STATES OF JERSEY

OXERA REPORT ON THE JERSEY GAS MARKET

Presented to the States on 4th January 2017
by the Chief Minister

STATES GREFFE

MINISTERIAL FOREWORD

Background

The 2015–2018 Strategic Plan emphasized a commitment to ensuring that competition helps contain prices in key markets in the Island, including those for energy.

The review of the competition framework, overseen by Professor Sir John Vickers, was an important step towards delivering this objective by the end of the current Council's term of office. It transferred responsibility for competition and regulation to the Chief Minister's Office, and established an action plan against which the Department is delivering.

In addition, the Chief Minister and I have recognised Islanders' concerns about energy prices and established an objective of ascertaining whether key energy markets – particularly gas and heating oil markets – are working in Islanders' interests.

Accordingly, I requested CICRA to undertake a review of the fuel market. This was published in October 2015 and concluded that, given a lack of evidence of any excessive margins or returns, "*there appears to be no reasonable grounds to suspect that the Jersey gas market is not acting in the best interests of consumers at this time*".

Nonetheless, in 2016 there have been a number of questions in the States Assembly regarding the level of gas prices, and concerns that the States should be intervening to reduce them. To build on the work done by CICRA and to provide additional information for States Members and consumers, Oxera was commissioned to undertake additional analysis to shed greater light on the gas market in Jersey and explore further whether there was any evidence that it was not working in consumers' best interests. The Report provides for the first time detailed facts and analysis to help everyone gain a better understanding of conditions in our gas market.

Report findings

The report is attached and contains detailed, independent and expert analysis to assess the reasonableness of gas prices in Jersey, using a framework to set out what factors would be expected to drive retail prices. The framework is used to identify where price trends do not appear to be explained by these factors, and uses profitability analysis to test whether any unexplained retail price trends are leading to excess profitability (which would suggest that retail prices are too high).

The report is based primarily on information contained within the statutory financial accounts of Jersey Gas from 2002 to 2015.

The conclusions are that while retail prices have not declined as sharply as wholesale prices in recent years, the gap between retail and wholesale gas prices is partially explained by declining volumes and increased investment expenditure, both of which would be expected to drive up retail prices relative to wholesale prices.

Looking backwards and on average over a number of years, Oxera's independent report noted that profitability levels do not appear to have been outside of a reasonable range, and therefore average prices do not appear to have been too high (or higher than they would have been if prices were regulated).

However, as the analysis in the report is backward-looking, it does not provide assurances that prices going forward will also produce 'reasonable' levels of profit. Therefore, further analysis is likely to be needed in future to assess whether this conclusion still holds.

Next steps

Clearly we should not impose regulation on businesses where there is no justification to do so, as this will incur costs which are likely to be borne at least in part by consumers.

Whilst gas prices do appear high compared to other fuels, Oxera's analysis and CICRA's report clearly show that regulation would not have solved previous price issues. Accordingly, regulating gas prices in such circumstances could not be justified at this point in time.

Oxera's report has already been shared with CICRA, and I will discuss its contents with the Chairman in the New Year.

It is important to work closely with ministerial colleagues, CICRA and the Jersey Consumer Council to establish what policy choices government may have in the future. Amongst other actions, it is important to establish what future monitoring can be undertaken to inform consumer choice.

The Competition and Regulation Unit within the Chief Minister's Office will continue to keep all markets under review where there is the option for regulation, including keeping a close eye on the gas market.

The Minister for the Environment is responsible for co-ordinating the Island's Energy policy. He has taken a keen interest in the sustainability of energy markets, and his officials were very helpful in reviewing the gas market before the publication of the Energy Policy last year. The report will be formally discussed with the Minister in the New Year.

Deputy M.J. Norton of St. Brelade, Assistant Minister for Economic Development, Tourism, Sport and Culture, is responsible for the Jersey Consumer Council. The Council has an important role to play in continuing to keep consumers informed about the choices they face in heating their homes. I will hold discussions with them to take work forward the important matters the report raises early in the New Year.

Following these various consultations and discussions, the report will tabled for a comprehensive discussion by the Council of Ministers in the New Year.

We remain committed to ensuring that energy markets work in Islanders' interests and will support CICRA in achieving that goal.

I will keep States Members and consumers informed of developments in 2017, as we move forward and continue to develop our competition framework and build on the important findings of this report.

Senator P.F.C. Ozouf
Assistant Chief Minister ***(with special responsibility for Financial Services, Digital, Competition and Innovation)***

Is the Jersey gas market working in the best interests of consumers?

Prepared for
The Government of Jersey

December 2016

www.oxera.com

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Figures and tables

Executive summary

The Government of Jersey appointed Oxera to examine whether the gas market is acting in the best interests of consumers.

Our preliminary conclusion is that while retail prices have not declined as sharply as wholesale prices in recent years, the gap between retail and wholesale gas prices is primarily explained by declining volumes and increased investment expenditure, both of which would be expected to increase the difference between retail and wholesale prices.

Declining volumes mean that fixed costs (i.e. costs that do not change in response to volume movements) need to be spread across fewer units of output, and the increasing capital base means that there are more capital costs to recover from each unit sold. Both of these factors drive a wedge between wholesale prices and the retail prices charged to Jersey Gas customers.

However, this analysis alone does not tell us how wide that gap should be and, as such, whether prices paid by retail customers are reasonable. To assess this, we examined whether the levels of profitability resulting from this gap appear reasonable and, in particular, whether the return on capital historically generated by Jersey Gas is within an estimate of its cost of capital (a commonly applied test in profitability analysis).

Looking backwards and on average over a number of years, we conclude that profitability levels do not appear to have been outside of a reasonable range, and therefore average prices do not appear to have been too high (or higher than they would have been under price regulation).

As this analysis is based on historical information, it does not allow for conclusions to be drawn in relation to the future profitability of the company or the level of prices going forward. Further analysis would be required in order to address these areas.

1 Introduction

1A Context

1.1 The Government of Jersey has appointed Oxera to examine whether the gas market is acting in the best interest of consumers.

1.2 We note that, following a high-level exercise conducted by the Channel Islands Competition and Regulatory Authorities (CICRA) in 2015, CICRA concluded that there are 'no reasonable grounds to suspect that [the fuel market in Jersey is] not acting in the best interests of consumers'.[1] We have further explored whether gas prices in Jersey are reasonable. Based on the analysis set out in this report, we agree with the overall conclusion reached by CICRA in relation to the historical profitability of Jersey Gas.

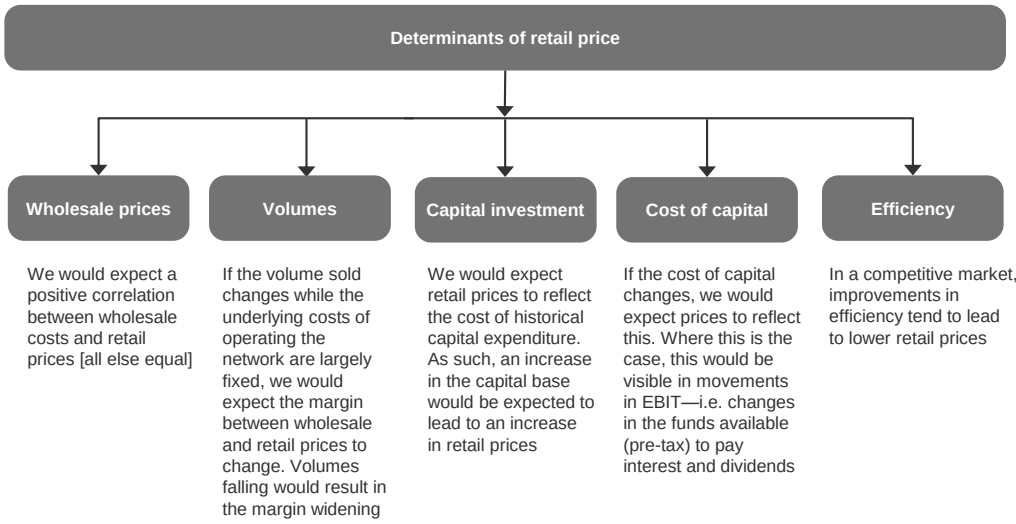
1B Approach

1.3 To assess the reasonableness of the gas prices in Jersey, we established a framework to describe how we would expect retail prices to move in a competitive environment. In particular, this framework sets out factors which we would expect to drive retail prices. We use this framework to identify where price trends do not appear to be explained by these factors, and use profitability analysis to test whether any unexplained retail price trends are leading to excess profitability (which would suggest that retail prices are too high).

1.4 Figure 1.1 below illustrates the economic framework established for the purpose of assessing retail price trends.

[1] CICRA (2015), 'Review of the Fuel Market in Jersey', p. 3.

Figure 1.1 Economic framework for assessing retail price trends



Note: EBIT, earnings before interest and tax.

Source: Oxera.

1C Financial information sources

1.5 This report is based primarily on information contained within the statutory financial accounts of Jersey Gas from 2002 to 2015. However, the accounting year-end used to prepare these accounts changed twice over this period. Some accounts are presented for the 12 months to the end of December, some for the 12 months to the end of June, one for the 18 months to the end of June, and one for the six months to the end of December. The periods reported by Jersey Gas are illustrated in Appendix A1.

1.6 This inconsistency creates challenges in analysing financial trends because the business is seasonal: consumers use more gas in winter than in summer – over the six months from July to December, less gas is likely to be consumed than in the six months from January to June. Therefore, revenues over the former period are likely to be lower than over the latter period, while the costs of running the network are fairly fixed and so less seasonal.

1.7 This means that profitability over the six months to the end of December is likely to be lower than for the six months to the end of June. Therefore, pro-rating (to create a consistent set of financials for the 12 months to the end

of December) can lead to distortions in the analysis if the two periods being pro-rated are not both of a 12-month duration, as the output will contain more or fewer summer (or winter) months than are present in any continuous 12-month period.

1.8 To avoid such distortions, in certain instances we do not report the outputs of analysis for the years around the points at which the accounting year-end changed.

1D Structure of the report

1.9 Section 2 analyses the historical trend in the retail prices charged by Jersey Gas and the extent to which this is explained by the drivers set out in the economic framework presented in Figure 1.1.

1.10 Section 3 then considers whether the retail prices charged by Jersey Gas have generated a 'reasonable' return on capital for investors. We do this by comparing the actual returns generated by Jersey Gas with a benchmark based on our assessment of Jersey Gas's cost of capital.

1.11 Section 4 draws conclusions based on the analysis presented on the reasonableness of the returns generated by Jersey Gas and, hence, the overall reasonableness of prices.

2 Are prices reasonable?

2A Context

2.1 Jersey's Ministers are keen to establish whether the gas market in Jersey is operating in the best interests of consumers. Consequently, they are interested in whether the evidence available suggests that the prices charged by Jersey Gas are reasonable, or inflated as a result of the company's monopoly position in the gas market.[2]

2B What does a reasonable price consist of?

2.2 To ascertain whether the gas market is working in the best interests of consumers, it is necessary to define what is meant by a 'reasonable' price. A good place to start is to examine what economic regulators consider to be an appropriate price in regulated utilities markets. This is relevant as economic regulators aim to mimic the outcomes that would result in a market that is subject to competitive forces.

2.3 The traditional model of economic regulation in the UK and elsewhere determines prices based on three key 'building blocks': (i) efficient operating costs; (ii) return of (invested) capital; and (iii) return on (invested) capital. Based on this definition, a 'reasonable' price is one that allows a company to earn sufficient revenues to fund its operations (on an efficient basis); to recover the cost of its investments over the life of the relevant asset; and to earn a reasonable return on any capital invested – a reasonable return being defined as one that is sufficient to attract and retain funding for the business, given the alternative uses of funds available to investors. In economic terms, this 'reasonable return' is the weighted average cost of capital (WACC) employed in the business.

[2] While Jersey Gas is the monopoly provider of gas in Jersey, it competes with oil and electricity companies for the provision of heating supply on the Island.

2.4 This section analyses the historical trend in retail prices and seeks to identify the factors driving these changes, using the economic framework set out in Figure 1.1. The three stages of this analysis are set out below.

(i) **The relationship between retail and wholesale prices**. This relationship is assessed to determine whether retail price movements are explained by changes in wholesale prices. In a competitive market (all other things equal), one would expect to observe a positive correlation between these two prices. However, a lag between movements in the wholesale price and movements in the retail price of gas would be expected where hedging arrangements[3] are in place or where there are any customer price-smoothing objectives. The relationship may also be affected by movements in the U.S. dollar:pound exchange rate (as gas is priced in U.S. dollars).

(ii) **Relationship between volume changes and profit**. If retail price movements are not explained entirely by wholesale price movements, they might be explained by a combination of wholesale price movements and changes in volumes sold. For a company with a high level of fixed costs (i.e. costs that do not change in response to volume movements), long-term volume changes with stable retail prices would lead to a long-term over- or under-recovery of fixed costs, and therefore retail price adjustments would be expected. However, all else being equal, if such price changes are made to reflect this, one would expect a broadly stable level of gross profit (before paying the fixed costs of the business[4]) – i.e. the same amount of money is available to meet the fixed costs of the business over the long term. In this section, we examine whether this is the case, in order to determine whether retail prices appear to be explained by a combination of wholesale price and volume changes.

[3] A hedge in this context is a form of investment designed to provide some protection against the risk of adverse price movements in a resource or asset (in this case, gas and/or currency).
[4] Oxera has calculated gross profit using Jersey Gas's accounts as revenue less cost of sales.

(iii) **Investment profile**. If the capital employed in the operations of the business changes, it would be reasonable to expect movements in the retail price that are not related to changes in the wholesale price or volumes. We would expect the retail price to reflect the cost of historical capital investment in assets required to provide gas supply. To assess whether the trend in retail prices can be explained partly by the level of capital changes in the company's operations (in addition to wholesale price and volume changes), we examine the profile of historical capital expenditure and depreciation levels (which reflect an accounting estimate of the amount of the asset that is being 'used up' each year). Traditional models of economic regulation assume that prices should reflect the return of capital. To proxy the return of capital in this analysis, we use accounting depreciation. Therefore, if retail price movements are driven by this factor (in addition to the others covered), one would expect profits after depreciation (EBIT) to be fairly stable.

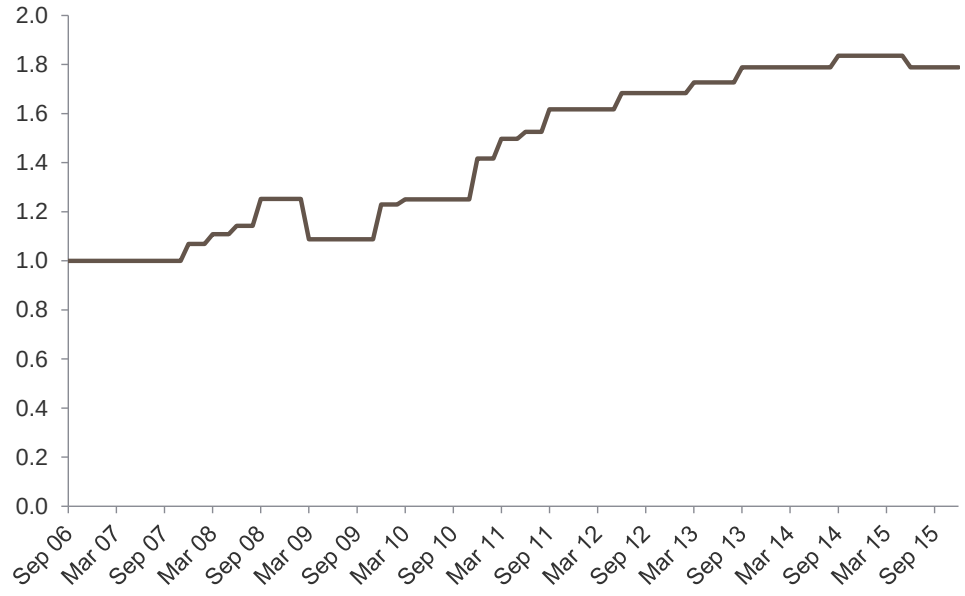
2.5 If these factors combined do not provide an intuitive explanation of retail price trends, an explanation can be sought in the level of returns to investors. By this we mean that if the trend in the gap between wholesale and retail prices does not appear to be explained by underlying cost drivers, it may be that the return to investors is changing.

2.6 Section 3 sets out how we have estimated what a 'reasonable return' on invested capital is, and whether returns to investors in Jersey Gas are consistent with this.

2C Trends in wholesale and retail prices

2.7 Figure 2.1 presents an index of retail gas prices in Jersey over the last ten years. This information was provided by the States of Jersey and has been cross-checked against additional data supplied by Jersey Gas.

Figure 2.1 Historical trend in the retail gas price in Jersey



Note: Index base = Sep 2006.

Source: Oxera analysis based on data supplied by the States of Jersey.

2.8 Figure 2.1 shows that prices have increased relatively steadily over the last ten years, with a dip in December 2008 (the reversal of an increase earlier in 2008). We note also that at the start of 2016 the variable component of the retail price fell, but the standing charge increased, broadly offsetting this reduction. Given that data for 2016 is not yet available, this review focuses on the period until the end of 2015.

2.9 As explained in section 2B, in a competitive market, prices are generally expected to move in response to changes in wholesale costs. In Figure 2.2 below, we use wholesale price data from February 2011 to compare wholesale and retail prices over this period. To do this, we have constructed two indices, with a base as at February 2011. We have used indices here to make the two prices comparable, as the units of measurement are different for wholesale costs and retail prices.

2.10 As can be seen from Figure 2.1 and Figure 2.2, retail prices climbed relatively steadily over the period from February 2011 to December 2015. Wholesale

prices were volatile until around January 2014, after which they began to fall relatively steadily, levelling out slightly after January 2015.

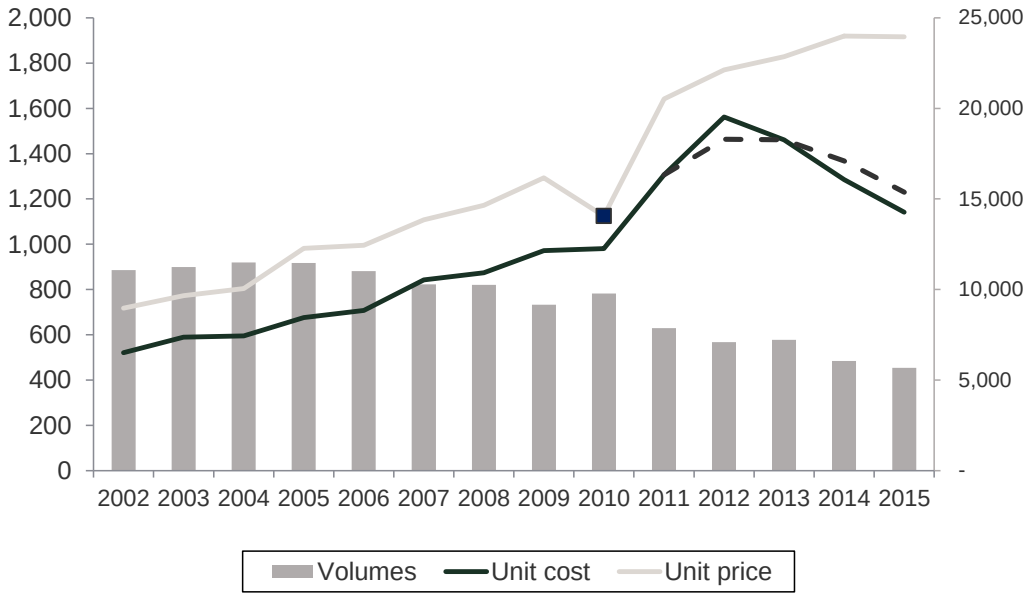
Figure 2.2 Historical trends in retail and wholesale gas price indices

Note: Retail prices are based on the variable component of Jersey Gas's Super Economy 24 tariff, which is applicable to the first 5,000 units consumed. Wholesale prices are based on monthly average prices drawn from the Argus CIF 7000+ MT Propane benchmark. The index base is February 2011.

Source: Oxera analysis based on data supplied by Jersey Gas.

2.11 Figure 2.3 below uses revenue and cost of sales data in Jersey Gas's financial accounts for the last 15 years to show unit costs (cost of sales divided by volumes) and unit revenues (revenue divided by volumes) over this longer period. Unit costs and unit revenues can be used as proxies for wholesale and retail prices. The benefit of analysing this data in addition to that presented in Figure 2.2 (other than allowing analysis over a longer period) is that it enables us to examine the absolute level of costs and prices (rather than relative levels, as shown in Figure 2.2) over this period. The cost of sales includes the cost of shipping fuel to Jersey and reflects any hedging of wholesale market prices.

Figure 2.3 Historical trends in unit revenues and costs (£/tonne, left axis) and volumes (tonnes, right axis)



Note: Data is based on calendar years (pro-rating applied where necessary). Unit revenues in 2010 (highlighted) are likely to be understated (see below). Dotted line: 2012 has been adjusted such that cost of sales is reduced by the cost of a gas facility fire (c. £700k) which was covered by insurance. 2014 and 2015 have been adjusted to add back c. £500k of costs which were reallocated to net operating expenses in 2014 and 2015 (see paragraphs 2.24 and 2.25 below).

Source: Oxera analysis. Revenue and cost of sales data based on Jersey Gas's Statutory Financial Statements. Volumes taken from CICRA (2016), 'Review of the Fuel Market in Jersey', p. 8, Figure 1.

2.12 As shown in Figure 2.1, between September 2006 and March 2015, retail prices climbed relatively steadily.[5] This is consistent with the proxy retail price shown in Figure 2.3, with the exception of 2010, when the proxy retail price fell but the actual retail price continued to rise. In 2010 volumes increased slightly (against the trend), which may have reduced the average unit revenue (proxy retail price), particularly as the marginal retail price falls when consumption increases (due to a two-tier tariff[6]).

2.13 A further factor contributing to this is likely to be the way the figures are calculated. As described in section 1C above, to obtain a consistent dataset, Jersey Gas's accounts have been pro-rated at certain points. The 2010 unit revenues and costs are based on a sum of the accounts for the six months to December 2010 and 50% of the 12 months to June 2010. Therefore, given the

[5] With the exception of a decline in price in late 2008, in part the reversal of an increase earlier that year.
[6] The first 5,000 units have historically been priced slightly higher than marginal volumes above this level.

seasonality of the business, this constructed 12-month period is likely to show lower revenues than a standard 12-month period (more heavily weighted towards the summer months). Therefore, when the revenue estimated for this period is divided by actual volumes for the calendar year 2010, estimated unit revenue is likely to be lower than it would have been had the actual calendar-year financials been available and used here.

2.14 Between 2011 and 2015, retail prices rose at an average compound growth rate (CAGR) of 4.0% (based on average price levels in 2011 and 2015). This compares with a CAGR of -19.6% for wholesale prices over the same period.

2.15 Since around the end of 2013, wholesale gas prices have fallen sharply (by 67% from December 2013 to December 2015). Retail prices have not followed suit – indeed, they continued to rise slightly until March 2015. However, the difference shown in Figure 2.2 could overstate the gap between retail prices and the wholesale prices faced by Jersey Gas, particularly if it was locked into higher wholesale prices due to hedging arrangements (i.e. it was unable to benefit from the lower wholesale prices).

2.16 However, Figure 2.3 does not appear to support this explanation, as the wedge is still visible even when actual costs are considered.

2.17 Since it is unclear (based solely on this analysis) why retail prices did not fall sooner (they began falling in March 2015), volume trends over this period are examined, allowing us to assess whether the widening gap between retail and wholesale prices might be explained by reducing volumes. If so, we would expect to see the funds available to pay for the fixed costs of the network remaining steady, despite a widening gap between retail and wholesale prices.

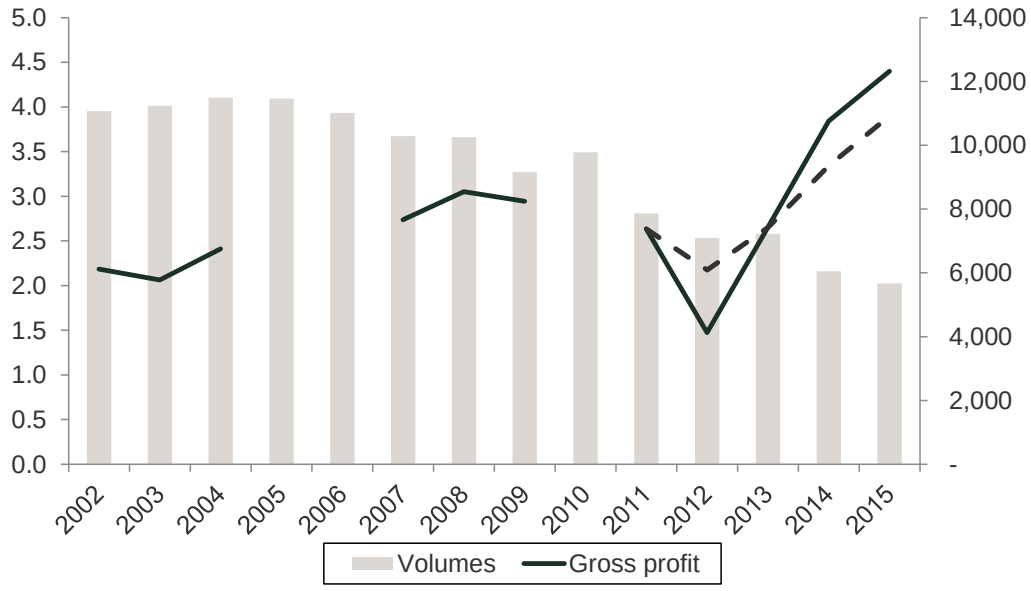
2D Trends in volumes and profit

2.18 Figure 2.2 and Figure 2.3 illustrate a deviation between retail and wholesale prices in recent years. This might be explained by declining volumes over this period. This is because, for a business with high fixed costs, a change in volumes will lead to an over- or under-recovery of fixed costs if prices do not change to reflect this. If prices have remained flat (despite falling wholesale costs) in order to offset the impact of declining volumes, we would expect to see gross profit (revenue minus cost of sales) remaining relatively steady (all else being equal).

2.19 To identify the isolated effect of volume on retail prices, we examine gross profit – a measure of profit after costs directly attributable to volumes sold have been taken into account. Gross profit indicates the funds available to meet the fixed costs of the network (including depreciation of historical capital expenditure).

2.20 Figure 2.4 shows the evolution of volumes over the last 15 years and the corresponding changes in gross profit.

Figure 2.4 Gross profit (£m, left axis) and volumes (tonnes, right axis)



Note: Gross profit is calculated as revenue less cost of sales. Where gross profit would be distorted due to pro-rating (see section 1C), the data point has been removed from the figure. The dotted line relates to cost and income reallocations (see paragraphs 2.24 and 2.25 below).

Source: Oxera analysis based on Jersey Gas's financial statements and volumes taken from CICRA (2016), 'Review of the Fuel Market in Jersey', p. 8, Figure 1.

2.21 As shown in Figure 2.4, volumes have declined relatively steadily over the period since 2005 (by a CAGR of around -6%). We understand from Jersey Gas that this is in part due to milder winters, and in part a result of a reduction in its share of the heating market on the Island. From this perspective, it is not surprising that retail prices have not decreased as much as wholesale prices over this period, as they would be expected to reflect the lower volumes over which the costs of operating the network (which are likely to be independent of volume sold) are spread.

2.22 The gross profit data in Figure 2.4 is incomplete because of the two year-end changes in the financial accounts of Jersey Gas (as explained in section 1C above).

2.23 If volume decline were the primary driver of retail prices not having fallen in line with wholesale prices (as opposed to this being due to an increase in returns to investors in Jersey Gas), one would expect gross profit to remain steady. However, since 2012, gross profit has risen, so other factors may also be influencing retail prices.

2.24 We note that one such factor may be a reallocation of costs that occurred in 2014. Jersey Gas has explained that in 2014, c. £500k of costs were reallocated from cost of sales to net operating expenses. If we assume that these costs were of a similar level in 2015, gross profit, presented on a consistent basis over the entire period, would be represented in 2014 and 2015 by the dotted line in Figure 2.4.

2.25 Further, Jersey Gas has advised Oxera that the 2012 gross profit figures include the cost of a significant fire (c. £700k). The damage was covered by

insurance (shown in the Jersey Gas accounts as 'other income' in 2012). The dotted line in Figure 2.4 represents adjusted figures to show the impact on gross profit if insurance income is offset against the £700k cost of the fire accounted for in cost of sales in 2012.

2.26 We now seek further explanation of the trend in retail prices by examining changes in the level of capital employed in the business (which an investor would seek to recover through customer prices over time).

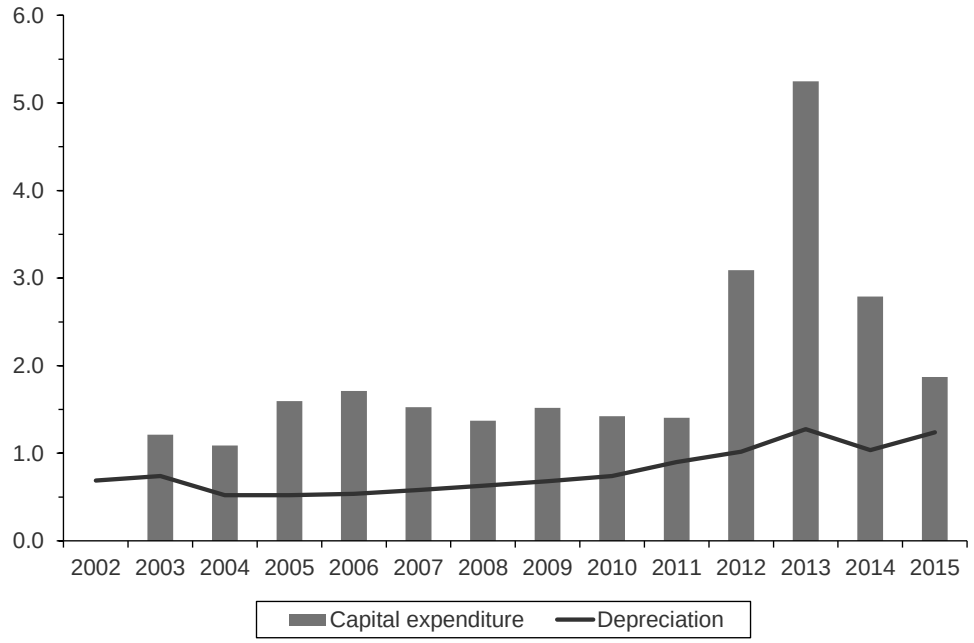
2E Trends in capital expenditure

2.27 As explained above, movements in retail prices could potentially be explained by trends in capital expenditure. Specifically, in a competitive market, a company will expect to recoup its capital expenditures from customers (plus a return, discussed in section 3). For the purpose of this analysis, we assume that the depreciation charge in the accounts broadly reflects the amount a company expects to recover from customers each year in relation to historical investment.[7]

2.28 Figure 2.5 shows the profile of capital expenditure and depreciation over the period 2002[8] to 2015.

[7] Revaluations of assets may lead to slight distortions here since they will change depreciation but not the amount of the original investment to be repaid. However, in the case of the regular revaluations of freehold property, we do not consider the impact to be material and so have not made any adjustment to reflect this.
[8] Capital expenditure information for 2002 is not available.

Figure 2.5 Capital expenditure and depreciation (£m)



Note: Where appropriate, these figures have been pro-rated to show calendar-year information.
Source: Oxera analysis based on Jersey Gas's financial statements.

2.29 As can be seen from Figure 2.5, after 2011, annual capital expenditure and the corresponding depreciation charge increased. This could help explain the increase in retail prices in the recent past.

2.30 To assess whether increasing capital expenditure is also contributing to the retail price path, the trend in EBIT (earnings before interest and tax, but importantly after depreciation) is analysed. EBIT, unlike gross profit, takes into account depreciation and should therefore reflect the fact that customers are paying for the increasing costs of the network.

2.31 Therefore, if prices have not fallen in response to a change in wholesale costs because of increased capital expenditure (in addition to volume changes), we would expect to see EBIT remaining fairly constant (in contrast to an increasing EBIT, which would suggest a higher underlying cost of capital or above-normal profits).

2.32 Figure 2.6 below shows that over the period, EBIT followed a similar trend to gross profit, but in recent years the gap between the two has increased. If the

adjustments described in paragraphs 2.24 and 2.25 above are made (shown by the dotted lines), a widening gap is evident only in 2015.

2.33 The gap that arises between gross profit and EBIT in 2015 may be driven by higher underlying costs of running the network, but we note that increased intercompany expenses and other one-off costs also reduced EBIT in 2015.

2.34 However, it does appear that higher capital expenditure is contributing to the recent wedge between retail and wholesale prices.

Figure 2.6 EBIT and gross profit (£m)

Note: EBIT is based on operating profit in Jersey Gas's accounts. Gross profit is calculated as revenue less cost of sales. Where these figures would be distorted due to pro-rating (see section 1C), the data point has been removed from the figure. The dotted lines reflect adjustments to cost and income allocations (see paragraphs 2.24 and 2.25 above).

Source: Oxera analysis based on Jersey Gas's financial statements.

2F Conclusions: do prices appear reasonable on the face of it?

2.35 This section considered historical trends in retail prices. Retail prices rose relatively steadily over the ten years to March 2015, at which point they dropped slightly. In the last five years (prior to this reduction), retail and wholesale prices have generally moved in different directions. Based on our analysis we can see that both declining volumes and increased capital expenditure have contributed to the divergence in retail and wholesale prices.

2.36 However, this analysis is not able to demonstrate whether the level of profit generated by this wedge is consistent with a reasonable return on capital. Therefore, in section 3 we examine in more detail the return on capital achieved over the period, and assess whether the historical average return on capital earned by Jersey Gas appears to be 'reasonable'.

3 What constitutes a reasonable return?

3A Background

3.1 In the previous section, we examined historical trends in retail prices and the extent to which these movements can be explained by changes in wholesale gas prices, volumes or levels of capital expenditure. By looking at these potential drivers, it is possible to identify signs that prices might have moved away from a 'reasonable' level.

3.2 While the analysis above suggests that retail prices would not be expected to fall as much as wholesale prices, it does not allow us to determine whether the gap is also being driven by profits that are above the level deemed reasonable. To better understand this, it is necessary to assess whether the level of return to investors generated by this retail price path is consistent with what would be considered a 'reasonable' return.

3.3 In this section, we therefore set out our assessment of the return being generated by Jersey Gas and benchmark this against an estimate of a reasonable level of return. Consistent with the standard model of economic regulation for regulated network utilities in the UK and elsewhere, we consider a reasonable return to be one that allows the company to generate enough cash to meet its funding costs – both debt and equity. This return is the weighted average cost of capital (WACC), a percentage return that is applied to invested capital in order to determine the absolute level of cash returns that would be considered 'reasonable'.

3B What constitutes a reasonable return?

3.4 A reasonable return is one that is sufficient to attract the required capital investment (debt and/or equity). The literature on the determination of the return required by investors is extensive, but the dominant theory is the capital

asset pricing model (CAPM), which postulates that the return required by investors will depend on the (non-diversifiable) risk of that investment.

3.5 The above return is described as the WACC for the company and it captures the company's cost of raising capital (both debt and equity). Once the WACC has been estimated, it can be used as a benchmark against which actual returns can be compared.

3.6 For listed companies with traded debt, the WACC is relatively easy to observe using stock market returns data and debt prices. Where a company's WACC is not directly observable in this way, comparator companies may need to be used as a proxy.

3.7 A full determination of the WACC for Jersey Gas is beyond the scope of this study, so we have conducted a high-level comparator analysis. Based on our findings, we estimate the cost of capital for Jersey Gas to be between 6% and 9%.

3C Measuring the returns generated by Jersey Gas

3.8 To assess the reasonableness of returns, this WACC estimate has to be compared with the actual returns the company has generated.

3.9 Our approach relies on a widely used method of measuring returns on invested capital: return on capital employed (ROCE), which measures the return generated as a percentage of the level of capital invested at a given point in time (usually calculated on one year's worth of data).

3D Calculating ROCE

3.10 Oxera's findings in relation to the returns generated by Jersey Gas are presented below.

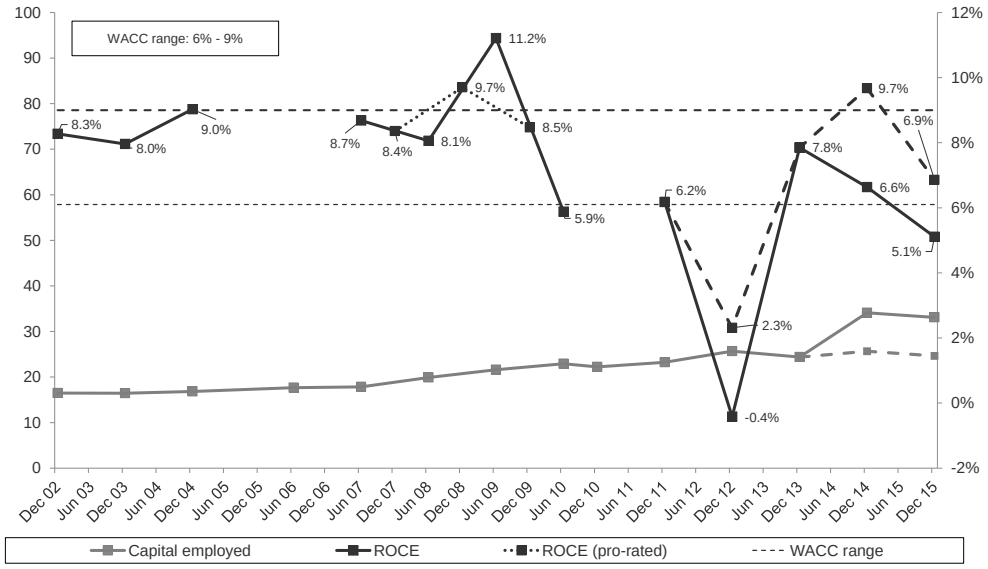
3.11 ROCE is calculated as follows:

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital employed}} = \frac{\text{EBIT}}{\text{Total assets - current liabilities}}$$

3.12 We have used the statutory financial accounts of Jersey Gas to calculate ROCE. Specifically, for EBIT we have used 'Operating Profit' as reported in the accounts (see Figure 2.6); for total assets we have used the sum of 'Non-Current Assets' and 'Current Assets' from the accounts; and current liabilities we have taken directly from the balance sheet.

3.13 We have used this approach to calculate the ROCE generated by Jersey Gas for the years 2002 to 2015. As shown in Figure 3.1, ROCE for the period 2002–15 is broadly consistent with the estimated WACC range. This suggests that, on average, Jersey Gas has generated returns that are consistent with the benchmark, and therefore average retail prices over this period do not appear to have been unreasonable.

Figure 3.1 ROCE (%) and capital employed (£m)



Note: 2012 has been adjusted to reflect the insurance income received in relation to the fire (see paragraph 2.25). 2014 and 2015 have been adjusted to reverse a revaluation of fixed assets that took place in 2014 (see paragraphs 3.14 to 3.20 below for details). Figures for years that could not be accurately pro-rated have been excluded (see section 1C).

Source: Oxera analysis based on Jersey Gas's financial statements.

3.14 In 2015, Jersey Gas restated its financial accounts for 2014, as part of a move to a new accounting basis – from UK GAAP to FRS 102. The original 2014 accounts were prepared under UK GAAP, whereas the 2014 accounts, as restated in 2015, were prepared in accordance with FRS 102.

3.15 One impact of this change is a revaluation of fixed assets. Of particular note is the movement in the stated value of plant and machinery, which increased from £18.6 million to £27.6 million (48%). The impact of this revaluation was to increase the 'capital' component of the return on capital calculation (i.e. total assets less current liabilities) by £8.5 million (25%) and to decrease ROCE (as determined according to the reported accounts) from 9.7% to 6.6%.

3.16 Oxera understands that the directors used an 'income' approach to the estimation of the fair value of plant and machinery, based on a discounted cash-flow calculation. This approach requires assumptions to be made about the future retail price of gas which Jersey Gas will charge its customers (which in turn drives the revenue derived from the assets in the business).

3.17 The purpose of our calculation of ROCE is to consider whether the prices charged to customers have been reasonable in the past. Therefore, if we were to accept the new valuation of property, plant and equipment provided in the restated 2014 accounts (and 2015 accounts), we would introduce a circularity into our assessment – assumptions about higher prices in future would lead to higher prices being justified in the present.

3.18 This is because the valuation of assets is based on future price assumptions. The higher the assumed future price, the higher the asset valuation will be. Therefore, the higher the assumed future prices, the lower the ROCE will be. All else being equal, this means that higher prices can be charged without appearing to generate above-reasonable levels of return on capital.

3.19 Projections about future prices should not influence our conclusion on the historically earned return on capital. For this reason, it would not be appropriate to use the 2014 revaluation of assets to assess historical returns on capital for Jersey Gas.

3.20 Therefore, in Figure 3.1 we show adjusted values for capital employed and ROCE for 2014 and 2015, which we consider to be the appropriate values to use for this analysis.

3.21 The ROCE figures presented in Figure 3.1 are based on earnings before tax, in nominal terms (based on data from the accounts without any inflation adjustments), and can therefore be compared with the pre-tax nominal WACC range estimated above (6–9%). Although ROCE does exceed this range in 2009 and 2014, average ROCE over the period lies within this range. Based on this, it appears that returns earned on capital were, on average, reasonable over this period.

3.22 We note that ROCE has not been particularly stable over the period of our review. This is primarily driven by movements in EBIT (see Figure 2.6), which we understand have been driven by a number of one-off items. Given this, it would not be appropriate to draw conclusions based on this analysis about the likely level of future profitability of Jersey Gas.

3E Efficiency considerations

3.23 One factor which we have not considered in detail is efficiency. If Jersey Gas becomes more efficient, we would expect to see a reduction in (controllable) costs (in real terms). In a competitive market, we would expect to see this passed through, at least in part, to consumers in the form of lower prices (although under the traditional model of price regulation, regulators typically allow some outperformance of efficiency assumptions to be retained by the regulated company in the short term).

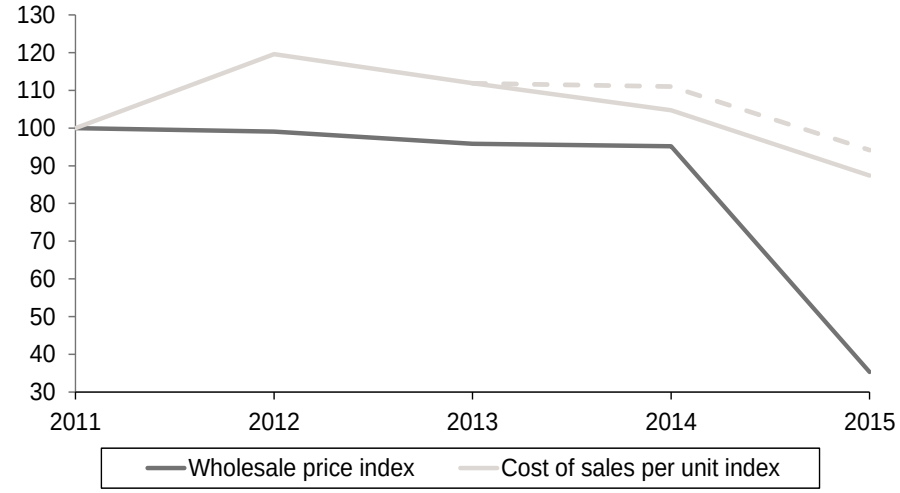
3.24 One explanation for an increased level of profitability (return on capital) might therefore be that the company is becoming more efficient and not passing these gains on to customers. While we recognise that this would be extremely challenging in the case of a company facing declining volumes (and therefore higher costs per unit of output), we nonetheless review, at a very high level, whether it appears that efficiency enhancements may be driving a slight increase in returns in recent years. It should be noted that this assessment is very basic and that a full efficiency assessment is outside of the scope of this report.

3.25 We assess the operating efficiency of Jersey Gas by examining:
(i) the relationship between wholesale costs and the cost of sales per unit; and
(ii) trends in total operating expenditures.

3.26 Figure 3.2 compares the wholesale cost index with a cost of sales per unit index. Since it is reasonable to assume that Jersey Gas is a price-taker in the wholesale gas market, any efficiencies in transportation, etc. would be expected to result in the cost of sales per unit index (based on the financial accounts data and annual volume information) declining more quickly (or growing more slowly) than the wholesale cost index (i.e. cost of sales per unit is growing more slowly than wholesale prices).

3.27 As the Figure 3.2 shows, between 2012 and 2014, the gap between the two indices narrowed, suggesting that some efficiencies were made, but between 2014 and 2015, unit costs did not decline as fast as wholesale costs, and so the efficiencies are not evident over this last period. This could be due to Jersey Gas's hedging strategy (which might have locked in higher wholesale prices in the past), or an increase in transportation costs.

Figure 3.2 Comparison of wholesale unit costs and cost of sales per unit indices

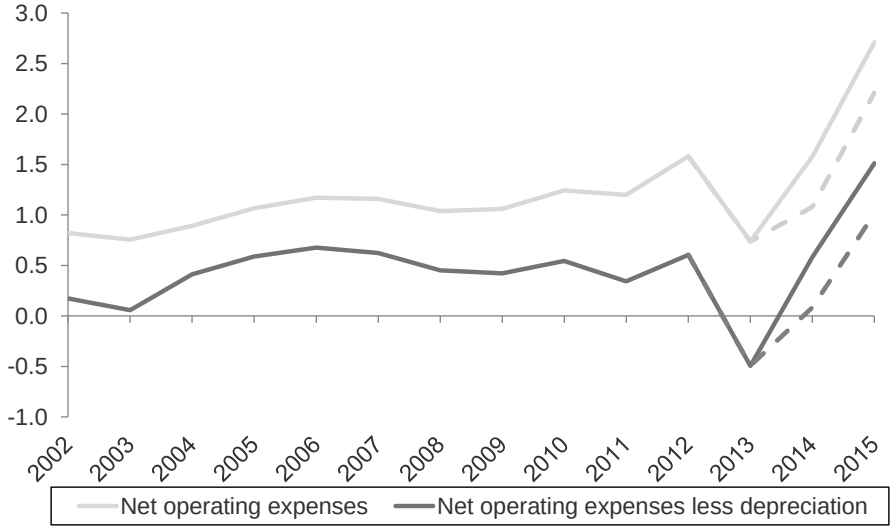


Note: The dotted line reflects the adjustment explained in paragraph 2.24 above.

Source: Oxera analysis based on Jersey Gas's financial statements.

3.28 A further analysis of the fixed costs of running the network, proxied by net operating expenses less depreciation (since depreciation cannot be controlled) can also provide an indication of efficiency (at a very high level). Figure 3.3 shows that net operating expenses have increased in recent years and so there are no obvious efficiencies which might explain why, if these saving are not passed through to customers, profitability might have increased slightly in recent years.

Figure 3.3 Net operating expenses (£m)



Source: Oxera analysis based on Jersey Gas's financial statements.

Note: The dotted line reflects the adjustment explained in paragraph 2.24 above.

4 Conclusion

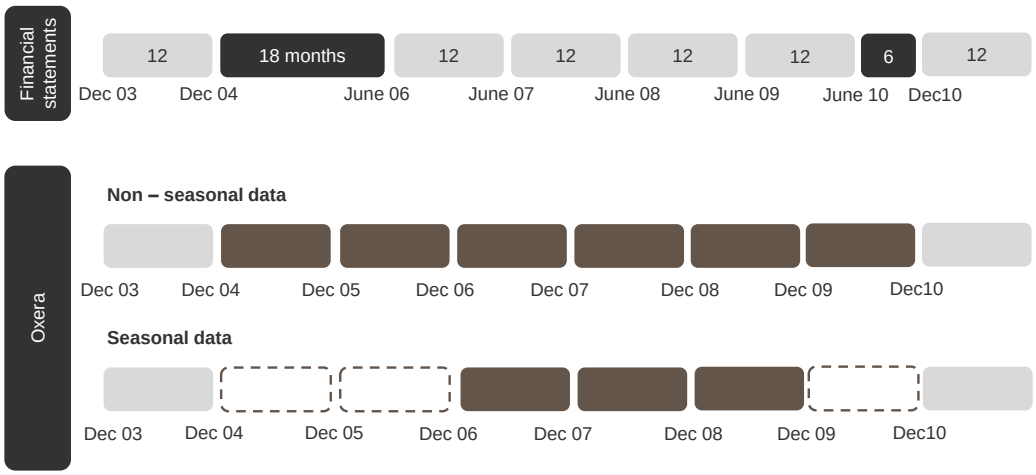
4.1 This report has examined historical trends in retail prices and sought to assess the reasonableness of these prices by identifying factors that could be expected to be driving movements in these prices – i.e. wholesale gas prices, volumes and capital expenditure.

4.2 While wholesale price trends suggest that prices should perhaps have fallen more quickly than they have done in recent years, the lag appears to be explained by declining volumes and increased investment expenditure, both of which would be expected to drive up retail prices. In addition, hedging policies and the U.S. dollar:pound exchange rate will also influence the relationship between retail and wholesale prices.

4.3 Given that the remaining unexplained 'gap' primarily relates to investor returns, we then assessed whether these appear to be reasonable. Based on our estimate of the WACC for Jersey Gas, we conclude that the available evidence suggests that returns to investors have, on average, historically been reasonable. Therefore, our analysis suggests that, on average, historical retail prices appear to have been reasonable.

4.4 Since this analysis is based on historical data, it would not be appropriate to use it to draw conclusions about the reasonableness of future prices.

A1 Time periods presented in the statutory financial accounts



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