Quarterly Wholesale/Retail Price Report

February 2009

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Overview

In October 2008 Ofgem published the *Energy Supply Probe – Initial Findings Report* which included analysis on the relationship between the wholesale energy costs faced by suppliers and retail prices[1] faced by customers. This was partly in response to concerns that falls in wholesale energy prices were not translating into lower retail prices as quickly as increases were leading to higher retail prices.

By updating the analysis presented in the *Energy Supply Probe*, Ofgem hopes that this report will help interested parties gain a greater understanding of the relationship between retail prices and wholesale energy costs.

Historically, energy suppliers have changed retail prices infrequently (compared to other commodity based retail markets such as petrol). This is because suppliers incur significant costs in changing prices and consumers prefer relatively stable retail prices. Energy consumers have a range options for managing the risk associated with movements in the retail price. For example, consumers can choose tracker products that link the retail price to changes in wholesale prices, or tariffs that fix or cap the price they pay for certain period of time (much like product offerings in the mortgage market). However, approximately 80% energy consumers continue to purchase energy on standard tariffs. Therefore, in response to consumers' desire for some price stability and to provide themselves with more certainty over costs as well as their actual supply of energy, suppliers buy some of their energy requirement in advance of use (generally referred to as hedging).

Wholesale energy costs account for around 60% of a domestic customer's energy bill and are a major consideration in supplier's retail pricing decision. The relationship between wholesale costs and retail prices is complex for a number of reasons. For example, firms can employ a range of hedging strategies that may change over time; there is a cost to suppliers of changing prices, which means that the retail price will not always reflect the wholesale cost the supplier is facing at a particular point in time; and, firms face a range of costs that may be beyond their control and difficult to forecast, such as the cost of environmental commitments and network charges.

The analysis presented in the report has been conducted on a forward looking basis, in other words it estimates the likely costs of supplying energy to customers over the next

[1] http://www.ofgem.gov.uk/MARKETS/RETMKTS/ENSUPPRO/Documents1/Energy%20Supply%20Probe%20-%20Initial%20Findings%20Report.pdf. Chapter 7 "Company behaviour", Appendix 5 "Wholesale costs and retail prices"

12 months. It also assumes that suppliers purchase wholesale energy in advance. We believe that this gives the best indications of the level of costs that they face.

Summary of analysis

The analysis presented in the report shows the relationship between retail prices and wholesale costs. The analysis shows that based on an 18month hedging strategy gross margins in February this year are around £95 and £103 per customer for electricity and gas respectively[2]. The gross margin covers supplier's internal operating costs such as staffing, sales, marketing and IT costs as well as profits. In the current economic climate there is upward pressure on operating costs, in particular the cost of social tariffs provision and bad debt costs, and in addition energy demand is lower.

Other supply costs such as environmental and network costs have already been deducted before calculating this margin. In 2008 these costs amounted to almost £180 per annual customer bill for both gas and electricity. Please refer to section 5 for further details.

The analysis also shows that no single hedging strategy has consistently yielded the highest margins across the period analysed (January 2003 to January 2009) and each of the hedging strategies considered in the analysis was the most costly at some point over this period. Hedging wholesale costs on a 12 month basis would have been the most costly strategy to suppliers since January 2008.

Notes

Ofgem is intending to publish the report on a quarterly basis. In addition, when appropriate, we may publish the report and related information outside of this time scale. It should be noted that the analysis presented in this report is not intended to give a precise indication of when retail prices will fall.

Whilst Ofgem has tried to ensure the accuracy of the data contained within this report, Ofgem does not accept any liability for any loss or damage arising from the use of or reliance on any information or opinion contained within this report.

Contact

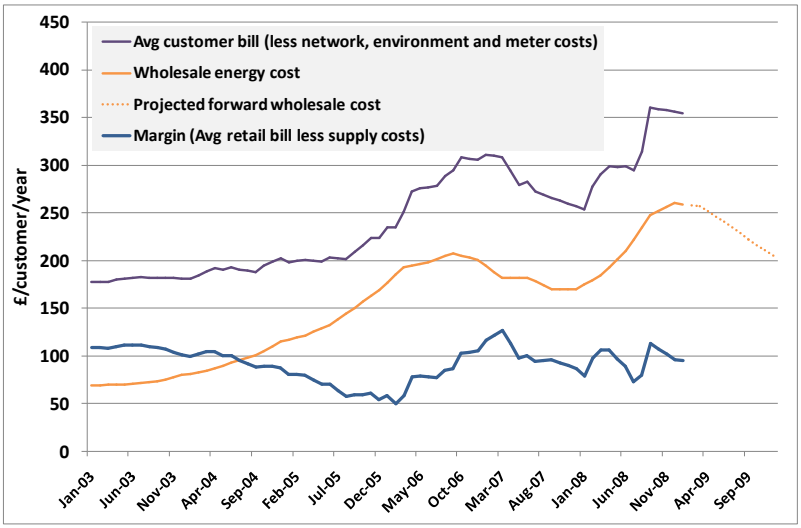
We welcome any suggestions on how this first report could be improved and comments on our methodology. Please contact Chris Lock on 0207 9017225 for press enquires or Ijaz Rasool at ijaz.rasool@ofgem.gov.uk or Ed Harris at ed.harris@ofgem.gov.uk.

[2] The retail bill data series does not include the recent price cuts announced by five of the big six energy suppliers. As the cost and price data is calculated on a national average basis margin is likely to vary by region.

1. Customer bills, wholesale energy costs and margins

This section shows the relationship between customer bills and wholesale energy costs (which assumes that a supplier has hedged costs on an 18 month basis). Please refer to section 5 for an explanation of the methodology.

Fig 1.1: Electricity customer bill, wholesale cost and margin

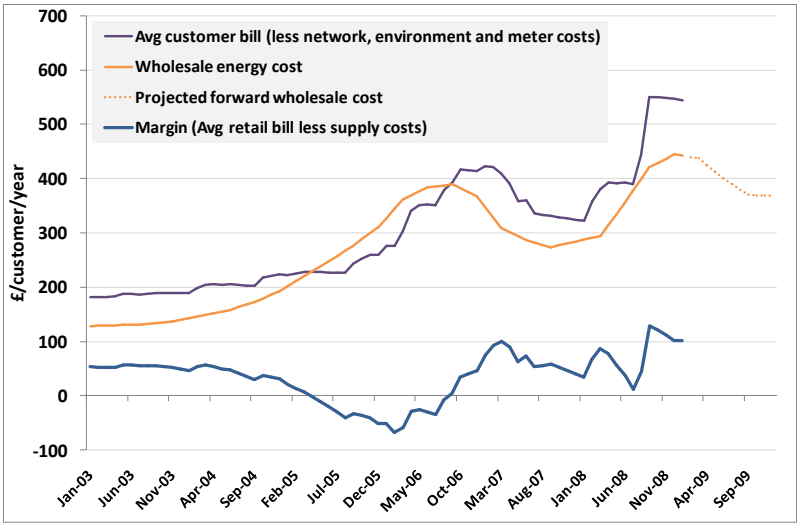


Electricity

Figure 1.1 shows that based on our assumed 18 month hedging strategy the supply margin would currently be around £95 per customer per year.

The analysis shows suppliers' wholesale energy costs peaking in December 2008 and, on the basis of current forward wholesale prices, should start declining during 2009.

Fig 1.2: Gas customer bill, wholesale cost and margin



Gas

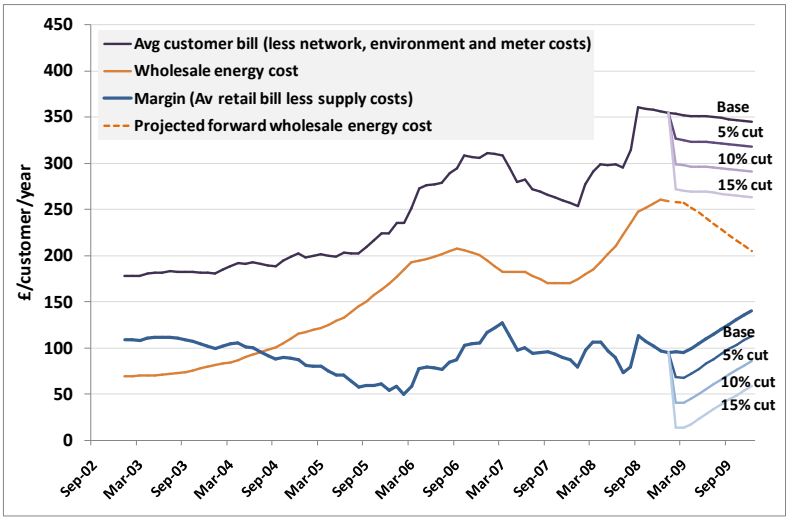
Figure 1.2 shows that based on our assumed 18 month hedging strategy the margin would currently be around £103 per customer, per year.

The chart shows that, on the basis of an 18month hedging strategy, wholesale energy costs peaked in December 2008, and are expected to decline during 2009 before levelling out at the end of the year.

2. Impact of retail price cuts on margins

This section shows the impact of a 5%, 10% and 15% reduction in retail prices on margins over the next twelve months. Please refer to section 5 for an explanation of the methodology.

Fig 2.1: Impact of electricity retail price cuts on margin



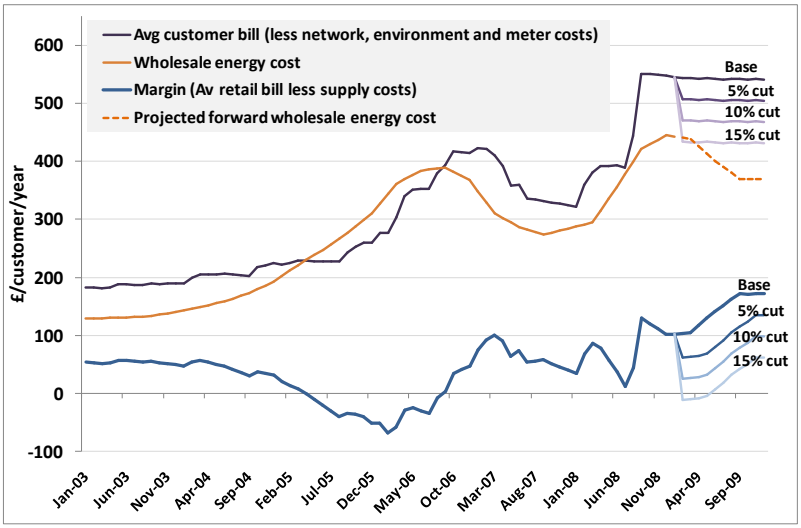
Electricity

Figure 2.1 shows the impact of a 5%, 10% and 15% reduction in the retail price on electricity margins over the next twelve months.

The analysis assumes that forward wholesale energy prices remain at current levels.

The downward slope of the average customer bill line reflects the impact of higher network and environmental supply costs on the average customer bill during 2009.

Fig 2.2: Impact of gas retail price cuts on margin



Gas

Figure 2.2 shows the impact of a 5%, 10% and 15% reduction in the retail price on gas margins over the next twelve months.

This analysis also assumes that forward wholesale energy prices remain at current levels. Further falls in forward wholesale prices may lead to higher margins.

3. Hedging strategies

This section compares the cost to a supplier of adopting different wholesale energy hedging strategies. Please refer to section 5 for an explanation of the methodology.

Fig 3.1: Electricity costs under different hedging strategies

Electricity

Figure 3.1 compares a range of wholesale cost hedging strategies that a supplier may adopt.

The analysis shows that each of the hedging strategies presented was the most costly to suppliers at some point over the period analysed (January 2003 to January 2009). This highlights the difficultly in understanding the relationship between wholesale and retail prices as different suppliers utilise different strategies that can change over time.

Fig 3.2: Gas costs under different hedging strategies

Gas

Figure 3.2 compares a range of wholesale cost hedging strategies that a supplier may adopt. It shows that of the four strategies presented, hedging wholesale costs on a 12 month basis would have been most costly to suppliers since the start of 2008.

4. Forward wholesale prices

This section compares the price of wholesale products (day-ahead and annual forward)[3] with wholesale costs using an 18 month hedging strategy. Please refer to section 5 for an explanation of the methodology.

Fig 4.1: Wholesale electricity forward prices vs 18mth hedge

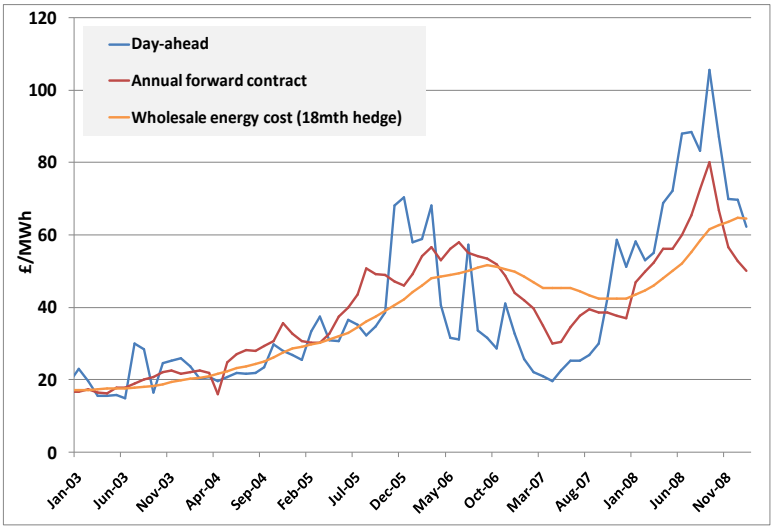
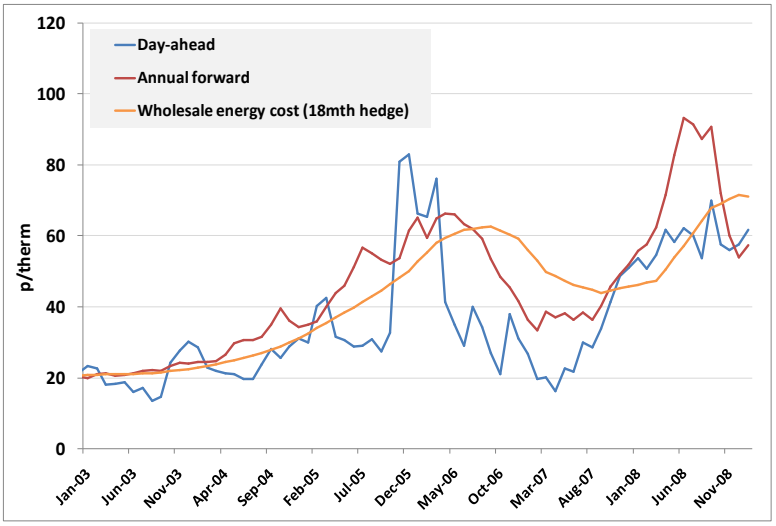


Fig 4.2: Wholesale gas forward prices vs 18mth hedge



Electricity and gas

Figures 4.1 and 4.2 compare wholesale prices for the day-ahead and annual wholesale forward products with an 18 month hedged product.

The analysis shows the clear contrast between volatile movements in day-ahead (and to a lesser extent annual) prices and the much smoother movements in wholesale energy costs that suppliers can achieve through hedging.

The charts illustrate how, by hedging, a supplier introduces a lag between changes in prices in the wholesale markets and its own energy purchase costs. The analysis therefore shows periods in which a supplier's hedged costs are rising when wholesale prices are falling, and periods when suppliers hedged costs are falling when wholesale prices are rising.

[3] Based on day-ahead and forward prices quoted in Heren's EDEM and ESGM reports.

5. Methodology

This section provides a detailed description of the methodology Ofgem has used in the analysis contained within this report. This methodology is very similar to that used to examine the relationship between wholesale and retail prices in the *Energy Supply Probe – Initial Finding Report* published in October 2008.

Methodology

The analysis presented in the report consists of three key data series:

- Average customer bill less network, environmental and meter costs
- Wholesale energy cost
- Margin (the difference between the two)

A description of each of these data series and how they have been constructed is provided below.

Average customer bill

The average customer bill is an estimate of the average cost paid by UK retail energy customers.

The average customer bill data series in the report is constructed using monthly prices charged by the 'big 6[4]' companies and those of suppliers since bought by, or merged with, the big 6[5]. First, a national average price by payment method is constructed by averaging prices in each region, then nationally[6]. Finally, these averages are weighted according to the proportion of customers on each payment method. As the cost and price data is calculated on a national average basis margin is likely to vary by region.

Costs faced by suppliers in supplying customers

We have estimated a range of costs on an annual basis using data from a variety of sources. A monthly series is constructed by taking straight line averages between each annual data point.

Network charges (transmission and distribution), environmental costs, (e.g. EEC, CERT, ROCs) and meter costs ((including the cost of the asset and maintenance but excluding meter reading) have been netted off the average customer bills to obtain a data series that excludes these supply costs.

[4] EON. RWE, SSE, SP, Centrica, EDF

[5] An average consumption of 2MWh for electricity and 18.2,MWh for gas was assumed.

[6] To calculate the retail price incumbent and non-incumbent prices have been used, weighted by customer numbers (incumbent and non-incumbent)

This allows the effect of wholesale energy costs on customer bills to be isolated from the effect of these costs.

The margin presented in the report is thus at a gross margin level, i.e. it includes supplier's internal operating costs such as customer service staffing, IT, marketing, billing and bad debt costs as well as operating profits.

Based on the analysis undertaken for the retail probe we estimate that supplier operating costs account for approximately 15% of total costs in 05, 14% in 06 and 14% in 07.

Wholesale energy costs

Wholesale energy costs account for around 60 per cent of a customers' energy bill and are generally the main driver behind changes to the retail price.

As wholesale energy purchases are a large (and often volatile) component of suppliers' costs, firms buy much of their energy requirement forward in order to reduce their exposure to potentially large changes in wholesale energy prices, often referred to as hedging. This helps to smooth suppliers' costs and provides a degree of certainty over future costs. This implies that current wholesale prices are unlikely to be an accurate indication of suppliers' current wholesale costs.

Given the above, it is important to understand the relationship between the wholesale energy price and the cost incurred by suppliers of procuring wholesale energy. It is likely that suppliers' price-setting decisions are made on the basis of expectation of future wholesale energy costs. We have therefore constructed a wholesale cost model that estimates the expected cost of providing a customer with energy for the next year. This wholesale cost model estimates the expected cost at time *t* of supplying energy for the next year[7], using quarterly products and seasonal products.

We have estimated costs based on a range of different hedging strategies. These strategies draw on information provided to us as part of the Energy Supply Probe. Our model shows what we believe are representative wholesale industry costs. However, it is important to note that hedging strategies vary across the industry and individual suppliers may change strategy through time in reaction to market conditions.

In the report we present costs based on 4 different hedging strategies. Section one shows costs based on a hedging strategy where firms start purchasing energy 18 months ahead of time *t*, and have bought all their energy requirements for the year ahead at time *t* (figure 1.1 and 1.2). Section three shows how wholesale costs vary with alternative hedging strategies (figure 3.1 and 3.2). The alternative hedging strategies are:

- Firms starting to purchase energy 12 months ahead of time t;
- Firms starting to purchase energy 2 years ahead of time t; and

[7] This cost estimate is based on traded prices for quarterly (gas) and seasonal (electricity) forward products which cover the relevant period, t to t+1year.

- Firms starting to purchase energy 18 months ahead of time t, but only hedging 90% with the remaining 10% purchased day-ahead.

Prices are weighted to take account of seasonal consumptions trends (by quarter for gas and by season for electricity) and the electricity requirement is shaped for baseload and peak products. Wholesale energy cost is calculated by averaging forward electricity and gas product prices over the buying period, from t-x to t, assuming a constant rate of purchase.

Since the wholesale cost model requires up to 2 years of pricing data prior to each point estimate, our price data, beginning in Q3 2000, limits the wholesale cost series to starting in Q3 2002. We do not believe this to be a significant limitation as liquidity was less well established prior to this, implying that prices may be a less reliable indicator of suppliers' costs. In addition, price controls were not fully removed until 2002, which means market conditions were likely to be different prior to this date.

The wholesale cost model calculates wholesale costs on a quarterly basis, which are then converted into a monthly series by taking a straight line average between quarterly points.

Finally, forecast wholesale energy costs have been calculated for one year ahead (from time t) based on current forward prices. This is to provide an indication of how wholesale costs faced by suppliers may change over the coming year.

Margin

The margin is calculated as the difference between the average customer bill (less network, environmental and meter costs) and the wholesale energy cost. In addition to operating profit, margin includes suppliers own internal operating costs such as customer service staffing, IT, marketing, billing and bad debt costs.

Our approach

As noted above, we appreciate that suppliers are different and hence adopt a range of different hedging strategies that may vary over time. However, on balance, we feel that the wholesale cost model is a reasonable representation of the wholesale costs incurred by suppliers in aggregate across the whole industry.

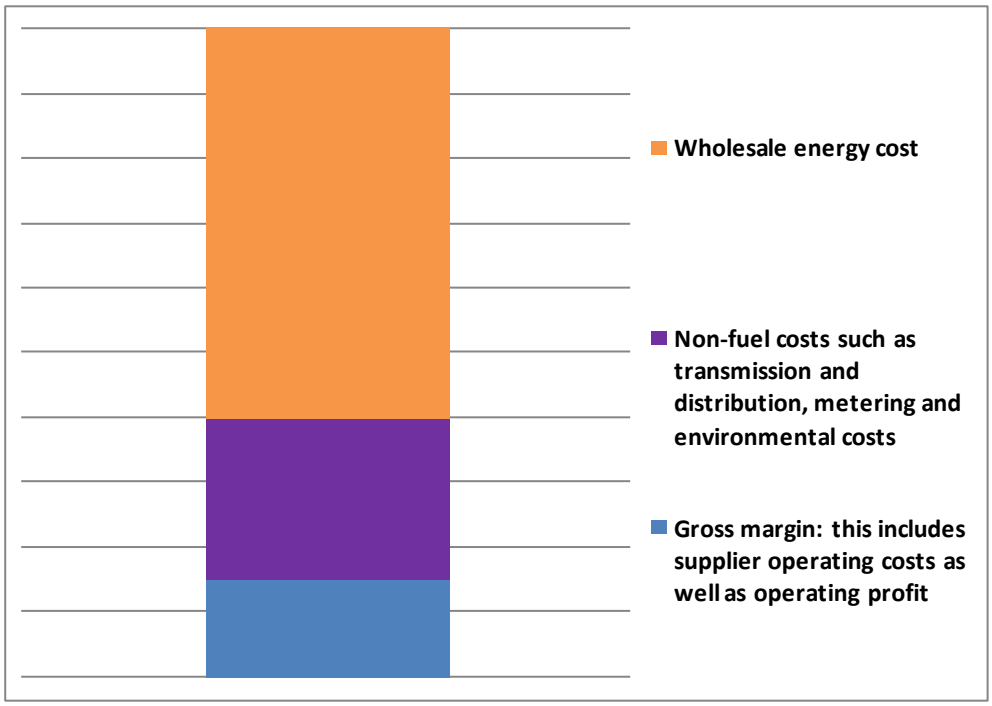
Key differences between our approach in the *Quarterly Report* and the *Energy Supply Probe Report*

Whilst Ofgem proposes to use a very similar methodology to that adopted in the Energy *Supply Probe – Initial Findings Report*[8], there is one key difference. The analysis presented in the probe document is at a net margin level, i.e. supplier's own internal operating costs were deducted and the net margin therefore equated to supplier profit. However, in producing this report we have not deducted supplier's operating costs in the margin calculation. The reason for this is that it would

[8] Chapter Seven "Company behaviour", pages 74 to 78 and Appendix five "Wholesale costs and retail prices"

currently be difficult to obtain this data on a consistent basis across all suppliers. However, given fuel costs account for the majority of suppliers' total costs we do not believe this change will materially alter conclusions that can be drawn from the analysis.

The gross margin approach is illustrated below. The entire stack presents the average customer bill or the retail energy cost faced by the consumer. From this we have removed wholesale energy costs and other supply costs. This leaves margin which includes suppliers operating costs and profit.



Notes

- Average consumption of 18.2MWh and 4MWh has been assumed for gas and electricity respectively.
- The analysis presented in this report is not intended to give an indication of when retail prices will fall. Suppliers generally consider a range of factors when considering changing retail prices.
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