Working Paper 1: Rate of Closure

Road Fuel Supply in the Highlands and Islands
April 2009

Experian™

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Introduction

In February 2008 Experian was appointed by **Highlands and Islands Enterprise** and its partners The **Highland Council** and the **Highlands & Islands Transport Partnership** (HITRANS) to investigate the sustainability of road fuel supplies in the Highlands and Islands region.

The drivers for the research are to enable a better understanding of the **current and future viability of fuel pumps** serving rural communities; and to gain a better understanding of **fuel price differentials** between urban and rural/ island areas.

Part 1 of the research, published in December 2008, examined the current state of the road fuel supply network across the Highlands and Islands. Part 2 of the research is currently in progress and examines the future sustainability of the road fuel supply network, assess the impact of any future closures and examine the necessity and scope of interventions and measures to ensure a reasonable level of fuel access is maintained across the Highlands and Islands. Part 2 will be split into a series of three working papers.

This is Working Paper 1 and examines the future sustainability of the road supply network in the Highlands and Islands.

Research Objectives

The overall objectives of Working Paper 1 are to:

- **Determine the historic rate of closure of petrol stations;**
- **Determine the importance of each of the factors driving change;**
- **Form a view on the future state of the H&I fuel supply network i.e. the number of fuel stations likely to close and establish a timeframe for which these closures are expected to take place;** and
- **Consult widely to understand the future facing petrol retailers.**

1 Historic Rate of Closures

1.1 Introduction

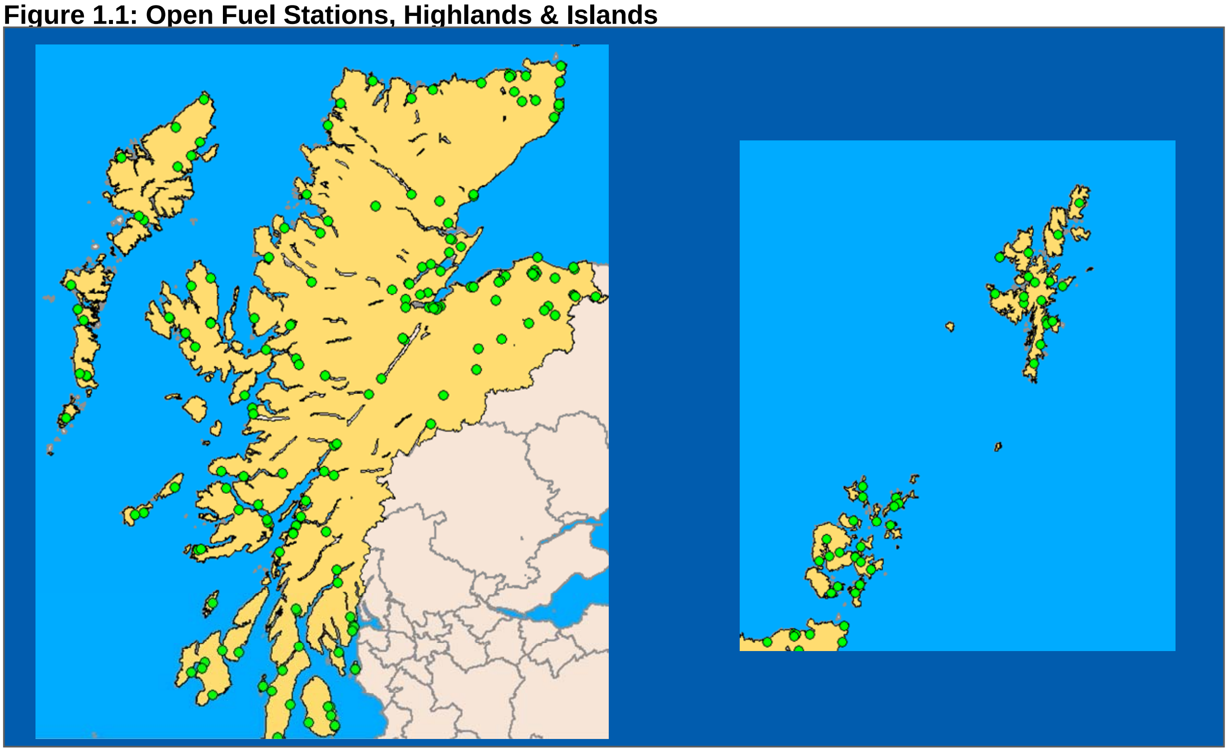
Establishing an accurate picture of the number of open sites that are retailing road fuel in the Highlands and Islands is a complex task as many of the sites (almost 40%) are unbranded and therefore do not tend to be reported within any of the general oil industry figures. In addition, the historical data on the number of petrol stations is not nearly as complete as the current information. However, below we review the best of the available information to build up a picture of the changes in the fuel station network across the Highlands and Islands in recent years.

1.2 Current Network

As of March 2008 there were 231 petrol stations in the Highlands and Islands with a throughput of 308 million litres of fuel each year.[1] The average volume per site is 1.3 million litres of fuel per year. Figure 1.2 shows the number and average volume for each of the former LEC areas in the Highlands and Islands and how it compares with an average site volume of 3.8 million litres of fuel for the rest of Scotland, 4.2 million litres for sites in England and 3.0 million for sites in Wales.

The average site volume in the Highlands and Islands is considerably lower than elsewhere in the UK; 35% of the Rest of Scotland average and 32% of the English average. **Therefore, whilst having a small number of high volume sites mainly in the larger urban areas, the Highlands and Islands network is in the main characterised by a large number of small sites with a very low average volume.** This has considerable implications for site operating costs as the fix element is supported by a much smaller volume and therefore revenue. The Highlands and Islands network is therefore at a significant operating cost disadvantage.

Figure 1.1: Open Fuel Stations, Highlands & Islands



[1] The following analysis is based on Experian Catalist data for March 2008.

Figure 1.2 also highlights the significant differences in average site volumes in different areas of the Highlands and Islands. In Inverness and Highland there are 34 sites, accounting for 36% of the total Highlands and Islands volume and with an average annual volume of 3.3 million litres. This is comparable with the rest of Scotland. However, in Orkney there are 28 sites, sharing a volume of 6.985 million litres each year (2% of the total Highlands and Islands volume), giving an average volume of just 0.25 million litres. As mentioned above this has significant implications for site operating costs and therefore the price of fuel being charged and the long-term sustainability of sites.

The Fragile Areas in the Highlands and Islands is also shown in Figure 1.2. In total there are 80 sites in the Fragile Areas with a combined volume of 20 million litres, which equates to an average site volume of 0.25 million litres (comparable with the average volume of sites in Orkney) and just 19% of the Highlands and Islands site average volume.

Figure 1.2: Market Comparisons Highlands and Islands, Rest of Scotland, England and Wales

	Site Count	Volume (Thousand Litres)	Share of H&I Total Volume	Average Site Volume
Argyll & the Islands	47	44,935	15%	956
Caithness & Sutherland	26	26,720	9%	1,028
Hebrides	16	9,690	3%	606
Inverness & East Highland	34	110,095	36%	3,238
Lochaber	13	25,390	8%	1,953
Moray	26	59,450	19%	2,287
Orkney	28	6,985	2%	249
Shetland	19	11,755	4%	619
Skye & Wester Ross	22	13,130	4%	597
Highlands and Islands	**231**	**308,150**	100%	**1,334**
HIE Fragile Areas	80	20,075	7%	251
Rest of Scotland	711	2,692,955	-	3,788
England	7,227	30,442,513	-	4,212
Wales	633	1,911,680	-	3,020

Source: Experian Catalist 2008

1.3 Historic Network

As mentioned above the historic data on the size of the fuel network across the Highlands and Islands is far from comprehensive. However, we have used the best of the available data to analyse historic trends.

Prior to 1998 the only widely recognised figures on the number of petrol stations in the UK were provided by the Institute of Petroleum (now the Energy Institute) and the lowest geographic level was for Scotland as a whole. The Institutes figures also depended on the industry reporting their own figures and so the numbers for Scotland did tend to fluctuate year on year.

There were no other published figures in the public domain and any research reports had to establish their own numbers. An example of this is the July 2000 Office of Fair Trading Report on “Petrol & Diesel Pricing in the Highlands and Islands” which quoted figures based on numbers provided by the Highlands Council and updated by the oil companies. This study estimated that in 1992 the Highlands and Islands had 284 sites and in 1998 that had fallen to 205. Based on Experian Catalists survey work in 1997/98 we believe this to be a significant under-estimate of the number of sites in operation over that period.

1.3.1 Experian Catalist Historic Data

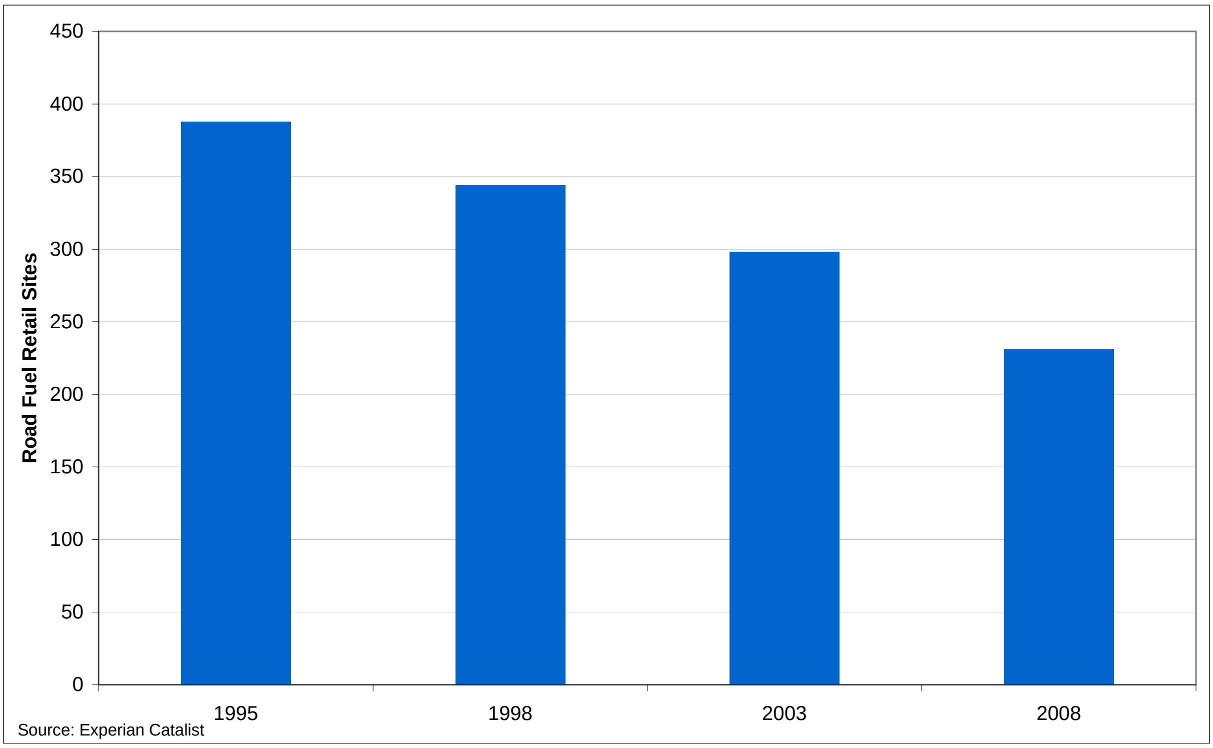
As part of establishing a proprietary UK database Experian Catalist carried out a comprehensive on-the-ground survey in 1997/98 of all the petrol stations in Scotland (including the Islands) and spent considerable time seeking out all the forecourts in order to establish the base figures. Subsequently Experian Catalist has continued to track these site numbers and has made repeat visits to verify that the sites are still operational. In addition, from 1998 onwards, Experian Catalist have worked closely with the Energy Institute in the publication of the site numbers each year.

By the end of 1998 Experian Catalist had visited and catalogued 344 open sites retailing road fuel in the Highlands and Islands area. In addition, Experian Catalist had also visited and catalogued a further 44 closed forecourts (sites that we believe would have been open and operational in the preceding year or two).

In total, therefore, if we are using a 1995 base line we have 388 open sites in the Highlands and Islands. This is significantly higher than other estimates quoted around the time. However, Experian Catalist can verify this number as the sites were visited and photographed during the survey work.

As the number of site closures can fluctuate significantly year-on-year due to a whole series of factors (as discussed later in this report) we have chosen 1995, 1998, 2003 and 2008 as reference years. In 1995, there were 388 open sites. By 1998 this had fallen by 11% or 44 sites to 344 open sites. Between 1998 and 2003 the Highlands and Islands network lost 50 sites or 15% of the network, leaving a total of 298 sites in 2003. The rate of decline between 2003 and 2008 increased with 71 closures or 24% of the network closing, leaving 231 sites as of March 2008.

Figure 1.3: Number of fuel retail sites in the Highlands & Islands, 1995-2008



Overall between 1995 and 2008, 165 sites across the Highlands and Islands closed this was a fall of 41%. Figure 1.4 shows that over the last 13 years the closures in the Highlands and Islands work out at an average of 13 per year. Over the last 5 years the average has marginally increased to 14 per year. This fairly constant rate against the backdrop of lower numbers each year means the % of the network that is closing is increasing – over the last 5 years 24% of the network has closed, compared to 15% between 1998 and 2003. This may be significant in terms of the factors driving change and will be discussed in the next chapter.

The total number of open sites also includes new sites that entered the market during the period. There were only eight of these in total and they were all Hypermarket sites.

Figure 1.4: Analysis of closures in Highlands and Islands, 1995 to 2008

Reference Year	Period	Sites	Closures in Period	Closures as % of network
1995	-	388	-	-
1998	1995-1998	344	44	11%
2003	1998-2003	298	50	15%
2008	2003-2008	231	71	24%
All	**1995 - 2008**	**-**	**165**	**42%**

It is useful to provide some perspective to this rate of closure of fuel stations in the Highlands and Islands by examining the rate of closures across Scotland as a whole. Figure 1.5 shows that the trend of closures is not unique to the Highlands and Islands. In fact, the fuel supply network across Scotland experienced a similar magnitude of contraction to the Highlands and Islands over the 1995 to 2008 period. Over the 13 year period the 165 closures in the Highlands and Islands represents an attrition rate of 42% of the network which is mirrored for Scotland as a whole – 43% of the network or 662 sites has closed over the same period.

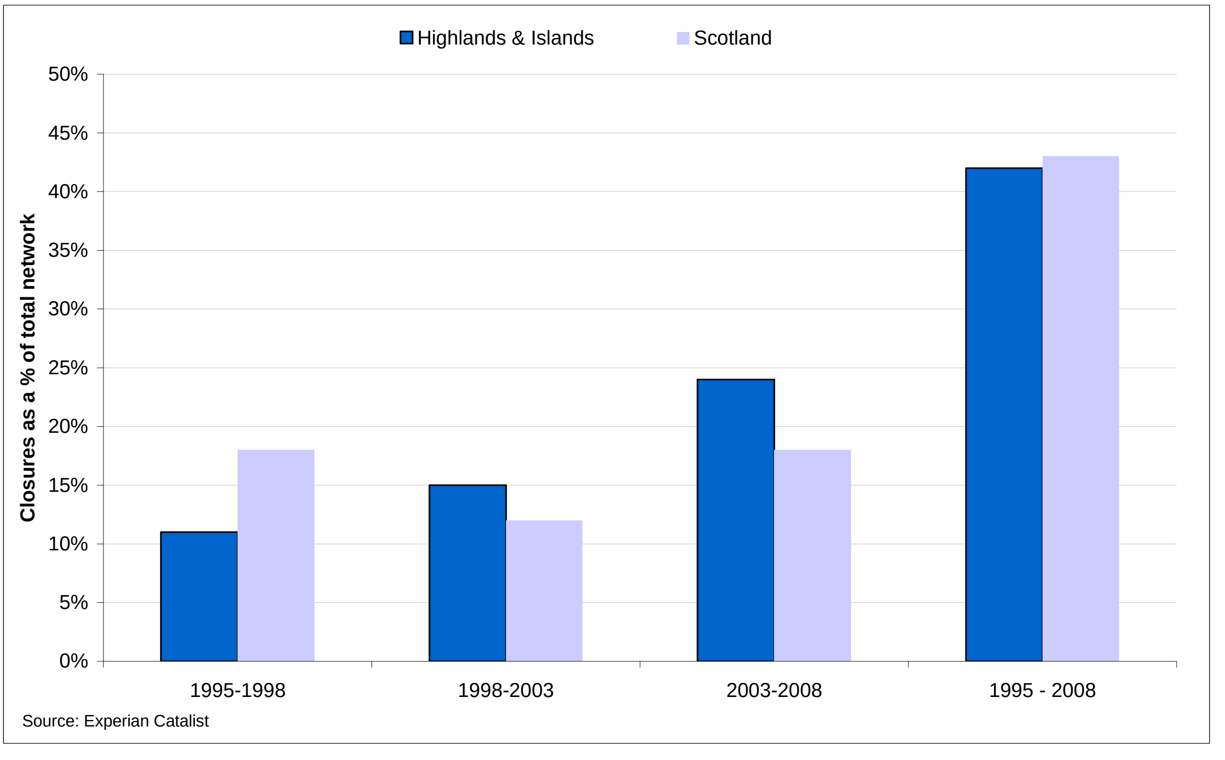
The % of the network closing in each of the last 2 periods is slightly higher in Highlands and Islands that for Scotland as a whole. Note that the Highlands and Islands site numbers represents some 25% of the total sites in Scotland and that this figure has remained fairly constant over the 13 year period.

Figure 1.5: Analysis of closures in Scotland, 1995 to 2008

Reference Year	Period	Sites	Closures in Period	Closures as % of network
1995	-	1544	-	-
1998	1995-1998	1262	282	18%
2003	1998-2003	1135	148	12%
2008	2003-2008	931	232	18%
All	**1995 - 2008**	**-**	**662**	**43%**

The % of the network closing in each of the last 2 periods is slightly higher in Highlands and Islands that for Scotland as a whole. Note that the Highlands and Islands site numbers represents some 25% of the total sites in Scotland and that this figure has remained fairly constant over the 13 year period.

Figure 1.6: Closures as a % of network in Highlands and Islands and Scotland, 1995 to 2008



If we assume that the factors driving the rate of change in fuel networks remain consistent and extrapolate the closure trends it indicates that between 90-130 sites will close over the next 10 years – depending on whether you take the absolute figures closing per year or the network % attrition rate. However this is on a statistical basis only and does not take into account the real factors on the ground. The following chapter examines the key factors that have driven change in the fuel retail network since 1995.

2 Drivers of Network Change

2.1 Introduction

The previous chapter examined the rate of closure of road fuel retail stations in the Highlands and Islands between 1995 and 2008. The network decreased by 42% in the Highlands and Islands over this period which was very similar to the rate of closure observed across Scotland as a whole. This chapter aims to identify the key factors that have driven change in the road fuel supply market between 1995 and 2008. It would appear that the major drivers of change are not specific to the Highlands and Islands given the comparable rate of change across Scotland. There are however some factors that are perhaps unique to the Highlands and Islands as a result of the challenges posed by supplying fuel in areas of low population density.

2.2 Key Factors

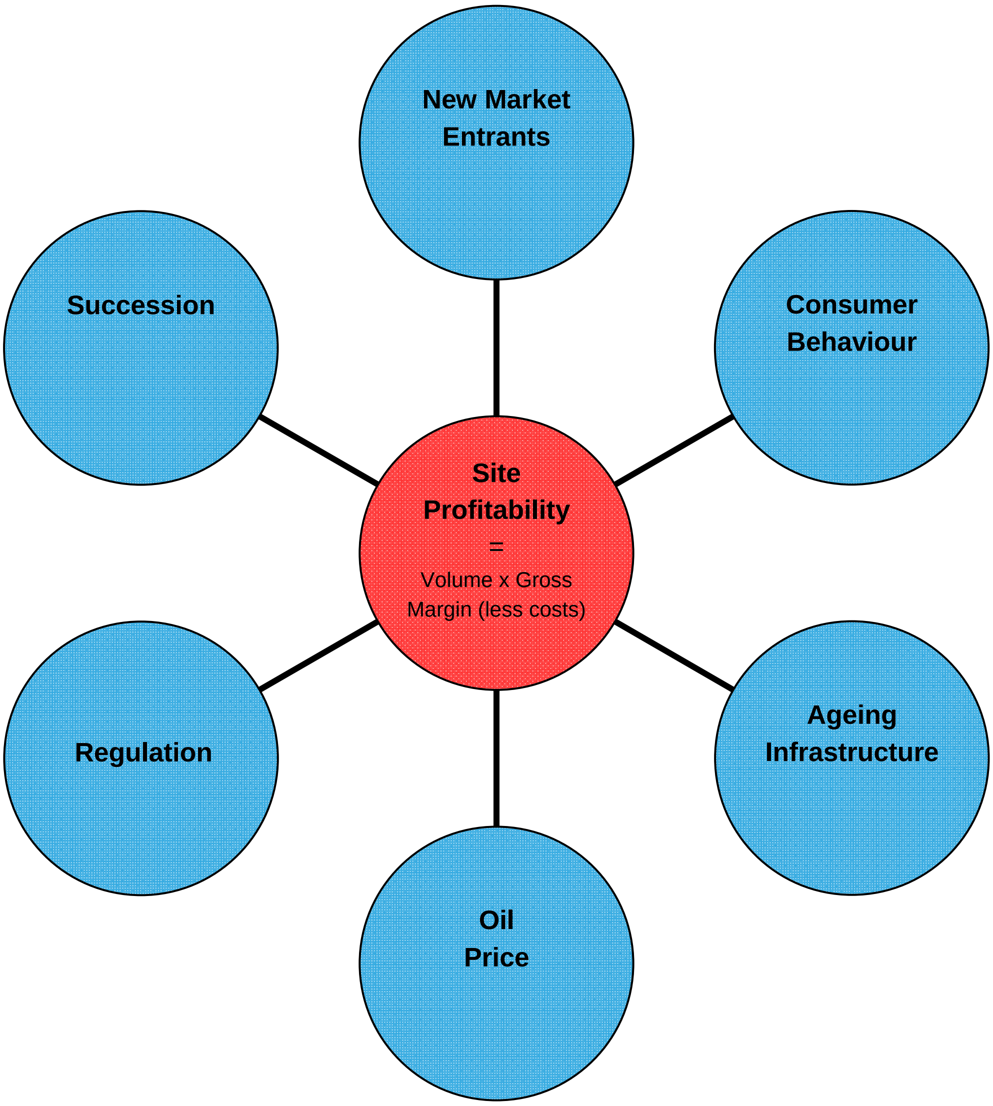
In a previous research report for Highlands and Islands Enterprise we have shown why petrol stations close. Basic economic theory of supply and demand predicts that if individual petrol stations have low volumes of fuel being sold they have to charge a higher fuel price to cover their fixed costs. As the volume of fuel a petrol station sells increases the average fixed costs is spread across a larger revenue base and the cost per unit sold falls. Therefore urban petrol stations which can have an average volume five times higher than a rural station, can afford to charge cheaper fuel prices.

As a result of relatively higher prices at some rural fuel stations, consumers may choose to purchase cheaper petrol from alternative locations even if the alternative is some distance away. If volumes being sold are so low that margins are eroded to the level that mean the site is no longer economically viable (costs are not covered by sales revenue) then the petrol station will close.

Therefore, petrol stations generally close because they are simply not making enough money i.e. they are not profitable enough to continue as an operating business. Fuel station profitability is governed by a function of volume and gross margin. Therefore we can identify a set of key factors that have affected either volume that sites are selling and/or gross margins or costs for the business that affect profitability.

There is not a single factor that can identified as the reason for the decline in the number of petrol stations since 1995 but rather a combination of factors that has taken place over a period of time and have affected both volume on smaller sites and the gross margins made and costs associated with selling fuel. Figure 2.1 shows the factors that have driven change in the fuel retail market since 1995. Each of these factors is considered below.

Figure 2.1: Key factors affecting site closure



2.2.1 New Market Entrants

The fuel retail market is not one where profitability is sufficient to attract a large number of new market entrants in recent years. However, the new entrants that have entered the market appear to have had a significant impact on the market and on consumer behaviour/perceptions. Since 1995, there have been eleven new sites opened across the entire region. These have all been large hypermarket sites which entered the market because they were confident that they could sell large volumes of fuel (in excess of 5 million litres for an average site).

The first large hypermarket stores with fuel forecourts entered the Highlands & Islands market in the period between 1995 and 1998; Tescos in Inverness and Oban and Safeway in Fort William. Between 1998 and 2003 four more Hypermarket forecourts were built; a second Tescos in Inverness, Asda in Elgin and two Safeway in Alness and Inverness. Between 2003 and 2008 a further four hypermarket forecourts were built, Tescos in Elgin, Dingwall, Wick and Keith. By the end of 2008 there were eleven hypermarkets with forecourts in the Highlands and Islands market with at least a further four with planning in the pipeline:

- Tesco, Inverness
- Asda, Inverness
- Tesco, Thurso
- Asda, Tain

At a UK level the hypermarket forecourts have significantly affected the fuel retailing market particularly in the 10 years since 1998. In a market with little or no growth over the years (<1% per year based on Energy Institute figures) the hypermarkets have almost doubled their market share since 1998 from 18% to 36% in 2008. The number of hypermarket forecourts has increased over the period by 332 to 1,205. While fuel station closures nationally have been dramatic with almost 4,500 sites closing over the same period.

Although the causality can not be directly established, the opening of the hypermarkets has certainly played a significant part in acting as a catalyst in the closure of sites that were already vulnerable i.e. sites with low volumes, poor margins and an ageing infrastructure. The new hypermarket sites appear to have attracted volume away from other smaller sites in the area by offering cheaper prices and more convenience (supermarkets have longer opening hours, people can buy fuel while purchasing their groceries, efficient payment systems and sometimes loyalty point schemes are also offered by supermarkets). In addition, the new supermarket sites have also affected consumer behaviour and perceptions which is discussed below.

The hypermarkets have had a similar effect in the Highlands and Islands. Again the causality can not be directly established but there are examples of supermarket sites opening, attracting large volumes of sales and other smaller local sites closing. One example is given by the building of a new Tesco site in Wick. Prior to the introduction of Tesco there were ten open sites in the town, now there are seven open sites – three have closed.

However the consumers in the vicinity of Wick, Inverness and the larger towns are generally better served since the hypermarkets entered the fuel retail market. Hypermarkets have provided lower prices and improved facilities. The introduction of the hypermarkets makes it more difficult for the smaller traditional sites - profitability from fuel retailing is very low for the smaller sites as operating costs have increased, retail margins are being squeezed and sales volumes have been hit by the hypermarkets, the impact and influence of which is noticeable across the whole Region.

With the laws of supply and demand being very much in evidence whenever a new hypermarket enters the market, it is very likely that there will be at least two or three closures of smaller sites in the vicinity within the first year of the hypermarket fuel station opening.

2.2.2 Consumer Behaviour

As part of the research process into road fuel supply for Highlands and Islands Enterprise, Experian carried out a series of consumer consultations across the region. These consultations provided evidence that the pattern of consumer behaviour is very much influenced by the hypermarkets in certain areas in the Highlands and Islands. The fuel buying consumer now expects similar prices and similar standards wherever they buy their fuel.

The consultations provided evidence that some consumers were increasingly filling-up when they travel to the large hypermarket food stores for their main shop and only 'topping-up' at local sites when required. This means that the hypermarkets have an extended trade area and therefore affect other sites across a wide area and not just those close by.

Another impact is that consumers are now accepting hypermarket site fuel prices are the norm and anything above as being highly priced. Where there was once loyalty to particular local sites this is also being affected as consumers move to buying their fuel from the hypermarkets tempted by low prices, money-off promotions and good quality facilities.

The effect of the changing patterns of consumer behaviour is that sites across the region are affected because the hypermarket sites are drawing volume from a very large catchment area. This contributes to a fall in volume and profitability of smaller sites in rural areas which in turn, have to charge a higher price to cover costs.

2.2.3 Ageing Infrastructure

The infrastructure of many of the sites across the Highlands and Islands is quite old. Therefore when pumps, lines, tanks etc, require to be updated for any reason the associated capital expenditure is often not viable for many sites as the expected profitability of the site would not cover the outlay. This is likely to become an increasing problem as time passes and station infrastructure reaches the end of its lifetime and/or is required to be replaced under legislation (discussed below). In addition, older sites with less sophisticated infrastructure may also seem less appealing to consumers who are used to using a hypermarket site.

2.2.4 Legislation

Legislation has not been a major issue for small rural petrol stations to date. However, all fuel retailers are going to be faced with spending some money on their sites to comply with legislation over the next few years. As discussed above, many of the sites in Highlands and Islands region are quite old and they have had little maintenance over the years.

Whilst this capital expenditure is fine for the larger sites and the hypermarkets as they sell enough volume to make it worth there while. Many of the smaller sites will struggle to justify the capital expenditure based on their projected turnover and profitability levels.

Environmental works for Stage 1 and Stage 2 vapour recovery will be a requirement for all larger sites in due course. Whilst there is currently a dispensation for smaller sites at some point in the future money will have to be spent on environmental works.

It is also accepted industry practise that the introduction of bio-fuels requires that tanks and pipework are thoroughly cleaned. This could cost £600 to £1000 per tank and this is not eligible for grants. As many of the tanks in the current network are very old (some more than 40 years old) there is then always the risk that the tanks will fail – the retailer then has the choice of spending upwards of £10,000 or closing the site. With the low volumes of many of the sites in the region to have to replace tanks would not be a viable option ie the site will close.

The capital grant scheme administered by Scottish Enterprise and HIE is available for this type of work but the funds are limited and there are a number of conditions – one being able to show the business is viable in the long term. In March £58,000 was awarded to 3 rural sites for capital works. The capital grant scheme and other assistance mechanisms will be discussed further in working paper three.

2.2.5 Oil Price

The oil price has been particularly volatile over the past 18 months peaking at just under $150 per barrel in July 2008 before falling to below $40 in February 2009. The volatility of the retail price has a major impact on the retailers who sell small volumes. In a declining market they are often left with product bought some time ago at a high price and the decision is to sell at the market price and make a loss or keep the price high and not sell very much. In addition, when prices are very high small independent retailers may struggle to finance a load of fuel. With volatility in the oil price expected for the foreseeable future the life of the independent retailer is not going to get any easier.

2.2.6 Succession

One of the factors in site closures is apparently fairly unique to the Highlands and Islands in that it relates to succession planning for the business. Many of the more remote retail sites have been owned and operated by the local ‘family’ for many years but now the owner is struggling to find any members of the family who are willing to take on the business. Fuel retailing is traditionally long hours and low profitability and the owners are now considering closing or trying to sell the business and putting their money into more profitable opportunities. Typically the families in these communities who own the garage will also own and operate the local hotel, village shop, car sales and repair and some holiday lets. This succession effect may cause some site closures over the next few years.

2.3 Summary

The closures trend over the last 13 years from 1995 has seen the network in the Highlands and Islands area reduce by 42% from 388 sites down to 231 in 2008. This was very similar to the rate of decline in Scotland as a whole, where the total number of sites fell by 43% between 1995 and 1998.

The 165 site closure observed in the Highlands and Islands between 1995 and 2008 equates to 13 closures per year. An extrapolation of this trend indicates between 90-130 sites closing over the next 10 years. However this trend decline could be altered by speed of change in the major factors that have driven closures. For example the number of new supermarkets may increase significantly and accelerate the rate of decline amongst smaller fuel stations or new legislation imposed may also accelerate the rate of decline as small fuel retailers can not afford the required investment. The key drivers of change are potential influence on the rate of decline of number of sites in the Highlands and Islands is summarised below:

- **New Market Entrants** – with the continued introduction of new hypermarket sites into the market we see at least the closure or 2 or 3 sites in the vicinity of wherever planning permission is granted.

- **Consumer Behaviour** – this is affecting all sites and resulting in lower volumes for the traditional smaller local sites as consumer preference turns towards large, new supermarket sites.
- **Oil prices** –high oil prices coupled with retail price volatility creates a major problem for small sites that need a good cash flow to pay premium prices for loads of fuel.
- **Ageing Infrastructure and Legislation** – the requirement to clean old tanks and pipework could result in quite a few sites having to consider replacing their tanks – this is likely to result in the site closure for a good number of the small sites.
- **Succession** – the family tradition of handing down the business to the next generation may prove to be a problem as younger generations within the family have no interest in working long hours for limited profitability. The owners may have a limited choice of selling or closing the garage and investing the money in other parts of the business that yield a better return than fuel retailing.

The next chapter presents Experian's central scenario for the future sustainability of the fuel network in the Highlands and Islands.

3 Future Sustainability

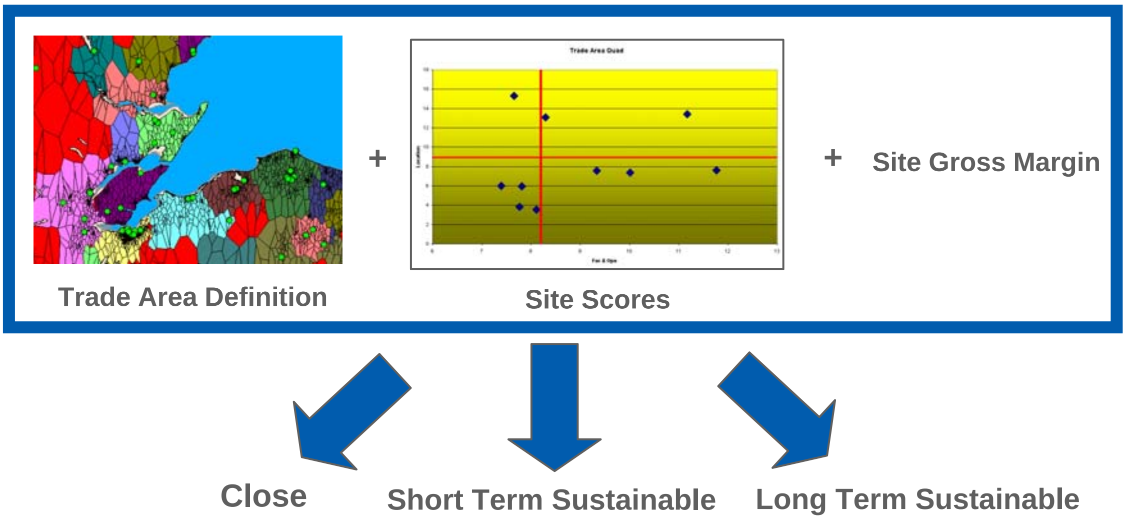
3.1 Introduction

This chapter assess the future sustainability of the fuel network in the Highlands and Islands. The methodology for determining the sustainability is discussed before going on to present the results. The results are presented in the form of a scenario for site closures and a timeframe for these closures is established. This scenario represents what we expect to happen to the road fuel network with no additional policy interventions. The issue of interventions is discussed in Working Paper 3.

3.2 Assessing Site Sustainability

Site Sustainability is based on an assessment of the trade area of each site, site retail strengths and the gross fuel margins of each site. The Highlands and Islands was segmented into trade areas to highlight single trade areas where one site was serving a relatively large geographical areas and therefore probably more sustainable in the long run. The scoring of site retail strengths was then carried out using Experian Catalist Site Scoring System (Location / Facility & Operations Strengths) and a quadrant analysis. Finally, the site fuel gross margin was considered as a key input into determining sustainability.

Figure 3.1: Methodology for determining site sustainability



Based on positioning in the quadrant analysis and gross fuel margins comparison, each site was categorised into one of the following:

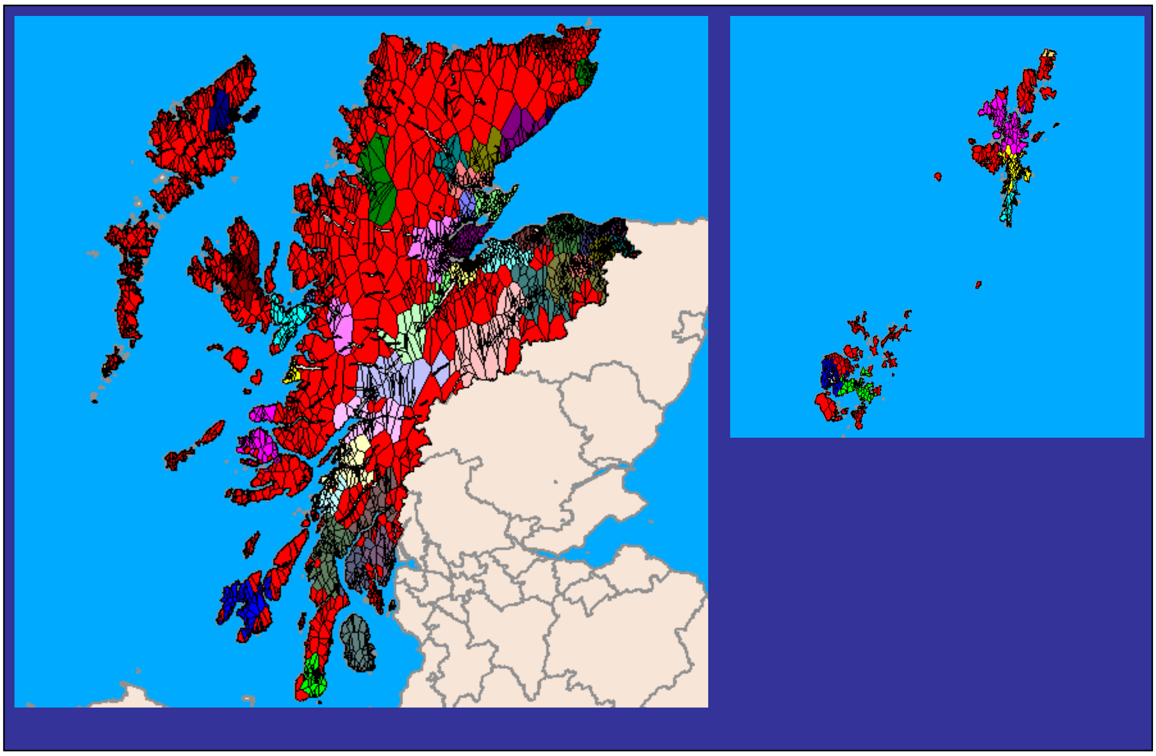
- **Closure in short term (<24 months)**
- **Short Term sustainable (24~60 Months)**
- **Long term Sustainable**

3.3 Single Site Trade Area

In order to assess the true rural location of some of the sites in the Highlands and Islands we constructed Trade Area Definitions to identify sites that were located in single trade areas (one site serving a large geographical area). The method we used to construct these single site trade areas is detailed in Appendix 2.

Sites within single site trade areas were initially deemed to have long term sustainability in the development of our scenario because of their large catchment areas and reasonably reliable customer base. If there is only one site in a single site trade area then it is deemed to have long term sustainability regardless of site scores of gross margins although this cannot be guaranteed given the very low gross margins. In total, 48 sites fall into these Single Site Trade Areas given their geographical remoteness and are therefore deemed to be sustainable at this stage.

Figure 3.2: Single site trade areas shown in red



3.4 Site retail strengths

The quality and condition of the fuel network in the Highlands and Islands was assessed using **Experian Catalist's petrol station (site) database and unique scoring systems**. This identifies the stronger and weaker sites in the network and highlights those that are vulnerable to closure and also those in a position to exploit further rationalisation of the network.

Experian Catalist's database allocates each site within a country a score that reflects the site's strength as a retail location, in relation to both fuel and shop attributes. Scores are derived by combining the information in the standard Catalist database with appropriate demographic and geographic data. Both the fuel and shop aspects of the business are given scores out of 20 for **location**, **facilities** and **operations**. These scores are then put into a quadrant analysis that shows the relative **condition** of the sites based on these three factors. Figures 3.3 and 3.4 illustrate the performances of different fuel stations against each of these criteria.

This powerful analytical tool graphically demonstrates a site's strength relative to other sites and reveals where competitive threats exist and in identifying a site's strategic options. The quadrant analysis table is drawn along two axes: **Location score along the Y axis** and **Facility/Operation score along the X axis**. The screen is divided in four sections - the cross hairs represent the average of all sites shown in the graph. The sites are positioned in the grid and displayed as dots. Their position on the chart reflects their performance in relation to their Location and Facility/Operation ratings. The **most competitive** sites will be those positioned in the **top right** of the grid as they have the strongest location and facilities.

Figure 3.3 – Guide to interpreting the quadrant analysis

The chart overleaf shows the spread of sites throughout the study area. Overall there are 111 sites (46%) within the HIE region that score poorly in the location and facility / operational criteria. Potentially these sites are at risk of closure over time as margins come under further pressure and competitor strengths increase. The impact of the closure of such sites on the accessibility of fuel in the study area will form a key part in the forthcoming analysis. It is important to state however that these sites are from across the whole HIE area and there will be trade areas where a site categorised in this quadrant will actually be the strongest site and therefore unlikely to close unless a new more competitive site is built which is itself unlikely given the nature of the current business economics of the industry.

Figure 3.4 – Fuel analysis (by individual site)

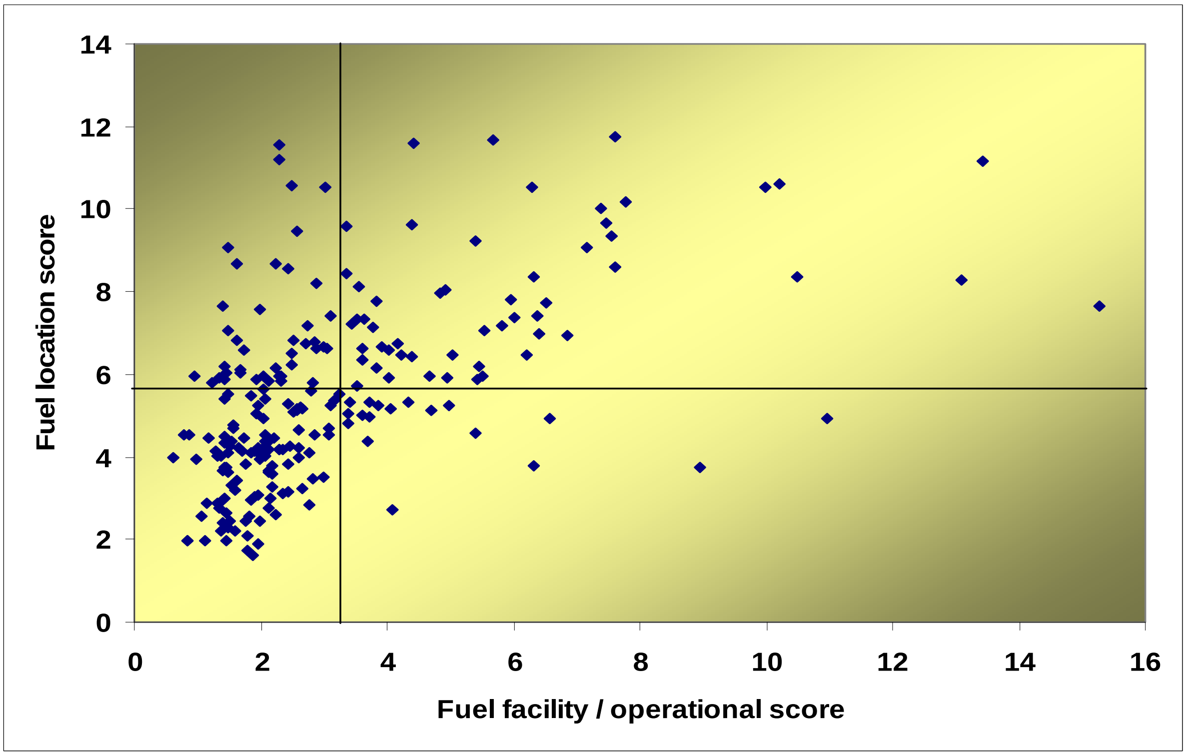
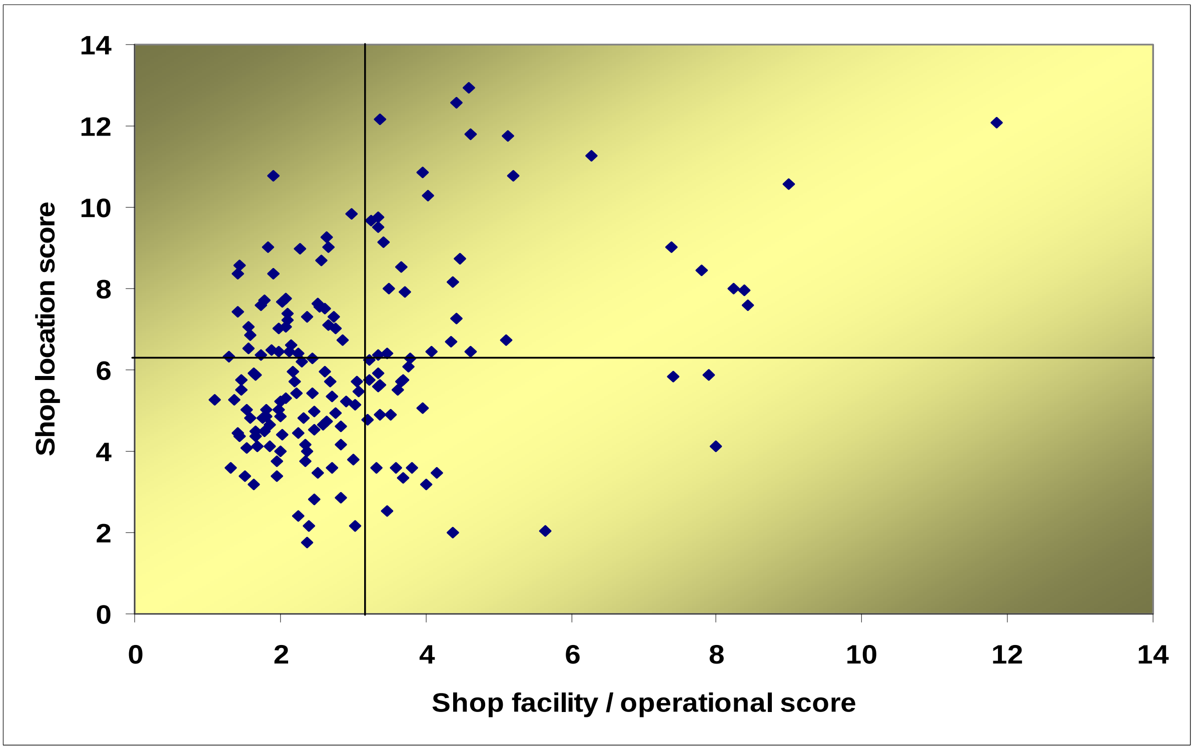


Figure 3.5 – Shop analysis (by individual site)



In addition to fuel retailing, other retail forms an important aspect of the overall forecourt income stream. Sites that do not have sufficiently strong location strengths will struggle to maintain profitable shops and as the chart below shows there are 62 sites that on face value do not appear to have sufficiently good enough location strengths.

When we account for site scores only we predict that from the current 231 forecourts in the Highlands and Islands that 32 sites are at risk of imminent closure, 23 are only sustainable in the short-term (less than 5 years) and 176 are expected to be sustainable in the long run.

3.5 Gross Margins

Site gross margins show a wide variation in the range of gross margins reflecting the range of fuel site types across the Highlands and Islands. Some gross margins were quite high and close to the average observed across Scotland. However there was also a large number of small sites with low volumes and very low gross margins that appear to be unsustainably low.

When we examine sustainability on the grounds of unsustainably low gross margins (less than £6,000 per year), we predict that from the current 231 forecourts in the Highlands and Islands that 14 sites are at risk of imminent closure, 23 are only sustainable in the short-term (less than 5 years) and 193 are expected to be sustainable in the long run. Initially we had assumed that the 48 sites in single trade areas were long-term sustainable. However, when we examined the gross margins for these sites it was found that 20 sites in single trade areas are at risk given their very low gross margins (less than £6,000 per year).

Therefore, when we account for sites in single trade areas with very low gross margins as well as for low gross margins and site strength scores the total number of sites that are long term sustainable is 117.

3.6 The Central Scenario

Our scenario analysis indicates that the long-term sustainable network in the Highlands and Islands will leave 117 sites, from the current network of 231 sites. Therefore we expect as many as 114 sites or 49% of sites to close across the Highlands and Islands. This is what we expect to happen to the fuel supply network if the market is left to operate with little or no additional government intervention. This scenario also works on the basis that at least one site will remain in the very remote areas which in reality may not happen given the low gross margins.

This scenario does not account for the potential of new entrants into the market. New entrants are most likely to be hypermarkets which have fuel supply forecourts attached to large food hypermarkets. These hypermarkets could have a significant impact by attracting volume from smaller sites in the surrounding area and therefore further increasing the number of sites that are unsustainable in the long-run.

Figure 3.6 shows the long-term sustainable network in the Highlands and Islands by former LEC area, including expected closures. The most heavily affected area in terms of percentage of sites lost is Orkney with 61% of sites (17) expected to close in the next few years. Inverness and East Highland is expected to lose the lowest proportion of sites, 35% or 12 sites lost.

Figure 3.6: Future long-term sustainable fuel supply network in the former LEC areas, Highlands and Islands

LEC	Current Sites	Long term sustainable Sites	Expected Closures	% closed
Argyll & the Islands	47	**20**	27	57%
Caithness & Sutherland	26	**13**	13	50%
Hebrides	16	**9**	7	44%
Inverness & East Highland	34	**22**	12	35%
Lochaber	13	**7**	6	46%
Moray	26	**13**	13	50%
Orkney	28	**11**	17	61%
Shetland	19	**8**	11	58%
Skye & Wester Ross	22	**14**	8	36%
Highlands and Islands	**231**	**117**	**114**	**49%**
Source: Experian Catalist				

Figure 3.7 shows that of the 80 fuel stations currently in the Fragile Areas, 41 sites or 51% are expected to close in the scenario period, leaving 39 sites as long-term sustainable. Orkney is the most heavily affected part of the Fragile Areas with 73% of fuel stations expected to close. The proportion expected to close in Argyll & the Islands Fragile Area is also significant at 58%.

Figure 3.7: Future long-term sustainable fuel supply network in the HIE Fragile Areas by LEC, Highlands and Islands

Fragile area by LEC	Current Sites	Long term sustainable Sites	Expected Closures	% closed
Argyll & the Islands	19	8	11	58%
Caithness & Sutherland	5	4	1	20%
Hebrides	13	7	6	46%
Lochaber	6	3	3	50%
Orkney	15	4	11	73%
Shetland	5	3	2	40%
Skye & Wester Ross	17	10	7	41%
Total	**80**	**39**	**41**	**51%**
Source: Experian Catalist				

This is clearly a significant reduction in the number of sites and therefore has implications for the supply of fuel across the region especially in more rural locations. The average inter-site distance will increase from the current distance of 8.9km with 231 sites to 15.9km with 117 sites. The average drive-time therefore increases substantially. Under the current network 92% of the population are within a 15 minute drive of a petrol station. Under the 117 site, long-term sustainable scenario, this percentage will fall to 83%, meaning a further 42,590 will have to drive more than 15 minutes to access a fuel supply. The actual impact of these changes in drive-time and the other impacts of the reduced fuel supply network are explored in more detail in chapter five.

Figure 3.8: Difference in inter-site distance and access to sites under current and future network

	Current Network (231 sites)	Potential Network (117 sites)
Average inter-site distance	8.9km	15.9km
Population within 15 mins drive-time (% of total population)	409,446 (92%)	367,409 (83%)
Population outside 15 mins drive-time (% of total population)	31,172 (8%)	73,764 (17%)

3.7 Establishing a Scenario Timeframe

The historic rate of closures and factors driving the rate of closures was discussed in some detail in chapter 2. The historic rate of closures in the Highlands and Islands region between 1995 and 2008 equated to 13 closures per year. On this basis the 114 sites that we have highlighted as being at risk of closure will close within 9 years. However, several factors affect this rate of change:

- **New Market Entrants** – if the rate of growth of new supermarket sites increases we would expect this to accelerate the rate of closures amongst our 114 sites and vice versa.
- **Consumer Behaviour** – if consumer preference swings towards large supermarket sites and this behaviour becomes entrenched the rate of closure amongst our 114 sites will accelerate and vice versa.
- **Oil prices** – If oil price volatility continues and high oil prices dominate this will increase pressure on small retailers and potentially accelerate closures.
- **Ageing Infrastructure and Legislation** – if new legislation is introduced that requires investment in new infrastructure this will accelerate the rate of closures amongst our 114 sites.

Therefore our central scenario indicates that 114 sites will close by 2017. There are factors that may accelerate or decelerate this rate of change > Add Retailers views to timeframe analysis

4 Conclusion

Appendix A

Retailer Questionnaire

Appendix B

Single Site Trade Area Methodology

Single Trade Area Construction - Methodology

This appendix gives a brief summary of how the single site trade areas were calculated.

Using the settlement outline data a point database was created with a centroid for each settlement (131 in total throughout the HIE region). 249,000 people live within these settlements, out of a total 432,000 with the remainder living in areas around the settlements and remote areas.

The population value for each location was then appended to the above database to enable the size of each settlement to be assessed. The settlements were then segmented into three categories based on population:

- **2 Large (Inverness and Elgin)**
- **20 Medium (Aviemore, Buckie, Dingwall, Keith, Lerwick, Tain etc)**
- **109 Small (Inver, Hopeman, Cullen, Castletown, Muir of Ord etc)**

The assumption was then made that smaller habitations would have larger trade areas surrounding them to reflect their remoteness. Drive times were then attached to each classification as follows:

- **Large - 10 minutes**
- **Medium - 20 minutes**
- **Small - 30 minutes**

Drive time polygons were then created around these settlements.

Based on settlement drive time isochrones, postcode areas were segmented into different areas. Postcodes that did not intersect or contain a settlement drive time were deemed to have no definitive trade area. In general, sites within such areas were therefore deemed to be single site trade areas and have long term sustainability provided they also had reasonable gross margin profitability.

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