of competition paper. The changes made to the model are outlined below;

- The typical consumption value for electricity has been updated to 4,200kWh, as per the CRU’s decision paper published in March 2017 (CER17042) which introduced revised typical annual consumption figures for electricity and gas.

- The weighted average SMP price per year (weighted according to a domestic customer demand profile over a year) has been updated up to August 2017, reflecting increases in wholesale prices at the end of 2016 and in the first part of 2017.

- The weighted average SMP is now taken from October to October rather than on a calendar year basis to reflect changes in network tariffs which are introduced at this time each year. This has been updated and the average

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\(^7\) 5,300 KWh as an average has since been updated.
SMP price across the tariff year is weighted according to a typical domestic consumption profile.

- In contrast to the previous CRU retail model, the estimated bill was based on a standard tariff only. As a range of customers are on discount plans, this is not representative of the market as a whole. Therefore, to better represent a supplier’s mix of customers, the CRU has taken three retail bill scenarios.

- The first scenario is for a 100% standard plan. This will give rise to the highest retail bill. The second scenario is a blended 70:30 standard to discount plan. The final scenario is based on the best available discount plan across all suppliers.

- Cost components for VAT and the PSO have been included per year, in order to present a typical final retail bill for customers.

The results of these three scenarios are outlined below for 2016/17.

As each retail bill will differ the difference between the combination of wholesale and network (which remains static across all retail bill scenarios) will give rise to

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8 Standard tariffs are based on the weighted average standard plan offered by suppliers, while discount tariffs are based on the weighted average of the best available discount plan across suppliers.
different percentages of Supply costs ranging from c.12% (100% discount) to c. 20% for a standard plan.

In the CRU’s view, analysis from retail market monitoring indicates that a blend of 30% of customers on a discount tariff and 70% of customers on a standard tariff is broadly representative of suppliers in the market.

<table>
<thead>
<tr>
<th>Electricity Model Cost Components 2016 (70:30 retail bill)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*Figure 5.4*
Electricity Cost components (5 years)

Having considered the retail tariff using a range of tariff scenarios, and having concluded that the 70:30 standard to discount ratio is broadly representative of the market, Figure 5.5 presents electricity cost components (in monetary terms) from the 2012/13 tariff year to the 2016/17 tariff year.

![Electricity Bill Cost Components](image)

**Figure 5.5**

As can be seen above the Supply component in 2015 is larger than previous years. From the analysis of information submitted by Suppliers it appears that Supply Costs did increase marginally between 2015 and 2016 (8.10% in 2015 and 9.50% in 2016). However, in the CRU model supply costs in 2015/16 are significantly higher than 2014/15.

This may suggest that although wholesale prices began to decrease from 2014 the corresponding decrease in the final retail tariff may have initially (across all suppliers) been conservative in 2015, potentially due to some of the energy costs having been hedged at higher prices. In 2016, as wholesale prices continued to be lower it would appear that retail prices continued to decline and were passed through to customers. The observations from the CRU model are also premised on a comparatively blunt hedging strategy of the daily SMP price, whereas some of the difference may also be attributable to different hedging strategies e.g. some suppliers may have contracts purchased in a forwards market i.e. before delivery, to cover some of their customer demand.

As shown in Chapter 2 of this information note, the wholesale and network cost components as reported by suppliers are not directly comparable to the figures
presented in figure 5.4 in terms of their percentage breakdown. This is because the CRU model as updated in this paper presents all components of a final retail bill (including taxes, levies and margins within supply costs), whereas Chapter 2 presents the costs directly attributable to suppliers only i.e. it does not include taxes, levies and margins.

In addition, components of a domestic customer’s bill are presented here while Chapter 2 presents costs for domestic and non-domestic customers.

**Comparison with Supplier’s submissions**

In order to assess the validity of the CRU retail model and the results presented in Figures 5.3 to 5.5 we have taken the total cost components as submitted by Suppliers, including wholesale, network and supply costs (including margin). These total costs have been related back to the CRU model of the final retail bill, by taking each component (as submitted by Suppliers), working out a cost per unit (kWh) and then multiplying a weighted average cost per unit to an average customer of 4,200 kWh.

This is compared to supplier’s submissions for 2015 and 2016 below for two reasons;

1. To validate the range of costs submitted by suppliers at a high level against the CRU’s data.
2. To understand where there are differences between the CRU’s model and supplier’s data and the drivers for these.

The differences are outlined below, with an indication of why there may be differences between the CRU model and Supplier data.

<table>
<thead>
<tr>
<th>Final Components of a domestic electricity retail bill for 4,200kWh of consumption- 2016</th>
<th>CRU Model</th>
<th>Supplier Data</th>
<th>Rationale for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wholesale costs</strong></td>
<td>31.33%</td>
<td>26.54%</td>
<td>Different hedging strategies</td>
</tr>
<tr>
<td><strong>Transmission and Distribution Costs</strong></td>
<td>31.63%</td>
<td>38.57%</td>
<td>CRU model optimises network costs whereas Suppliers with a portfolio are likely to have fluctuating network charges dependent on customer profiles/numbers.</td>
</tr>
<tr>
<td><strong>Supply Component</strong></td>
<td>17.51%</td>
<td>17.93%</td>
<td>The CRU model includes an implicit margin, whereas Supplier data here includes a combination of reported supply costs and inferred margins.</td>
</tr>
</tbody>
</table>
An Coimisiún um Rialáil Fóntas  
Commission for Regulation of Utilities

<table>
<thead>
<tr>
<th></th>
<th>CRU PSO</th>
<th>CRU 7.7%</th>
<th>No difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSO</td>
<td>7.64%</td>
<td>7.7%</td>
<td>No difference</td>
</tr>
<tr>
<td>Taxes and Levies</td>
<td>11.89%</td>
<td>11.89%</td>
<td>No difference</td>
</tr>
</tbody>
</table>

**Table 5.1**

As can be seen from table 5.1, the main difference between the CRU’s model of cost components and the costs reported by suppliers relates to the breakdown of wholesale costs and transmission and distribution costs and the main differences may be due to the CRU’s assumptions around hedging for electricity suppliers.

The CRU’s model only concludes that there is an inferred CRU Supply Costs (and margin) of 17.51%. Cross validating the results against the Supplier submitted data indicates that Supply Costs and inferred margins amount to 15.29%.

This difference in percentages could again be attributed to the CRU model’s limitations in terms of capturing the hedging strategies for different suppliers as well as limitations in terms of inferring the margin of Suppliers.

**5.3 CRU Gas Model**

A similar assessment was also conducted for the gas market. Wholesale costs are based on the National Balancing Point (NBP)\(^9\) price of gas, which was converted to Euros per MWh, as the NBP price is set in Sterling. Consumption for a typical customer was split out across each month based on Gas Network Ireland’s NDM\(^10\) profile for domestic customers\(^11\), which sets out the yearly profiles for gas consumption.

For gas, transmission tariffs consist of capacity and commodity charges that apply for the use of the high pressure transmission natural gas network systems. All natural gas in Ireland flows through the transmission system, and some gas customers such as power generation plants are directly connected to the transmission system.

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\(^9\) The NBP is the virtual trading hub in Britain where gas is traded.

\(^10\) Non Daily Metered is the meter type applicable to a domestic gas customer

Distribution tariffs also consist of capacity and commodity charges, and are for the use of the lower pressure system where all domestic dwellings are connected.

An (arbitrary) hedge of 50% of consumption for a customer for a particular month bought a year in advance and 50% bought based on the average NBP price within the month of delivery was assumed for the purpose of the calculation of the estimated wholesale price, based on 13,800 kWh\(^{12}\) of consumption annually.

Network costs were added to this to estimate the total wholesale and network price.

The final retail price of gas is based on the CRU’s market monitoring of supplier prices over time, and was calculated as a weighted average of the prices of all standard plans at a point in time each year, excluding Carbon Tax and VAT, based on the customer numbers of each supplier over time.

### Updates to Gas Model

The CRU has updated the gas model to reflect suggestions for improvements received from stakeholders in response to the review of Competition, outlined below as well as to reflect the changes in the application of tariffs to derive the final retail price, consistent with the electricity model.

- The typical consumption value for gas has been updated to 11,000 kWh, as per the CRU’s decision paper published in March 2017\(^{13}\) which introduced revised typical annual consumption figures for electricity and gas.

- The weighted average NBP price has been updated to August 2017 and is based on Gas Network Ireland’s NDM\(^{14}\) consumption profile during the year for domestic customers. Simply put this shows how gas customer typically consume gas month-to-month.

- The assumed hedge for gas has been changed to 80% of gas bought one year in advance, with 20% bought at the day ahead price. While the CRU realises that in reality hedges may be more complex than presented in the

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\(^{12}\) This consumption figure is currently used on price comparison websites. However, the CER is currently in the process of revising this consumption figure.  
\(^{13}\) CER17042  
\(^{14}\) Non Daily Metered is the meter type applicable to a domestic gas customer.
CRU model, suppliers all have different hedging strategies which cannot be captured here.

- Analysis of both day ahead and month ahead NBP prices has been included.
- Network cost data has been updated to reflect network tariffs across each year. Previously the CRU used ACER/CEER data on network cost components which the CRU feeds into.
- Cost components for Carbon Tax and VAT have been included per year.
- The CRU has compared the components of costs based on a weighted average standard price bill, a weighted average discount price bill, and a combination of both in order to see the effect on inferred supply costs.
- Data on the components of costs as submitted by suppliers has also been compiled for comparison with the CRU model.

Based on these changes, an updated breakdown of the components of the final gas bill for a customer with typical consumption of 11,000kWh in 2016 is shown below. This is based on the estimated cost components for a standard tariff, a discount tariff and a combination of both.

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15 For transmission this includes entry commodity and capacity charges, exit commodity and capacity charges and for distribution this includes commodity and capacity charges.
16 Standard tariffs are based on the weighted average standard plan offered by suppliers, while discount tariffs are based on the weighted average of the best available discount plan across suppliers.
2016/17 Gas Cost Components (CER Model)

<table>
<thead>
<tr>
<th>Component</th>
<th>Standard Tariff Calculation</th>
<th>Discount Tariff Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale Estimate</td>
<td>24.20%</td>
<td>24.94%</td>
</tr>
<tr>
<td>Transmission &amp; Distribution</td>
<td>35.64%</td>
<td>36.41%</td>
</tr>
<tr>
<td>costs</td>
<td>22.63%</td>
<td>23.21%</td>
</tr>
<tr>
<td>Carbon Tax</td>
<td>5.38%</td>
<td>5.38%</td>
</tr>
<tr>
<td>Tax</td>
<td>11.89%</td>
<td>11.89%</td>
</tr>
<tr>
<td>Supply Component</td>
<td>20.00%</td>
<td>21.21%</td>
</tr>
</tbody>
</table>

### Figure 5.6

Gas Model Cost Components 2016 (70:30 retail bill)

<table>
<thead>
<tr>
<th>Component</th>
<th>Wholesale</th>
<th>Network</th>
<th>Supply</th>
<th>Taxes and levies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24.42%</td>
<td>35.64%</td>
<td>22.63%</td>
<td>17.32%</td>
</tr>
</tbody>
</table>

### Figure 5.7
**Gas Cost components (4 year analysis)**

Having considered the retail tariff using a range of tariff scenarios, similar to the electricity retail model, the CRU has concluded that the 70:30 standard to discount ratio is broadly representative of the market. Figure 5.8 presents gas cost components (in monetary terms) from the 2013/14 tariff year to the 2016/17 tariff year.

As shown in Chapter 2 of this information note, the wholesale and network cost components as reported by suppliers are not directly comparable to the figures presented in figure 5.8 in terms of their percentage breakdown.

The same rationale as outlined above for figure 5.4 applies. Chapter 2 presents total domestic and non-domestic costs only while all components of a final retail bill for a domestic customer are presented in this chapter. The primary difference is that in electricity a PSO applies whereas in gas a carbon tax applies.

![Gas Cost Components (CER Model)](#)

**Figure 5.8**

The updated graph above is notable in that the Supply Cost element in the CRU model appears to have increased between 2015/16 and 2016/17 from €141 to €170, and this is in contrast to the electricity model where the Supply Cost element does not increase in this manner.

There may be a number of reasons for this. Firstly, the CRU model is reflective of a hedging strategy that is based on 80% of gas requirements bought a year ahead and 20% day ahead. A different hedging strategy would result in an increase or decrease in the cost component associated with the wholesale element in either 2015 or 2016 and therefore the level of Supply Costs may change.
In addition, as indicated in Section 4 the inferred margins in gas were noticeably higher than those in electricity, and this may also be contributing to the apparent increase in the Supply Costs element in the CRU retail model.

**Comparison with Suppliers submissions**

Similar to the exercise undertaken to validate the CRU retail model in electricity, the CRU has also taken supplier cost component data on a cost per customer (11,000 KWh) basis.

The differences are outlined below, with an indication of why there may be differences between the CRU model and Supplier data.

<table>
<thead>
<tr>
<th>Final Components of a domestic gas retail bill for 11,000kWh of consumption- 2016</th>
<th>CRU Model</th>
<th>Supplier Data</th>
<th>Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale costs</td>
<td>24.42%</td>
<td>29.95%</td>
<td>Different hedging strategies</td>
</tr>
<tr>
<td>Transmission and Distribution Costs</td>
<td>35.64%</td>
<td>34.15%</td>
<td>Broadly comparable</td>
</tr>
<tr>
<td>Supply Component</td>
<td>22.63%</td>
<td>18.75%</td>
<td>The CRU model includes an implicit margin, whereas Supplier data presented here is a combination of supply costs and an inferred margin</td>
</tr>
<tr>
<td>Carbon Tax</td>
<td>5.42%</td>
<td>5.24%</td>
<td>No difference</td>
</tr>
<tr>
<td>Tax</td>
<td>11.89%</td>
<td>11.89%</td>
<td>No difference</td>
</tr>
</tbody>
</table>

Table 5.2

Having concluded the updates to the CRU retail tariff model, based on the revised inputs outlined above, we can conclude that both electricity and gas supply costs appear to have risen over the period 2013/14 to 2016/17, using 2013/14 as the base year.

This may reflect the fact that in the same period broadly speaking wholesale costs (which are pass through) have reduced and network charges have remained broadly constant.

Therefore, in percentage terms, the Supply cost element (which includes a retail margin) appears to have increased vis-à-vis the total retail bill. However, as explored in chapter 2 of this paper, Supply costs also include sales, advertising,
customer acquisition and retention costs, amongst other costs, and these appear to have driven a level of increased supply costs in that period.

Key Points and Summary of findings

- The components and drivers of the final retail bill have been outlined in this chapter.

- In the CRU’s Review of Competition a breakdown of electricity and gas cost components over time was presented based on the CRU’s internal Retail tariff model.

- Analysis conducted for both electricity and gas found that there was an increase in the difference between the total wholesale and network costs and the average retail price between 2013 and 2015.

- Having updated the CRU retail tariff model for both electricity and gas, the CRU has concluded that electricity and gas supply costs appear to have risen over time. Electricity supply costs appear to have decreased between 2016/17. This may be driven by the fact that SMP prices have been higher in this period while final retail prices have not changed.
6 Conclusions

The analysis for this paper was undertaken as an action from the Review of Competition published in early 2017, in order to understand the drivers for the changes in supply costs across each year and increase transparency around supply costs. The primary conclusions are included below.

1. **Sales, advertising and customer acquisition and retention costs are driven by economies of scale**

For sales, advertising and customer acquisition and retention costs we have found that suppliers with above 5% market share in terms of customer numbers in electricity and gas in 2015 and 2016 spend less on a per customer basis than suppliers with less than 5% market share. This is a constantly changing area for suppliers and the costs associated with this could be inferred to have increased since deregulation of the electricity and gas retail markets.

2. **Bad debt is reducing across the market**

Bad debt appears to be a significant cost for suppliers but has decreased between 2015 and 2016, which may reflect improving economic conditions and the trends from other market data showing decreased numbers of disconnections and PAYG financial hardship installs.

3. **Obligatory costs are a small component, but may increase in the short to medium term.**

This paper has also presented a number of components of Obligatory costs, which together make up just under 1% of total supplier costs (taken as a weighted average across suppliers). While obligatory costs are a relatively small component of total costs, they have increased between 2015 and 2016, primarily due to energy efficiency obligations and customer protection and audit requirements.

The CRU is aware of a number of areas where obligatory costs may increase in the short to medium term, and will consider monitoring the impact of these policy areas in future. In terms of the costs associated with the EEOS in particular, we have identified a range of costs per MWh across different suppliers in the electricity and gas markets.

4. **Supplier Margins are not a cause for concern but the CRU will continue to monitor to ensure that customers are benefitting from competition**

In addition the CRU has also reviewed supplier margins across the electricity and gas retail markets so as to ensure that a full picture of the components of final retail
prices is presented in this paper. Margins have been compared in scale since deregulation of the electricity and gas retail markets.

The CRU has also determined Supplier’s margins through this RFI. While these appear to be comparable with other utilities, the CRU notes an increase in margins from 2015 to 2016 and will continue to monitor these to ensure that competition is working for consumers.
## Appendix 1

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Revenue</td>
<td>The revenue associated with the sale of electricity and/or gas to final customers in the reporting period, excluding taxes and levies.</td>
</tr>
<tr>
<td>Fuel Costs</td>
<td>The total costs paid by a supplier for wholesale electricity or gas in the reporting period, including costs for hedging.</td>
</tr>
<tr>
<td>Total transportation and network costs</td>
<td>Network and other non-supply or non-energy related costs refer to distribution, transmission and other charges incurred by the supplier in the reporting period. In electricity this includes DUoS and TUoS charges, capacity charges, market operator charges, imperfection charges and transmission and distribution loss adjustment factors. Transmission charges in gas include both entry cost and exit cost. Gas network charges include entry and exit capacity, entry and exit commodity, shrinkage, commodity charges, disbursement and adjustment charges.</td>
</tr>
<tr>
<td>Gross operating costs</td>
<td>Operating costs excluding fuel costs and network costs.</td>
</tr>
<tr>
<td>Obligatory costs</td>
<td>Any costs directly attributable to a statutory requirement, whether national or European, related to government policies, regulatory decisions and environmental obligations.</td>
</tr>
<tr>
<td>Sales, advertising &amp; branding costs</td>
<td>Sales and advertising costs, associated with the acquisition of new customers and retention of current customers.</td>
</tr>
<tr>
<td>Net Operating Costs</td>
<td>This is Gross Operating Costs minus obligatory costs and sales costs. This may include billing, communications, customer care, business support services, facilities, insurance and systems, including any depreciated capital expenditure in the reporting period.</td>
</tr>
</tbody>
</table>
## Appendix 2

### Energy Efficiency Obligation Scheme

- The Energy Efficiency Obligation Scheme is administered by the Sustainable Energy Authority of Ireland (SEAI). Obligated parties' targets are allocated according to their proportion of energy market sales volume in Ireland.
- The target allocated to obligated parties is 550 GWh which is sub-sectoralised as 75% non-residential, 20% residential and 5% fuel poverty residential.
- Costs reported by suppliers under the EEOS scheme include the direct costs of energy credits, implementation of energy efficiency schemes and indirect labour costs.

### Free Electricity and Gas Allowance

- The Department of Social Protection provides a Free Electricity Allowance (FEA) and Natural Gas Allowance to those aged over 70 and to people under age 70 in certain circumstances.
- Costs reported by suppliers relate to any administrative costs associated with this allowance.

### Supplier Handbook

- The Supplier Handbook defines minimum standards of protection for all customers and sets out the obligations on electricity and gas suppliers.
- While the costs reported under this category may account for changes being implemented as a result of the supplier handbook review, the majority of costs relate to ongoing operational costs associated with compliance for the period of reporting for 2015 and 2016.

### Meter tampering, revenue protection and disconnection process

- A number of obligations are placed on suppliers in relation to the disconnection of customers for non-payment. Suppliers are required to offer a payment plan and prepayment solution to customers in advance of proceeding to disconnect, and a number of suppliers have also signed up to a voluntary agreement committing to never disconnect an engaging customer.

### Green Source Products Audits & Fuel Mix Disclosure

- Any supplier offering green source products must go through a verification process to ascertain that they have sufficient green attributes to cover their sales of green source products.
- Suppliers are required to provide information on their websites and on customer bills regarding their overall fuel mix and environmental impact to customers.
- Costs reported by suppliers relate to the cost of carrying out the green source product audit and providing information for the fuel mix disclosure.

<table>
<thead>
<tr>
<th>Regulation Human Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs reported by suppliers relate to the resource costs of the main regulation team and costs allocated to analysis and responses to either EU or Irish regulations, consultation papers, compliance requests and issues arising from industry governance groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual CRU Supplier Audits</th>
</tr>
</thead>
<tbody>
<tr>
<td>The CRU regularly conducts audits of compliance to ensure that suppliers are meeting their regulatory obligations as set out in the Supplier Handbook.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retail Market Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers are required to submit monthly, quarterly and annual reports to the CRU for a range of indicators including renegotiations, dual fuel switching, margins, end user prices and customer complaints.</td>
</tr>
<tr>
<td>The costs associated with this include resource costs for compiling and developing the information and reports and IT project costs for implementing market monitoring systems.</td>
</tr>
</tbody>
</table>