Road Fuel Supply in the Highlands and Islands – Current Situation

Highlands and Islands Enterprise, HITRANS,
The Highland Council

November 2008

Future of Road Fuel Supply in the Highlands and Islands – Current Situation

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Executive summary

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 current state and future sustainability of road fuel supplies in the Highlands and Islands Enterprise (HIE) area. This paper presents Part 1 of the research, the current state of the road fuel supply network in the Highlands and Islands.

Rurality and fuel dependence

Residents of the Highlands and Islands are more likely to own a car and use it to travel greater distances to work than the Scottish average. As a result **the average resident in the Highlands and Islands has higher average fuel consumption than the average for residents across Scotland**. Equally businesses in the Highlands and Islands are generally more fuel dependant than businesses across Scotland as a whole. However the extent of a business's reliance on road transport will clearly depend strongly upon the nature of the industry in which they operate. Overall **changes to the price and access of fuel will impact rural residents and the profitability of rural businesses more severely than their urban counterparts.**

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**.

Breaking down the cost of fuel

The price of fuel charged at the pump can be broken down in to eight different component costs. **The fuel duty, cost of goods sold and VAT account for over 90% of the cost for both petrol and diesel**. The **site retail margin accounts for around 6% of the cost for petrol and 5% for diesel**. It should be remembered that the site operator still has to cover all operating costs from this margin. The remaining 3.7% of the cost is made up of delivery costs, terminal costs, oil company marketing cost margin and the dealer margin.[1]

The retail **margins for petrol and diesel across all sites within the HIE area range from a maximum of just under 14 pence per litre to a minimum of less than 1 pence per litre** and average around 6 pence per litre.

[1] The data used here is modelled and will differ from reality by virtue of the fact that each petrol station operator will have their own agreement with suppliers based on the particulars of the commercial relationship.

Current fuel supply network

As of March 2008 there were **231 petrol stations in the Highlands and Islands with an annual throughput of 308 million litres of fuel each year**.[2] The average volume per site is therefore 1.334 million litres of fuel each year. This compares with an average site volume of 3.788 million litres of fuel for the rest of Scotland. 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. There is significant variation in average volumes across the HIE area with the highest average volumes in Inverness and East Highland (3.238 million litres) area and the lowest in the Orkney Islands (0.249 million litres).

The Highlands and Islands network is characterised by a large number of small sites with a very low average volume. This has considerable implications for site operating costs as the fixed element is supported by a much smaller fuel volume and therefore revenue. The majority of the Highlands and Islands network is therefore at a significant operating cost disadvantage.

The majority of the population in the Highlands and Islands have reasonable access to a fuel station however a small proportion in the most rural areas have limited access to fuel supply. The vast majority of the population (92%) is within a reasonable drive time (15 minutes) to a petrol station. However, 8% of the population is more that 15 minutes drive away from their nearest fuel station and the maximum inter-site distance is over 30 kilometres with a journey time of around one hour.

Site profitability was assessed by examining the gross margins for sites across the region. The gross margin is a good indication of how profitable a site is at the most fundamental level and does not account for any operating costs. **Our research indicates that there are a small number of sites with high volumes and therefore reasonably high gross margins and a large number of small sites with low volumes and very low gross margins**.

Next Steps

This report forms Part 1 of the research process. Part 2 of the research will examine 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.

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

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.

This report forms Part 1 of the research and examines the current state of the road fuel supply network across the Highlands and Islands. Part 2 of the research will examine 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.

Research Objectives

The overall objectives of Part 1 of the research are to:

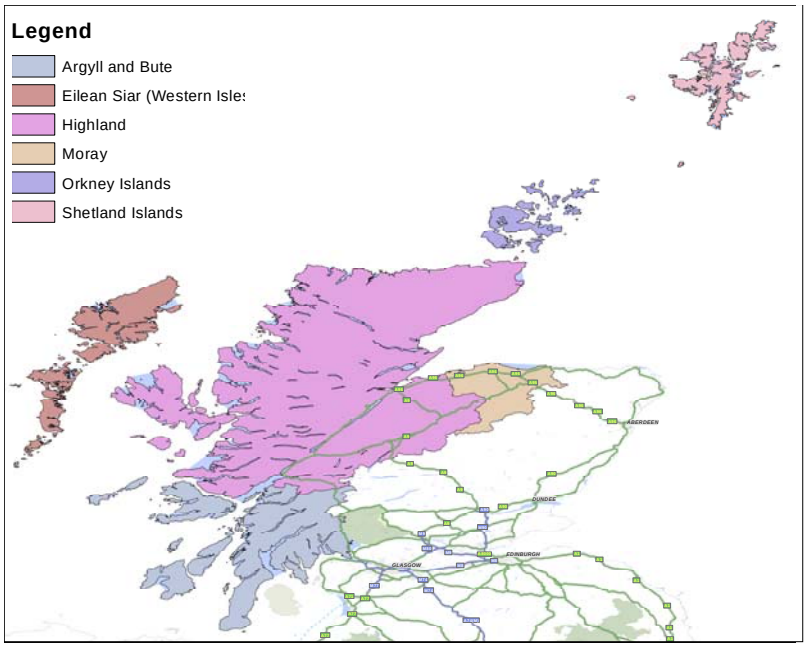
- **Determine the extent of the existing fuel station network in the region;**
- **Determine the associated distribution of fuel to this network – from refinery to pump**;
- **Identify the forecourt margins at LEC level and understand site economics;**
- **Consult widely to understand issues facing businesses and communities.**

1 Background

1.1 The Study Area

The Highlands and Islands area lies in the North and North West of Scotland, and covers six of Scotland's unitary and island authority areas, including Argyll and Bute, Eilean Siar, Highland, Moray, Orkney Islands and Shetland Islands[3].

Figure 1.1 – The Highlands and Islands Region



1.2 Demographics

Until April 2008, the Highlands and Islands Enterprise Region was divided into nine Local Enterprise Company (LEC) areas. Under a restructuring of the Highlands and Islands Enterprise network the LEC structure was removed. However, we still make reference to the nine LEC areas throughout the document.

In 2005, the most populous of these areas within the Highlands and Islands network was Inverness and East Highland (which includes the City of Inverness) followed by Moray (which includes the town of Elgin) and Argyll and the Islands, (which includes the town of Oban). The Inverness and East Highland area accounted for just over 30% of the Highlands and Islands population.

[3] The area also includes the Isle of Arran in North Ayrshire, but does not include some South Eastern areas of Argyll and Bute, such as Helensburgh.

Figure 1.2 – Population of the Highlands and Islands by former LEC Area, 2005

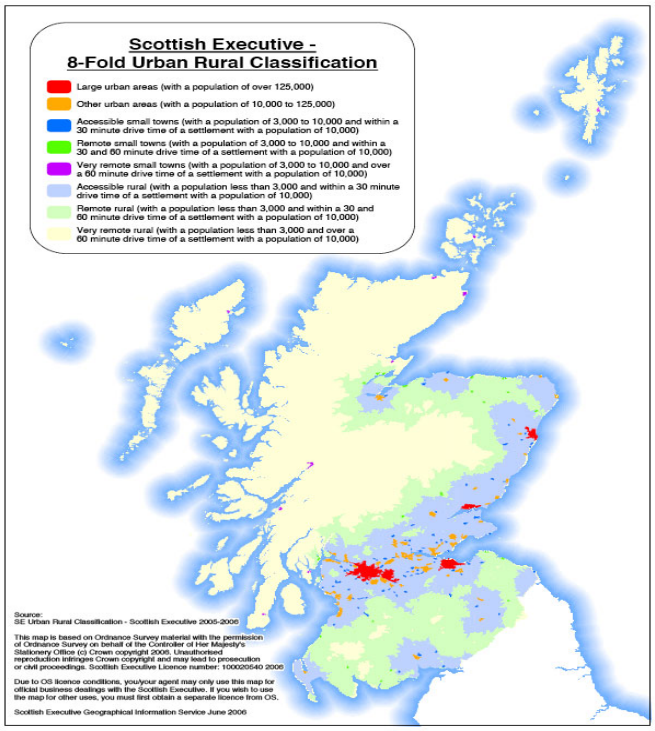
Area	Population
Inverness and East Highland	137,648
Moray	88,120
Argyll and the Islands	71,091
Caithness and Sutherland	38,262
Innse Gall (Outer Hebrides)	26,370
Shetland Islands	22,000
Orkney Islands	19,590
Lochaber	18,915
Skye and Wester Ross	18,765
Highlands and Islands	**440,761**
Scotland	**5,094,800**

Source: GROS 2005, as quoted by HIE, 2007[4]

1.3 Extent of Rurality

As part of the then Scottish Executive's 2003 *A Partnership for a Better Scotland* agreement, a commitment was made to "*ensure that rural and remote communities have their distinct needs reflected across the range of government policy and initiatives*". As part of that commitment, the Scottish Executive's Rural Affairs Analytical Services Division produced an 8-fold urban rural classification that identified the extent of rurality across each of Scotland's 42,604 output areas. This is shown below.

Figure 1.3 – Scottish Executive 8-Fold Urban Rural Classification



[4] The Highlands and Islands – Economic Update, April 2007

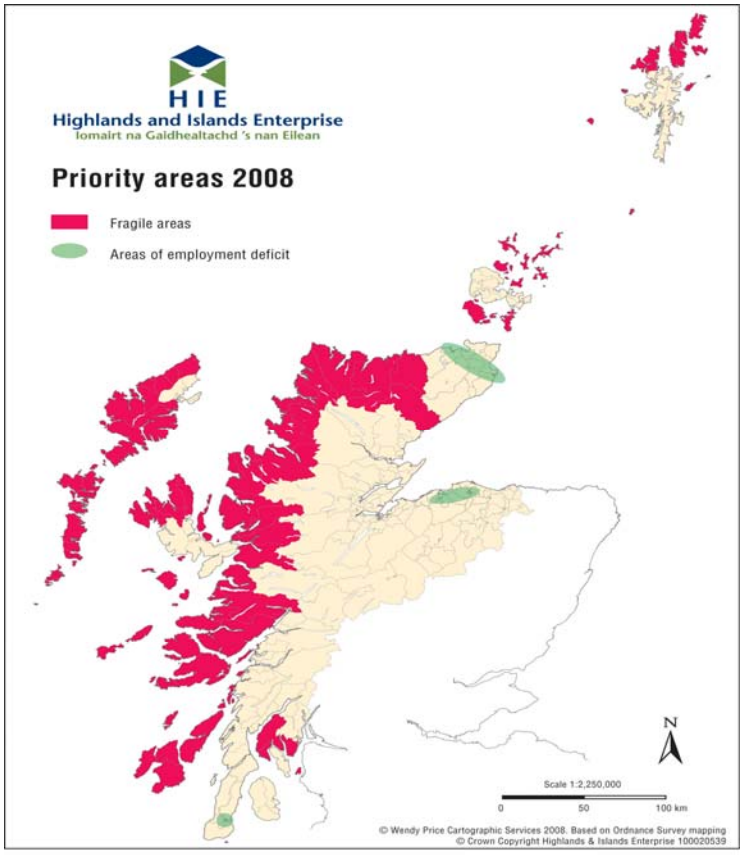
Based on this classification, it is clear that a significantly higher proportion of the Highlands and Islands population are likely to experience significant service accessibility difficulties, with 31% of the area's population living in Very Remote Rural areas.

Figure 1.4 – Population of Highlands and Islands and Scotland by 8-Fold Urban Rural Classification Type

	Highlands and Islands	Scotland
Large Urban Areas	0%	38%
Other Urban Areas	18%	30%
Accessible Small Towns	5%	9%
Remote Small Towns	10%	2%
Very Remote Small Towns	14%	1%
Accessible Rural	13%	12%
Remote Rural	9%	3%
Very Remote Rural	**31%**	**3%**
Source: Scottish Executive, 2006		

Highlands and Islands Enterprise have identified parts of the Highlands and Islands that are classed as fragile areas. Fragile areas are characterised by weakening of communities through population loss, low incomes, limited employment opportunities, poor infrastructure and remoteness. Some 56,338 people reside in fragile areas, representing 13% of the total Highlands and Islands population. Figure 1.5 shows the Fragile Areas in the Highlands and Islands. The settlements of Wick, Thurso, Forres, Elgin and Campbeltown were identified as settlement priority areas.

Figure 1.5: Highlands and Islands Fragile Areas



1.4 Impacts of Rurality on Fuel Economics

The rural nature of much of the Highlands and Islands has an important bearing on many of the supply and demand factors that will influence the market for road fuel.

1.4.1 Fuel Demand Impacts – Fuel Dependency of Residents

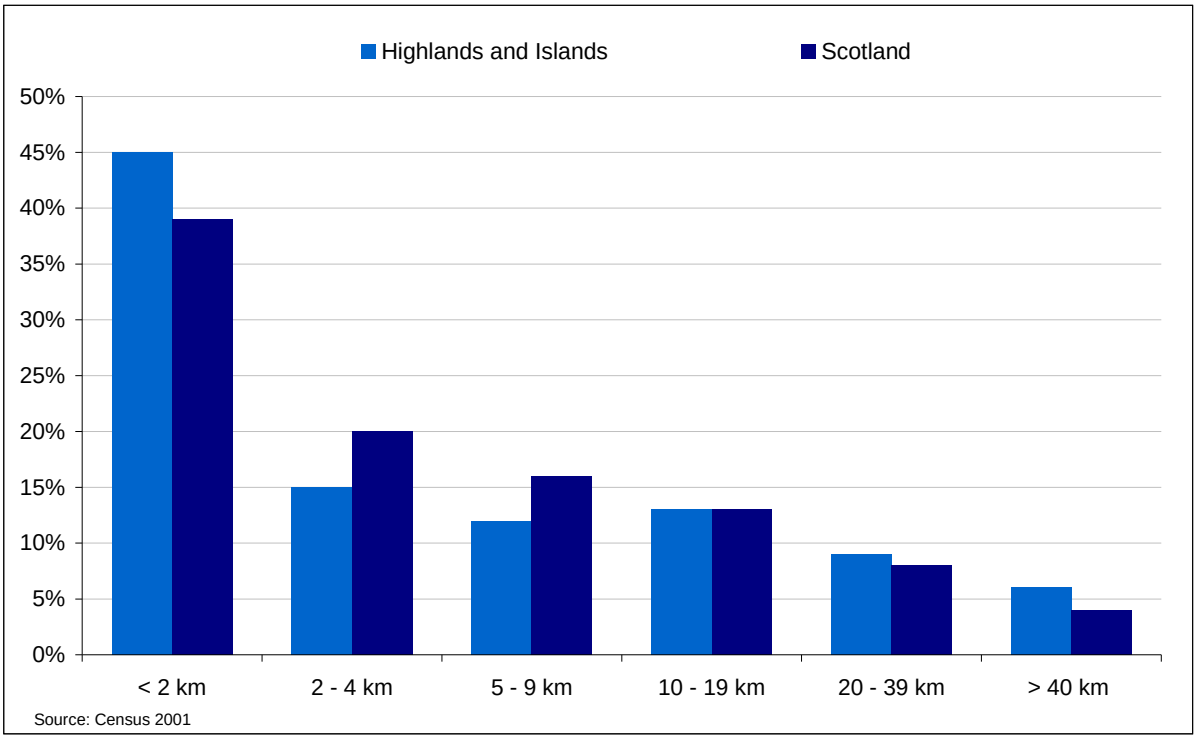
Given its rural nature, it is not surprising that much of the Highlands and Islands population have further to travel in order to reach their nearest urban centre (see figure 1.6). Consequently motorists in rural areas consume greater quantities of fuel in order to reach urban services.

Figure 1.6 – Drive times from main centres

	At least 30 minutes drive time	At least 60 minutes drive time
Highlands and Islands	64%	45%
All Scotland	9%	4%
Source: Scottish Urban Rural Classification, 2006		

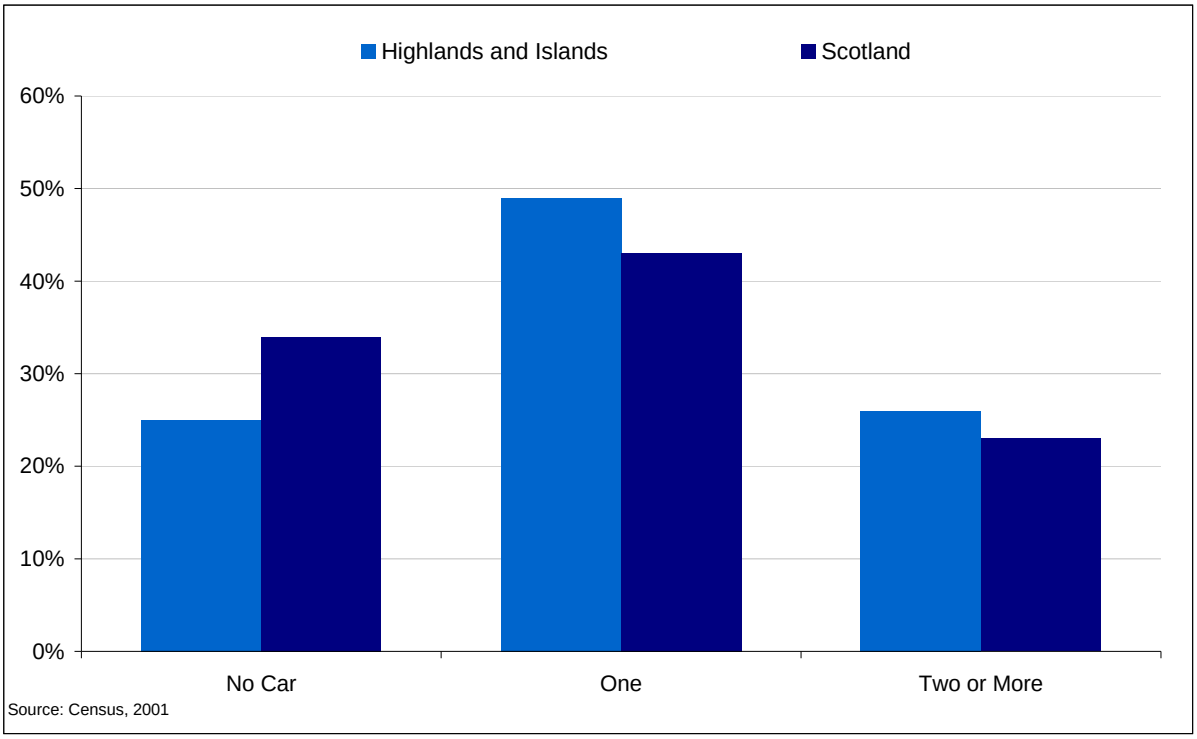
The greater distance to an urban centre can impact in a number of ways: individuals in rural areas may choose to commute greater distances, in order to access employment in urban centres, thereby incurring above average travel costs; or, assuming opportunities exist, they may choose to work in their immediate surroundings. These trends are illustrated in Figure 1.7 which shows that while the proportion of the population in the Highlands and Islands travelling less than 2km to place of work or study is greater than the Scottish average at 45%, the proportion travelling 20km or more is also greater at 15% compared to the Scottish average of 12%.

Figure 1.7 – Distance between place of residence and place of work or study (% of population)



The need for individuals living in rural areas to travel further to access many services and workplaces, together with the more limited availability of public transport provision, means that car ownership rates tend to be higher in rural areas than in urban ones, and consequently a higher proportion of people are direct consumers of fuel. Figure 1.8 below shows that 75% of households in the Highlands and Islands own one car or more compared to the Scottish average of 66%.

Figure 1.8 – Proportion of households owning no cars or vans, one car or van or two or more cars or vans in Highlands and Islands and Scotland

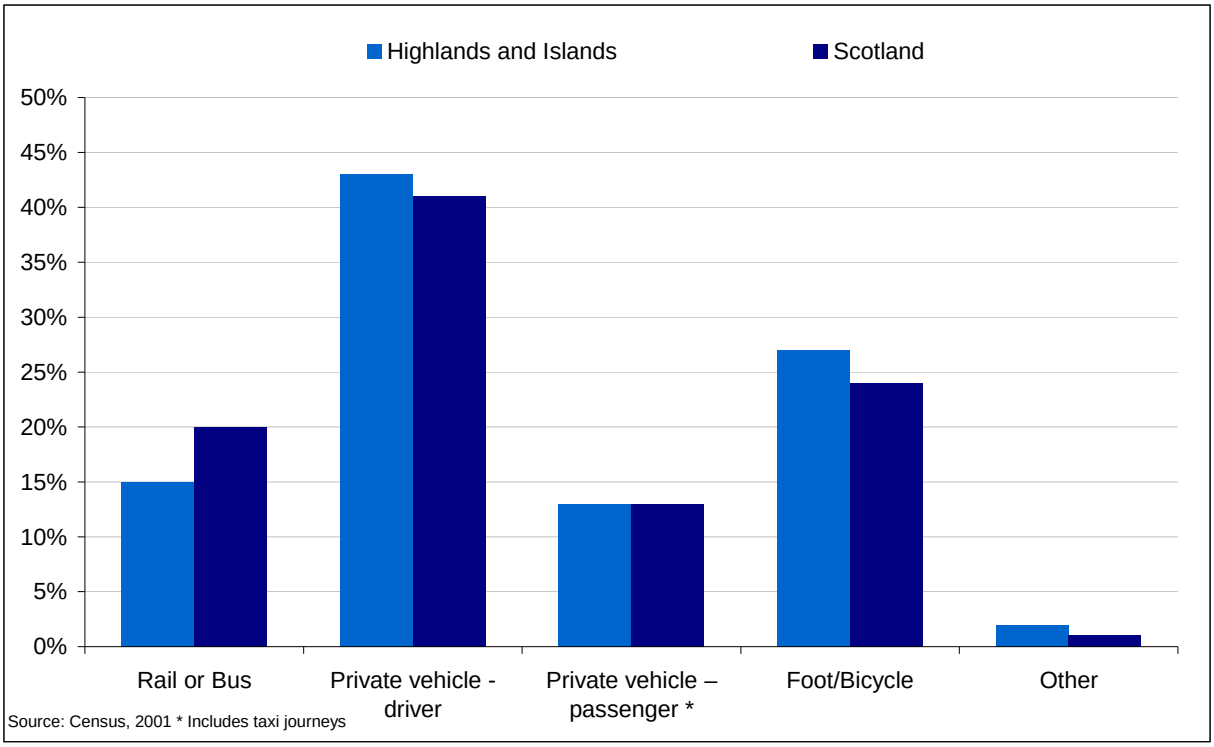


Another effect of limited availability of public transport is that the car is more heavily favoured as a mode of transport for rural residents than urban residents, with road journeys accounting for a larger proportion of total journeys to work. Figure 1.9 shows public transport is used to travel to work by just 15% of the population in the Highlands and Islands compared to 20% across Scotland as a whole and 43% of the population drive a private vehicle compared to 41% across Scotland as a whole. However despite more intense usage of private vehicles to travel to work, 27% of the Highlands and Islands workforce walk or cycle to work which is significantly higher than the Scottish average of 24%.

A final factor influencing demand for fuel amongst rural residents is that cars owned by rural residents tend to be older models than those owned by urban residents, with approximately one in three households in the Highlands and Islands owning a vehicle that was ten years old or more, compared to one in five across Scotland as a whole[5]. This is significant as the fuel efficiency of 12 year old cars (typically 24 miles per gallon), tend to be poorer than brand new cars (typically 30 miles per gallon)[6], meaning that rural residents may often need to consume higher levels of fuel in order to travel the same distance as their urban counterparts.

[5] Source – DVLA, 1998, as quoted in *Economic Impacts of Road Fuel Prices in the Highlands and Islands*, EKOS, 2000
[6] Ibid.

Figure 1.9 – Mode of transport used for travel to work: Excluding those working from home



Overall, residents of the Highlands and Islands are more likely to own a car and use it to travel greater distances to work than the Scottish average. As a result the average resident in the Highlands and Islands have higher average fuel consumption than the average for residents across Scotland.

1.4.2 Demand Side Impacts – Fuel Dependency of Businesses

Transport availability is a major consideration for all businesses as it impacts upon an organisation's ability to obtain raw materials and intermediate goods, attract labour, access business services, meet customers and transport goods to markets. Evidence from the Department for Environment, Food and Rural Affairs[7] suggests that the issue is of particular importance to rural economies, as businesses are located further from their markets, and therefore have to travel greater distances to exchange goods and services, than more urban competitors. Higher fuel prices or changes to the access to fuel can therefore impact the profitability of rural businesses more severely.

While all businesses are affected in some way by these transport issues, the extent of a business's reliance on road transport will depend strongly upon the nature of the industry in which they operate. For example, it is likely that any change in the supply and cost of fuel will impact on the costs of operating a rural wholesale and distribution business, and on the level of trade received by a rural hospitality businesses, but would have a more moderate impact on the cost of operating a rural personal services business such as a hairdresser. As was the case with residents, in general businesses in the Highlands are more fuel dependant than business across Scotland as a whole.

[7] *Determinants of Relative Economic Performance of Rural Areas*, DEFRA, 2004

1.4.3 Supply Side Impacts

As well as influencing demand for fuel, the rural location of the Highlands and Islands can impact on the costs of supplying petrol in rural areas. Indeed, the issues of rurality can cause difficulties across the fuel supply chain, with the distance between petrol stations increasing the delivery time and costs for fuel distributors, and with more limited catchment sizes of rural petrol stations requiring station proprietors to spread their overhead costs across a smaller base of customers. These issues will be examined in further detail over the course of this report.

1.5 Economics of fuel demand – Why Fuel Stations Close

This section reviews the basic economics of fuel demand which provides important context for the findings of the research discussed in later chapters.

Broadly speaking, the costs to a fuel station of supplying petrol can be classed into two broad types called 'fixed costs' and 'variable costs'. Fixed costs represent those that the company are required to pay regardless of the volume of fuel they sell, and include any rent or loan repayments for the purchase of the station's land and premises, the costs of security, site maintenance (including tanks) and (at least to some extent) the costs of staffing.

Figure 1.10 shows that the station's 'average fixed cost' schedule is shown to be downward sloping, as the cost per unit sold falls when sales volumes increase. In contrast, variable costs, such as the costs of buying petrol from a wholesaler, increase in proportion with the level of fuel sold, meaning that the variable cost schedule is horizontal. By totalling these two costs together, it is possible to calculate the minimum possible price that a fuel station will be willing to charge. This is known as the station's supply curve.

Figure 1.10 – Components of the fuel supply curve

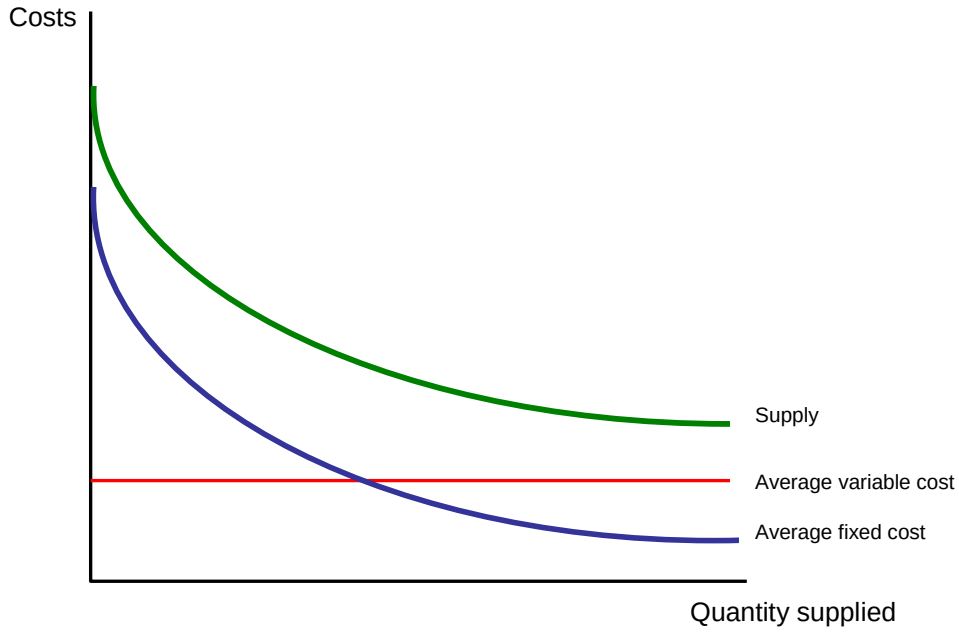
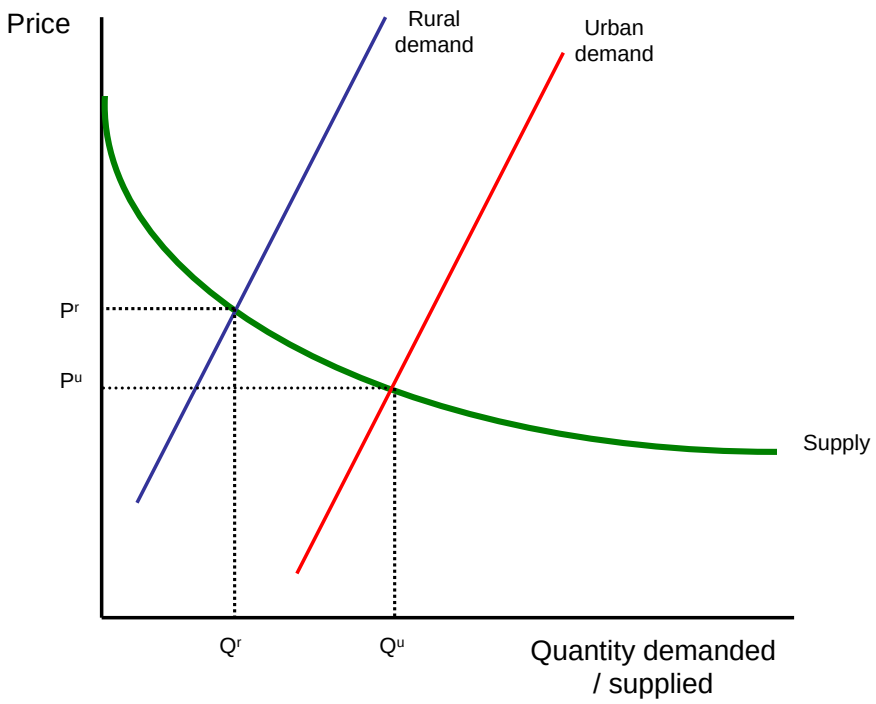


Figure 1.11 below shows the total number of consumers who would choose to purchase fuel at any given price level in rural and urban areas. In both cases we have assumed that the demand curve will be steeply upward sloping, on the assumption that fuel has a 'price inelastic demand', meaning that many people will choose to buy fuel regardless of its cost, due to the absence of a suitable alternative.

Figure 1.11 – Fuel supply and demand in urban and rural areas



Source: Experian

The figure shows that, at any price level, rural petrol stations are likely to sell lower volumes of fuel due to the smaller population resident within the petrol stations catchment area. Economic theory dictates that as a result of supply and demand conditions, the typical price of fuel in rural areas (P^r) is likely to be higher than that in an urban area (P^u).

This point is crucial to the research and understanding why rural petrol stations are going out of business i.e. **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 a result of the higher prices, consumers may 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**.

1.6 Fuel price breakdown

Figure 1.12 and Figure 1.13 show the approximate breakdown of the constituent parts of the cost of retail fuel at the average petrol station in the Highlands and Islands. These figures are based on a model that Experian Catalist developed in order to measure the potential gross margin generating potential of each petrol station. This is further explored in section 2.4 - Site Profitability below.

The data shows that the price of fuel charged at the pump can be broken down in to eight different component costs. The fuel duty, cost of goods sold and VAT account for over 90% of the cost for both petrol and diesel. The site retail margin accounts for around 6% of the cost for petrol and 5% for diesel. It should be remembered that the site operator still has to cover all operating costs from this margin. As

discussed above, the margin charged (and therefore the price of fuel) will change depending on the volume of fuel sold, with sites with a very low volume charging a higher price and taking a larger proportion of the total cost as a margin. The margin shown here is the average margin likely to be taken across the Highlands and Islands.

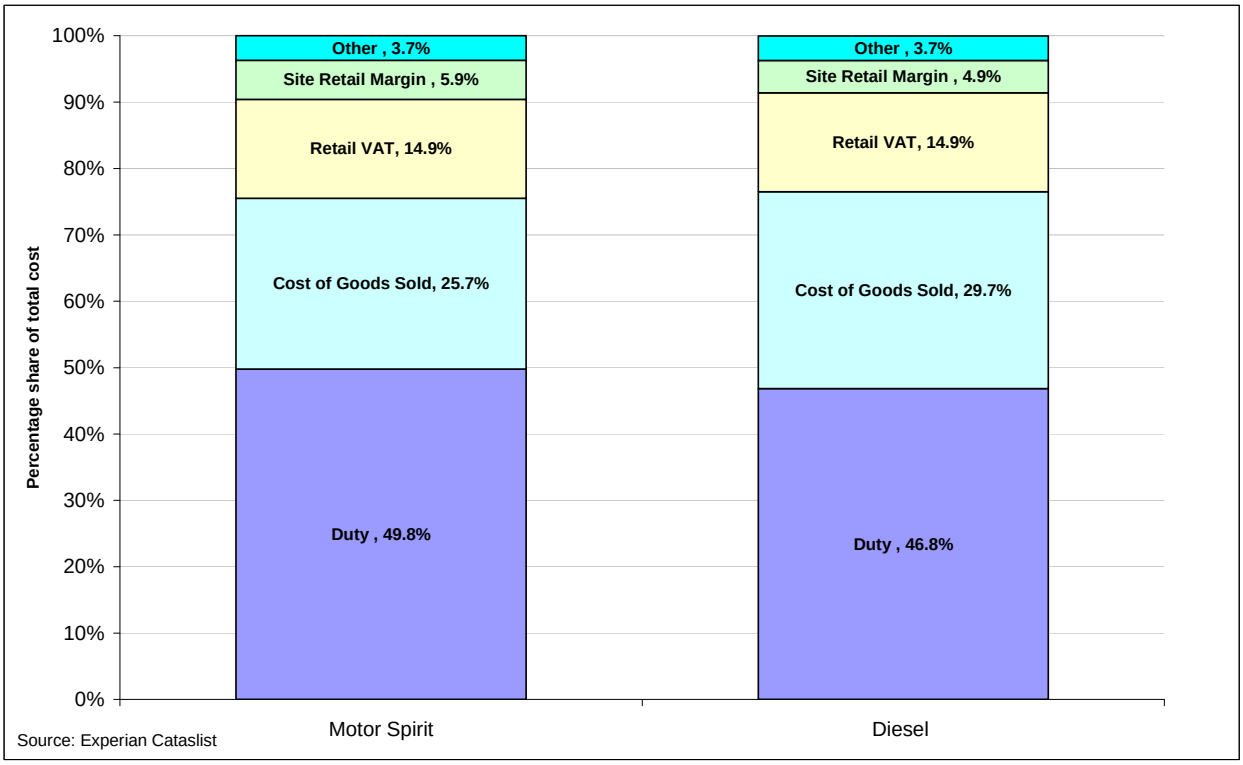
The remaining 3.7% of the cost is made up of delivery costs, terminal costs, oil company marketing cost margin and the dealer margin. Again it should be noted that these are average costs presented to illustrate the constituent parts of the price charged at the pump and will vary slightly by site (ranges of costs are examined below).

Figure 1.12: Average Retail Price Breakdown in £ for Motor Spirit and Diesel, March 2008

	Petrol £	Petrol, % of total cost	Diesel £	Diesel %
Duty	0.554	49.8%	0.554	46.8%
Cost of Goods Sold	0.286	25.7%	0.351	29.7%
Retail VAT	0.166	14.9%	0.176	14.9%
Site Retail Margin	0.065	5.9%	0.057	4.9%
Delivery Costs	0.031	2.8%	0.031	2.7%
Terminal Costs	0.004	0.4%	0.005	0.4%
Oil Co MKT margin	0.004	0.3%	0.004	0.3%
Deal Margin	0.002	0.2%	0.004	0.4%
Average Retail Price Breakdown	**1.112**	100%	**1.182**	100%

Source: Experian Catalist

Figure 1.13: Average composition of fuel price, March 2008



The data used here is modelled and will differ from reality by virtue of the fact that each petrol station operator will have their own agreement with suppliers based on the particulars of the commercial relationship. Moreover, the actual figures are commercial confidential information and given the manner in which different companies allocate and account for costs, what one operator will state will not necessarily be comparable with another. Notwithstanding the above, Experian Catalist has based these figures on information provided by parties in the industry and as a result they can be deemed to be representative and fit for purpose for this project. Indeed using a common price model throughout the model ensures universal comparability of the profitability and ultimately sustainability of the network.

Figure 1.14 shows the ranges of the various costs. These will depend on the distances from the supply point to the petrol station, the volumes of each delivery and the size of the road tankers used.

Figure 1.14: Cost ranges for Petrol and Diesel, £ per Litre

	Maximum	Minimum
Terminal Costs	0.010	0.003
Delivery Costs	0.070	0.004
Oil Co MKT margin	0.004	0.004
Deal Margin	0.004	0.002
Source: Experian Catalist		

Figure 1.15 shows the average retail margins for petrol and diesel across all sites within the HIE area. It also shows the maximum and minimum margin range for petrol and diesel. These ranges will be a factor of the points made above including the sales volume of each particular site and they range from a maximum of 12 to 14 pence per litre to a minimum of less than 1 penny per litre. In fact, the minimum margin for petrol is actually -0.01 of a penny, suggesting that some forecourts are selling petrol at a loss. Evidence suggests that this happens rarely but does sometimes occur.

Figure 1.15: Retail margin ranges for Petrol and Diesel, £ per Litre

	Petrol Retail Margin £ Per Litre	Diesel Retail Margin £ Per Litre
Avg Retail Margin	0.065	0.058
Max Retail Margin	0.139	0.128
Min Retail Margin	-0.001	0.007

Supermarkets are often accused of selling at a loss but there is no evidence to substantiate that they do indeed consistently sell at a loss. Perceptions are important and other retailers who compare their own buying price with the supermarkets selling price may *assume* that they are selling at a loss. This is usually not the case as the supermarkets have a different economic model and typically buy at more advantageous prices than other forecourt operators. The actual buying prices of the supermarkets are also probably lower than our standard prices used in our model (we have no way of obtaining actual buying prices of supermarkets as the information is confidential).

There is a potential issue with supermarket pricing associated with the cross merchandising (5p off per litre voucher with £50 spent in the store). If the total cost was included as a discount off the retail price then there are occasions when the supermarkets are probably 'selling at a loss'. However, the supermarkets operating costs on a pence per litre basis are very low so with their high fuel volumes they still usually make a positive contribution albeit small in pence per litre terms as they represent a sizable cash value.

Smaller sites will need to generate a higher unit margin as they have fixed costs that need to be covered and by their nature have more limited ability to generate gross margin. Therefore, such sites generally do not sell at a loss under this definition but they may make a loss when their operating costs

are included which are generally much higher in pence per litre terms than the supermarkets. Smaller sites might only stay in operation because they generate additional revenue from other sources i.e. shop sales. Supermarkets move the product much faster than small sites so can take advantage of changes in prices whereas small sites have to live with the product price for longer periods - in a falling market this means the small sites are not competitive unless they are prepared to take a hit and maybe sell at a loss to clear their tanks for a new delivery at lower costs.

2 Current Fuel Network

2.1 Introduction

This chapter reviews the current fuel network in the Highlands and Islands. It examines the number and location of sites, volumes sold, recent site closures, site facilities, how average volumes differ by location and distribution channels.

2.2 Existing Site 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.[8] The average volume per site is therefore 1.334 million litres of fuel each year. Figure 2.2 shows that this compares with an average site volume of 3.788 million litres of fuel for the rest of Scotland, 4.212 million litres for sites in England and 3,020 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 2.1: The road fuel station network in the Highlands and Islands

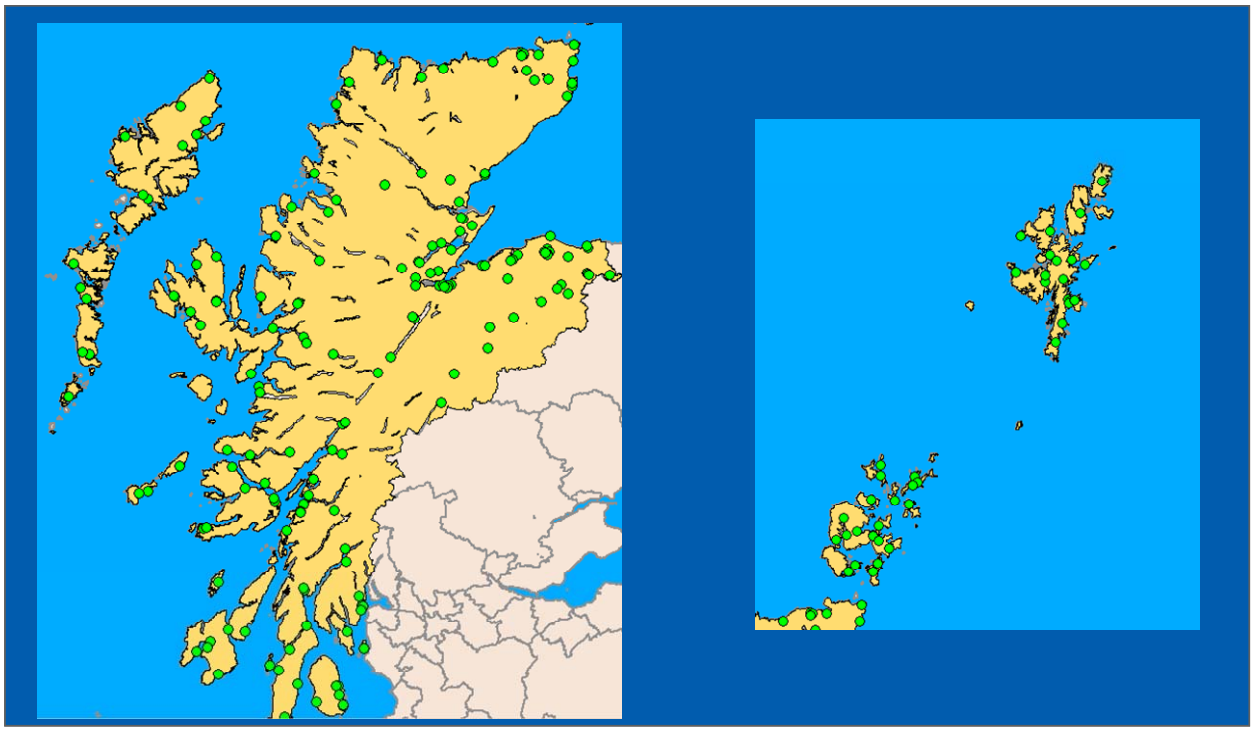


Figure 2.2 shows the number, volume and average volume for each of the former LEC areas in the Highlands and Islands. This highlights the massive difference in average site volumes in different areas in the Highlands and Islands. In Inverness and Highland there are 34 sites, accounting for 36% of the total Highlands and Islands volume and with an average annual volume of 3.238 million litres. This is

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

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 0.249 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.

Figure 2.2 also shows data for the Fragile Areas in the Highlands and Islands. 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 0.251 million litres (comparable with the average volume of sites in Orkney) and just 19% of the Highlands and Islands site average volume.

Figure 2.2: Market Volumes and 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

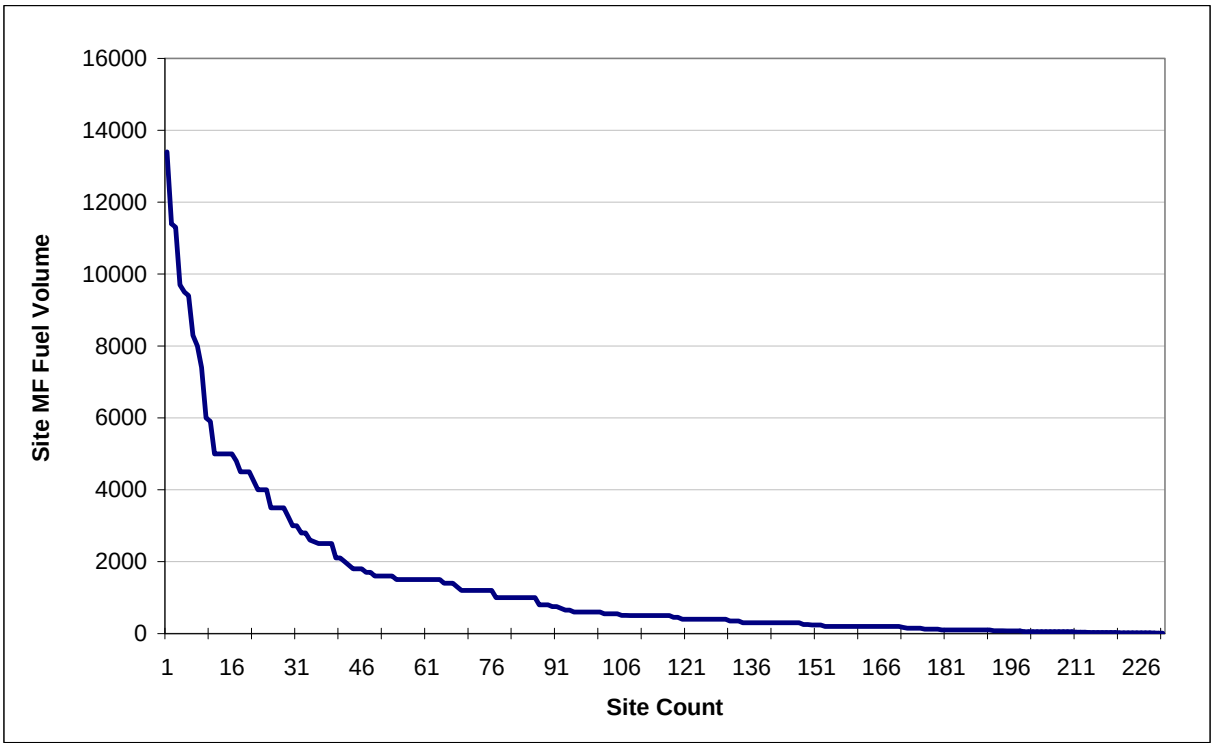
The average site volumes by LEC suggest that there is a broad range of fuel stations in the Highlands and Islands. On one hand there are a number of high quality retail sites that have relatively high average volumes and would be competitive anywhere in the country; while on the other there are numerous small sites of small size, very low volumes and poor facilities. The result is that the network is characterised by having a very long “tail” of small sites with low volumes as indicated in the figure 2.3.

A small number of large sites on the mainland account for a large share of the total Highlands and Islands volume and a large number of small sites make up the rest:

- **Overall the top 30 sites (12% of total) account for 56% of the region’s total volume;**
- **On the mainland 11 Hypermarkets account for 35% of all volume;**

- **There are 143 very remote rural sites with average site volumes less than 0.5 million litres per year.**

Figure 2.3 – Fuel retail volumes in the Highlands and Islands by site[9]



The majority of the population in the Highlands and Islands have reasonable access to a fuel station. The vast majority of the population (92%) is within a reasonable drive time (15 minutes) to a petrol station. However, 8% of the population is more that 15 minutes drive away from their nearest fuel station.

The average inter-site distance under the current network is 8.9 kilometres and the average calculated drive time is under 10 minutes. However, the maximum inter-site distance is over 30 kilometres with a journey time of around one hour.

Therefore as one would expect with the rural nature of much of the Highlands and Islands, a small proportion of the population have a lengthy journey to access fuel supply. In recent years as more and more sites close, the drive time for a small proportion of the population to access fuel has gradually got longer and longer. Between 2002 and 2007, 62 sites with an average volume of just 0.5million litres closed.[10]

2.3 Site facilities

It is well established that non-fuel retailing is a vital component of individual forecourt viability but within the Highlands and Islands shop sales are significantly smaller in absolute terms, which has an impact on overall site sustainability. As a percentage of fuel volume however, the sites within Highlands and Islands have a shop sales that is commensurate with the rest of the UK and Scotland. The issue is that the total revenue available as a proportion of fixed costs is lower (for a discussion of how fixed costs influence price levels, see section 1.5).

[9] All figures in this section of the report are sourced to Experian Catalist, 2008
[10] This figure does not account for the new petrol stations that would have opened during this same 5 year period.

Figure 2.4 – Overview of fuel site provision

Area Comparison	Sites	Average MF Vol	Average Shop Sales per site (£ 000)	Average Shop Area (square metres)
All H&I Sites	231	1,334	137	30
All Scotland	968	3,345	346	48
All UK	9434	4,029	508	60

Source: Experian Catalist

Figure 2.5 shows the market shares of sites across the former LEC area. Overall Inverness and East Highlands together with Moray has the most efficient network in terms of market shares for each site. This is largely a reflection of the relative urbanisation of these areas and the existence of several supermarket forecourts. The Orkney Islands are the most inefficient where just 2.1% of the regions fuel volume is sold through 10% of the regions sites. However, while many of these sites may perform poorly on economic efficiency grounds alone, many of these serve an important role for detached communities and may therefore be required on the grounds that they provide a lifeline service.

Figure 2.5 –Market Shares by LEC area

Former LEC Area	Sites	% of HIE total sites	% MF Mkt Share	Avg MF Vol	% Shop Mkt Share	Avg Shop Sales (£000)
Argyll & the Islands	47	22%	15%	956	18%	113
Caithness & Sutherland	26	12%	9%	1,028	6%	67
Hebrides	16	8%	3%	606	5%	94
Inverness & East Highland	34	14%	36%	3,238	27%	255
Lochaber	13	5%	8%	1,953	4%	109
Moray	26	11%	19%	2,287	21%	260
Orkney	28	10%	2%	249	10%	138
Shetland	19	8%	4%	619	5%	76
Skye & Wester Ross	22	10%	4%	597	3%	43
Total H&I Area	***231***	**100%**	**100%**	**1,334**	**100%**	***135***

Source: Experian Catalist

In terms of some other site characteristics, sites within the HIE region display the following:

- **Average plot site of 850 square meters which is only 60% of the Scotland average;**
- **An average of just 2.7 pumps per site;**
- **8% of sites are 24 hour operation;** and
- **57% of sites have no canopy.**

Figure 2.6 provides by brand the number of sites, the share of sites, volume market share, site average volume and Marketing Efficiency Ratio (MER). Of the 231 sites in the study 32% of volume is supplied by just 11 sites (5%). At the other end of the scale the unbranded network which consists of 37% of sites sells 10.5% of volume. As mentioned above this has major implications for the economics of fuel retailing across the HIE region.

Figure 2.6 – Market share by operating company

Brand	Sites	% of Sites	% MF Market Share	Average site Volume	MER
TESCO EXTRA	2	1%	7%	11,350	8.51
ASDA	1	<1%	3%	9,700	7.27
TESCO	4	2%	12%	9,025	6.77
MORRISONS	3	<1%	8%	8,300	6.22
SOMERFIELD	1	<1%	2%	5,900	4.42
BP	5	2%	8%	4,800	3.60
ESSO	18	8%	17%	2,889	2.17
SHELL	12	5%	7%	1,750	1.31
Q8	3	1%	1%	1,333	1.00
THAMES	4	2%	2%	1,275	0.96
GULF	1	<1%	<1%	1,200	0.90
NATIONAL	26	11%	8%	986	0.74
GLEANER	37	16%	11%	926	0.69
TEXACO	2	1%	<1%	475	0.36
SCOTTISH FUELS	18	8%	2%	386	0.29
UNBRANDED	87	38%	11%	375	0.28
HIGHLAND	7	3%	<1%	164	0.12
Grand Total	**231**	**100%**	**100%**	**1,334**	**1.00**

Source: Experian Catalist. Note: data all relates to March 2008

Note: MER is the Marketing Efficiency Ratio which is the % market share in volume divided by the % market share of sites. The higher the MER the lower the cost for each unit sold. As a general rule major operators will aim for a MER of well over 1.

2.4 Site Profitability

It is possible to assess site profitability by examining the gross margins for sites across the Highlands and Islands network. The gross margin is a good indication of how profitable a site is at the most fundamental level and does not account for any operating costs. Site unit margins and gross margins were estimated using the product costs model. The resultant margin is a gross margin and does not cover:

- **Site fixed & variable operating costs (rent / power / utilities etc)**
- **On going maintenance costs**
- **Any staffing costs**
- **Capital costs (interest on loans / depreciation)**
- **Marketing and licensing**
- **Credit charges on product / working capital**

The gross margin is therefore simply the retail price minus the cost of product delivered. Figure 2.8 shows average and minimum gross margins for the HIE area as a whole. There are a wide range of gross margins reflecting the range of fuel site types across the Highlands and Islands. The average gross margin across the Highlands and Islands is just under £68,000. However this ranges from a low of £18,906 in Skye and Wester Ross to a high of £159,133 for Inverness and East Highland.

Some sites are actually making quite high unit margins, however their volumes are so low that the gross margins are extremely low. Figure 2.7 also shows the minimum gross margin by LEC. This shows that the lowest gross margin was £660 for a site in Caithness and Sutherland.

Figure 2.7: Gross margins[11] by former LEC

	Site Count	Sum of Gross Margin	Average Gross Margin	Minimum Gross Margin
Argyll & the Islands	47	2,683,170	57,089	954
Caithness & Sutherland	26	1,228,170	47,237	660
Hebrides	16	967,468	60,467	3,955
Inverness & East Highland	34	5,410,523	159,133	5,233
Lochaber	13	1,046,771	80,521	2,259
Moray	26	1,790,724	68,874	1,069
Orkney	28	752,491	26,875	1,088
Shetland	19	1,384,909	72,890	1,127
Skye & Wester Ross	22	415,938	18,906	2,186
Highlands and Islands	**231**	**15,680,164**	**67,879**	**660**
HIE Fragile Areas	**80**	**1,294,398**	**16,180**	**660**

Source: Experian Catalist

If we analyse profitability by splitting the gross margins of the 231 sites into quartiles rather than averages it provides further insight into the economics of the fuel supply network in the Highlands and Islands:

- **58 sites account for 78% of total gross margin and have an average gross margin of £210,870;**
- **112 sites make less than £25,000 per annum fuel gross margin;** and
- **79 sites make less that £10,000 per annum fuel gross margin.**

Figure 2.8 also shows data on gross margins for the 80 sites in the HIE Fragile Areas. This shows that the average gross margin is £16,180, far lower than the average for any of the former LEC areas.

Overall then there is a small number of sites with high volumes and therefore reasonably high gross margins and a large number of small sites with low volumes and very low gross margins. Since all operating costs and salaries are yet to be covered by these gross margins, final profitability and therefore sustainability must be very fragile for a large proportion of sites. In addition, the current gross margins available are not encouraging people to join the industry; in fact the opposite is the case and fuel stations are closing due to a lack of profitability. In chapter three we assess site sustainability using gross margins as a key factor in overall sustainability.

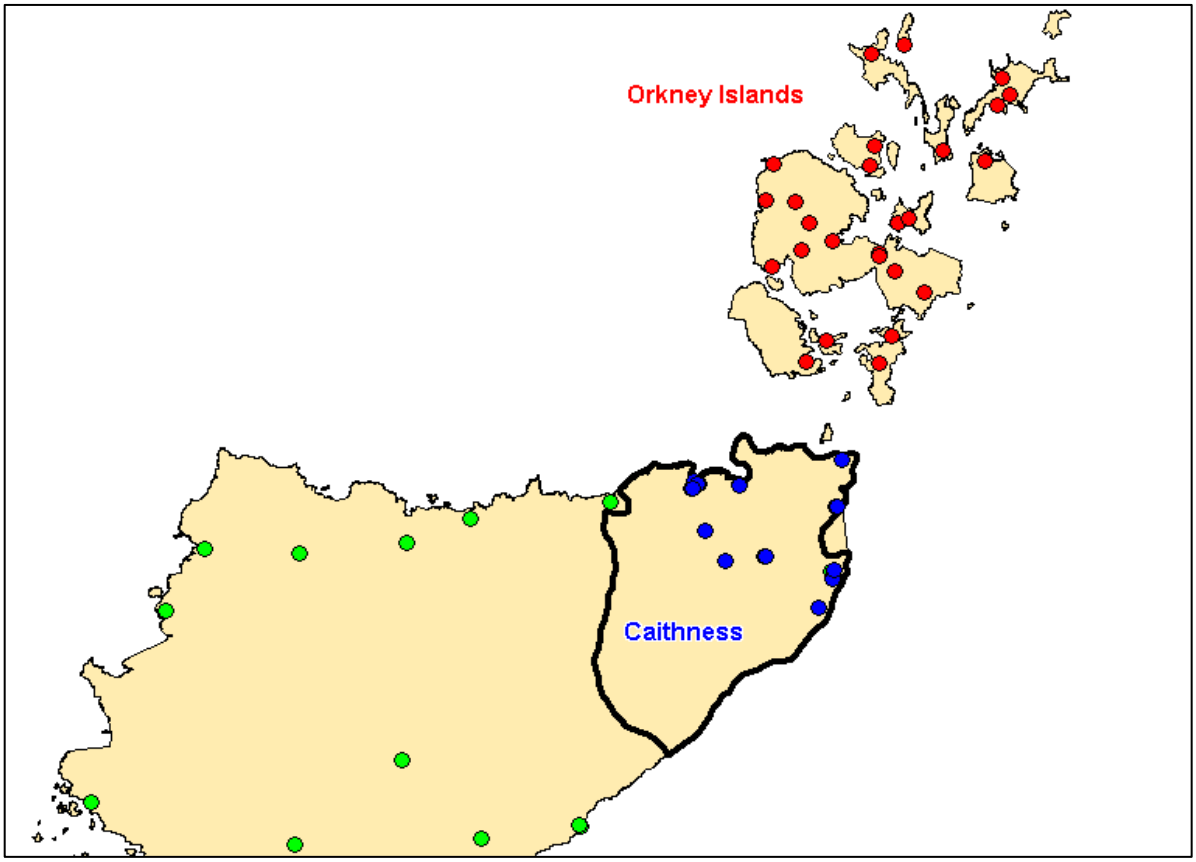
2.5 Site economics – Orkney and Caithness Example

In order to demonstrate the site economics of the Highlands and Islands i.e. how site numbers, average volumes and fuel prices interact, Caithness and Orkney have been chosen as an example. These areas have been chosen because they are geographically close, relatively remote and broadly comparable in terms of land size and population. Figure 2.8 shows the sites in Orkney and Caithness; 28 sites in Orkney and 14 sites in Caithness.

[11] Margins were calculated using retail and product prices for March 2008

Orkney has a population of just under 20,000 people and 28 fuel stations, equating to roughly one fuel station per 700 people. Caithness has a slightly larger population, just over 25,000 and 14 petrol stations. This equates to roughly one petrol station per 1,800 people. Therefore, the population on the Orkney Islands is only 20% less than in Caithness, but the number of sites is twice as high. Obviously the stations in Caithness benefit from a greater through flow of traffic from other regions than Orkney and the population the 14 sites are serving is actually greater than the resident population.

Figure 2.8: Orkney and Caithness Fuel Stations



As a result of the large number of fuel stations relative to population, the average volume on the Orkney Islands is only 240,000 litres which is six times lower than average volume of Caithness. Therefore average site total gross margin for fuels is very low at just £25,200 compared to £58,560. The sites on the Orkney Islands still need to cover overhead costs from these gross margins; with such low volumes the only way to do this is to charge higher fuel prices (7 pence a litre higher for unleaded petrol and 6 pence a litre higher for diesel). There is also a Tesco site in the Caithness area and with high volumes they can price competitively, which in turn will have an impact on pricing levels in the areas.

Figure 2.9: Caithness and Orkney fuel sites data

	Caithness	Orkney Islands
Area (sq. km)	1,786	1,078
Population	25,109	19,779
Population Density	14	18
Site Count	14	28
Population per site	1,794	706
Total MF Volume (kl)	20,500	6,725
Average Volume (kl)	1,464	240
Average Retail Price Unleaded	1.09	1.16
Average Retail Price Diesel	1.17	1.23
Average Retail Margin Petrol	0.04	0.11
Average Retail Margin Diesel	0.04	0.10
Average Gross Margins (£)	**58,560**	**25,200**

The Orkney and Caithness example demonstrates the basic site economics discussed in section 1.5 and the point that is fundamental to our analysis. **There are a large number of sites in Orkney for the size of the population, as a result sites have low volumes and have to charge a higher fuel price to cover their fixed costs.** If Orkney had half the number of sites, average volumes would be double, gross margins would be comparable with Caithness and the sites would be sustainable in the longer term. Therefore the volume that a site sells is the primary factor driving gross margin and the cost of fuel.

2.6 Distribution Channels

The following sections provide a description of the distribution of fuel to the network in the Highlands and Islands. There is considerable complexity in the distribution channels for the Highlands & Islands and the detail below is based on consultations and expert opinion.

2.6.1 Grangemouth Refinery

Grangemouth Refinery supplies nearly all the road fuels in Scotland (we believe over 90%). This has not changed from the last time the OFT looked at the supply of fuels in 1998/2000. However the significant difference is at that time the refinery was owned by BP but it has now been sold to INEOS who are a UK based private chemicals group. INEOS are a major world chemical group but are not involved in fuel retailing.

Grangemouth Refinery is one of the nine UK refineries and it has capacity to supply around 10-12% of the total UK road fuel requirements - which is more than the total road fuel requirements of Scotland.

We understand that BP has a contract with INEOS to lift product from Grangemouth until 2011 and it is on the back of this (under exchange Agreements and direct purchase Agreements) that the majority of the other Oil Companies, the Distributors and the Supermarkets have access to road fuels in Scotland.

Outside of Grangemouth there is a limited amount of road fuel supply in Scotland from depots on the West coast (e.g. depots on the Clyde sea fed from Shell Stanlow) and from other depots around Edinburgh on the East Coast (sea fed from Sonoco Immingham).

2.6.2 BP Supply by Sea from Grangemouth

The majority of road fuel for the Highlands and Islands area is moved from Grangemouth by sea mainly to BP's Inverness Terminal. The same vessels (there are 3 on charter to BP) also supply road fuels to small sub-depots on the Orkney Islands, the Shetland Islands and the Western Isles. Once in store at Inverness Terminal, the exchange and direct purchase agreements come into play and many of the local suppliers have access to the fuel for onward delivery to retail sites.

2.6.3 Other Supply by road

A number of retail sites in the southern part of the Highlands & Islands area are delivered directly by road tanker from the Clyde or from Grangemouth. For example, we understand that Gulf deliver as far north as Fort Augustus on the A82 out of Grangemouth. We understand that some retail sites in the Highlands and Islands area on the West coast, for example the Thames sites are delivered by road tanker from depots around the Clyde. Somerfield with one site in Nairn and another outside the area to the south are also delivered to by road tanker also direct from the Clyde

2.6.4 Inverness Terminal

Inverness Terminal operated by BP is the primary terminal for supplying the Highlands area. For the south east part of the market, Aberdeen Terminal is also used to a limited extent. Most of the Oil Companies, local Distributors and the Supermarkets deliver from Inverness terminal by road tanker. It is also worth noting that some road tankers are unmarked and may deliver on behalf of a number of companies.

The Oil Companies (Shell, BP, Esso) that have a limited number of directly supplied 'mainline' sites have full size (c40,000 litre) road tanker(s) based in Inverness Terminal. The Supermarkets (Tesco, Morrisons) also have branded full size road tankers at Inverness Terminal to supply their sites.

The other oil companies such as Texaco and Pace have arrangements with local companies to deliver their fuel usually in unmarked road tankers from Inverness Terminal.

The Distributors all have access to road fuels at Inverness Terminal and deliver direct to some of the retail network by smaller road tanker (c15,000 litres) and deliver on to their own sub depots around the area for eventual onward delivery by small road tanker to their more remote retail sites. For example, Scottish Fuels has 22 depots, Gleaner Oil & Gas have 10 depots and Highland Fuels has 10 depots.

2.6.5 Orkney Islands, Shetland Islands & Western Isles.

The larger Islands generally have limited road fuel storage supplied by sea either from Grangemouth direct for the Orkney Islands and Shetland Islands; or up the west coast from the Clyde for the Western Isles. A number of the main Distributors then supply their retail sites by small road tanker based on the Islands. In the case of some of the smaller Islands they may be supplied by a small road tanker taken across on a ferry or occasionally road fuels are taken across in containers on the ferry.

2.7 Companies Involved in Distribution

Since the main Oil Companies (BP, Shell, and Esso) started to pull out of supplying retail sites in the Highlands and Islands area from 2000, the principal option of supply for the retailer is one of the four local distributors with access to branded fuels.

2.7.1 Scottish Fuels (ex BP/National Sites)

Scottish Fuels is a subsidiary of GB Oils which in turn is part of DCC Energy plc a major group involved in the supply of fuels across the UK and Ireland. GB Oils have a number of other road fuel brands in the UK and Ireland including UK Fuels, Carlton and EMO in Ireland. In 2006, GB Oils also took over the home heating business of Shell Direct across the UK including Scotland. Scottish Fuels claim to supply 42 own branded sites. The supply to the majority of the former BP and National sites in the Highlands and Islands area was taken over by Scottish Fuels in 2001-02 and the sites started to be re-branded to Scottish Fuels in 2006. Scottish Fuels, based in Larbert, is the largest independent fuel distributor in Scotland and has 22 depots throughout Scotland and Northern England. Scottish Fuels have a major presence at the Inverness Terminal and supply retail sites throughout the Highlands and Islands.

2.7.2 Highland Fuels (ex Esso Sites)

Highland Fuels is Scotland's largest independently-owned fuel distributor (on the assumption that Scottish Fuels is *not* independently-owned) and has 10 depots in Scotland and supplies Esso branded fuels to 17 retail sites. Highland Fuels has depots on the Shetland Islands and Orkney Islands.

2.7.3 Gleaner Oil & Gas (ex Shell sites)

Gleaner is an established Highland company based in Elgin and supplies Shell branded fuels to around 80 retail sites most of which are Gleaner branded. Gleaner has 10 depots and uses small road tankers to supply retail sites across the Highlands and the Western Isles. (Gleaner does not supply retail sites in the Orkney Islands or the Shetland Islands)

2.7.4 Regency Oils (Texaco sites & others)

Regency Oils is a small distributor based in Buckie and supplies Texaco branded fuels to a limited number (only 3 ex-Texaco branded sites plus others including the Pace sites) of retail sites in the eastern part of the Highlands and north of Aberdeen where it has a second depot.

3 Issues Facing the Road Fuel Sector - Consultations

3.1 Introduction

The research process included thirty consultations with forecourt operators, local authorities, businesses and industry trade bodies and associations (refer to Appendix A for a list of consultees). The key findings from this research are presented below.

3.2 Issues Facing Forecourt Operators

3.2.1 Key Issues

There are issues with the sustainability of the current forecourt network across the Highlands and Islands. A large number of sites have very low margins and therefore poor profitability. It is very likely that as margins continue to be squeezed for small forecourt retailers an increasing number will go out of business and subsequently the current level of access to road fuel forecourts may not be maintained.

The fuel supply and distribution network[12] is not a major issue – it is extensive & flexible (outside of the issue of bio-fuels discussed later). Grangemouth produces more than enough transport fuels for the Region and there appears to be enough storage, supply & delivery options in the HIE area. There are also more than enough suppliers of transport fuels to the area. That said the situation has weaknesses in that maintenance investment is required to maintain the current level of supply. If the Region's retail network should continue to decline, there could come the point that the returns offered from investment in the distribution infrastructure are not sufficient and investment will decline and therefore jeopardise the supply infrastructure.

In addition there is a large evolving problem caused by the probable introduction of Bio-gasoline E5 under the Renewable Transport Fuel Obligation (RTFO) that presents the product distribution chain and retail network with some considerable challenges. Given the chemical nature of the product, action with respect to the distribution infrastructure needs to be taken if the current level of availability of gasoline across the Region is to be maintained. In addition, all retail sites across the Region need investment in order to be able to store and handle Bio-gasoline E5.

3.2.2 Retailing / Forecourts

Consumers in the vicinity of Inverness and the larger towns are generally better served since the supermarkets entered the fuel retail market. Supermarkets have provided lower prices and improved facilities. However, profitability from fuel retailing is very low for smaller petrol station sites as operating costs have increased, retail margins are being squeezed and sales volumes have been hit by the supermarkets, the impact and influence of which is noticeable across the whole Region and thus impacting a large number of sites. The existence of supermarkets is changing the behaviour of consumers in that they are increasingly filling-up when they travel to the these large hypermarket food stores for their main shop and only topping up at local sites when required. Another impact is that consumers are now accepting hypermarket site prices are the norm and anything above as being highly priced. For rural sites, the consumer is not taking into account the increased delivery costs driven by distance, the higher costs associated with smaller drop (delivery) sizes and the higher unit operating costs. It would also appear that consumers have no concept of the impact of low volumes at

[12] (excluding the forecourts for sake of clarity)

a site on price (i.e. lower volumes mean a higher fixed cost per unit sold). A rising cost of fuel means cash flow (& credit terms) is also becoming a major factor.

Rural site operators are consistently running on very small gross margins and overall site profitability is very low. They do not see shop income as a remedy in many instances as by their nature, the shops would mainly only fulfil a transient / convenience need and not an end-destination shopping need and therefore sales potential is low. Where shops are possible, there is a sentiment that should one be developed, it may alleviate the forecourt economics issue but at the same time shift the sustainability problem onto the local shop operators who would see their revenue reduced. Local shop operators are also experiencing pressure from the growth of hypermarkets. In addition, operating shops on the forecourt requires increased operating costs and capital investment all of which needs to be covered by increased revenue before any benefit can be obtained.

3.2.3 Pricing and Consumers

Fuel Prices in the Highlands and Islands have for years been at a premium to elsewhere in Scotland & the UK and despite 3 OFT/MMC enquiries since the mid 1990's the competitive nature of the market has been given a clean bill of health. These higher prices will continue as they reflect the higher costs incurred by sites both in terms of product delivered due to distance and given their very low volumes the relatively high unit operating costs.

Our consultations have confirmed our view that the freight industry is not impacted upon by local issues facing the rural fuel network. This is primarily because they have a number of main sites they all know and use, although the general issues created because of the price of fuel are well documented.

3.2.4 Future (Potential) Issues

3.2.4.1 Distribution

The main business of the three principal distributors is in home heating, commercial and industrial fuels supply and they don't have to be involved in retail road fuels. On this basis if the profitability from the supply of road fuels was insufficient then there is potentially a risk that one or more of the distributors could pull out of the supply and delivery to the forecourt sector. However there is currently no indication from distributors that they are considering ceasing fuel delivery activity.

3.2.4.2 Supply to Consumers

If fuel forecourts continue to close across the Highlands and Islands there will be a potentially significant impact on consumers access to fuel supply in terms of having to travel increased distances to access fuel supply. There will also be a potentially significant impact for isolated communities who depend on at risk fuel forecourts (which typically have low volumes and margins) for wider service provision. Some form of intervention may be required to ensure a reasonable level of access to fuel across the Highlands and Islands and that isolated communities are supported. Part 2 of the research will explore these issues in more detail.

Consultees also believed that tourism should be made the highest priority therefore 'main road services' (fuel & food & toilets etc) on the key routes should be looked at and also improved main road signage - needs more prominence & be more informative (e.g. 'last fuel for 25 miles').

3.2.4.3 Operational Issues

Many independents face issues with 'succession planning' as family businesses where there is no obvious next generation or reason to inherit the business. This may be particularly the case where the local owner/operator has a range of other businesses and will close the forecourt and put money into other more profitable businesses – e.g. local property lets etc.

3.2.4.4 Supply

Grangemouth (INEOS) supplies over 90% of transport fuels to the HIE area. Around 600 tankers leave Grangemouth each day and the Grangemouth BP Ship terminal load the coasters that supply Aberdeen, Inverness, Scrabster, Orkneys, Shetlands & Western Isles including Arran.

3.2.5 Bio Fuels

The **Renewable Transport Fuel Obligation (RTFO)** is legislation designed to ensure the delivery of the UK Government's policy for reducing greenhouse gas emissions emanating from road transport. The legislation stipulates a stepwise approach for the introduction and growth in the content percentage of road fuels derived from renewable sources. As part of this legislation law requires that on average 2.5 vol% is bio-fuel in April 2008, increasing to 3.75 vol% in April 2009, and reaching 5.0 vol% in April 2010. In practise in 2008, producers are doubling up so there is 0% in gasoline and 5% on diesel as Bio-diesel does not present the same challenges as bio-gasoline. From 2009, bio-gasoline will have to be introduced, as 5% is the maximum level attainable in diesel without car manufacturers changing their warrantees. Producers who fail to meet these requirements will have to pay a "buy-out" penalty, initially 15p/litre increases to 30p/litre in 2010 on the Bio-Fuel element. At the pump this will increase prices by between 0.33ppl and 1.5ppl.

The Gallagher review on the indirect impact of biofuels[13] recommended that the introduction of biofuels be slowed down. The recommendations of the review were based on examining evidence suggesting that an increasing demand for biofuels might indirectly cause carbon emissions because of land use change and also concerns that demand for biofuels may be exacerbating food insecurity by causing food commodity price increases. The Gallagher review did not examine the potential impacts on rural fuel stations or problems with supply and distribution to the Highlands and Islands. However now that the government is aware of these further issues, action may be taken slow the rate of the introduction. Indeed, the government is due to consult shortly on a slowing down in the rate of increase of the RTFO in 2009/10 and 2010/11.

3.2.5.1 Supply of Bio Fuels

On the basis of the above legislation Grangemouth will start producing Blendstock for Oxygenated Blending (BOB – essentially an off-spec gasoline ready for blending) and acquire 100% bioethanol (E100) via imports and domestic supply. Ineos are investing in blending facilities for the loading of on-spec E5 Bio-gasoline at Grangemouth into road tankers.

While blended bio-diesel is relatively easy to store and transport once blended bio-gasoline (E5) is not. Bio-Ethanol is chemically very different from hydrocarbon (fossil) fuels and as a result offers some considerable challenges with respect to production, blending, storage and most significantly transportation particularly by sea going vessel. Bio-ethanol is very highly hydroscopic and the bio-ethanol molecule will readily uncouple from the fossil fuel hydrocarbon molecule and combine with any

[13] Gallagher review on the indirect impact of biofuels, Renewable Fuels Agency, July 2008

water and other contaminant in proximity. The result is that at each step of the way, the product must be stored, transported and managed in such a way as to prevent contamination with water or dirt. Any liquid in storage tanks, particularly in old tanks under forecourts will result in the bio-gasoline's ethanol content separating out from the gasoline hydrocarbon molecules and forming an alcohol-rich water solution at the base of the storage tank and an off-spec gasoline on top with potentially deleterious consequences for the end-user.

3.2.5.2 The Bio-Gasoline – Supply & Distribution Challenge

As a result of the highly hydroscopic behaviour of bio-ethanol, transportation of bio-gasoline by sea going vessel or barge should be avoided. Indeed Ineos has advised us that they would not ship any blended Bio-Gasoline product by ship from their refinery. **This poses some significant issues for the outer islands**. To supply E5 the components (BOB & E100) will have to be shipped in and blended locally. This will require considerable capital investment.

If such facilities are built on the outer islands, E100 will have to be transported there in road tankers. Whilst there are ships that transport E100 these are major seagoing vessels and will be too large to supply the islands. Given the volatile nature of E100, the ferry companies will need to be consulted with to ascertain the viability of shipping such product in road tankers.

The smaller islands will need to be supplied by road tanker carrying E5 Bio-gasoline. Those that cannot be supplied in such a manner will either need to ensure fuel supply by individual vehicles purchasing E5 Bio-gasoline on the mainland or other island (as is currently the case with some smaller islands such as Lismore and Raasay) or converting to a purely diesel powered transport system. A sole reliance on diesel obviously has consequences for non-transport gasoline burning engines such as chainsaws, generators, boat outboards and any other plant machinery. The impact on the tourist traveller would also be significant.

If the larger islands do not have the required blending facility investment, they will also face the same option of moving to a diesel powered transport system or purchasing gasoline on the mainland and transporting back to island on a vehicle by vehicle basis. LPG could in some circumstances replace gasoline but there are still significant product handing and vehicle conversion costs and not all cars can be converted.

3.2.5.3 The Bio-Gasoline –Forecourt Challenge

Given the highly hydroscopic nature of bio-ethanol and also its scouring properties, it is vital that all tanks storing E5 Bio-Gasoline across the entire distribution chain are clean, totally free from water and maintained in such a way as to prevent water ingress. At the production end and at the blending plants, whilst this is a challenge, it is fair to say that given the scale of the operations the projects and costs are manageable.

The main concern is the storage facilities across the HIE site network. Industry best practise for the acceptance of bio-ethanol petrol at 5% at a retail site requires that tanks & pipes are thoroughly cleaned (not a legal requirement however). This could cost £600 - £1,000 per tank and would not be recoverable or eligible for grant. As tanks are very old the cleaning process could result in tanks failing current standards and therefore having to be replaced or close. Unfortunately reducing costs by replacing existing subterranean tanks with above ground is not possible as such tanks are not permitted for petrol storage at retain sites.

Transport of blended E5 by pipeline is an issue. It is likely that pipeline operators will not allow E5 to be piped as is the case in the US. If used they need to be completely dehydrated before each shipment of E5 product – a costly exercise. Therefore all E5 bio-gasoline will need to move by road tanker.

3.3 Issues Facing Businesses

3.3.1 Use of fuel by businesses

3.3.1.1 General Usage

Larger businesses (such as unitary authorities, police, major hauliers, and wholesalers) are likely to have on-site storage[14], as do users of red diesel in the agricultural and forestry sectors. Otherwise, most businesses tend to use fuel stations, though some more mobile businesses, or heavy road users (such as the ambulance services and smaller haulage firms) have either fuel purchase card or bulk storage arrangements with national fuel station operators.

Although, even in the most remote areas, the majority of businesses have access to a fuel station that is within a 15 minute drive of their business, there is a tendency for drivers to wait until they are in a larger town on business before filling their tank. This is particularly true for drivers working in jobs that require regular travel. Smaller forecourts are more frequently used for small fuel pick ups to 'tide-over' fuel users until they are in the vicinity of a large forecourt.

3.3.1.2 Distribution

Road transport is considered the most viable option for point to point delivery of materials in the Highlands and Islands. In our consultation, CBI Scotland argued that there is no real alternative option as many deliver points will not be on the rail freight network, and rail freight offers less flexibility (in particular, it provides less scope to triangulate deliveries so as to avoid transportation of empty containers).

However, while most sectors rely on road haulage as an exclusive means of transporting goods to market, some sectors, such as the forestry sector in Lochaber, use road transport as a means of accessing the nearest modal interchange (in this instance Corpach), from where they are transferred onto an alternative transport mode (in this case by ship). In circumstances such as these, companies appear to have a stronger preference for contracting their distribution to local haulage businesses. These smaller haulage businesses are often most affected by large fluctuations in fuel prices (increases) as historically their contracts have been negotiated relating to RPI or similar indexes but not fuel prices.

3.3.2 Impact of closures and openings

None of the businesses that we consulted with had been commercially affected by the closure of a local petrol station in recent years, and all of the businesses consulted had access to a fuel stations within a 15 minute drive of their location. However, there was recognition that the closure of stations had an important social impact on local communities. There was also recognition that drive times may increase as it is perceived to be likely that further closures would take place.

A number of the businesses had concerns about the potential future loss of stations, including one public service provider in Sutherland, who argued that, in the event of their local station closing, they

[14] Northern Constabulary use fuel stations for their unmarked vehicles, though not for their marked vehicles.

would need to explore options to jointly invest in an on site storage facility that could be shared by all of the public sector businesses in the area. This is a situation affecting private and public sector businesses and the general public alike.

Businesses had mixed views on the extent to which new fuel suppliers, such as supermarket stations, helped to lower the costs of fuel. While supermarkets appear to offer cheaper fuel in certain areas, this was not always the case. One haulage representative consulted raised the issue that heavy goods vehicles are unable to access fuel in most supermarket stations, as the roof for the forecourt is set too low to allow them access.

3.3.3 Impacts of fuel costs

3.3.3.1 Impacts on tourism

There is evidence to suggest that businesses in the tourism sector are adversely affected by the rising cost of fuel. For example one tourism business consulted that organised deer stalking events reported that fuel costs have, in some cases, been a deterrent to people visiting the Highlands, and have had a slight negative impact on their visitor numbers. Similarly, tourist businesses on Skye reported that they received unseasonably low levels of visitor numbers during April 2008. They believed this was due to the actual and perceived result of the impact that the Grangemouth refinery dispute had on fuel costs and availability.

3.3.3.2 Impact of rate of fuel price increases

It was argued that, for many businesses, the rate of change in fuel cost has been a greater concern than the cost itself. This is because many businesses are only able to alter their pricing structure once per year, and therefore have to absorb any increases in costs until the next round of pricing increases. This issue has been a particularly important one for users of red diesel for whom the proportionate rate of growth in fuel costs has been greatest, due to the absence of duty charges.[15] In response to this trend, certain haulage businesses have now altered their pricing structure, so as to charge a variable fuel sub charge on top of their fixed charge.

Another example of how the rate of change in fuel prices affected businesses came from one of the public sector bodies who received an annual grant to cover their fuel costs. They found that the rapid increase in fuel prices that occurred following their receipt of this grant, forced them to overspend on their budget. This is a common scenario for public sector organisations, which must realign what can be realistically delivered as fuel prices increase and budgets remain fixed.

3.3.3.3 Impacts on business start ups and expansions

The impacts of high fuel prices also have an impact on the decisions made by those contemplating starting a business. For example one of the individuals consulted had plans to start a new taxi business in the Western Isles, but was cautious about doing so as a result of uncertainty as to how fuel prices will affect his profitability. Similarly, one of the businesses that we spoke to argued that, due to a combination of economic forces, including fuel costs, they have put on hold any decisions to expand their business.

[15] As the cost of fuel duty only changes once a year, the costs of white diesel and petrol tend to fluctuate more in relative terms than those of red diesel, although the changes in the price per litre remain the same in absolute terms.

3.3.3.4 Impacts on ability to attend sales events

Two of the businesses that we consulted with stated that they had taken business decisions not to attend sales events in their sector as they felt that the cost of doing so (in terms of both fuel costs and the cost of their professional time), could, depending on how well they sell, outweigh the potential sales benefits. Replicated across the Highlands and Islands this trend potentially leaves remotely located businesses at a competitive disadvantage in terms of generating sales and therefore growing their business.

3.3.3.5 Ability to pass on increases to customers

There is a general view that rather than affecting particular sectors, 'everyone gets squeezed' as a result of fuel price growth, including consumers, producers of consumer goods and services, and producers of intermediate goods. However, the majority of businesses consulted did not believe that the issue of road fuel costs was sufficiently important to impact on the continued viability of their businesses. Indeed, one business argued that while they would benefit from fuel prices returning to their April 2007 rates, other economic issues, such as the credit crunch and the weak dollar would mean that they would remain in a weaker financial position.

3.3.3.6 Relative significance of the fuel price issue

One small construction company which operates a fleet of two vans, argued that the cost of fuel accounted for only a small proportion of their business expenditure, and therefore changes in these costs had no substantial bearing on their business. However, this impact varies by business and one wholesaler commented that as fuel costs account for a double digit percentage of their total costs increases had a major impact on profitability. This impact is most significant as recent increases have become more volatile and therefore the ability to pass this cost onto customers is more difficult.

CBI argued that while fuel prices are an issue for H&I businesses, they are only one of a number of location disadvantages, the most important of which is the quality of the transport infrastructure. In particular, the quality of the A9, and the loss of the Inverness to Heathrow air route are major concerns for the business. CBI also argue that, while fuel costs in more remote parts of H&I can be significantly above the UK average, prices in Inverness are generally on a par with those in London.

They therefore argued that, while any future price increases will have an inevitable impact on companies bottom lines, the fuel price issue will not, in isolation, be a significant enough concern to force people to significantly alter their business practices.

3.4 Issues facing communities

3.4.1 Fuel Station Closures

There appears to have been a significant sub-regional variation in the extent to which the Highlands and Islands have been affected by fuel station closures, stakeholders in Sutherland reporting a number of closures (including Ardgay and Helmsdale) and with stakeholders in the Western Isles not reporting any change in the number of stations in their area.

These closures have impacted on communities in a number of ways, including:

- motorists may have to travel further in order to obtain petrol (Helmsdale residents now have to make a 22 mile return trip to Brora in order to access petrol);

- removing a critical and regular reason for residents to visit a location, therefore reducing the critical mass of the area, and affecting local traders;
- preventing communities from accessing food supplies in station shops (sometimes the only shops available in rural communities);
- alleged increased instances of dangerous and illegal fuel hoarding; and
- in some of the more isolated communities the continued operation of the local fuel station is considered essential to the area's ongoing viability.

There is also concern about future closures and the extent to which this may create even longer drive times in some cases. It was therefore deemed important that the general supply to dispersed communities was secured to ensure that individuals did not find themselves disadvantaged.

The viability of individual sites is of concern because as volumes purchased at sites fall, as does income, this leads to a circle of decline where forecourt prices have to increase to meet costs and then even less volume is sold. In many cases low sales volumes mean that sites cannot be viable and in the remotest areas this means sites cannot sustain even one full-time equivalent job. This means locating several services (i.e. Shop, car wash etc) on one site, shorter opening hours or attendant holding multiple jobs is a necessity not an option.

Our consultations also confirmed the infrastructure issues facing smaller forecourt operators, particularly the failure to be able to meet on-going maintenance work and meet the costs of tank replacement / repair. In part this issue has been created as the distance (operationally) between forecourts and major oil companies has become greater i.e. there is less real and in-kind support today than was historically the case.

3.4.2 Fuel Costs

Many of the stakeholders that we consulted thought that the fuel price differential between the islands and the mainland was a more important factor than the cost of the fuel itself, as it is the differential that influences the competitiveness of rural and island communities, and deters people from coming to rural areas.

Although not all of the stakeholders we consulted reported any changes in customer behaviour in response to changes in fuel costs, some did react either by buying small amounts of petrol from independent stations in isolated communities, in order to give them enough fuel to reach a cheaper supermarket operator. Stakeholders also reported that while residents complained about the impacts of fuel costs on local businesses, they did not in all cases remain loyal themselves.

3.4.3 Role of Government

There is a view that the tax system mitigates against small businesses as the practice of levying VAT as a percentage of prices mean that Highland businesses are charged more heavily than their more urban counterparts. There was also a view that, while tax policies aimed at deterring the use of highly emitting four wheel drive vehicles serve a useful purpose in city areas, they do not acknowledge the essential role of these working vehicles in more rural locations.

Appendix A

Consultations List

Organisation	Location
The AA	Nationwide
APEA (Association for Petroleum and Explosives Administration	Nationwide
ASDA	Nationwide
BP Oil UK	Nationwide
Chevron	Nationwide
Cioch Outdoor Clothing	Skye
Construction Firm	Inverness
Forestry Company	Various
Furniture Maker	Isle of Lewis
Federation of Petroleum Suppliers (FPS)	Nationwide
Freight Transport Association	Nationwide
GarageWatch	Nationwide
Gleaner Oil and Gas	Nationwide
Highland Council – Trading Standards	Inverness
Highland Fuels	Nationwide
Independent Petrol Retailers	Various
INEOS	Nationwide
Moray District Council	Elgin
National Farmers Union Scotland	Edinburgh
NHS - Scottish Ambulance Service	Inverness
Northern Constabulary	Highlands and Islands
Pace Petroleum	Nationwide
Petrol Retailers Association	Nationwide
Road Haulers Association	Nationwide
Scottish Fuels	Nationwide
Somerfield	Nationwide
Sutherland Partnership	Sutherland
Tesco	Nationwide
Welding and Fabrication Firm	Benbecula
Western Isles Council	Isle of Lewis