



Energy Prices and Debt
to
The National Housing Federation

September 2008



IPA Energy + Water Economics

Energy Prices and Debt
to
The National Housing Federation



IPA Energy + Water Economics
41 Manor Place
Edinburgh
EH3 7EB
Scotland

Tel: +44 (0) 131 240 0840
Fax: +44 (0) 131 220 6440
Email: contact@ipaeconomics.com
web: www.ipaeconomics.com

TABLE OF CONTENTS

<u>EXECUTIVE SUMMARY</u>	<u>1</u>
<u>1 INTRODUCTION</u>	<u>2</u>
1.1 This Report	2
<u>2 FORECASTS OF WHOLESALE UTILITY PRICES</u>	<u>3</u>
2.1 Introduction	3
2.2 IPA’s PowerView Forecast	3
<u>3 FORECASTS OF DELIVERED UTILITY PRICES AND ANNUAL BILLS</u>	<u>7</u>
3.1 Delivered Gas Prices	7
3.2 Power	15
<u>4 NUMBERS OF CUSTOMERS IN DEBT</u>	<u>24</u>
4.1 Policy Interventions	24
4.2 Historical Number of Customers Repaying a Debt	27
4.3 Correlations between Bills and Debt	29
<u>5 AVERAGE AND TOTAL DEBT</u>	<u>33</u>
5.1 Historical Annual Bills and Average Debt	33
5.2 Correlations Between Annual Bills and Average Debt	33
5.3 Forecast Total Debt	37
<u>6 FUEL POVERTY</u>	<u>40</u>
6.1 Historical Trends	40
6.2 Forecast Fuel Poverty	40
<u>7 SUMMARY</u>	<u>41</u>
<u>APPENDIX – DATA TABLES</u>	<u>42</u>

This document has been produced by IPA Energy + Water Economics ('IPA') for use solely by the client. Unless otherwise provided, copyright in this document remains with IPA. No other party may, without the express written consent of IPA, copy or use this document for any purpose and IPA accepts no liability for any loss, damage or claim arising from any act or omission occurring through any unauthorised use of this document by a third party. IPA has taken all reasonable steps to ensure that the information contained in this document is accurate, however IPA does not make or give any warranty that the information contained herein is correct and accepts no liability for any loss, damage or claim arising from any person, whether authorised or unauthorised, seeking to rely on the contents of this document.

LIST OF FIGURES

Figure 1: Wholesale Gas Prices	5
Figure 2: Forecast Wholesale Gas Prices	5
Figure 3: Evolution of Forward Power Prices.....	6
Figure 4: Comparison of Power Price Projections	6
Figure 5: Average Gas Consumption Rates	7
Figure 6: Forecast Gas Consumption by Region for 2008-2011.....	8
Figure 7: Forecast Delivered Gas Prices	13
Figure 8: Historical and Forecast Annual Gas Bills.....	14
Figure 9: Monthly Electricity Consumption Profile.....	15
Figure 10: Average Electricity Consumption Rates.....	16
Figure 11: Forecast Electricity Consumption by Region for 2008-2011	16
Figure 12: BSUoS Forecasts	18
Figure 13: Forecast Delivered Electricity Rates.....	22
Figure 14: Historical and Forecast Annual Electricity Bills	23
Figure 15: Electricity Customers Repaying a Debt.....	27
Figure 16: Gas Customers Repaying a Debt	28
Figure 17: Total Electricity and Gas Customers Repaying a Debt	28
Figure 18: Electricity Average Bills and Numbers of Customers in Debt	29
Figure 19: Gas Annual Bills and Numbers of Customers in Debt	30
Figure 20: Correlation Between Debt Level and Annual Bill (1 yr Lag).....	31
Figure 21: Forecast Total Electricity Customers in Debt.....	31
Figure 22: Forecast Total Gas Customers in Debt	32
Figure 23: Historical Average Debt Levels.....	33
Figure 24: Electricity Average Debt and Annual Bill.....	34
Figure 25: Gas Annual Bill and Average Debt	34
Figure 26: Correlation Between Average Debt and Annual Bill	35
Figure 27: Forecast Average Electricity Debt.....	35
Figure 28: Correlation Between Average Debt and Annual Bill	36
Figure 29: Forecast Average Gas Debt	37
Figure 30: Total Electricity Debt	38
Figure 31: Total Gas Debt.....	38
Figure 32: Forecast Levels of Fuel Poverty	40
Figure 33: Forecast Gas Unit Rates, p/kWh, Real 2008 money.....	42
Figure 34: Historical Average Annual Gas Bills, £/yr, Money of the Day Terms	42
Figure 35: Forecast Average Annual Gas Bills, £/yr, Money of the Day Terms	42
Figure 36: Forecast Electricity Unit Rates, p/kWh, Real 2008 money	43
Figure 37: Historical Average Annual Electricity Bills, £/yr, Money of the Day Terms	43
Figure 38: Forecast Average Annual Electricity Bills, £/yr, Money of the Day Terms.....	43
Figure 39: Forecast Number of Customers in Debt	44
Figure 40: Forecast Average Debt, £/yr, Money of the Day Terms.....	44
Figure 41: Forecast Total Debt, £m, Money of the Day Terms	44

LIST OF TABLES

Table 1: Gas Transmission Exit Charges for 2008.....	9
Table 2: Gas Distribution Network Unit Rates	10
Table 3: Gas Metering Charges.....	10
Table 4: IPA Forecast Delivered Gas Price for 2008.....	12

TABLE OF CONTENTS

Table 5: 2008 BSUoS Charges and Costs	17
Table 6: Current TNUoS Charges	18
Table 7: Electricity Distribution Use of System Charges for 2008 by Region	19
Table 8: IPA Forecast Delivered Electricity Price for 2008	21

EXECUTIVE SUMMARY

IPA have been asked by the National Housing Federation to provide advice on the impact of increasing energy prices on the levels of debt and fuel poverty. Rising commodity prices in the last two years or so have fed through into substantial increases in the wholesale price of power and our forecast of future prices suggest that this is likely to be sustained over the next three years. The increase in wholesale energy prices feeds through to significant increases in the tariffs offered by suppliers to domestic customers and the resulting rising gas and electricity bills are likely to have a number of impacts on households' abilities to pay, pushing more people into debt (and higher levels of debt) as well as increasing the number of households in fuel poverty.

The main findings from this study are:

- Rising wholesale gas and electricity prices are forecast to increase average annual electricity bills by 25% from around £400/yr in 2007 to over £500/yr by the start of next decade and annual gas bills are forecast to increase by about 55% - from around £575/yr in 2007 to around £900/yr over the same period.
- As a consequence, the total numbers of electricity customers in debt is expected to increase from around 1.3m in 2007 to close to over 1.5m. Most of this increase (nearly 150,000 customers) is expected to occur in 2009 as the considerable price increases seen in 2008 start to impact on the numbers of customers in debt.
- The number of gas customers in debt is expected to increase from 2007 levels of 900,000 to over 1.1 million by the start of the next decade. Most of this increase comes in 2009 when the significant bill increase in 2008 feeds through with 140,000 additional customers in debt.
- As well as a sharp increase in the number of customers in debt, the average debt is also expected to increase - for electricity customers from around £220 in 2007 to close to £300 in 2009 and for gas customers from around £190 to around £260 by the start of next decade.
- The total level of debt is expected to rise very significantly – by about £275 million – over the next year as total debt owed by electricity customers is forecast to increase from around £300 million in 2007 to over £450 million in 2009 and debt owed by gas customers is forecast to rise from around £175 million in 2007 to nearly £300 million in 2009. This is due to a combination of the average debt continuing to rise as well as the total number of customers in debt increasing sharply in the coming years.
- Fuel poverty is also expected to increase - the predicted rise in gas and electricity bills suggests that the number of households in fuel poverty will increase to over 5.5 million by the start of the next decade which is over double the 2005 levels with over 1.5 million additional households being classified as being in fuel poverty between 2007 and 2008.

1 INTRODUCTION

This report provides an assessment of forecast debt levels for both domestic gas and electricity consumption over the period 2008-2011.

As part of this assessment, IPA forecast annual electricity and gas bills and assessed the historical relationship between annual bills and levels of debt and explored the extent to which such relationships exist and whether these are likely to continue into the future.

Except where indicated otherwise prices in this report are expressed in money-of-the-day terms.

1.1 This Report

This report represents the conclusions of our study.

The remaining sections of this report are:

Section 2 provides the wholesale gas and electricity forecasts from PowerView;

Section 3 develops the forecast of delivered utility prices and annual energy bills;

Section 4 provides a forecast of the number of customers in debt;

Section 5 provides a forecast of the average debt and total debt;

Section 6 provides a forecast for the change in the level of fuel poverty; and

Section 7 Provides a summary of the findings of this study.

There is also an appendix containing tables of data that are reporting graphically in the main report.

2 FORECASTS OF WHOLESALE UTILITY PRICES

2.1 Introduction

It is obvious that forecasts of annual domestic bills have two distinct elements - the price of the utility and the volume consumed – which are combined to arrive at a forecast of utility costs.

For gas and electricity the price forecast consists of both a “wholesale” price element – reflecting the level of forecast market prices and a “supply” element. The supply element covers a range of issues related to the supply activity – these include the cost of the infrastructure to deliver the commodity to the household (transmission and distribution costs) and the suppliers own internal costs. The suppliers costs reflect the fact that the supplier must arrange for meters to be supplied and read, bills issued, differences between the market price (which reflects a flat consumption) and the cost of supplying the variable load of real customers (which includes both the costs of the “shape” element of the supply and the costs of unpredictability in demand) as well as the suppliers own profit margin. The difference between wholesale prices and retail prices is discussed in the following Section; this Section discusses wholesale power and gas prices as well as providing an analysis of current wholesale forward market prices.

2.2 IPA’s PowerView Forecast

IPA produces a routine forecast of GB energy prices under the name “PowerView”. PowerView provides quarterly analysis of the GB power and gas markets and developments within the industry and the political and regulatory frameworks in which they operate. A summary of the key features is provided below:

- Projections of GB electricity and gas prices against Base, High and Low scenarios. These are designed to be credible high and low cases and we estimate that they represent the 75% and 25% confidence limits respectively;
- Detailed modelling of GB gas markets, including projections of monthly flows onto the system from domestic gas fields (by import terminal and field type), imports over major pipeline infrastructure, and imports via LNG terminals;
- Detailed modelling of GB power markets, including projections of operation of individual plant over the load curve, subject to commodity pricing and emissions constraints;
- Projections of gas, oil and carbon prices under consistent scenarios, based upon market modelling, analysis of market pricing and comparison with forecasts from governments and regulatory agencies;
- Forecasts of Renewable Obligation prices (ROCs), and detailed analysis and modelling of the renewable build rates including constraints due to planning and transmission access;
- Forecast of generation mix, carbon intensity, system security and balancing costs;

- Analysis of plant competitiveness and profitability, and their impact upon plant operation, market price setting and the incentives for new build and plant closure across different generation technologies;
- Analysis of the impact of key policies and regulations, including environmental legislation and government targets and aspirations.

The analysis in this report makes use of IPA's most recent edition of PowerView (July-08).

2.2.1 Gas Price Projections

The historical evolution of the gas market is shown in Figure 3.

The gas price has fluctuated considerably over the last few years, with large increases observed over the last 18 months or so (with year ahead prices increasing from around 40p/th to above 80p/th).

The most recent increases in UK gas prices primarily reflect the significant increases in the oil price over recent months. Oil prices are significant drivers of gas prices in the continental gas markets to which the UK is now linked and the recent strong oil prices have fed through into high forward prices for gas in these markets. In turn, these have fed through to higher UK gas prices. This highlights the high level of volatility that is observable in wholesale gas prices.

While current levels of oil prices are seen as unsustainable in the longer term, there is no expectation that oil prices will fall in the short term. Current high levels of demand in the oil market – in particular from developing countries – and a relatively slower than expected development of new production capacity has meant a squeeze on both supplies and inventory. Currently, Saudi Arabia (traditionally OPEC's swing producer) has been reported as producing at record or near record levels reflecting the lack of spare capacity in the market leaving the short term market susceptible to price spikes. The demand for oil products is largely driven by expanding consumption of "light" products (petroleum, kerosene and diesel) compared to HFO and other residual oils. A lack of new refinery capacity capable of processing heavier crudes into the light fractions required by the market has pushed prices for the lighter crudes (which form the benchmark for the oil price indices) up strongly compared to many new sources of oil. In the longer term, investment in new sources of oil and additional refinery capacity is expected to place downward pressure on prices but this process will be relatively slow in coming.

The forecast shown in Figure 2 is in Real (2008 money) terms.

Figure 1: Wholesale Gas Prices

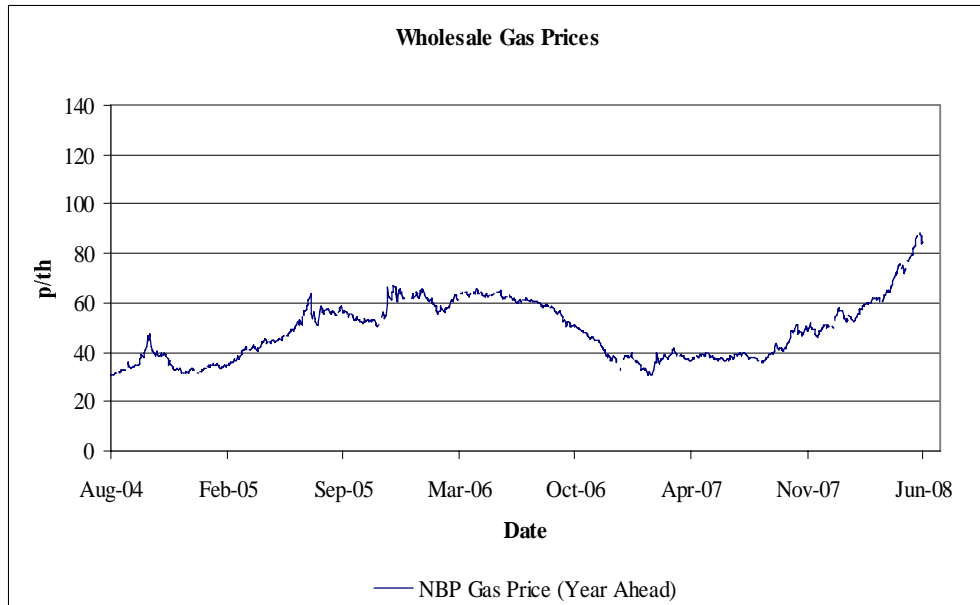
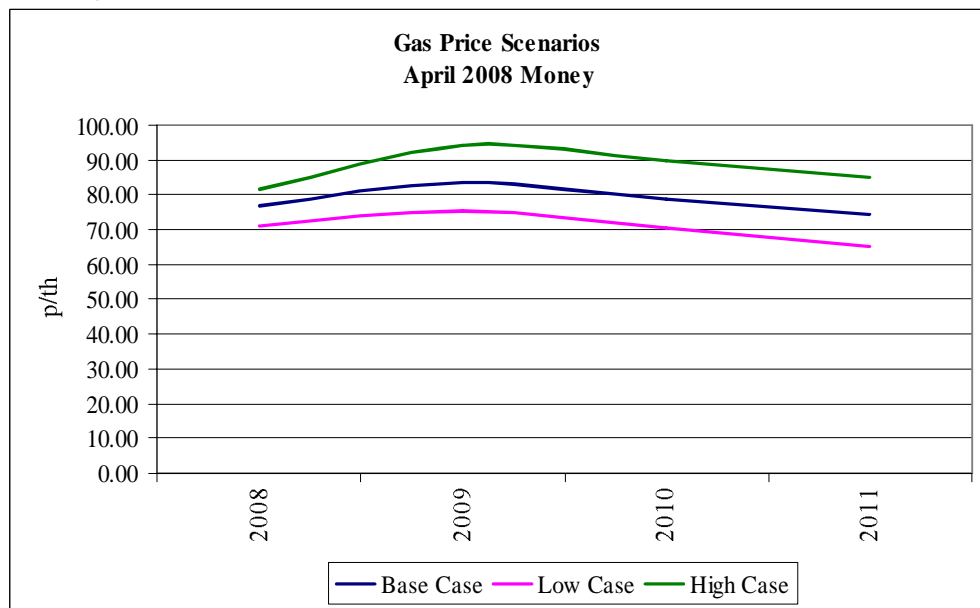


Figure 2: Forecast Wholesale Gas Prices



2.2.2 Power Price Projections

The historical evolution of the power market is shown in Figure 3 with IPA's forecasts given in Figure 4.

As can be seen in Figure 3, the forward market for electricity has seen considerable change over the last year with prices increasing from around £35-£45/MWh to £70-£80/MWh. The most recent of these increases primarily reflect increases in the oil price which in turn influences the gas price. This highlights the significant volatility that is observable in wholesale power prices.

The forecast shown in Figure 4 is in Real (2008 money) terms.

Figure 3: Evolution of Forward Power Prices

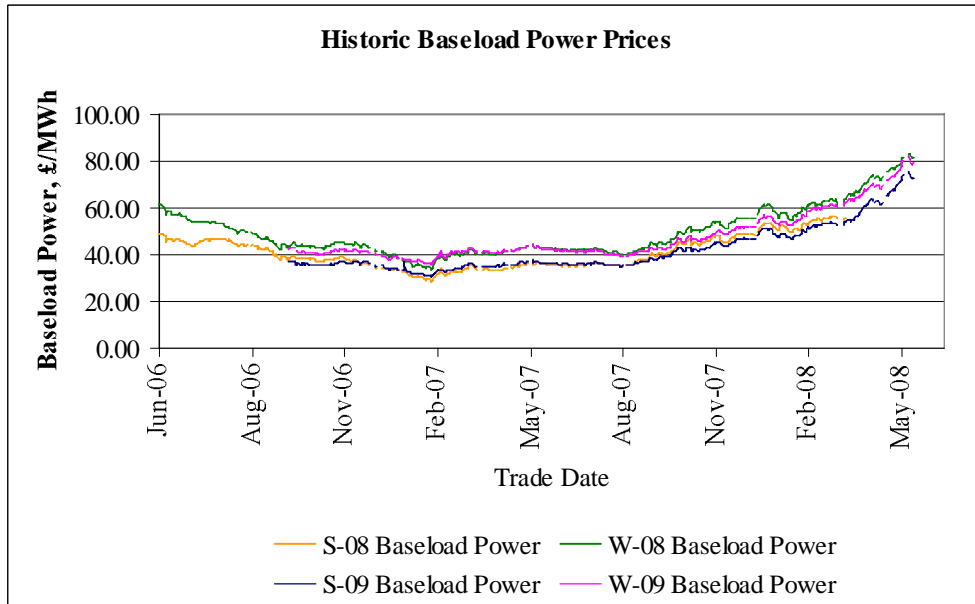
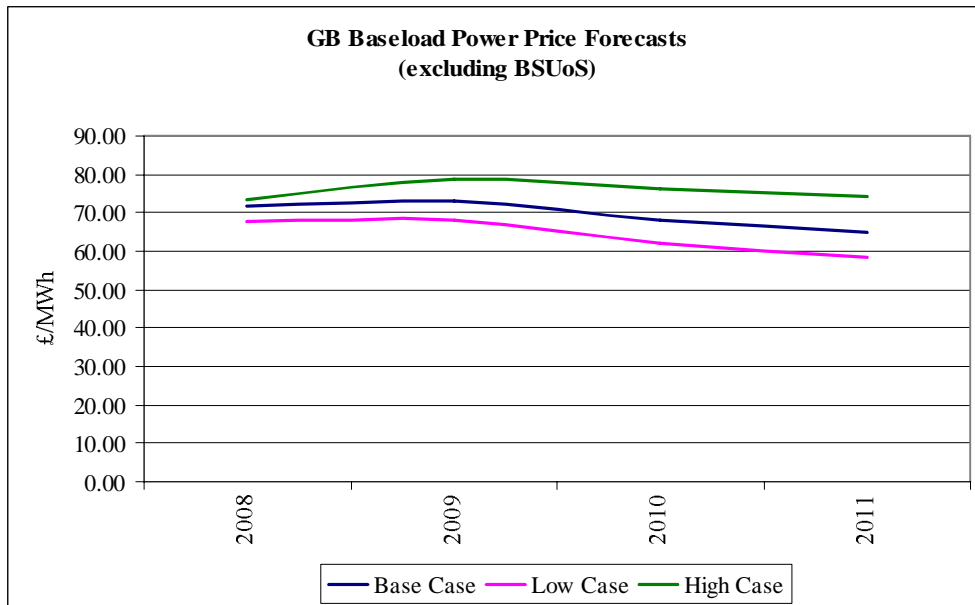


Figure 4: Comparison of Power Price Projections



3 FORECASTS OF DELIVERED UTILITY PRICES AND ANNUAL BILLS

This Section discusses IPA's forecasts of delivered utility prices. In particular, it discusses the difference between wholesale and retail prices and also provides forecasts of annual bills. Gas and power are considered in separate sections.

For the purposes of this analysis, IPA have forecast electricity and gas costs for customers in London, Birmingham and Edinburgh (to reflect regional differences in some charges) as well as for Credit and Prepayment customers separately.

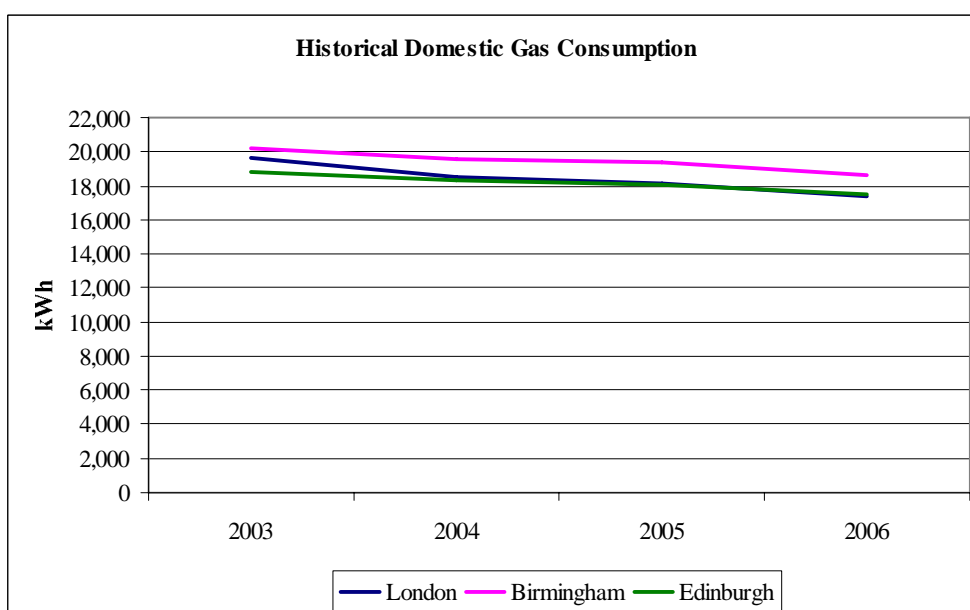
3.1 Delivered Gas Prices

Delivered gas prices comprise a number of components, which are discussed in the following sections.

3.1.1 Gas Demand

Historical annual average gas consumption figures are shown in Figure 5.

Figure 5: Average Gas Consumption Rates¹



This shows a slight decrease in annual quantity (AQ) across the period which is likely to reflect milder winters that have been observed, particularly in the last year as gas use is particularly driven by heating. Therefore, the average consumption figure for the previous 4 years has been used as a forecast across the period reflecting the fact that, on average, future winters will be no better or worse than previous winters.

¹ Source: BERR Regional and Local Authority Gas Consumption Statistics, April 2008

For domestic customers, the Supply Offtake Quantity (SOQ), or peak day demand, is determined through the use of a regional load factor (which is calculated by the relevant distribution network). The gas consumption information is summarised in the following table.

Figure 6: Forecast Gas Consumption by Region for 2008-2011

	London	Birmingham	Edinburgh
AQ, kWh	18,433	19,450	18,175
Load Factor, %	32.8%	33.6%	39.5%
SOQ, kWh	154	159	126

3.1.2 Wholesale Price

A full discussion of the factors affecting the wholesale gas prices is provided in the previous section (Section 2).

For simplicity and ease of reporting, we have only considered the Base Case gas price in the following analysis.

3.1.3 Profile Charges

The strong seasonality of gas prices means that gas suppliers will charge customers based on the profile of their expected gas consumption over the year. This will take account of higher prices which apply for gas consumed over winter, with lower prices applying over the summer period.

Clearly there is significant seasonality associated with gas requirements for domestic customers, primarily reflecting its use for heating, with the majority of consumption occurring over the winter months when wholesale prices are most expensive. A supplier would factor this into the price charged thus increasing the price above the baseload price discussed above.

We have estimated the profile charge for all domestic customers to be a premium of around 15% on the annual average price.

3.1.4 Imbalance Charges

The supplier will provide gas to households, and will contract based on forecast demand. The supplier is then liable for any imbalance between the actual take of its customers and the forecast volume.

IPA have been unable to source reliable data on domestic gas volumes and as such have not been able to calculate the imbalance charge that would be passed through to the customer. However, it is considered that these charges are likely to be negligible and have been assumed to be so in our calculation of the delivered price.

3.1.5 Gas Transportation Charges

Annual gas transportation charges contain a number of elements used to recover the costs of maintaining the gas network infrastructure (capacity costs) and operating the network (commodity costs). For an individual supply point these costs can be estimated using the forecasts of annual quantities (AQ) and Supply point Offtake Quantity (SOQ) for that supply point and the relevant unit charges (estimates of AQ and SOQ are provided in Section 3.1.1).

- **Transmission**

Suppliers pay transportation charges for use of the National Transmission System (NTS) assets that provide the bulk transportation of gas around Britain through a high pressure network. The NTS is owned and operated by National Grid Gas.

The cost of transporting gas on Britain's high pressure network is outlined in National Grid's "The Statement of Gas Transmission Transportation Charges". Gas purchased at the NBP (National Balancing Point – the notional point where gas is traded on the network) is subject to NTS Transmission Owner (TO) exit capacity charges, which are based on the daily consumption over the peak days, and NTS System Operator (SO) Exit commodity charges, which are based on annual consumption.

National Grid Gas divides GB into a series of zones for the purposes of charging. The three cities included in the analysis incur the following charges:-

Table 1: Gas Transmission Exit Charges for 2008

Charge for Exit	Unit	London Unit Charge ²	Birmingham Unit Charge ³	Edinburgh Unit Charge
TO Exit Capacity Charge	p/pkdkWh/d ⁴	0.014	0.013	0.0001
SO Exit Commodity Charge	p/kWh	0.0129	0.0129	0.0129

In addition to these charges, Distribution companies must recover a further charge - the DN Pensions Deficit charge – which has been levied on Distribution Network Operators from 1st April 2007. This is designed to collect specific annual cost allowances for the part-funding of the deficit in the National Grid UK Pension Scheme. This deficit relates to the pension costs of former employees of the DNs. This allowance has been included in the NTS' TO Price Control Formulae for the period April 2007 to March 2012 and is recovered via the application of a DN Pensions Deficit Charge which is levied on each of the DNs on a monthly basis in accordance with National Grid's Gas Transporters Licence and the DN Gas Transporter's Licences.

² Averaged across all London TNUoS zones

³ Averaged across all West Midlands TNUoS zones

⁴ Pence per peak day kWh per day

The total cost to be recovered, on an annual basis, is £26.6M, and this is apportioned between the distribution regions. The distribution companies will pass these costs on to their customers and we have estimated the cost to be 0.004p/kWh.

- **Distribution**

The distribution networks take gas from the NTS network and deliver it through lower pressure pipes to homes and businesses. The distribution networks for London and Birmingham are owned and operated by National Grid whereas the network for Edinburgh is owned and operated by Scotia Gas.

The cost of transporting gas is made up of a capacity, a commodity and a customer charge element with the current rates for each of the regions as in the table below.

Table 2: Gas Distribution Network Unit Rates

Charge	Unit	London	Birmingham	Edinburgh
LDZ System Capacity	p/pkdkWh/d ⁵	0.0728	0.0679	0.0654
LDZ System Commodity	p/kWh	0.1941	0.1813	0.1746
LDZ Customer	p/pkdkWh/d	0.0723	0.0673	0.0742

3.1.6 Metering Charges

Metering service providers charge for the provision of a meter and for its maintenance and servicing. Credit and prepayment customers have different daily rates for the provision, installation and maintenance of meters as shown in Table 3.

Table 3: Gas Metering Charges

Component	Credit Customers Charge (p/day)	Prepayment Customers Charge (p/day)
Provision	2.1369	1.6739
Installation	1.4932	1.4932
Maintenance	0.2329	5.5821
Total	3.863	8.7492

3.1.7 Supplier/Shipper Margin

Gas suppliers will also have further costs relating to credit cover, market costs, systems, trading and billing and running other key functions such as customer services, registration of new customers etc. These are briefly discussed below:

- **Credit Cover** – Credit cover must be provided to the gas energy market operator for trading operations and also to the transmission and distribution network operators, dependent on the company's credit rating. It provides

⁵ Pence per peak day kWh/day

security in the case of failure or its inability to pay the appropriate charges for operating in the market.

- **Market and Systems Costs** – The costs of participating in the market and connecting to the relevant central systems.
- **Trading** – The costs of maintaining a trading desk as well as the costs of buying and selling gas through an exchange or through a broker.
- **Billing** – Suppliers will also have costs associated with producing bills for their customers and collecting revenues from them.
- **Customer Services** – administration and responding to customer queries and issues.

IPA estimates of the margin are around 10% for credit customers and 12.5% for prepayment customers reflecting the additional infrastructure and supply business costs associated with prepayment customers.

3.1.8 Value Added Tax

Value Added Tax will be applied to customers' bills.

The gas supplier will be liable for Value Added Tax (VAT) on the gas delivered to domestic customers. The current rate for VAT for domestic gas use is 5% and this is applied to all the costs discussed above.

3.1.9 Forecast Delivered Gas Prices

The components of the delivered price of gas described above have been used to produce IPA's estimate of final price of delivered gas to the various sites.

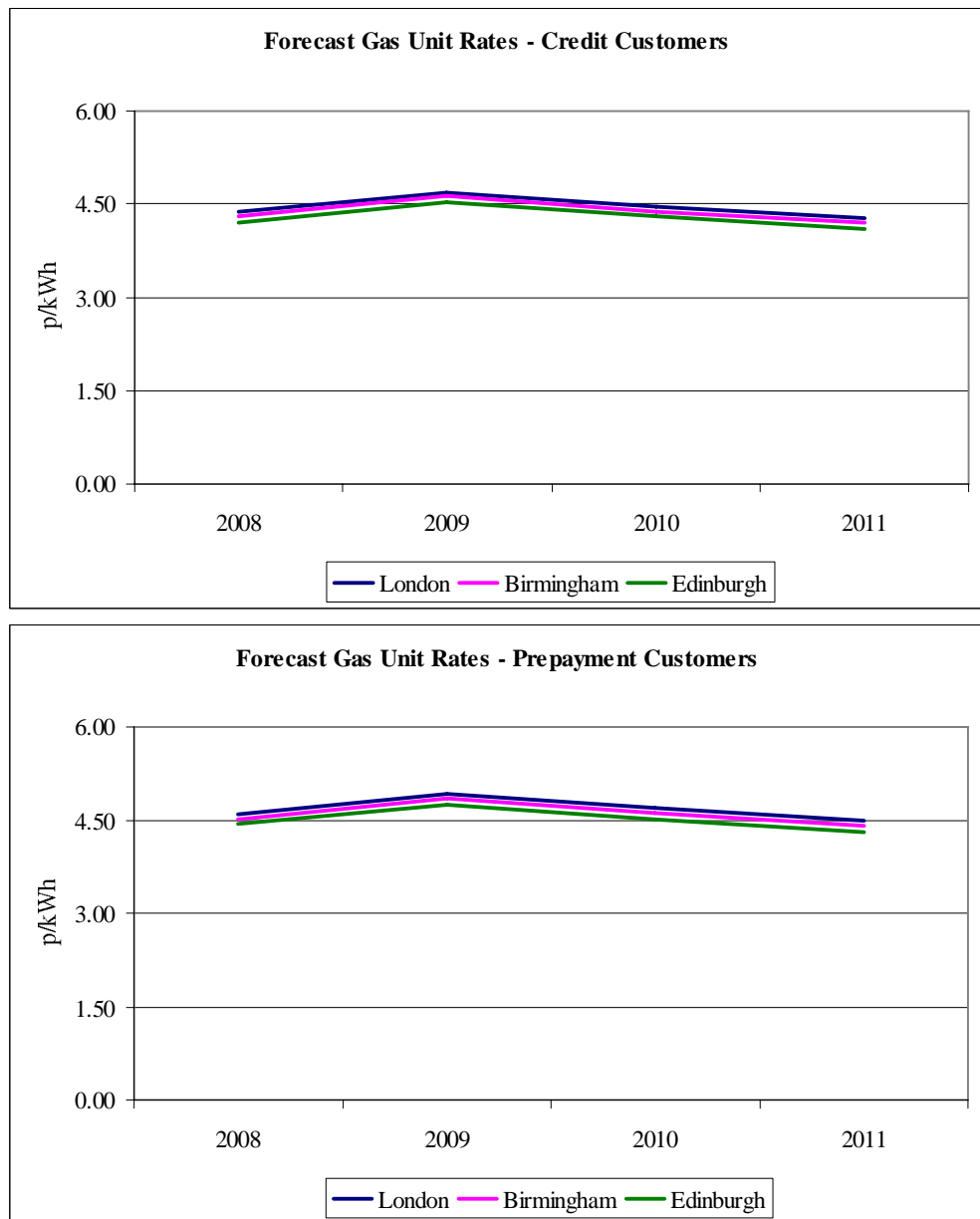
The costs for 2008 for London Credit customers are set out in the table below and the make-up of the delivered price represented in the following figure. As can be seen, the difference between credit and prepayment customers is in the metering charges, with prepayment customers paying around 3% more (in 2008) for their gas.

Table 4: IPA Forecast Delivered Gas Price for 2008

Component	Units	London Credit Charge	London Prepay Charge
		2008	2008
NBP Gas Price	p/kWh	2.63	2.63
Profile cost	p/kWh	0.39	0.39
Total Energy Charge	p/kWh	3.02	3.02
Transmission			
NTS (TO) Exit Capacity	£	7.87	7.87
NTS (SO) Exit Capacity	£	2.38	2.38
Pensions Deficit	£	0.73	0.73
Total Transmission Charge	p/kWh	0.06	0.06
Distribution			
LDZ Capacity	£	40.91	40.91
LDZ Commodity	£	35.78	35.78
LDZ Customer	£	40.63	40.63
Total Distribution Charge	p/kWh	0.64	0.64
Metering			
Meter asset provision	£	7.80	6.11
Installation	£	5.45	5.45
Maintenance	£	0.85	21.36
Total Metering Charge	p/kWh	0.08	0.18
Supplier Margin	p/kWh	0.38	0.49
VAT	p/kWh	0.21	0.22
Total	p/kWh	4.38	4.60

Projecting the prices to 2011/12 results in forecast trajectories of delivered prices for London, Birmingham and Edinburgh as shown in the following figure (in real (2008 money) terms).

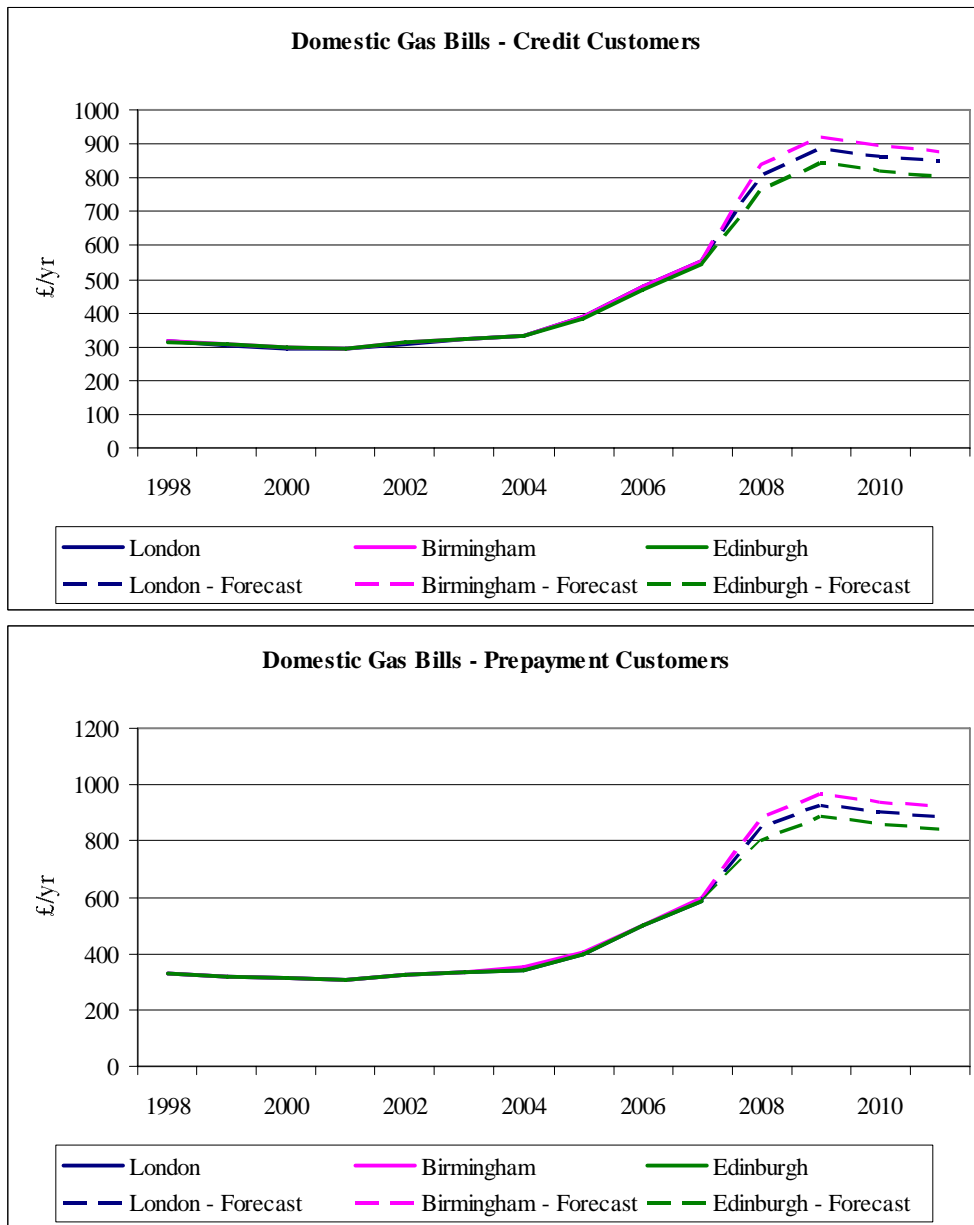
Figure 7: Forecast Delivered Gas Prices



3.1.10 Annual Gas Bills

The forecast annual gas bill is calculated by multiplying the forecast gas consumption with the delivered unit rates. The historical and forecast annual gas bills are shown in the below figures for credit and prepayment customers. Historical bill information has been sourced from BERR's Quarterly Energy Prices Report, June 2008.

Figure 8: Historical and Forecast Annual Gas Bills



As can be seen, gas bills for 2008 and beyond are forecast to be much higher than in previous years reflecting the significant increases seen in the wholesale gas price. It is worth noting that as supply companies generally get a considerable portion of their gas on long-term contracts, there is likely to be a lag between when wholesale prices increase and when this feeds through to the customer. However, the point remains that gas bills will rise from their current levels and average bills could exceed £900/year by the start of the next decade.

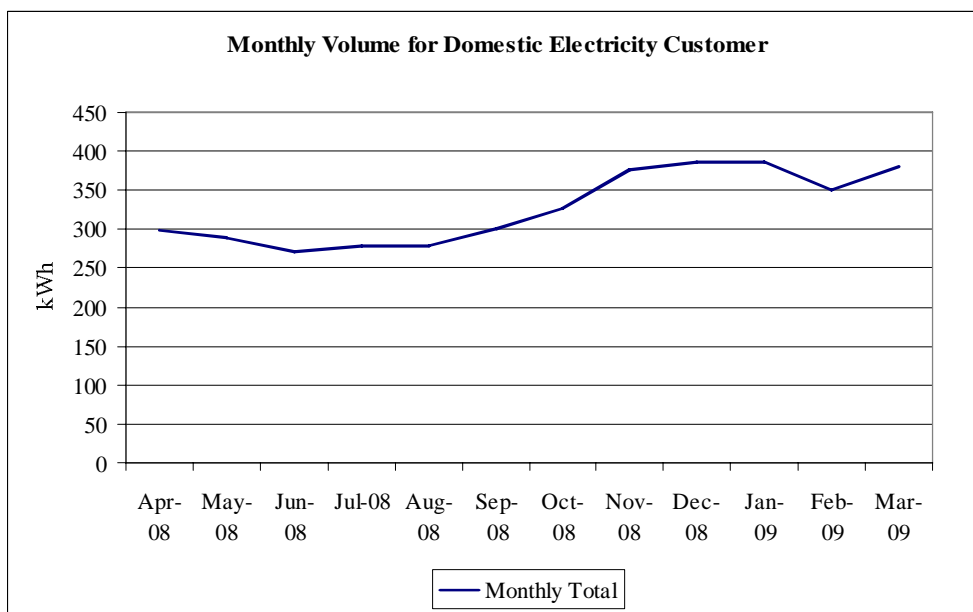
3.2 Power

Delivered electricity prices are comprised of a number of components, which are discussed in the following sections.

3.2.1 Electricity Demand

Average monthly electricity consumption for calendar year 2007-08 was sourced from ELEXON and indicates an annual electricity consumption profile as shown in the following figure.

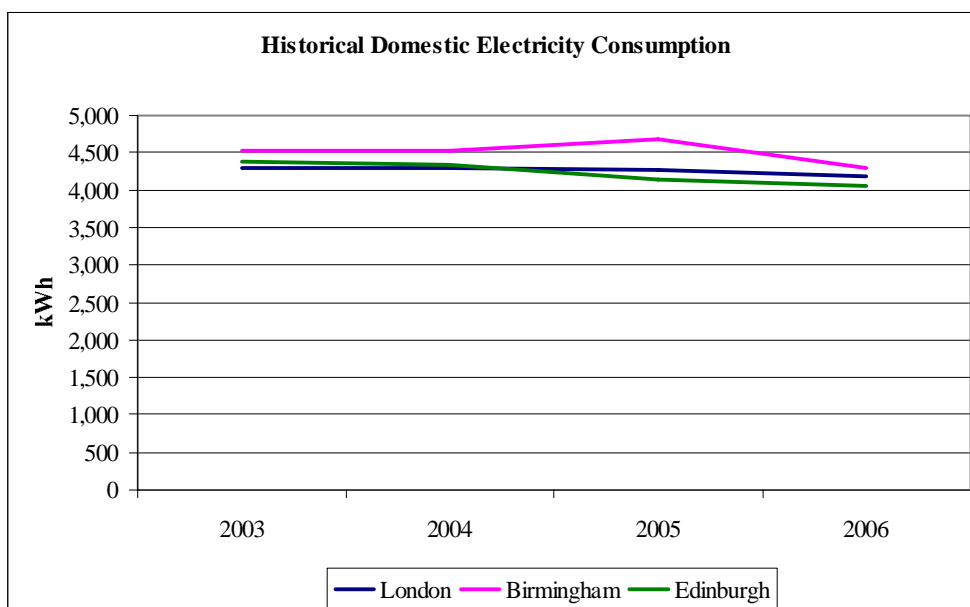
Figure 9: Monthly Electricity Consumption Profile



Clearly consumption displays some seasonality indicating some usage for heating and lighting which results in higher consumption levels in winter.

Additionally, average annual electricity consumption rates for London, Birmingham and Edinburgh are shown in Figure 10.

Figure 10: Average Electricity Consumption Rates⁶



This shows a very slight decrease between 2003 and 2006, however for the purposes of this study it is assumed that forecast electricity consumption is flat from the 2006 levels with forecast consumption shown in Figure 11.

Figure 11: Forecast Electricity Consumption by Region for 2008-2011

	London	Birmingham	Edinburgh
Annual Consumption, kWh	4,193	4,299	4,051

3.2.2 Wholesale Power Prices

Wholesale power price is a significant component of retail prices, and changes in wholesale prices can have a significant impact at the retail level. A full discussion of the forecasts has been provided in Section 2.

For simplicity and ease of reporting, we have only considered the Base Case electricity price in the following analysis.

3.2.3 Profile Charges

Analysis of the average half-hourly domestic electricity consumption for financial year 2007-08 sourced from Elexon indicates that the domestic electricity consumption profile has a slightly higher consumption over the winter months than the summer months. A supplier would factor this into the price charged to the customers thus increasing the price.

⁶ Source: BERR Regional and Local Authority Gas Consumption Statistics, April 2008

We have estimated this profile charge based on the volume of consumption throughout the year and our forecast monthly wholesale price. This indicates that the net imports of electricity for households should be charged at a premium of around 4% to the annual average price.

3.2.4 Imbalance Charges

The supplier will be subject to imbalance charges, relative to the difference between their forecast of net demand and their contract position.

Analysis of the half hourly data for 2007-08, provided by Elexon, indicates that the imbalance volume for domestic customers is relatively small at around 3% - reflecting the relative stability/predictability of the load.

We have estimated the imbalance charges by estimating the range of half hourly imbalance volumes from the data provided and the historic imbalance penalties published by Elexon - the market operator. Imbalance penalties over the calendar year have been around 50% of the wholesale price and in our forecasts we assume that domestic customers are charged an uplift to the wholesale price, equal to this penalty for the indicated imbalance volume.

3.2.5 Balancing Services Use of System Charges

The system operator levies a variable (£/MWh) charge on power generation and consumption reflecting the costs of managing the system. This BSUoS (Balancing Services Use of System) charge is in effect an increased marginal cost for generators. BSUoS is an additional component that has been added to the wholesale price forecasts detailed above, to construct a wholesale price forecast. BSUoS has averaged around £1.00/MWh over the last year.

However, as BSUoS is charged on both generation and supply, domestic customers would see a further charge equal to the BSUoS charge.

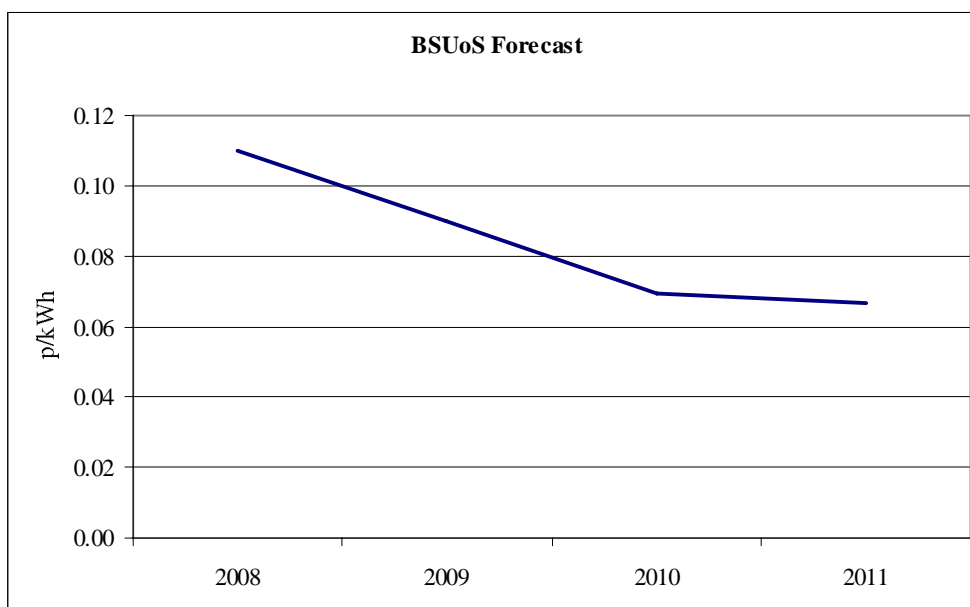
Table 5: 2008 BSUoS Charges and Costs

2008 BSUoS Charge	0.11p/kWh
-------------------	-----------

Forecasts of BSUoS charges for the Base Case scenario over the forecast horizon are shown in Figure 12.

It can be seen that BSUoS charges initially fall from their current levels, but face increasing upwards pressure as there becomes a requirement to support generation capacity in the face of eroding competitiveness of coal plant and an increase in intermittent generation (requiring a growth in generation and reserve margins) however, for the period of this forecast BSUoS charges are forecast to fall.

Figure 12: BSUoS Forecasts



3.2.6 Transmission Network Use of System Charges (TNUoS)

Suppliers pay Transmission Use of System Charges (TNUoS) for use of the transmission system assets that provide the bulk transportation of electricity around the country.

TNUoS is charged by National Grid Company (NGC) over all of GB. NGC have implemented a locational charging methodology, with a significant regional spread in charging. London lies in TNUoS Demand Zone 12 – London, Birmingham in Zone 8 – Midlands, and Edinburgh in Zone 2 – Southern Scotland.

TNUoS charges for domestic customers are based upon a p/kWh energy consumption tariff based on energy consumed between 16:00 and 19:00 every day. IPA have estimated this consumption using the half-hourly data provided by Elexon). The current tariffs for the three regions are shown in the table below.

Table 6: Current TNUoS Charges

	London	Birmingham	Edinburgh
Current TNUoS Charge, p/kWh	3.013718	2.543378	1.049619

3.2.7 Transmission Losses

Around 2% of the electrical energy generated in the UK is lost in the transmission system. These losses are recouped from both generators and suppliers, with suppliers being responsible for 55% of the losses. This is done through a volume adjustment, which we have applied in our forecasts.

3.2.8 Distribution Use of System Charges (DUoS)

The distribution networks distribute electricity from the transmission grid to individual customer premises.

Distribution companies levy a Distribution Use of System charge (DUoS) on suppliers for the use and operation of the distribution network. These charges are designed to be cost reflective, depending upon the voltage of the customer's connection as well as the customers demand profile.

The structure of the charges varies significantly between the Distribution companies and different customer classes. Charges can include a component for unit charges, fixed charges, maximum demand charges and reactive power charges. The amount charged to a customer in an area is defined by the local distribution company's charging methodology.

London is connected to EdF's Energy Networks (EPN) distribution network, Birmingham is connected to E.On's Central Networks West network and Edinburgh is connected to Scottish Power Energy Networks distribution network. The relevant changes for each area are shown in Table 7.

Table 7: Electricity Distribution Use of System Charges for 2008 by Region

DUoS Demand Tariffs	Unit	London	Birmingham	Edinburgh
Standing Charge	p/month	3.8	5.88	5.71
Unit Charge	p/kWh	1.189	0.94	1.64

3.2.9 Metering Charges

Meter service providers charge for the provision of a meter and for its servicing. Meter asset provision charges differ for prepayment and credit customers and the current charges for the three areas are shown in the below table.

	Unit	London	Birmingham	Edinburgh
Single Rate	p/day	0.336	0.37	0.64
Prepayment	p/day	2.231	2.81	3.08

3.2.10 Renewables Obligation

Suppliers have obligations under the Renewables Obligation (RO) to source renewable energy or pay a "buy out" payment which ultimately increases retail prices. The buy out price increases with RPI from this year's charge of 3.576p/kWh until after the end of the forecast period. The obligation volume is 9.1% in 2008 and this increases 11.4% in 2011.

For 2008 the obligation volume of 9.1% equates to a charge of around 0.33p/kWh on the total bill. However, this charge will increase in line with the increase in obligation level and with inflation.

3.2.11 Assistance for Areas with High Electricity Distribution Costs

The Assistance for Areas with High Electricity Distribution Costs scheme, which replaces a similar (but discontinued) scheme known as the Hydro Benefit, was introduced to offset the relatively high electricity prices that would otherwise arise in the North of Scotland area, where distribution costs are significantly higher than in any other area of Britain.

The scheme provides for an annual payment of just over £40 million to be made to the operator of the distribution network in the North of Scotland area. This payment is financed by a levy on suppliers across Great Britain.

The scheme is funded by charges on supplier across Britain by means of a small pence-per-kilowatt hour tariff. For 2008/09, this charge is 0.0146p/kWh and is increasing largely in line with RPI.

3.2.12 Suppliers Margin

Electricity suppliers also have to pay market administration charges to the market administrator - Elexon - for their Balancing and Settlement Code (BSC) work required to support the operation of the electricity market and also to Electralink, the data transfer service provider for the market. These charges are spread over all the customers in the supplier's Grid Supply Point (GSP) and would be minimal.

Electricity suppliers will also have further costs relating to credit cover, market costs, systems, trading and billing and running other key functions such as customer services, registration of new customers etc. These are briefly discussed below:

- **Credit Cover** – Credit cover must be provided to the electricity market operator for trading operations and also to the transmission and distribution network operators, dependent on the company's credit rating. It provides security in the case of failure or its inability to pay the appropriate charges for operating in the market.
- **Market and Systems Costs** – The costs of participating in the market and connecting to the relevant central systems.
- **Trading** – The costs of maintaining a trading desk as well as the costs of buying and selling electricity through an exchange or through a broker.
- **Billing** – Suppliers will also have costs associated with producing bills for their customers and collecting revenues from them.
- **Customer Services** – administration and responding to customer queries and issues.

IPA estimates of the margin are around 10% for credit customers and 12.5% for prepayment customers reflecting the additional infrastructure and supply business costs associated with prepayment customers.

3.2.13 Value Added Tax

Value Added Tax will be applied to customers' bills.

Suppliers of electricity to businesses are required to pay Value Added Tax at a rate of 5%. This is levied on all the costs discussed in the previous sections.

3.2.14 Forecast Delivered Electricity Prices

The components of the delivered price of electricity described above have been used to produce IPA's final price estimate of delivered electricity to household customers. The make-up of the London charges for 2008 is detailed in the following table.

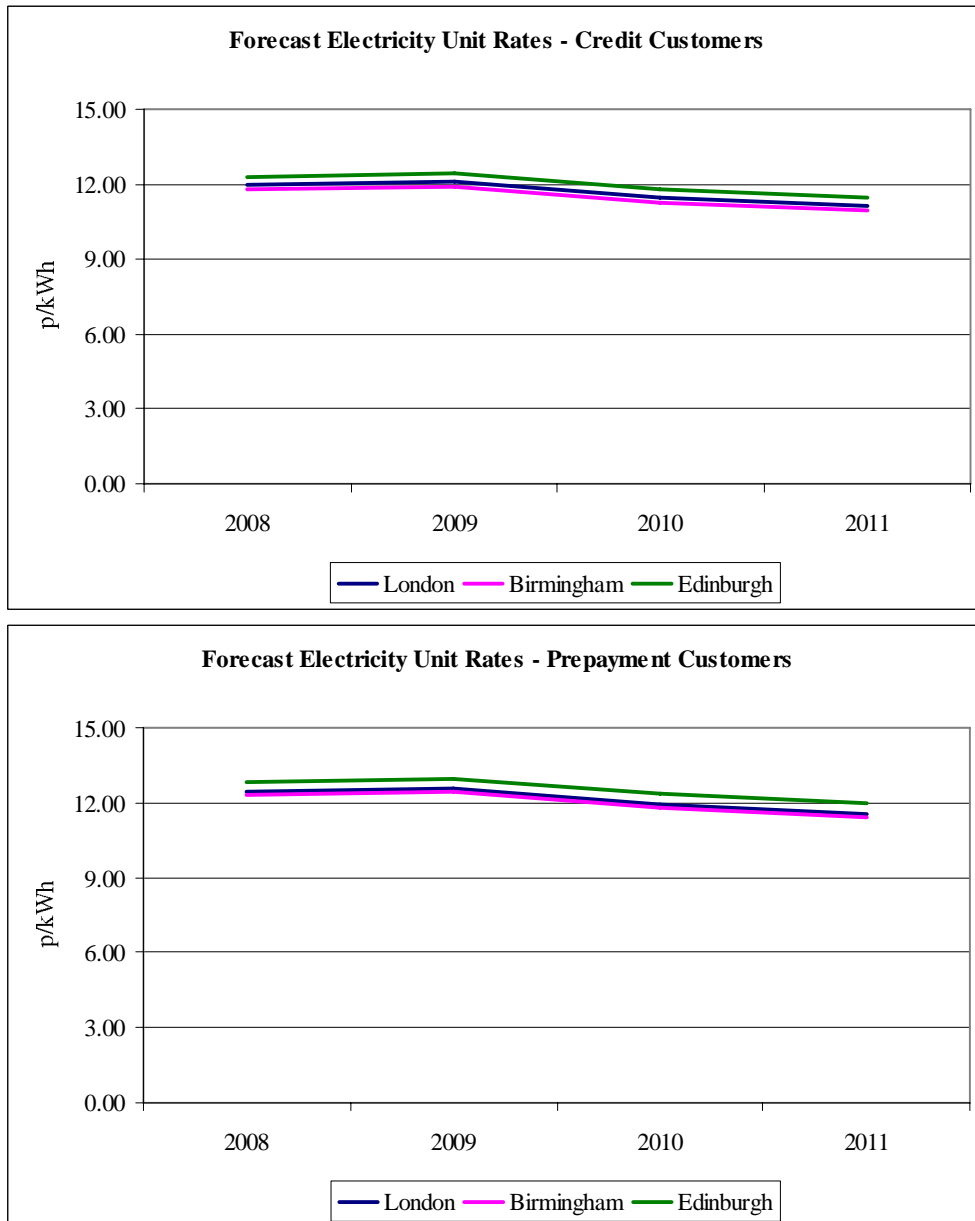
Table 8: IPA Forecast Delivered Electricity Price for 2008

Component	Units	London Credit	London Prepay
Energy			
Wholesale energy price	p/kWh	7.19	7.19
Profile Cost	p/kWh	0.29	0.29
Imbalance charge	p/kWh	0.11	0.11
Elexon costs	p/kWh	0.01	0.01
Total Energy Costs	p/kWh	7.60	7.60
Transmission			
Annual TNUoS Charge	p/kWh	0.57	0.57
BSUOS	p/kWh	0.22	0.22
Transmission losses	p/kWh	0.08	0.08
Total Transmission Costs	p/kWh	0.87	0.87
Distribution			
Distribution Use of System Charge	p/kWh	1.52	1.52
Total Distribution Costs	p/kWh	1.52	1.52
Metering			
Meter asset provision/servicing	p/kWh	0.03	0.19
Total Metering Costs	p/kWh	0.03	0.19
Environmental			
Renewables Obligation	p/kWh	0.33	0.33
Total Environmental Costs	p/kWh	0.33	0.33
AAHEDC⁷ Scheme	p/kWh	0.01	0.01
Supplier Margin	p/kWh	1.04	1.32
VAT	p/kWh	0.57	0.59
Total excluding VAT	p/kWh	11.97	12.43

⁷ Assistance to Areas with High Electricity Distribution Costs Scheme

The forecasts of delivered electricity prices through to 2011 for prepayment and credit customers in the three regions is shown in the following figures.

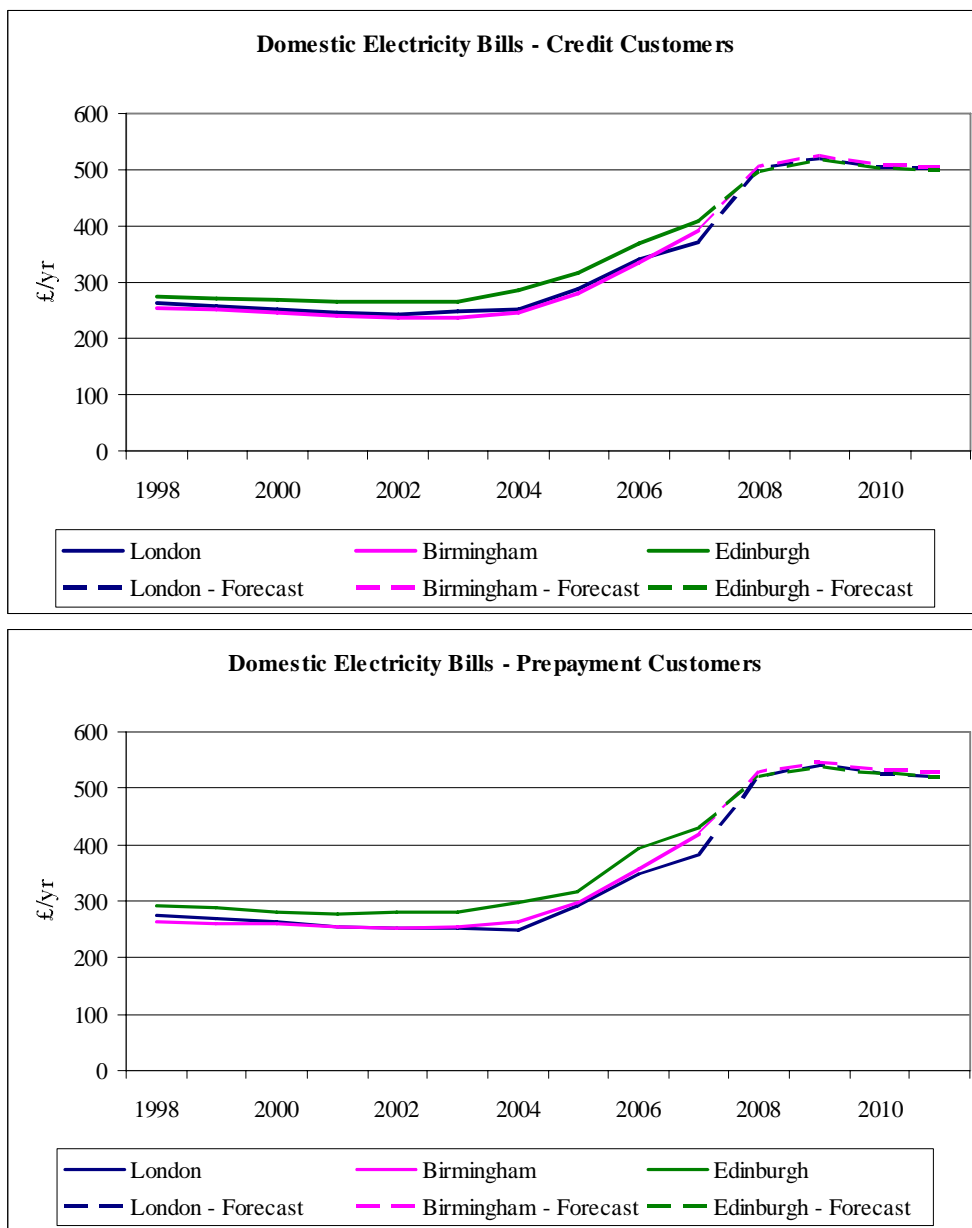
Figure 13: Forecast Delivered Electricity Rates



3.2.15 Annual Electricity Bills

The forecast annual electricity bill is calculated by multiplying the forecast electricity consumption with the delivered unit rates. The historical and forecast annual electricity bills are shown in the below figures for credit and prepayment customers. Historical bill information has been sourced from BERR's Quarterly Energy Prices Report, June 2008.

Figure 14: Historical and Forecast Annual Electricity Bills



As can be seen, electricity bills for 2008 and beyond are forecast to be much higher than in previous years reflecting the significant increases seen in the wholesale electricity price. It is worth noting that as supply companies generally get a considerable portion of their electricity on long-term contracts, there is likely to be a lag between when wholesale prices increase and when this feeds through to the customer. However, the point remains that electricity bills will rise from their current levels and are likely to hit £550/year by the start of the next decade.

It is worth noting that there is little regional variation in forecast electricity bills, with similar trends being observed for both the historical and forecast values reflecting the significant contribution of wholesale power prices to the delivered price.

4 NUMBERS OF CUSTOMERS IN DEBT

This section discusses the policy interventions that have been put into place in recent years by Ofgem to provide a context for the historical trends within the numbers of customers in debt and to understand what impact the policy interventions might have had on debt levels.

This section then explores the relationship between annual bills and the number of customers in debt with the aim of forecasting the impact of the changes in annual bills outlined in the previous section.

4.1 Policy Interventions

In 2002, energywatch and Ofgem had both identified the issue of debt as part of their work plan activities. They then chose January 2003 as the baseline for monitoring the impact of their debt prevention and management guidelines.

In March 2005, Sohn Associates reviewed the policies and suggested that the measurements selected by Ofgem and Energywatch were not necessarily the most appropriate – for example, there was no measurement of meter reading performance as a debt prevention tool and in some cases poor performance could result good performance within the performance monitoring of the guidelines. The report suggested that suppliers had not embedded the performance monitoring into their business management activities; for example, no supplier used the measurements as part of their business performance monitoring. The Sohn report suggested that it was still too early to see the impact of the Guidelines coming through in terms of lower debt levels.

Ofgem carried out a review which was published in January this year. This emphasised that the numbers in 2007 were staying relatively static despite the fact that debt elsewhere in the economy was increasing. However, the real picture is not quite as simple as the one painted by Ofgem in that the amount of debt owed by consumers was increasing (see Section 5) and the level of weekly repayments was increasing.

Each of these policy interventions is discussed in more detail below.

4.1.1 Good Practice Guidelines Developed by Energywatch and Ofgem – September 2002

In 2002 energywatch and Ofgem both had identified the issue of debt as part of their work plan activities. Energywatch had identified debt prevention and management as a strand in its campaign to address fuel poverty. For Ofgem, the issue of debt prevention and management was driven by its Social Action Plan activities.

An Advisory Group was set up which was chaired by Peter Lehmann (then chair of FPAG and the Energy Saving Trust). It consisted of Ofgem, energywatch, supplier representatives, other advice agencies and BERR (then DTI)

The aims of the project were to:

- Identify good practice in the prevention of debt and disconnection and the management of debt recovery;

- Develop and publish for the benefit of suppliers, consumers and their representatives guidelines describing good practice; and
- Establish suitable criteria for monitoring and reporting on industry performance following the introduction of new guidelines.

The activity of the project focused on 6 policy areas:

- Minimising billing errors;
- Using incoming calls to identify consumers who would benefit from energy efficiency advice or other assistance;
- Using consumer records to target energy efficiency;
- Demonstrating flexibility in debt recovery;
- Offering sustainable solutions to consumers in difficulty; and
- Helping consumers who are unable to manage their own affairs.

It is interesting to note that debt prevention only accounts for 1 point while debt management accounts for 5 points of the policy areas identified.

The Advisory Group developed a set of output measures as a means of measuring the impact of the policy activity using data already collected by Ofgem on a quarterly basis. January 2003 was chosen as the baseline for measuring companies' future performance. Ofgem said that it would review this information on a quarterly basis in line with its normal monitoring cycle.

The performance measures were:

- Number of consumers repaying a debt
- Percentage with a debt over £300 carried forward from previous bill
- Number of consumers disconnected for non-payment of debt
- Number of ppm meters installed to recover debt
- Number of consumers provided with energy efficiency advice
- Number of consumers in debt provided with energy efficiency information

Ofgem and energywatch proposed to undertake a review of companies' strategies in September 2004 and said that they expected to see suppliers' debt prevention strategies having a positive impact on outputs within 2 years.

4.1.2 Independent Review by Sohn Associates – March 2005

Sohn Associates was asked to prepare a report on the progress made by the 6 main energy suppliers with implementing the guidelines.

The report said that “substantial effort and progress has been made but this varies significantly between suppliers. Some have positively embraced the Guidelines and embedded the principles in their businesses; some have concentrated on

specific areas whilst others have implemented the Guidelines on a “less integrated basis”.

However, the report suggested that the “current range of statistical measures does not provide clear evidence of the extent to which the Guidelines are having the desired effect”. This has been taken to mean that the output measures described above were not the best means of measuring the impact of the Guidelines.

The report said that different suppliers were at different stages with their business programmes and therefore had taken different approaches to dealing with the Guidelines but their view was that “Overall there was little evidence that the suppliers have the measurement and controls in place that we would normally expect for work of this importance.”

This would suggest that the guidelines were not having a significant impact on the business decisions of the companies and therefore there would be limited impact on the output measures. The report comes to the conclusion that “it is likely that despite the substantial progress made since the Guidelines were issued, that it is still too early to see the impact coming through in terms of lower debt levels and fewer consumers in debt. This is perhaps not surprising given some of the long cycle times in the debt processes and so far only a few suppliers have increased their emphasis on debt prevention rather than management.”

The report made some attempt to quantify the progress of different suppliers; however, there is no attempt to link this to the existing output measures. The report identified the main area of progress as the reduction in the number of disconnections undertaken by suppliers. However, this was principally caused by an industry moratorium on disconnection after the deaths of an elderly couple that had been disconnected by British Gas rather than guidelines.

4.1.3 Best Practice Review – January 2008

This report was undertaken by Ofgem and was to look at “how suppliers have progressed further in this area and go beyond what is required to assist customers having difficulty paying their energy bills”.

Ofgem said that the Sohn report had found that the Guidelines had been a “driving force for action and resulted in improvements, although progress varied between suppliers”, which is at odds with the overall tone of the report.

Ofgem undertook a short analysis of overall debt in GB and compared it to the levels and debt for gas and electricity consumers and concluded that “despite rising energy prices and the wider context of increases in personal debt, the numbers of customers repaying an energy debt has remained relatively stable.” However the amount that consumers are repaying has increased by approximately 80% for electricity and 30% for gas since 2003 and the average debt values were also increasing (see Section 5).

Suppliers have an obligation to take account of a customer’s ability to pay when setting the level at which a debt can be repaid each week – best practice is that it should be no more than the Fuel Direct maximum for vulnerable consumers. The Fuel Direct maximum is £2.90 per week. However, in 2007 the repayment levels were significantly above this level for both credit and prepayment meter consumers (with prepayment customers repaying £6.46/week for electricity and

£6.91/week for gas). However, it is impossible to say whether these are the levels paid by low income and vulnerable consumers.

Ofgem’s Best Practice Review highlights the seasonal variations in debt levels and suggests that there is generally a lag of a quarter from the high winter bill in Q1 and increases in debt levels in Q2 (Q2 figures are nearly always the highest debt figures within a year).

Each of these events will have impacted upon company performance and as such may have impacted on the debt figures and may over-ride or mask the underlying relationship between annual bills and the numbers of customers repaying a debt.

4.2 Historical Number of Customers Repaying a Debt

The historical number of credit and prepayment customers who are repaying a debt has been sourced from Ofgem’s Quarterly Monitoring Company Performance reports. The definition of debt is either a prepayment meter set to collect a debt or customers who are on a debt repayment arrangement scheduled to last longer than 91 days or 13 weeks. This will exclude direct debit consumers that have had a review and found that they have paying too little to cover their consumption (because of price rises) and then found they owe a substantial amount. If this shortfall is just spread over the next 6 months to a year and is repaid as part of the general payment arrangement this does not appear to be counted as a debt in Ofgem’s figures. This means that the real debt figures will be understated.

The number of credit and prepayment customers who are repaying a debt is shown in Figure 15 for electricity customers and Figure 16 for prepayment customers. The total electricity and gas customers in debt are shown in Figure 17.

Figure 15: Electricity Customers Repaying a Debt

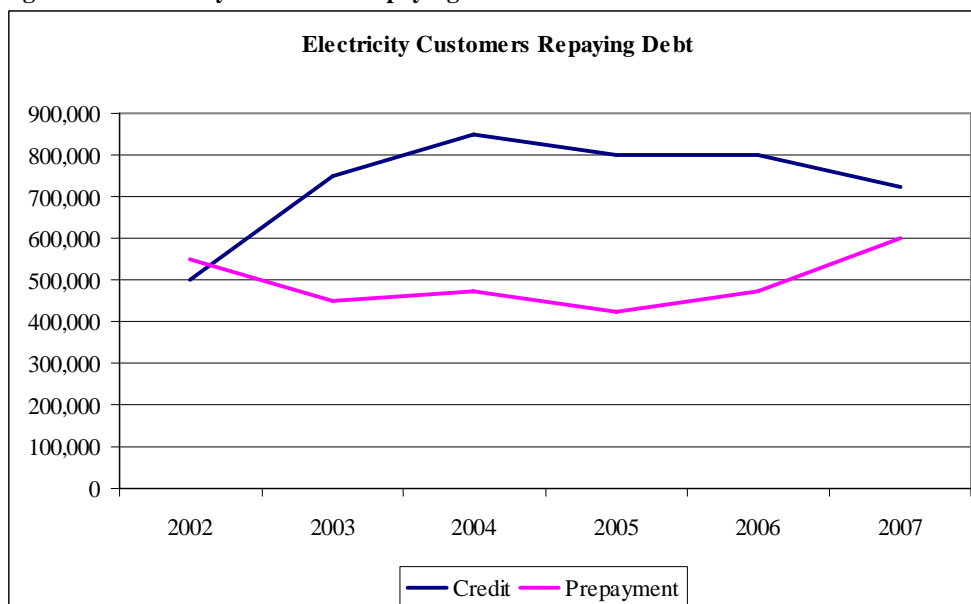


Figure 16: Gas Customers Repaying a Debt

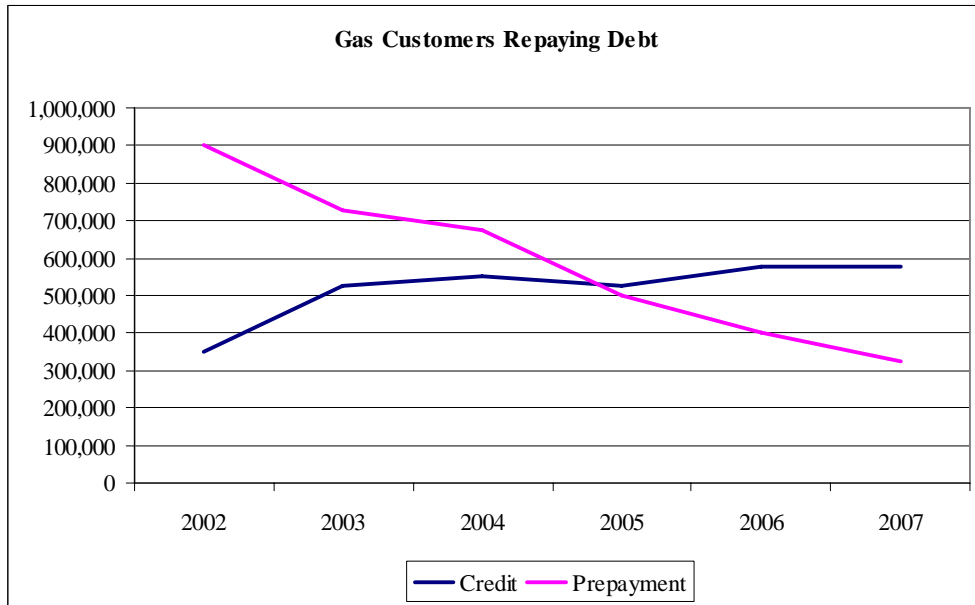
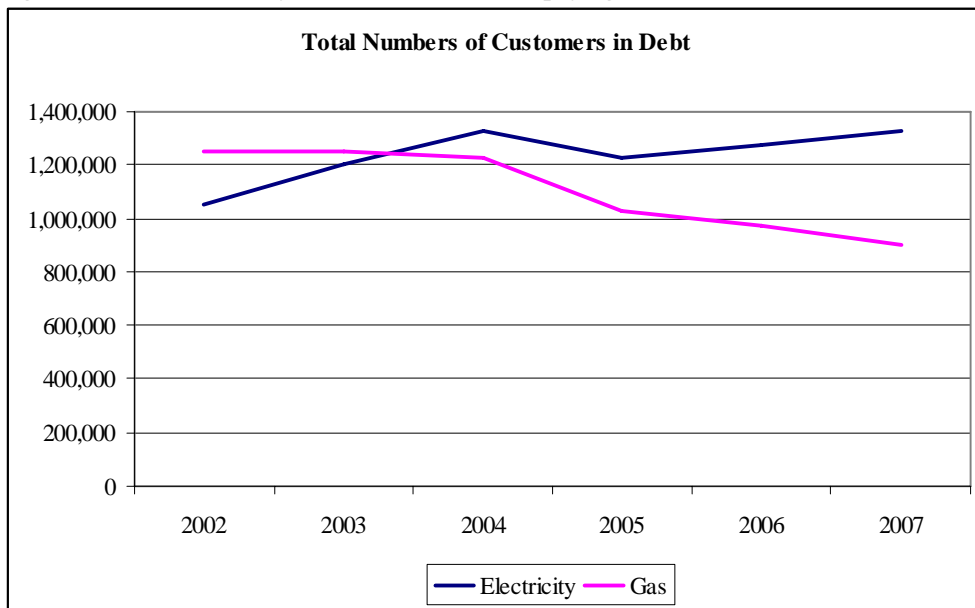


Figure 17: Total Electricity and Gas Customers Repaying a Debt



It can be seen from the above graphs that the number of electricity customers in debt peaked in 2004, dropped slightly in 2005 and has increased since then. It is interesting to note that since 2004, the number of credit customers in debt has decreased by around 100k whereas the number of prepayment customers in debt has increased by an equivalent amount. This shows the shift from credit to prepayment for customers in debt

For gas, the number of prepayment customers repaying debt has dropped considerably over the last few years from around 900k in 2002 to just over 300k in 2007.

As noted above, one of the main events in this policy area over the past several years was the death of an elderly couple whose gas supply had been disconnected despite the fact

that they were a vulnerable couple. This led to a general moratorium on disconnections for some time – in 2005 and 2006 British Gas undertook no disconnections at all.

The reduction in the number of gas prepayment consumers repaying debt is not matched by a similar reduction in the number of gas credit consumers. In fact the number of gas credit customers with a debt increases more than electricity credit customers with a debt. This could suggest a conscious policy (by one or several suppliers) to reduce the number of consumers repaying debt via a prepayment for gas – perhaps because they did not want vulnerable consumers to be faced with self-disconnection or because of the safety issues associated with the use of self-disconnection. This however is a little counter-intuitive since any supplier would increase the number of prepayment meters installed as a means of preventing the amount of debt owed from accruing and as a means of off-loading the responsibility for disconnection to the customer.

4.3 Correlations between Bills and Debt

In this section, the historical correlation between annual bill and level of debt is explored with the aim of using this correlation to forecast future levels of debt given the annual bills forecast in Section 3.

The trends for annual bills and total numbers of customers in debt are shown in the following figures for electricity and gas. Given the bills between London, Birmingham and Edinburgh are at similar levels (particularly for gas) and have similar year on year trends, the London Credit bills are used for this analysis.

Figure 18: Electricity Average Bills and Numbers of Customers in Debt

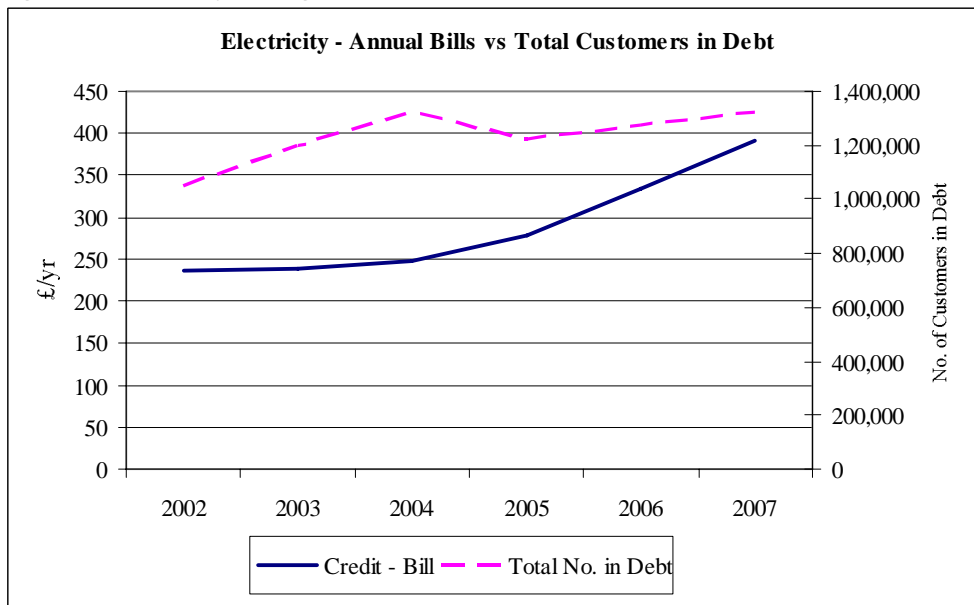
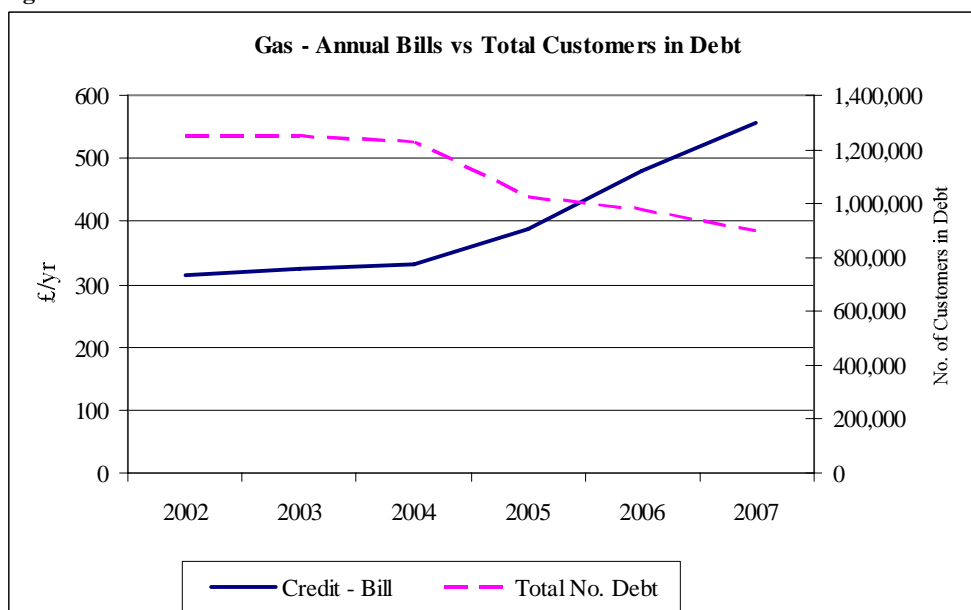


Figure 19: Gas Annual Bills and Numbers of Customers in Debt



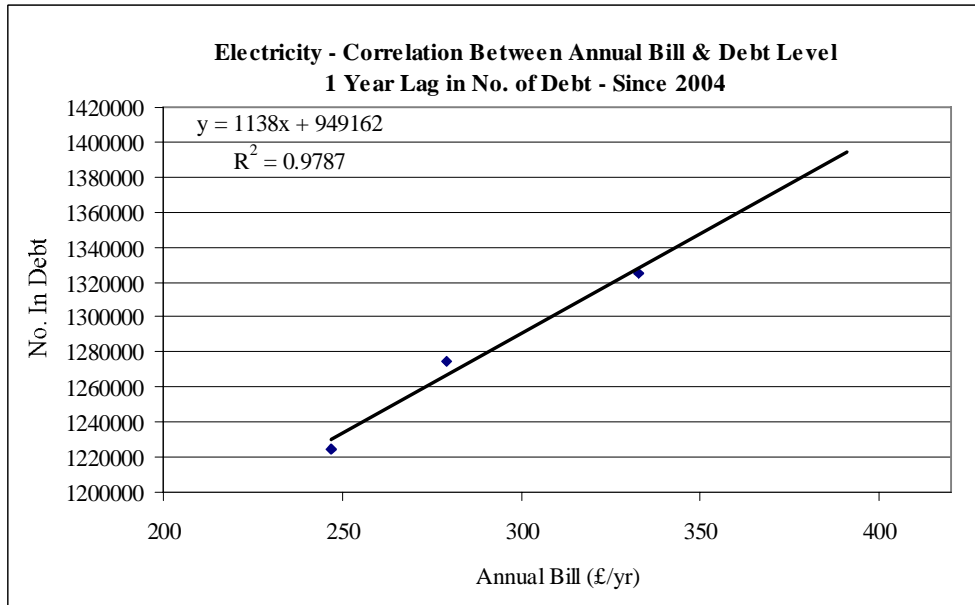
4.3.1 Electricity

For electricity, it can be seen that there is a general historical trend for annual bills to increase and for the number of customers in debt to also increase. However, the correlation is not strong with an R-Squared figure of just 33%.

However, it can take some time from the implementation of a price increase to it having an impact on a particular group of consumers as the quarterly billing cycle means that it can be some time before a developing debt problem is observed and the suppliers undertake administrative procedures to remind customers of their situations and to get the payment plan set-up. The length of time between a bill being issued and a customer being disconnected for non-payment can be anything between 60 and 160 days after the bill was first issued. The majority of payment arrangements however will be set up well before this “end-date.” The Ofgem data does not include this information

However, even when considering a lag in the annual bill, the correlation with the number of customers in debt is not good. This is due in the main to the peak levels of debt seen in 2004 and the drop to 2005. However, the correlations considering only the most recent data (2005 onwards) with a one-year lag shows an extremely high level of correlation as shown in the following figure. This may suggest that the efforts in debt management initially bore fruit but that in the face of rising real energy prices since 2005 this reached some sort of natural limit and subsequently debt and prices have risen more or less in lockstep.

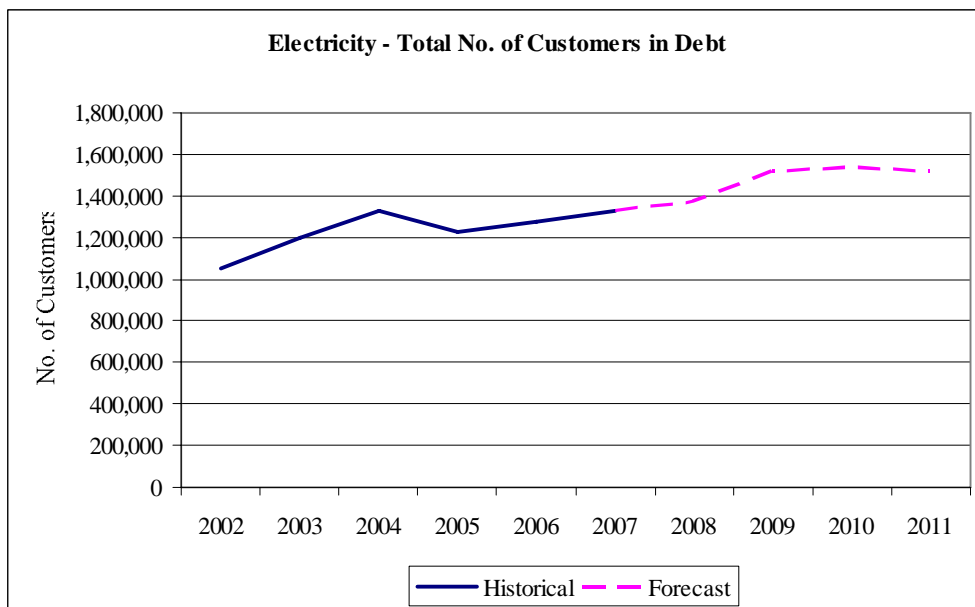
Figure 20: Correlation between Debt Level and Annual Bill (1 yr Lag)



This implies that for every £100/yr on an annual electricity bill, the total number of extra people going into debt the following year will be approximately 100k.

Applying this relationship to the forecast of annual electricity bills gives the forecast total number of households in debt as shown in Figure 21.

Figure 21: Forecast Total Electricity Customers in Debt



This shows that total numbers of electricity customers in debt is expected to increase from around 1.3m in 2007 to over 1.5m by 2011. Included in this is an increase of nearly 150k in 2009 as the considerable price increases seen in 2008 starts to impact on the debt numbers.

4.3.2 Gas

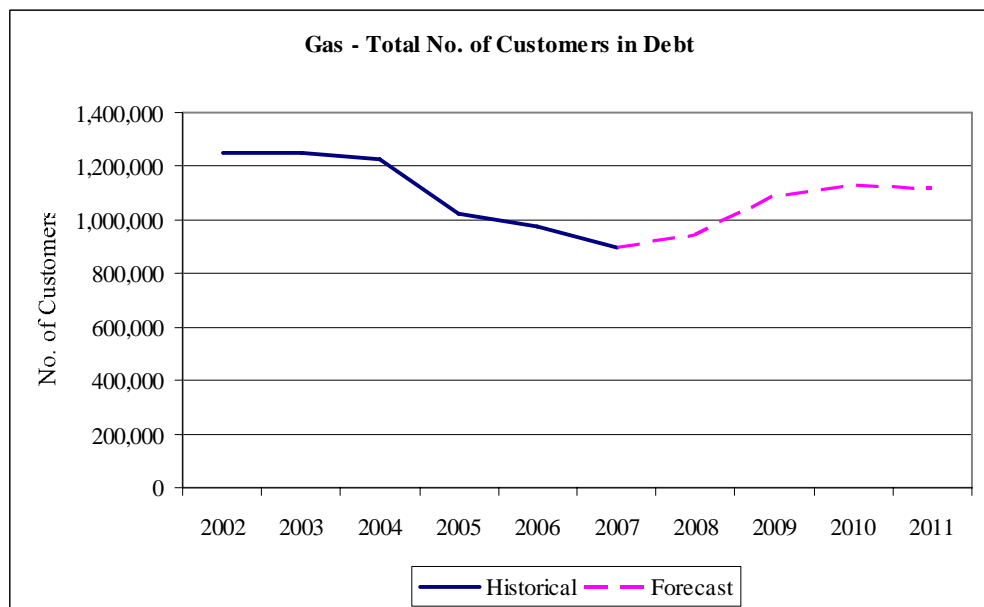
As seen in Figure 16 and Figure 17 and as described in Section 4.2, the number of gas customers repaying a debt has decreased between 2002 and 2007 largely due to policy measures to better manage the credit customers who are in debt. This could be partly explained by the actions of the single largest company - British Gas – who put a moratorium on disconnection following the deaths of an elderly couple.

However, as annual gas bills have been rising throughout this period the policy change has completely masked any underlying trend in increasing levels of debt caused by increasing bills.

As outlined in Section 4.3.2, there is likely to be a lag between changes in the annual bill and the number of customers in debt. However, for the gas data available, there is no correlation between annual bills and numbers of customers in debt which makes it extremely difficult to forecast future levels of debt.

However, it is clear that although gas debt appears to have been rather better controlled than electricity, the fundamental correlation between prices and debt cannot be significantly different from that for power. Therefore, for this analysis we have assumed that gas debt levels increase at only half the rate for power which would therefore be likely to represent a conservative estimate of the future numbers of households in debt.

Figure 22: Forecast Total Gas Customers in Debt



This shows the number of gas customers in debt increasing from their 2007 levels of 900,000 to over 1.1 million. Most of this increase comes in 2009 when the significant bill increase from 2008 takes effect with 140,000 additional customers in debt, which IPA considers a conservative estimate.

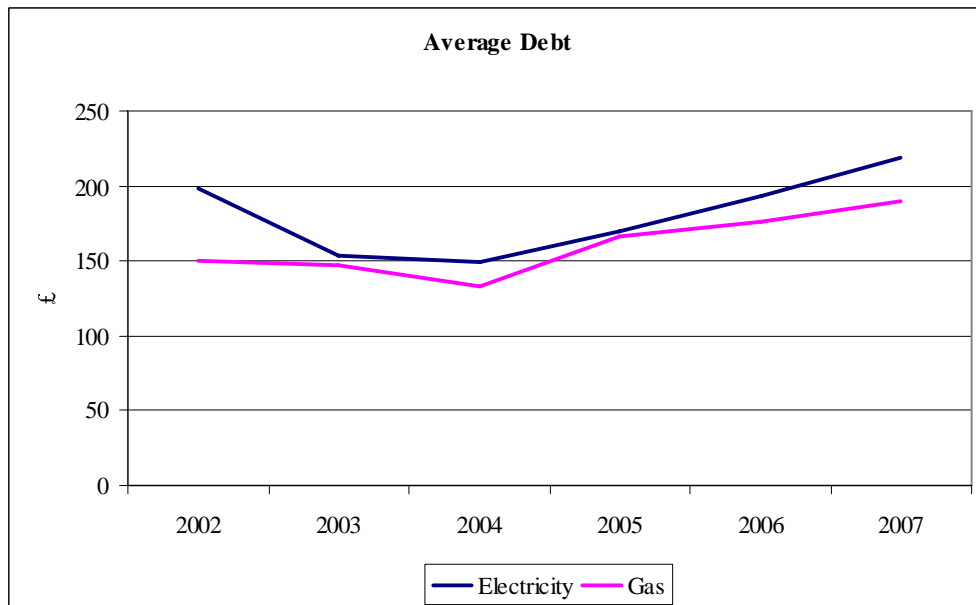
5 AVERAGE AND TOTAL DEBT

In addition to considering how changes to annual bills could impact the total number of customers in debt, it is also important to forecast how the average debt could be affected. The combination of these two parameters (number of customers and average debt) gives the total debt. Average Debt information has been sourced from Ofgem’s Social Obligations Monitoring Data. Average debt is defined as the total amount owed by customers in debt divided by the number of customers in debt.

5.1 Historical Annual Bills and Average Debt

The average debt levels for gas and electricity customers are shown in Figure 23.

Figure 23: Historical Average Debt Levels



As can be seen, the average debt levels are increasing for both electricity and gas. So even though the numbers of customers in debt may be falling for gas (as explored in the previous section), the average debt of the customers remaining has not been positively affected by the policy measures introduced over the period. This suggests that the management measures may have dealt with the “soft” debt amongst customers but that the customers now in debt are those with the most significant problems or who are able to repay existing debt at only a very slow level.

5.2 Correlations Between Annual Bills and Average Debt

In this section, the historical correlation between annual bill and average debt is explored with the aim of using this correlation to forecast future levels of average debt given the annual bills forecast in Section 3.

The trends for annual bills and average debt are shown in the following figures for electricity and gas. Given the bills between London, Birmingham and Edinburgh are at

similar levels (and have the same trends), the London Credit bills are used for this analysis.

Figure 24: Electricity Average Debt and Annual Bill

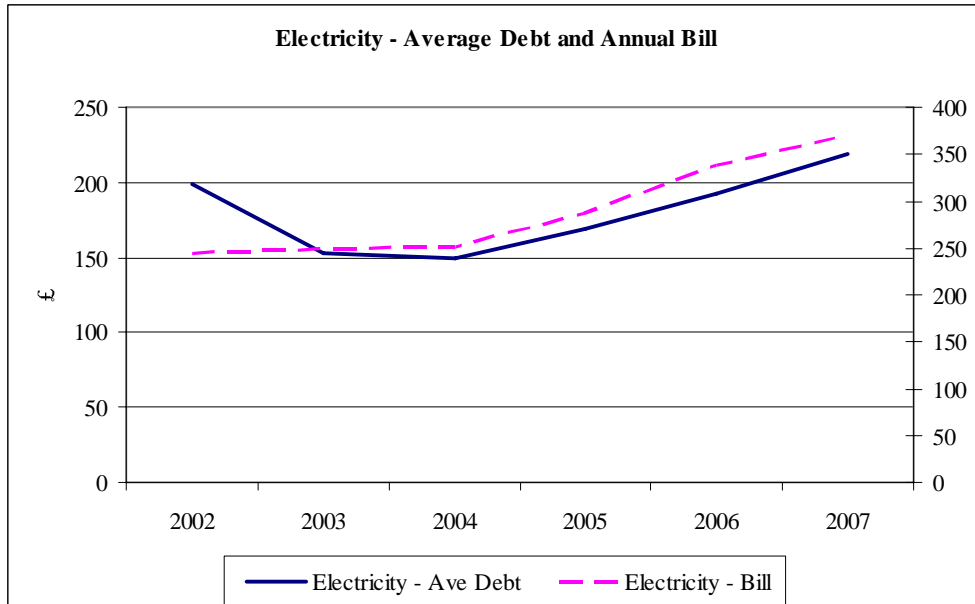
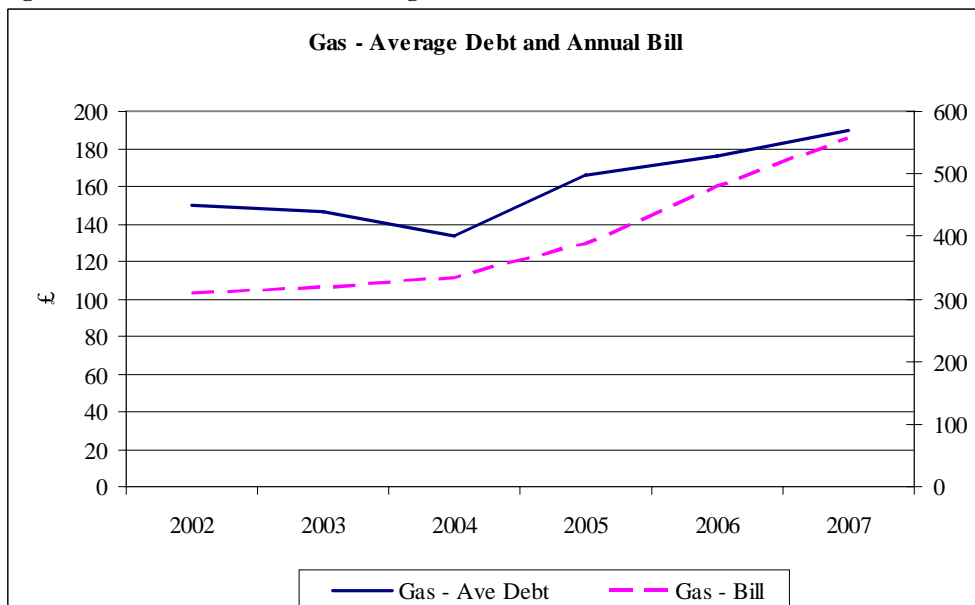


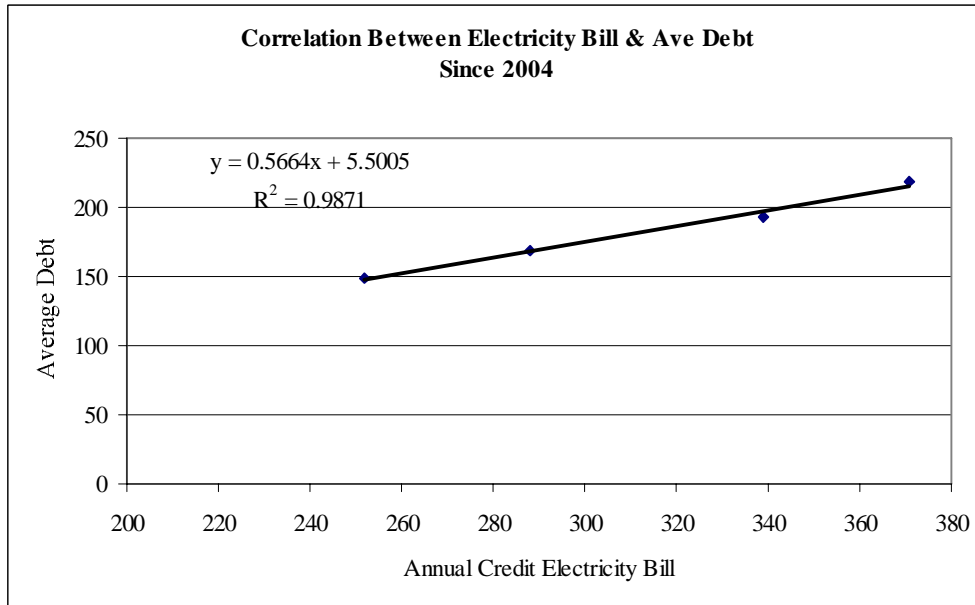
Figure 25: Gas Annual Bill and Average Debt



5.2.1 Electricity

For electricity, it can be seen that increases in annual bills since 2004 have been matched by a similar increase in average debt. The correlation of the two parameters since 2004 is shown in Figure 26 and shows an extremely high correlation with an R-Squared of 98%.

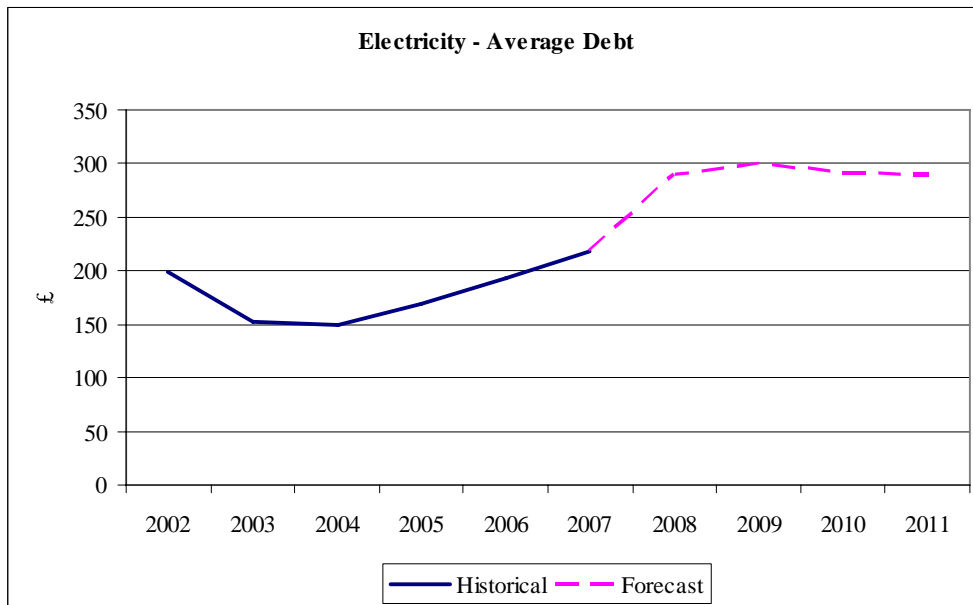
Figure 26: Correlation between Average Debt and Annual Bill



This suggests that for every £100/yr on the average annual electricity bill, the average debt increases by £60.

Applying this relationship to the forecast annual electricity bills gives the forecast average debt as shown in Figure 27.

Figure 27: Forecast Average Electricity Debt

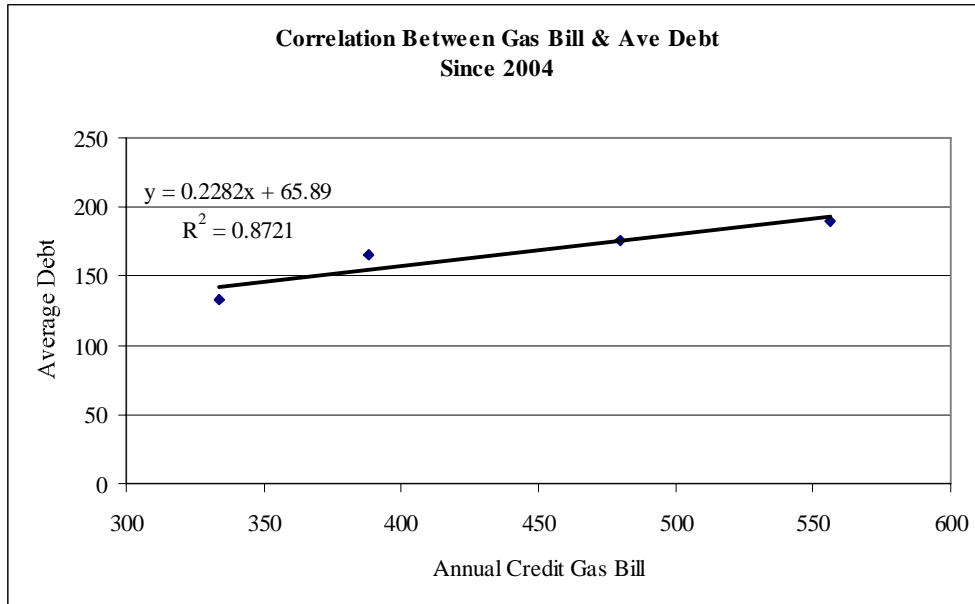


This shows that average debt for electricity customers is expected to increase from around £220 in 2007 to close to £300 in 2009.

5.2.2 Gas

For gas as well as electricity, it can be seen that increases in annual bills since 2004 have been matched by a similar increase in average debt. The correlation of the two parameters since 2004 is shown in Figure 26 and shows a high correlation with an R-Squared of 87%.

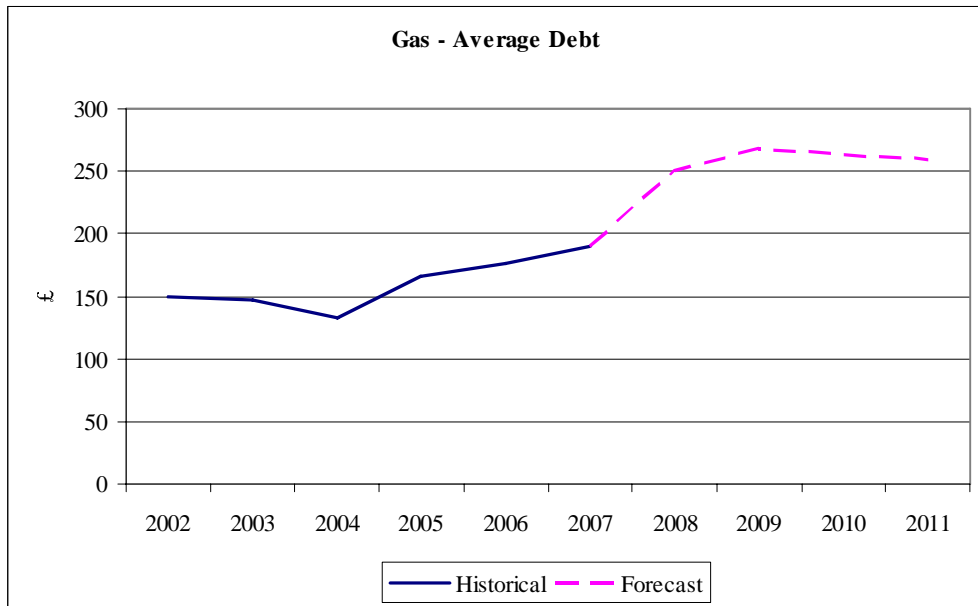
Figure 28: Correlation between Average Debt and Annual Bill



This suggests that for every £100/yr on the average annual gas bill, the average debt increases by £20.

Applying this relationship to the forecast annual gas bills gives the forecast total average debt as shown in Figure 27.

Figure 29: Forecast Average Gas Debt



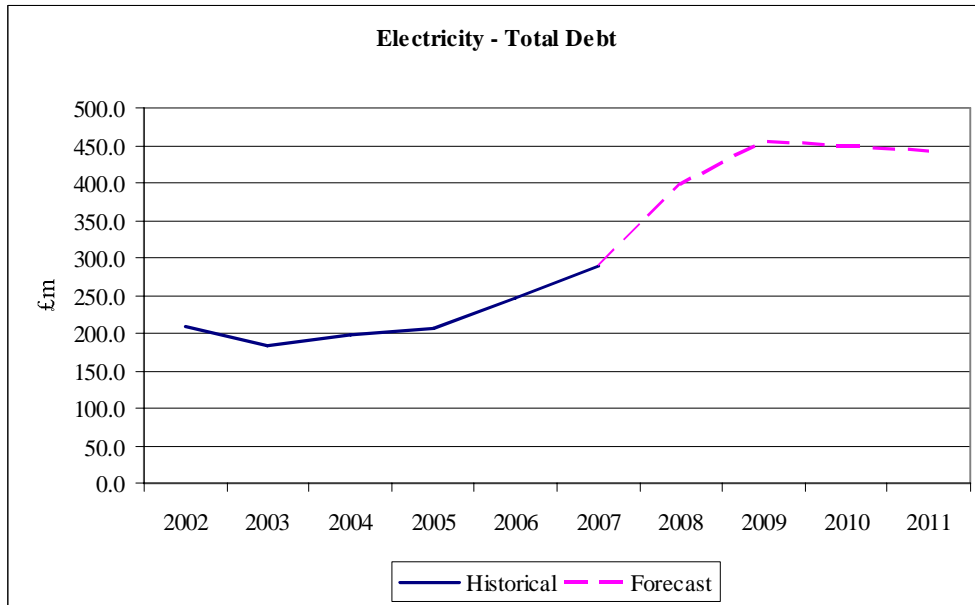
This suggests that average debt for gas customers is expected to increase from around £190 in 2007 to around £260 by the start of next decade.

5.3 Forecast Total Debt

Combining the forecast total number of customers in debt with the average debt gives a forecast of the total UK debt.

The total electricity debt is shown in Figure 30.

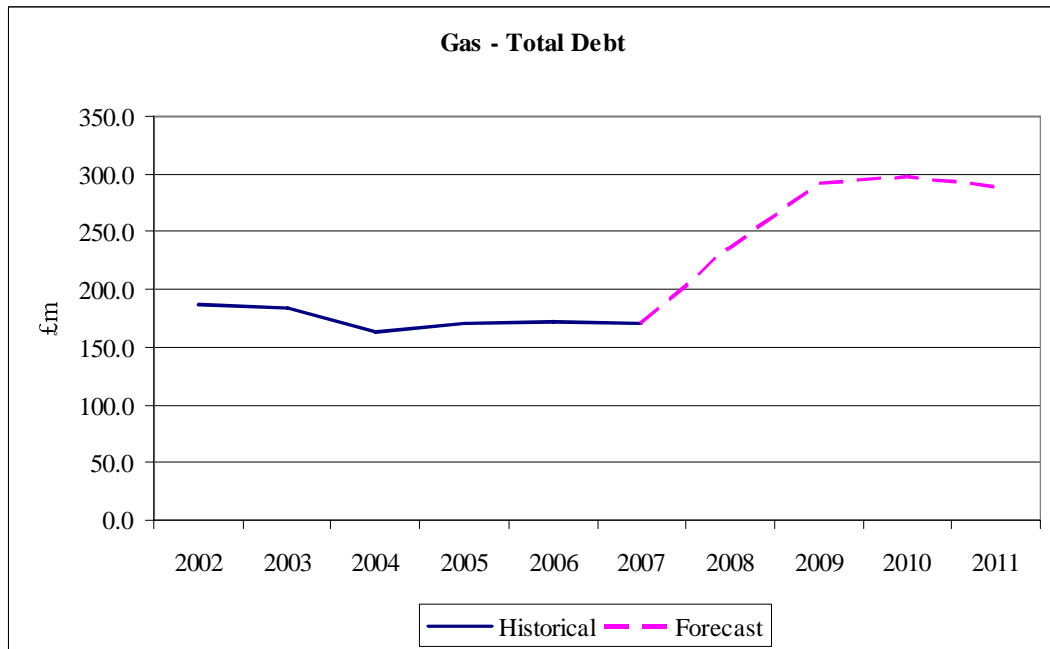
Figure 30: Total Electricity Debt



This suggests that due to increases in annual electricity bills that are forecast over the next couple of years, the total debt owed by electricity customers is expected to increase from around £300 million in 2007 to over £450 million in 2009. This is due to a combination of the total number of customers in debt increasing as well as the average debt of those customers also increasing.

The total gas debt is shown in Figure 31.

Figure 31: Total Gas Debt



It can be seen that historically, the total debt owed by gas customers has been reasonably flat which is due to falling numbers of customers in debt being balanced by increasing average debt levels. However, IPA forecasts the total debt owed by gas customers rising from around £175 million in 2007 to nearly £300 million in 2009. This is due to a combination of the average debt continuing to rise as well as the total number of customers in debt increasing in the coming years.

6 FUEL POVERTY

Fuel poverty is defined as households who pay more than 10% of their income on fuel bills. This section considers the impact on changes to annual bills on the number of households considered to be in fuel poverty.

6.1 Historical Trends

Recent estimates for the number of households in fuel poverty for England, Scotland and Wales are:

- **England:** In 2004, there were 1.2 million households in fuel poverty which had increased to 2.6 million by 2006;
- **Scotland:** In 2002, there were just under 300,000 households in fuel poverty (13.4% of all Scottish households). This had increased to nearly 420,000 households in 2004/05 and 543,000 in 2005/06 (which corresponds to 23.5% of all households);
- **Wales:** In 2004, 130,000 households were in fuel poverty which had increased to 243,000 by 2006 representing an 87% increase.

The latest official figure for fuel poverty was 2,400,000 in 2005.

6.2 Forecast Fuel Poverty

There is a relatively widely accepted rule of thumb that for every 1% increase in energy prices, the number of households in fuel poverty increases by 40,000. The year on year utility bill increases, and the resulting forecast levels of households in fuel poverty using this formula are shown in the following table.

Figure 32: Forecast Levels of Fuel Poverty

	2005	2006	2007	2008	2009	2010	2011
Annual Energy Bill ⁸ , £/yr	676	819	927	1,309	1,406	1,369	1,348
% Increase Yr on Yr	-	21%	13%	41%	7%	-3%	-2%
Fuel Poverty ('000s)	2,400	3,246	3,774	5,422	5,720	5,614	5,553

Therefore, the forecast increase in gas and electricity bills suggests that the number of households in fuel poverty will increase to over 5.5 million by the start of the next decade which is over double the number of fuel poverty households in 2005 levels with over 1.5 million additional households being classified as being in fuel poverty between 2007 and 2008.

⁸ Using London Credit Annual Bills.

7 SUMMARY

Rising gas and electricity bills are likely to have a number of impacts on households' abilities to pay bills pushing more people into debt (and higher levels of debt) as well as increasing the number of households in fuel poverty.

The main findings from this study are:

- Rising wholesale gas and electricity prices are forecast to increase annual electricity bills from around £400/yr in 2007 to over £500/yr by the start of next decade and annual gas bills are forecast to increase from around £575/yr in 2007 to around £900/yr by the start of next decade.
- The total numbers of electricity customers in debt is expected to increase from around 1.3m in 2007 to close to over 1.5m. Included in this is an increase of nearly 150k in 2009 as the considerable price increases seen in 2008 starts to impact on the debt numbers
- The number of gas customers in debt increases from 2007 levels of 900,000 to over 1.1 million by the start of the next decade. Most of this increase comes in 2009 when the significant bill increase in 2008 takes effect with 140,000 additional customers in debt.
- Average debt for electricity customers is expected to increase from around £220 in 2007 to close to £300 in 2009 whereas average debt for gas customers is expected to increase from around £190 to around £260 by the start of next decade.
- The total debt owed by electricity customers is expected to increase from around £300 million in 2007 to over £450 million in 2009. This is due to a combination of the total number of customers in debt increasing as well as the average debt of those customers also increasing.
- The total debt owed by gas customers is forecast to rise from around £175 million in 2007 to nearly £300 million in 2009. This is due to a combination of the average debt continuing to rise as well as the total number of customers in debt increasing in the coming years.
- The number of households in fuel poverty is forecast to increase to over 5.5 million by the start of the next decade which is over double the 2005 levels with over 1.5 million additional households being classified as being in fuel poverty between 2007 and 2008.

APPENDIX – DATA TABLES

Figure 33: Forecast Gas Unit Rates, p/kWh, Real 2008 money

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
2008	4.38	4.31	4.21	4.60	4.52	4.43
2009	4.69	4.62	4.52	4.92	4.84	4.75
2010	4.46	4.39	4.29	4.68	4.60	4.51
2011	4.27	4.20	4.10	4.48	4.41	4.31

Figure 34: Historical Average Annual Gas Bills, £/yr, Money of the Day Terms

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
1998	318	317	313	331	331	331
1999	305	307	307	318	318	318
2000	295	297	297	311	312	310
2001	293	296	294	308	309	308
2002	309	313	311	326	327	327
2003	320	324	320	335	335	335
2004	334	333	332	351	352	343
2005	388	389	384	401	403	400
2006	480	480	469	499	503	501
2007	556	556	547	590	595	588

Figure 35: Forecast Average Annual Gas Bills, £/yr, Money of the Day Terms

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
2008	807	838	765	848	879	805
2009	887	922	842	930	965	884
2010	864	897	819	907	941	861
2011	847	879	802	890	923	844

Figure 36: Forecast Electricity Unit Rates, p/kWh, Real 2008 money

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
2008	11.97	11.77	12.30	12.43	12.28	12.84
2009	12.10	11.90	12.43	12.57	12.42	12.97
2010	11.48	11.28	11.81	11.93	11.78	12.34
2011	11.11	10.92	11.44	11.56	11.41	11.96

Figure 37: Historical Average Annual Electricity Bills, £/yr, Money of the Day Terms

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
1998	263	253	273	275	263	292
1999	258	252	272	268	261	288
2000	252	245	268	263	261	281
2001	246	239	267	256	256	278
2002	244	237	266	253	253	279
2003	249	238	266	253	254	281
2004	252	247	286	250	262	298
2005	288	279	316	292	297	318
2006	339	333	369	348	356	393
2007	371	391	408	381	418	430

Figure 38: Forecast Average Annual Electricity Bills, £/yr, Money of the Day Terms

	Credit			Prepayment		
	London	Birmingham	Edinburgh	London	Birmingham	Edinburgh
2008	502	506	498	521	528	520
2009	520	524	516	540	547	539
2010	506	510	503	526	532	525
2011	502	505	499	522	528	522

Figure 39: Forecast Number of Customers in Debt

	Electricity	Gas
2008	1,371,360	943,320
2009	1,520,122	1,086,510
2010	1,540,746	1,131,775
2011	1,524,554	1,118,679

Figure 40: Forecast Average Debt, £/yr, Money of the Day Terms

	Electricity	Gas
2008	290	250
2009	300	268
2010	292	263
2011	290	259

Figure 41: Forecast Total Debt, £m, Money of the Day Terms

	Electricity	Gas
2008	397	236
2009	456	291
2010	450	298
2011	442	290