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CÒMHDHAIL ALBA

Evaluation of the impact of Road Equivalent Tariff on Arran

Final Report

Contents

Summary

Road Equivalent Tariff (RET) involves setting ferry fares on the basis of the cost of travelling an equivalent distance by road, including a fixed element to keep fares sustainable and cover fixed costs such as infrastructure. In line with the commitment made in the Ferries Plan 2013-2022, RET was introduced on the Arran routes in October 2014. These routes are: the principal route between Ardrossan and Brodick; the summer route between Claonaig and Lochranza; and the winter (and principally freight route) between Tarbert (Loch Fyne) and Lochranza. The objectives of the roll-out of RET to Arran, which were set by Transport Scotland, are:

- to increase demand for ferry services by making ferry travel more affordable and more accessible;
- to increase tourism to Arran and support existing tourism markets; and
- to enhance the local Arran economy and wider national economy.

Transport Scotland commissioned Peter Brett Associates LLP, together with Wellside Research, in December 2014 to conduct a two-year evaluation of the impact of RET on the island of Arran. The evaluation was informed by a range of primary (i.e. ferry user, household, business and haulier surveys) and secondary (i.e. ferry operator and socio-economic data) research. The key findings are as follows:

Scale of Fares Reductions

The Ardrossan-Brodick and Claonaig-Lochranza routes both provide ferry services for passengers, cars, commercial vehicles (CVs) and coaches.[1] RET fares are in place for passengers, cars (including small CVs under 6 metres in length) and coaches. The table below sets out the change in fares between the published summer 2014 fares and the RET fares introduced for the winter timetable.

Table S1: 2014/15 RET Fares & Fare Reductions from Summer 2014 Single Fares

Route	Passengers			Cars		
	Single Fare Summer 2014	RET Fare 2014/15	*% Change*	Single Fare Summer 2014	RET Fare 2014/15	*% Change*
Ardrossan – Brodick	£6.75	£3.65	*-46%*	£49.50	£14.85	*-64%*
Claonaig / Tarbert - Lochranza	£6.15	£2.75	*-55%*	£27.00	£9.25	*-66%*

[1] It is worth noting that the winter only Tarbert (Loch Fyne)–Lochranza route is principally a freight only route, operated specifically to support the flow of goods classified as 'dangerous' under the International Maritime Dangerous Goods (IMDG) Code. During the winter, the Ardrossan–Brodick route is operated by a single vessel, the MV *Caledonian Isles*. As this vessel is closed deck (i.e. the car deck is sealed), it cannot carry dangerous goods such as hay and fuel unless operated in freight mode (i.e. it runs with a maximum of 12 passengers). The operation of the Tarbert (Loch Fyne)–Lochranza route is the solution to this and, as this is mainly a freight only route, the impact of RET is likely to be minimal.

Travel behaviour

- RET has significantly increased resident ferry travel across all journey purposes. The data suggest a degree of 'novelty' in the 2015 resident use (e.g. increased leisure trips) which has not been sustained into 2016. However, there appears to be a gradual evolution in travel behaviour, with the ferry being increasingly used for business and education trips.
- The observed / outturn price elasticity of demand on the Ardrossan – Brodick route is **-0.29** for passengers and **-0.83** for cars. This implies that passenger demand is relatively inelastic in comparisons to vehicle demand, which is far more elastic. On the Claonaig-Lochranza route, the elasticity for both passengers and cars is **-0.70**.
- The reduced fares have acted as a significant stimulus to non-resident use of the ferry, with a step-change in day-trip, short and long-stay tourism.

Demand & Capacity

Demand for ferry services & demand management measures

The total carryings for the last full pre-RET year (2013/14) and the first two years for RET are shown in the table below:

Table S2: Arran routes pre and post RET carryings[2]

	Passengers	Cars	Coaches	CVs	CV LM
28 October 2013 - 26th October 2014					
Ardrossan to Brodick	704,007	131,529	610	11,874	128,433
Claonaig to Lochranza	46,265	14,794	51	385	3,423
TOTAL 2013-14	750,272	146,323	661	12,259	131,856
27th October 2014 – 25th October 2015					
Ardrossan to Brodick	765,031	189,438	551	8,723	99,930
Claonaig to Lochranza	58,699	20,727	47	319	2,930
TOTAL 2014-15	823,730	210,165	598	9,042	102,860
26th October 2015 – 23rd October 2016					
Ardrossan to Brodick	807,732	199,001	628	9,770	113,562
Claonaig to Lochranza	65,908	23,639	66	350	3,226
TOTAL 2015-16	873,640	222,640	694	10,120	116,788

- The introduction of RET to the Arran routes has significantly increased the demand for ferry services. This has been particularly noticeable in terms of car carryings where, across the two routes, 76,000 extra cars were carried in 2015/16 compared to the last pre-RET year (2013-14), an increase of **52%**. This increase is dominated by the Ardrossan – Brodick route (around 67,000 additional cars).

[2] Note, the figures in the table have been equated to the 'RET year' rather than the contract year.

- Passenger carryings have also increased, although the uplift is much more modest when compared to vehicle carryings, at **16%**. This suggests that a number of ferry users that previously travelled as foot passengers are now taking a car onboard. This finding is supported by the primary research and suggests that RET has had a very significant impact as a generator of car trips.
- CV and CV lane metre (LM) carryings have declined, largely due to redefinition of the length at which a vehicle is defined as commercial from five to six metres.
- In absolute terms, RET has had a larger impact on Arran than on any other island in the Clyde & Hebridean Ferry Services (CHFS) network.
- Around three quarters of passengers & cars and around two thirds of annual CV carryings on the Ardrossan – Brodick route are in the summer months (April-October). This has been broadly consistent pre and post RET. The vast majority of coaches are carried in the summer months.
- The Ardrossan – Brodick route is beginning to experience vehicle deck capacity issues on peak sailings, with 26% of all sailings in 2015/16 having a car deck utilisation of greater than 80%. The introduction of a new vessel on this route in 2018 will largely address these capacity problems.
- The Claonaig – Lochranza has not experienced significant passenger or vehicle capacity problems. The introduction of the new hybrid ferry, MV *Catriona*, in September 2016 has provided further scope for growth.
- The current demand management measures, which prohibit over-height vehicles from certain peak sailings, are appropriately targeted at the highest utilisation sailings.

Resident perceptions of capacity

- There is a clear perception of vehicle deck capacity issues amongst Arran residents, with a significant number of residents in both years of the evaluation reporting at least one occasion where they could not secure a car booking on their preferred sailing.
- From the perspective of island residents, the perceived vehicle capacity issues were significantly worse in the second year of RET (2015/16) than the first (2014/15).

Visitor perceptions of capacity

- Around one quarter of visitors reported difficulties securing a booking on their preferred sailing on both Arran routes (despite a propensity to book in advance). From a visitor perspective, capacity constrained sailings are generally from Ardrossan and are concentrated around the weekends.
- On average, just over 10% of visitors using the Ardrossan - Brodick route indicated that they did not travel to Arran on the occasion on which they could not secure a vehicle booking. This implies that the boost in trade for the island provided by RET has been partially constrained by vehicle capacity.

Tourism in Arran

- The research clearly highlighted the hugely positive impact of RET on tourism. The number of tourists coming to the island has increased substantially, whilst the season has been extended from Easter & peak summer to the equivalent of the whole summer timetable (i.e. Easter to the October school holidays).
- Across the two summer onboard surveys, 11% of visitors questioned on Ardrossan – Brodick and 17% on Claonaig – Lochranza noted that their journey had been wholly prompted by RET fares.
- 11% (on average over the two summer surveys) of visitors would not have visited Scotland without the introduction of RET on the Arran services. This group of visitors represents a much larger proportion of those staying in paid accommodation for more than one night. The introduction of RET has therefore made a positive contribution to the Scottish tourism industry.
- The introduction of RET to Arran and neighbouring islands / peninsulas has enhanced the island / peninsula-hopping tourism market.

Impact on the Arran economy

Aggregate impact

- Arran businesses were highly positive about the impact of RET, with the majority citing increases in both footfall and turnover.
- The evidence clearly demonstrates that the largest benefit has accrued to the tourism sector, with hotels, campsites, guesthouses, golf courses, visitor attractions etc all highlighting the particularly positive impact of RET. A number of retail businesses exposed to mainland competition did however explain that their customer numbers and turnover have declined.
- There was a widely expressed view amongst businesses that RET has been particularly beneficial to the more remote areas of Arran, particularly on the west coast. This is attributed to the large increase in the number of visitors bringing their car to Arran and exploring the island beyond Brodick and Lamlash.
- Businesses responded that RET has generally had positive labour market impacts, allowing some in-commuting from the mainland (particularly students and school-age staff fulfilling part-time / seasonal hospitality roles) and increased job security / permanence as a result of the overall increase in turnover. However, some early signs of staff shortages in the hospitality industry were identified.
- A number of businesses noted that they have made investments or plan to make investments as a result of RET (directly or indirectly). Such businesses are generally concentrated in the tourism sector. The longer-term trend with respect to business investment will require future monitoring.
- A number of businesses expressed concerns that a lack of ferry capacity (until the new vessel arrives in 2018) and limited on-island infrastructure (e.g. roads, toilet blocks etc) could dampen the positive RET impacts.
- It may be a number of years before the full impacts of RET on the Arran economy are realised due to lags in supply-side adjustments.

Displacement / economic leakage

- The business survey identified a degree of economic leakage as a result of increased mainland competition. This was particularly prominent in the retail sector (including fuel) where lower prices on the mainland combined with lower ferry fares are enticing Arran residents to travel off-island for shopping.
- In spite of the above, it should be noted that the net agreement amongst residents that it has become easier to shop on the mainland declined in 2016 when compared to 2015. Whilst there remained a net agreement of 48% in 2016 (compared to 68% in 2015), there is perhaps a suggestion of a novelty factor in the first full year of RET which has worn off as the fares structure becomes more embedded. This point is supported by a review of resident trip purposes, which highlights a reduction in trips for off-island shopping.
- Overall, Arran businesses responded that the increase in customer numbers and turnover has been largely beneficial.

Social, economic and cultural opportunities

- The household survey suggests that RET has been overwhelmingly positive in enhancing the social, economic and cultural opportunities in Arran. In particular, the higher net agreement figure across a range of areas (e.g. employment, new business formation, enhanced leisure opportunities etc) suggests that the supply-side on Arran is starting to respond to the large demand stimulus offered by RET.
- However, whilst RET is seen by residents to have been widely beneficial to the island economy, there is a net agreement expressed through the household survey that the quality of life on the island has declined (9% net agreement in 2015 and 5% in 2016). The decline in the quality of life is associated with perceptions of the island being too busy / congested / crowded at peak times, whilst increased incidences of anti-social behaviour have also been cited.

Supply chain impacts

- The redefinition of the length at which a vehicle is classed as a commercial vehicle from 5 to 6 metres has had a negative impact on the ‘traditional’ haulage industry in Arran. There is clear evidence of a switch of freight traffic from CVs to vehicles under 6 metres (typically vans), with a reduction of CVs and CV lane metres carried on the ferry.

1 Introduction

Overview

The Ferries Plan 2013-2022, published in December 2012, committed to rolling out the Road Equivalent Tariff (RET) fares scheme across the entire Clyde & Hebrides Ferry Services (CHFS) network by the end of the previous Parliament (May 2016). RET, in its current formulation, involves setting ferry fares on the basis of the cost of travelling an equivalent distance by road (including a fixed element to keep fares sustainable and cover fixed costs such as infrastructure). The rationale behind the scheme is to reduce the economic disadvantage suffered by island communities and support the growth of both the island economies and the wider Scottish economy.

In line with the commitment made in the Ferries Plan, RET was introduced to the Arran routes in October 2014. These routes are the principal route between Ardrossan and Brodick, the summer route between Claonaig and Lochranza and the winter (and principally freight) route between Tarbert (Loch Fyne) and Lochranza.

The objectives of the roll-out of RET to Arran, which were set by Transport Scotland, are:

- to increase demand for ferry services by making ferry travel more affordable and more accessible;
- to increase tourism to Arran and support existing tourism markets; and
- to enhance the local Arran economy and wider national economy.

Transport Scotland commissioned Peter Brett Associates LLP, together with Wellside Research, in December 2014 to conduct a two-year evaluation of the impact of the introduction of RET on the island of Arran. This document is the final report for the study.

Scale of fares reductions

The Ardrossan-Brodick and Claonaig-Lochranza routes both provide ferry services for passengers, cars, commercial vehicles (CVs) and coaches.[3] RET fares are in place for passengers, cars (including small CVs under 6 metres in length) and coaches. The table below sets out the change in fares between the summer 2014 fares and the RET fares introduced for the winter timetable.

[3] It is worth noting that the winter only Tarbert (Loch Fyne)–Lochranza route is principally a freight only route, operated specifically to support the flow of goods classified as 'dangerous' under the International Maritime Dangerous Goods (IMDG) Code.

During the winter, the Ardrossan–Brodick route is operated by a single vessel, the MV *Caledonian Isles*. As this vessel is closed deck (i.e. the car deck is sealed), it cannot carry dangerous goods such as hay and fuel unless operated in freight mode (i.e. it runs with a maximum of 12 passengers). The operation of the Tarbert (Loch Fyne)–Lochranza route is the solution to this and, as this is mainly a freight only route, the impact of RET is likely to be minimal.

Table 1.1: 2014/15 RET Fares & Fare Reductions from Summer 2014 Single Fares

Route	Passengers			Cars		
	Single Fare Summer 2014	RET Fare 2014/15	*% Change*	Single Fare Summer 2014	RET Fare 2014/15	*% Change*
Ardrossan – Brodick	£6.75	£3.65	*-46%*	£49.50	£14.85	*-70%*
Claonaig / Tarbert - Lochranza	£6.15	£2.75	*-55%*	£27.00	£9.25	*-66%*

It is clear from the table above that the reduction in fares offered is substantial and indeed exceeds the proportional reductions offered on the original Coll, Tiree and Western Isles pilot. Passenger fares on the Ardrossan - Brodick route were reduced by over 46% compared to the standard single summer 2014 fare, whilst car fares were reduced by 70%. On the Claonaig - Lochranza route, passenger fares were reduced by 55% compared to the summer 2014 standard single fare, whilst car fares decreased by over 65%. When the RET fares are compared to the winter 2014/15 fares, the reduction is lower but nonetheless significant. [4] It should be noted that Strathclyde Concessionary Travel Scheme fares were not reduced and, given the demographic of Arran (31% of residents are aged 65 or over, 2011 Census), this means that a significant number of users will not have seen a fares reduction.

The reduction in fares was welcomed by Arran residents and played an important role in stimulating increased use of the ferry services. Note though that Arran residents previously benefited from a range of potential discounts, including multi-journey tickets which are no longer available, and hence the reduction in fares for these frequent ferry users is less than the values reported above. Infrequent Visitors however will have seen reductions in fares of the scale noted above. Also, the Household Survey carried out as part of the 2009 Ferries Review indicated that the level of fares was the area of highest dissatisfaction amongst Arran residents and also the area where residents indicated they would use the ferry more if improved. The extent to which this is the case is examined in this report.

It is important to note that Arran was the first island in close proximity to the Central Belt to receive RET fares. The location of Arran means that it is more suited to impromptu trips being made from west central Scotland in particular compared to other routes where RET had been introduced, where more advanced planning is required. This is a further key issue explored through this study.

There are two other contextual points worth noting here:

- RET has been rolled out across the CHFS network in stages, with all routes migrating to RET fares by October 2015. When RET was introduced to Arran in October 2014, this was the only island to receive it in that year – therefore the year 2014/15 was a one-off for Arran, whereby ferry users experienced a large fares reductions relative to neighbouring islands (e.g. Bute, Cumbrae

[4] Off-peak single fares: Ardrossan-Brodick - passenger = £5.25, car = £33.50; and Claonaig-Lochranza - passenger = £5.10, car = £26.00

etc) and 'competitor' islands (e.g. Mull) which had not yet moved to RET. The roll-out of RET to the remaining CHFS islands in October 2015 reduced this disparity to some extent, although the absolute and percentage fares reductions on the Arran routes were in most cases greater than elsewhere. This creates a challenge in terms of the evaluation in that none of the years under consideration (2013/14 pre-RET; 2014/15 Arran RET; and 2015/16 roll-out of RET to remaining CHFS islands) are directly comparable.

- A key issue addressed in this evaluation is the impact of RET on demand and capacity. At present, the Ardrossan – Brodick route is operated by a single vessel, the MV *Caledonian Isles*, between late September and late April, with a second smaller vessel, the MV *Isle of Arran*, supplementing the service between May and September (as well as operating the Campbeltown roster). The data suggest that the available tonnage is hard pressed to meet the needs of the route during peak periods (e.g. Easter, school summer holidays etc). However, this is likely to be a medium-term issue only as it will be mostly addressed with a new 127[5] PCU[6] vessel replacing the MV *Caledonian Isles* in 2018. This represents a 17 PCU increase on the MV *Caledonian Isles*[7] and a 51 PCU increase on the MV *Isle of Arran*[8].

This research study

The key purpose of this study is to establish the impact of the introduction of RET on Arran, particularly in terms of the contribution of the policy to the study objectives. Consideration is also given to wider evidence of changes in travel behaviour, sectoral impacts and the success of demand management measures on the ferry services. This consideration of the wider impacts of RET will be important in informing Transport Scotland's approach to the ongoing evolution of the policy.

The remainder of this report consists of six further chapters, as follows:

- Chapter 2 briefly sets out the research approach.
- Chapter 3 establishes changes in travel behaviour since the introduction of RET.
- Chapter 4 considers the change in demand for ferry travel on the Arran and comparator routes since the introduction of RET.
- Chapter 5 identifies the impact of RET on tourism on the island.
- Chapter 6 considers the wider impact of RET on the Arran economy.
- Chapter 7 draws study conclusions.

[5] http://www.cmassets.co.uk/ferries/fleet-facts/
[6] PCU – Passenger Car Units
[7] http://www.cmassets.co.uk/ferry/mv-caledonian-isles/
[8] http://www.cmassets.co.uk/ferry/mv-isle-of-arran/

2 Research Approach

The evaluation made use of a combination of bespoke primary research and secondary data analysis.

Primary research

The findings of the study from the user, island resident and visitor perspective were largely informed by a two-year programme of primary research. This consisted of:

- Four waves of **on-ferry self-completion surveys** undertaken in winter 2014/15, summer 2015, winter 2015/16 and summer 2016. Separate surveys were issued depending on whether a respondent was an island resident or a visitor.
- Two waves of **household surveys** undertaken in summer 2015 and 2016.
- Two waves of **business surveys** undertaken in autumn 2015 and 2016 with a panel of 20 island business and one mainland supermarket.
- **Depth interviews** undertaken with two **island hauliers** in autumn 2015, although both hauliers declined to respond in 2016.

Over 4,000 responses to the on-ferry surveys were received as follows:

- Winter 2014/15: **285**, 128 residents and 187 visitors (Ardrossan – Brodick)
- Summer 2015: **1,331**, 207 residents and 1,124 visitors (Ardrossan – Brodick) & 197, 21 residents and 176 visitors (Claonaig – Lochranza)
- Winter 2015/16: **631**, 230 residents and 401 visitors (Ardrossan – Brodick)
- Summer 2015: **1,495**, 277 residents and 1,218 visitors (Ardrossan – Brodick) & 71, 12 residents and 59 visitors (Claonaig – Lochranza)

The responses to the household surveys were as follows:

- Summer 2015: 359 responses (17% of all Arran households)
- Summer 2016: 232 responses (11% of all Arran households)

The response rates to the four distinct research strands were well in excess of those identified at the outset of the study and thus form a robust basis for the analysis. This report draws out the key material from the respective surveys with a view to informing the evaluation objectives.

Secondary research

The secondary research principally consisted of the review of ferry operator data in relation to carryings, capacity utilisation, and revenue (not reported due to operator confidentiality) for the Arran and control group routes. The analysis of ferry operator data was supplemented by a review of bus patronage on Arran and the usage of Ardrossan Harbour railway station.

Socio-economic data in relation to, for example, population, economic activity rates, tourism numbers etc were used in the development of the study baseline. However, the majority of published data sources such as the Census, Scottish Neighbourhood Statistics, Nomis etc significantly lag the introduction of RET on the Arran routes and are often not reported at a sufficiently spatially disaggregated level. Therefore, these data could not be used as part of the evaluation. This means that the principal source of data used to conduct the evaluation was the primary research. The issue of mapping longer-term impacts has been discussed in a separate paper (provided to Transport Scotland) considering ongoing monitoring and evaluation.

3 Travel Behaviour

In advance of setting out the impact of RET in terms of the objectives, it is useful to consider how the fares reductions have impacted on travel behaviour.

Residents

The household survey clearly identified an **increase in the use of the ferry services** as a result of RET. This was particularly the case on the Ardrossan – Brodick route, with 43% (2015, n=155, 2016, n=98) of respondents in each research year indicating that they now use the ferries on this route more frequently. The survey also identified an increase in the use of the Claonaig – Lochranza route (9% in 2015 (n=32) and 14% in 2016 (n=33) use this route more often), although this was much smaller given the connection is to Kintyre rather than the Central Belt.

As well as overall increases in the use of the service, the household survey clearly identified a trend towards **taking the car on the ferry more often**. Some 51% (n=182) of survey respondents in 2015 and 50% (n=116) in 2016 noted that they now travel more frequently by car. This is consistent with the findings from the review of operator data (see below), which clearly demonstrates that car growth has outstripped passenger growth, suggesting that a number of passengers who previously travelled on foot are now taking a car. This finding was supported by the 2016 onboard surveys, where an average of 20% (n=54) of resident respondents on the Ardrossan – Brodick route who had brought a car onboard responded that they would not have done so without the RET related fares reduction. The equivalent figure on the Lochranza – Claonaig route was 33% (n=4).

In the context of the above paragraph, it should be noted that those previously using multi-journey books experienced a lesser reduction than those purchasing standard tickets, although the discount on the vehicle element was greater than on the passenger element (40% reduction for vehicle, 20% reduction for passengers). In addition, passengers eligible for a concessionary fare saw no reduction in passenger fares, but vehicle were reduced considerably.

Whilst the evidence that RET has increased total resident ferry travel is unequivocal, the household survey sought to determine the level of increase by **different types of trips / journey purposes**. Residents were asked to state the number of ferry journeys they made by different purposes before and after RET and the table below sets out the inferred change in trip purposes identified in each year of the survey:

Table 3.1: Household Survey - Change in Implied Level of Ferry Travel by Purpose

	2015 Household Survey (n=359)			2016 Household Survey (n=232)		
	No. of trips pre-RET (Annual)	No. of trips post-RET (Annual)	% Change	No. of trips pre-RET (Annual)	No. of trips post-RET (Annual)	% Change
Commuting to / from place of work	679	847	25%	755	687	-9%
Travelling on business	1,285	1,442	12%	791	1,181	49%
Education	202	232	15%	224	314	40%
Visiting friends / family	2,552	3,514	38%	1,720	2,383	39%
Leisure / Sport	1,481	2,002	35%	844	901	7%
Holiday / Short Break	1,887	2,372	26%	1,137	1,224	8%
Shopping - groceries	1,863	3,026	62%	1,007	1,369	36%
Shopping - clothes or household goods	1,359	2,065	52%	963	1,342	39%
Health / Medical appointment	1,267	1,466	16%	796	795	0%
Other (please specify)	296	401	35%	59	75	27%
Total	**12,871**	**17,367**	**35%**	**8,296**	**10,271**	**24%**

Note – the absolute numbers in the above table are included to show the scale of trips by each purpose. The 2015 and 2016 numbers are not however directly comparable given the different sample sizes in the two surveys. It is also likely that a number of respondents completed a survey in 2015 and 2016.

By this measure, the introduction of RET on the Arran routes has led to a large increase in trip making by virtually all purposes. Of particular note has been the strong growth in shopping (across both categories) and for leisure purposes, particularly visiting friends and family.

Overall travel by residents grew by 35% in the first full year of RET dropping back to a 24% increase in the second year. This may point towards a ‘novelty effect’ in the first full year of RET, where Arran residents took advantage of the ability to make leisure trips at a lower cost. Indeed, the sharp increase in, for example, ‘leisure / sport’ and ‘holiday / short-break’ was not particularly sustained into 2016, the second year of RET.

It is also noticeable that the scale of additional non-leisure trips, ‘travelling on business’ and ‘education’ for example, is much greater in 2016 than 2015. This could suggest that Arran residents are accessing enhanced business and educational opportunities (or continuing to live on the island when they would perhaps otherwise leave) as a result of reduced travel costs, a clear benefit for the island. Given the relatively small number of commuters responding to the survey, it is difficult to draw definitive conclusions in relation to commuting, except to say that it remains overall a very small element of the Arran travel market.

The above point is supported by further analysis assessing the **extent to which RET has been a factor** in the increase in the cited number of journeys. Some 52%

(n=180) of household survey respondents in 2015 indicated that the increase in their household's ferry use had been influenced by RET (wholly because of RET – 12% (n=42); major factor – 27% (n=94); minor factor – 13% (n=44)), with the figure for 2016 being 47% (n=110) (wholly because of RET – 7% (n=16); major factor – 27% (n=63); minor factor – 13% (n=31)). This finding was reinforced by the 2015 summer onboard surveys, whereby around 11% (n=23) of residents on average questioned on the Ardrossan – Brodick ferry noted that they would not have made the journey had RET not been introduced.[9] The proportions are slightly higher for the Claonaig – Lochranza route, where leisure travel is more dominant.

The findings from the household survey are supported by the successive waves of on-ferry surveys, which identified a clear **increase in the use of the ferries** since RET was introduced. As with the household survey, this increase was less sustained in 2016, with the number of respondents noting that they use the Ardrossan – Brodick route more often than before RET being 39% (n=81) in summer 2015 compared to 36% (n=100) in summer 2016. The pattern is similar on the Claonaig – Lochranza route, again due to its predominant use as a leisure route.

Overall, the onboard surveys suggest that RET induced a higher proportion of additional trips amongst residents in winter.

Visitors

The introduction of RET played a significant role in influencing the travel behaviour of visitors to Arran. Across the four survey waves, a broadly consistent 11% of visitor respondents on the Ardrossan – Brodick route noted that they would not have made the journey had RET fares not been introduced. The equivalent figure on the popular tourist route between Claonaig and Lochranza was 17%. This is a key finding – it strongly suggests that the reduction in fares was an important contributor in encouraging people to visit Arran.

The onboard visitor surveys clearly indicated that the introduction of RET encouraged greater use of the car. An average across the two survey years of 17% of respondents on Ardrossan – Brodick and 18% on Claonaig – Lochranza noted that they would not have taken the car onto the ferry had RET not been introduced.

Price Elasticity of Demand

Price elasticity of demand (PED) measures the response of demand to changes in price. Using the published carryings data, a PED was calculated for passengers and cars by dividing the increase in carryings by the change in yield (yield is used as many passengers did not pay the headline published fare pre-RET, so did not benefit from the maximum fares reduction available).

[9] Note that the question in the onboard survey was much more binary, in that it asked for a straight 'yes / no' as to whether the journey would have been undertaken without RET. This compares to the household survey, which offered a range of options on the extent to which RET was a factor influencing the decision to travel. The answer in the onboard survey can therefore be considered equivalent to the 'journey prompted wholly by RET' in the household survey.

The price elasticity of demand on the Ardrossan – Brodick route is **-0.29** for passengers and **-0.83** for cars. This implies that passenger demand is relatively inelastic compared to vehicle demand. On the Claonaig – Lochranza route, the observed elasticity for both passengers and cars is **-0.70**. This implies virtually all passengers are car-based and there was little scope for foot passengers to switch to car as has been the case on the Brodick route.

4 Demand For Ferry Travel & Demand Management

This chapter evaluates the impact of RET on ferry carryings and perceptions of demand as evidenced through the surveys. There is a wealth of ferry related data which have been analysed as part of this study. However, given the summary nature of this report and the need to respect operator confidentiality, only key and relatively aggregate findings are reported in this chapter.

Note: CalMac Ferries Limited has supplied the data included within this report but has not been involved in the validation of the assumptions and statements made.

Carryings

The table below shows the annual carryings of passengers, cars, coaches, commercial vehicles and commercial vehicle lane metres for the Arran routes **before** the introduction of RET (note three contract years (October to September) are provided to give an indication of the longer-term trend):

Table 4.1: Arran routes pre-RET carryings

	Passengers	Cars	Coaches	CVs	CV LM
Oct 2011 – Sept 2012					
Ardrossan to Brodick	675,836	124,707	630	11,130	117,921
Claonaig to Lochranza	43,493	13,943	51	488	4,116
TOTAL 2011-12	**719,329**	**138,650**	**681**	**11,618**	**122,037**
Oct 2012 – Sept 2013					
Ardrossan to Brodick	708,582	131,851	637	11,858	128,641
Claonaig to Lochranza	43,153	13,922	37	405	3,514
TOTAL 2012-13	**751,735**	**145,773**	**674**	**12,263**	**132,156**
Oct 2013 – Sept 2014					
Ardrossan to Brodick	709,191	131,705	623	11,915	128,432
Claonaig to Lochranza	46,270	14,806	50	399	3,422
TOTAL 2013-14	**755,461**	**146,511**	**673**	**12,314**	**131,855**
Changes in Carryings (%)					
2011–12 to 2012-13					
Ardrossan to Brodick	*4.8%*	*5.7%*	*1.1%*	*6.5%*	*9.1%*
Claonaig to Lochranza	*-0.8%*	*-0.2%*	*-27.5%*	*-17.0%*	*-14.6%*
TOTAL 2011-12	***4.5%***	***5.1%***	***-1.0%***	***5.6%***	***8.3%***

	Passengers	Cars	Coaches	CVs	CV LM
2012-13 to 2013-14					
Ardrossan to Brodick	*0.1%*	*-0.1%*	*-2.2%*	*0.5%*	*-0.2%*
Claonaig to Lochranza	*7.2%*	*6.3%*	*35.1%*	*-1.5%*	*-2.6%*
TOTAL 2013-14	***0.5%***	***0.5%***	***-0.1%***	***0.4%***	***-0.2%***

The increase in all carrying types on the Ardrossan-Brodick route between 2011-12 and 2012-13 is most likely a reflection of the new two-vessel service introduced in the summer of 2013. Carryings on this route in 2012-13 and 2013-14 were very similar with all carryings (except coaches) changing by less than one percentage point year on year.

Growth in passenger and car carryings on the Claonaig-Lochranza route was significant between 2012-13 and 2013-14 – there is no obvious reason for this as the level of service did not change. Note though that the number of CVs carried on this route declined in both years.

Across the two Arran routes, passenger, car and CV carryings grew by over 5% between 2011-12 and 2013-14. Much of this is attributable to the introduction of the two-vessel summer service on Ardrossan-Brodick.

The table below provides a comparison of the last pre-RET year (2013-14) with the two subsequent RET years (2014-15 and 2015-16).

Table 4.2: Arran routes pre and post RET carryings[10]

	Passengers	Cars	Coaches	CVs	CV LM
28 October 2013 - 26th October 2014					
Ardrossan to Brodick	704,007	131,529	610	11,874	128,433
Claonaig to Lochranza	46,265	14,794	51	385	3,423
TOTAL 2013-14	750,272	146,323	661	12,259	131,856
27th October 2014 – 25th October 2015					
Ardrossan to Brodick	765,031	189,438	551	8,723	99,930
Claonaig to Lochranza	58,699	20,727	47	319	2,930
TOTAL 2014-15	823,730	210,165	598	9,042	102,860
26th October 2015 – 23rd October 2016					
Ardrossan to Brodick	807,732	199,001	628	9,770	113,562
Claonaig to Lochranza	65,908	23,639	66	350	3,226
TOTAL 2015-16	873,640	222,640	694	10,120	116,788
Changes in Carryings (%)					
2013-14 to 2014-15 (year 1 RET v pre-RET)					
Ardrossan to Brodick	*9%*	*44%*	*-10%*	*-27%*	*-22%*
Claonaig to Lochranza	*27%*	*40%*	*-8%*	*-17%*	*-14%*
TOTAL 2013-14 to 2014-15	*10%*	*44%*	*-10%*	*-26%*	*-22%*

[10] Note, the figures in the table have been equated to the 'RET year' rather than the contract year.

	Passengers	Cars	Coaches	CVs	CV LM
2014-15 to 2015-16 (year 2 RET v Year 1 RET)					
Ardrossan to Brodick	*6%*	*5%*	*14%*	*12%*	*14%*
Claonaig to Lochranza	*12%*	*14%*	*40%*	*10%*	*10%*
TOTAL 2014-15 to 2015-16	*6%*	*6%*	*16%*	*12%*	*14%*
Changes in Carryings (abs)					
2013-14 to 2014-15 (year 1 RET v pre-RET)					
Ardrossan to Brodick	*61,024*	*57,909*	*-59*	*-3,151*	*-28,503*
Claonaig to Lochranza	*12,434*	*5,933*	*-4*	*-66*	*-493*
TOTAL 2013-14 to 2014-15	*73,458*	*63,842*	*-63*	*-3,217*	*-28,996*
2014-15 to 2015-16 (year 2 RET v Year 1 RET)					
Ardrossan to Brodick	*42,701*	*9,563*	*77*	*1,047*	*13,632*
Claonaig to Lochranza	*7,209*	*2,912*	*19*	*31*	*296*
TOTAL 2014-15 to 2015-16	*49,910*	*12,475*	*96*	*1,078*	*13,928*

It is important to note that, in the above table, the CV LM figures are based on contract year rather than RET year data (for which they are not available), which to some extent will overstate the reduction in CV LM experienced as a result of RET.

In the first full year of RET (2014-15), **passenger numbers** increased by 10% across the two routes, a total of 73,500 passengers. Passenger growth continued to be strong in 2015-16, with a further growth of 6% or 50,000 across the two routes.

The most notable carryings change has however been in relation to **vehicles**. This is dominated by the Ardrossan – Brodick crossing where there was a growth of over 67,000 vehicles or 51% by 2015-16 compared to the last full pre-RET year. Whilst the largest step in car carryings occurred in 2014/15 (44% across the two routes), the increase was sustained into 2015/16, with a further 6% growth across both routes.

In the first year, the ratio of additional passengers to cars was very low (almost one to one), suggesting that many people are now travelling with a car rather than as a foot passenger. It is notable that in Year 2, this ratio is much higher, i.e. there are 4.5 passenger trips per additional car trip. This may in part be a result of capacity restrictions on the vehicle deck due to the additional volumes generated in Year 1.

The surveys suggest that the rate of resident and visitor growth broadly comparable.

The Claonaig-Lochranza route has seen a far greater percentage increase in passenger carryings, implying much less of a switch from foot to car-based travel. This seems plausible as there is much less scope to travel as a foot passenger on this route.

There was a **large reduction in CVs and CV lane metres** carried in the first full year of RET. Whilst this figure rebounded to some extent in 2015-16 (possibly as a result of increased exports due to reduced transport costs and increased imports as a result of higher tourism numbers), CVs and CV lane metre carryings remain below their pre-RET level. Much of this will be attributable to the new 6m rule where small commercial vehicles (<6m in length) are now classed as cars. Some of the 76,000 increase in cars in 2015/16 carried across both routes will be accounted for by this reclassification, but even if all of the 3,000 reduction in CVs is attributable to this, this would account for only around 3% of the increase in car carryings.

The pattern in terms of carryings on the Arran routes post-RET is broadly consistent with experience on other routes to which RET had been rolled out (i.e. Coll, Tiree, the Western Isles, Colonsay, Islay and Gigha). There are a number of key similarities:

- a large initial increase in passenger and particularly car carryings in the first year of RET, with more modest or flat growth in subsequent years;
- ferry users that travelled as foot passengers prior to the introduction of RET choosing instead to take a car on the ferry; and
- a reduction in CV carryings / CV lane metres as a result of the introduction of the 6 metre rule.

The key difference with Arran compared to other RET routes is that its proximity to the Central Belt and attractiveness to day trippers / tourists means that growth in absolute terms has been much larger than on the other routes to which RET had previously been applied.

Seasonal Variation

The table below shows the summer and winter split by carrying type by year on the Ardrossan – Brodick route:

Table 4.3: Ardrossan – Brodick, winter / summer split

Year	RET Year	% Winter: November - March				% Summer: April - October			
		Pass	*Cars*	*CVs*	*Coaches*	*Pass*	*Cars*	*CVs*	*Coaches*
2013-14	Pre-RET	24%	26%	37%	9%	76%	74%	63%	91%
2014-15	RET Y1	24%	26%	36%	10%	76%	74%	64%	90%
2015-16	RET Y2	25%	28%	39%	6%	75%	72%	61%	94%

Around three quarters of passengers & cars and around two thirds of CVs are carried on this route in the summer months. This has been broadly consistent pre and post RET. As would be expected, the vast majority of coaches are carried in the summer months.

Comparator Routes

A control group of comparator routes was developed, which included several 2012 RET routes (i.e. Colonsay and Islay), the Mull routes and the other Firth of Clyde routes (Bute, Cumbrae and Tarbert-Portavadie). Figures 4.1 and 4.2 below show the growth in carryings by route group between 2011-12 to 2014-15 for passengers and cars respectively (on a common scale):

Figure 4.1: Year on Year change in passenger carryings on Arran and control routes 2011-12 – 2015-16

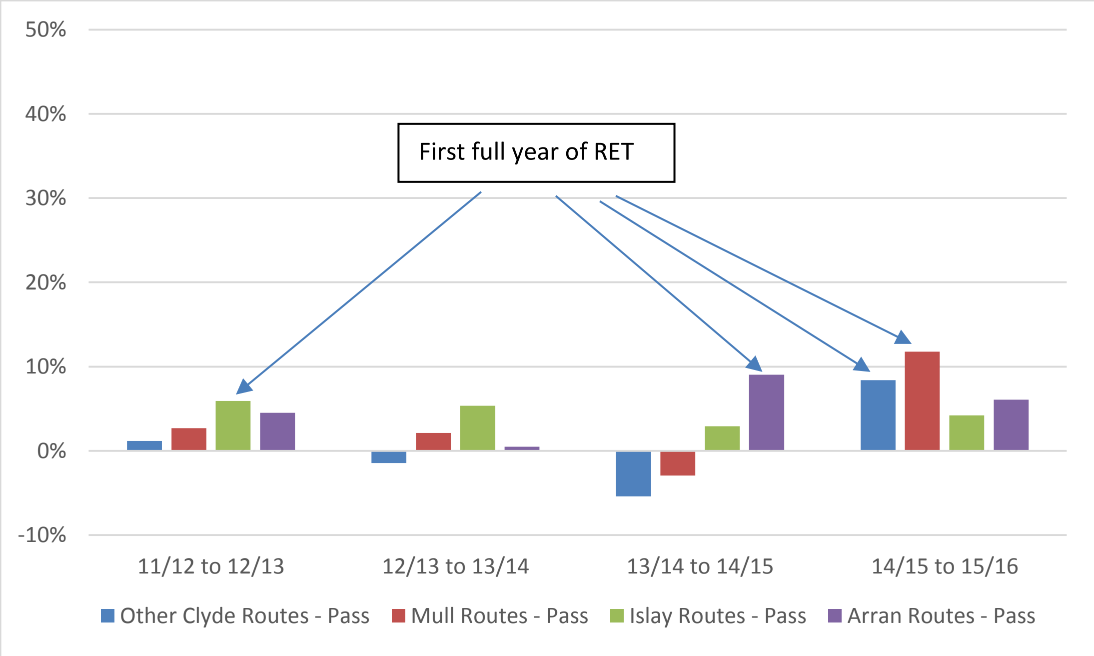
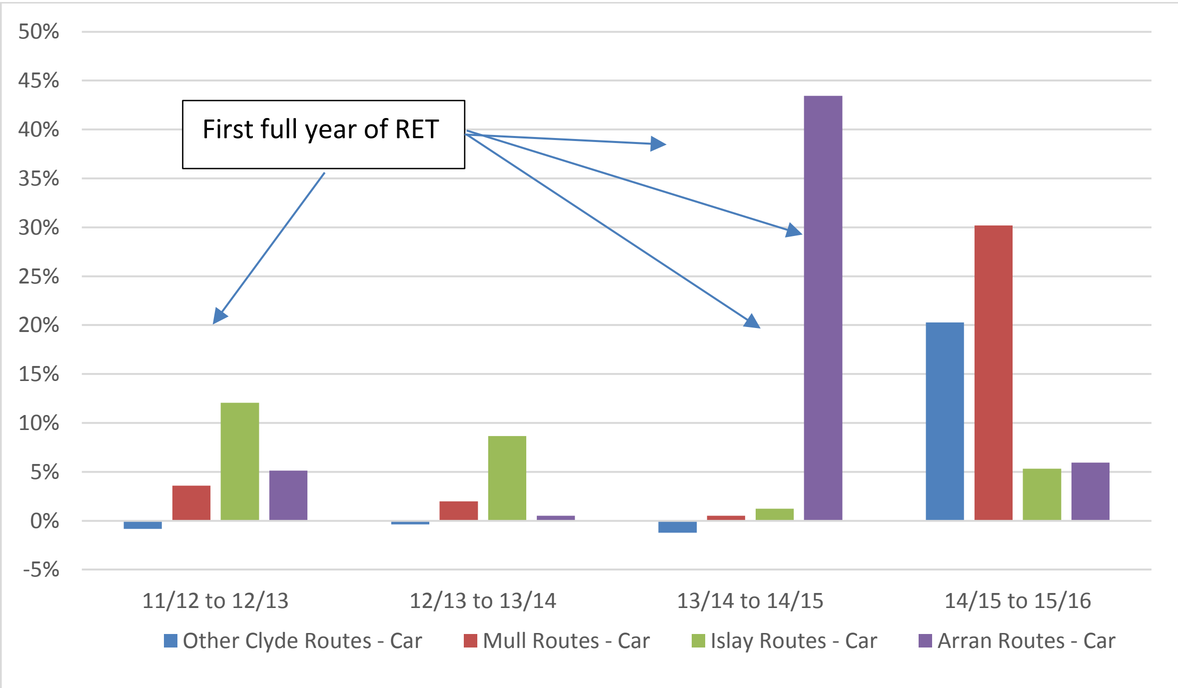


Figure 4.2: Year on Year change in car carryings on Arran and control routes 2011-12 – 2015-16



These figures illustrate the scale of year on year changes associated with RET by route group. The most notable point is that the scale of growth associated with car carryings far outstrips that of passenger carryings, implying a strong shift to car-based travel across the network when RET is introduced.

For **passengers**, the growth in the first full year of RET on Arran coincided with a drop in carryings on the other Clyde routes, and a smaller drop in the Mull routes, indicating a potential switch away from these route groups (which were not then on RET). Growth in the Islay routes also declined in this year. However, in 2015/16, all route groups saw a growth with RET now in place on all routes. The Mull routes witnessed the highest growth, and growth on the Arran routes remained strong. The RET-related growth in passenger numbers on the other Clyde routes was lower than the equivalent growth seen on the Arran and Mull routes.

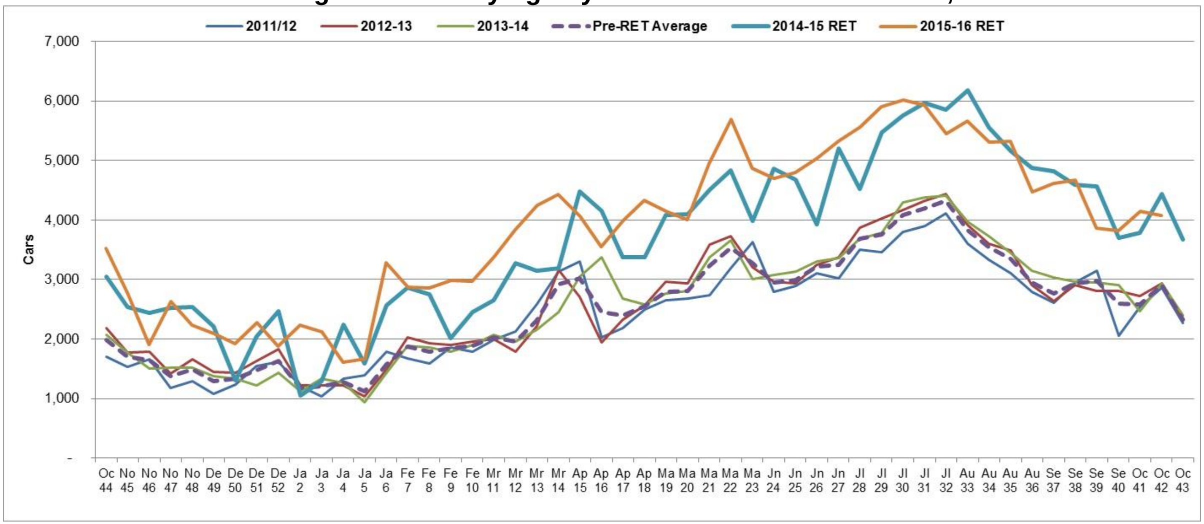
The Year 1 ‘RET effect’ in Arran was greater than for any of these other route groups in terms of **car** carryings. As with passengers, 2013/14 to 2014/15 saw a drop in car carryings on the other Clyde routes and reduced growth on the other route groups, with a pronounced rebound in 2014/15 to 2015/16.

Carryings across the year

Whilst there has been a clear increase in demand for the Arran ferry services, it is important to consider the profile of that demand across the year. Given the particularly marked increase in vehicle carryings and the fact that car deck capacity is the principal constraint on the Arran routes, **the focus here is on vehicle carryings**.

Figure 4.3 below shows vehicle carryings by week for the Ardrossan – Brodick route for the period 2011-12 to 2015-16:

Figure 4.3: Carryings by week: Ardrossan – Brodick, cars

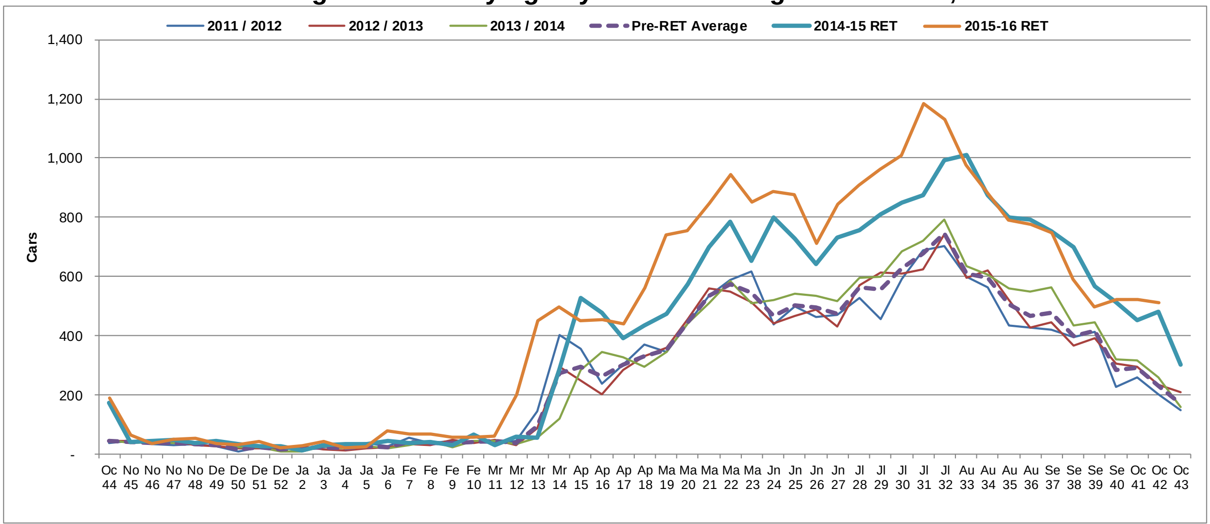


The impact of RET on car carryings across the year is highly visible in the above figure. In virtually all weeks, post-RET carryings on Ardrossan – Brodick were greater than the three-year pre-RET average and this differential becomes even more marked in the summer months. August is the peak month in terms of vehicle carryings, with almost 2,000 additional cars per week being carried on average compared to the pre-RET period.

It is also clear from the above figure that RET has significantly extended the peak season on Arran (a finding the business surveys support). The differential between pre-RET carryings and post-RET carryings tends to be more marked between Easter and October than over the winter months. The extension of the season at both ends is seen to be of significant benefit by the Arran community, particularly in the tourism sector.

The equivalent figure for the Claonaig / Tarbert LF – Lochranza route is provided below:

Figure 4.4: Carryings by week Claonaig – Lochranza, cars



RET has had no discernible impact on the winter Tarbert LF – Lochranza service because there is only one return sailing per day operated principally for freight. In contrast, there has been a clear increase in car carryings over the summer months as a result of RET, particularly in the peak months of July and August. As with the Ardrossan – Brodick route, there has been a significant uplift in car carryings in the shoulder months, again highlighting the extended tourist season in Arran, with the benefits also spreading to Kintyre.

Annual utilisation

The table below shows the average passenger and vehicle deck utilisation (load factor) for the Arran routes for each of the three pre-RET years and the first two RET years. The figures show the vehicle deck utilisation as reported by CalMac and the passenger load factor is calculated here based on published passenger certifications.

Table 4.4: Average load factors per annum, Arran routes

	Sept 2011 – Oct 2012	Sept 2012 – Oct 2013	Sept 2013 – Oct 2014	Sept 2014 – Oct 2015	Sept 2015 – Oct 2016
	Pre-RET			***Post-RET***	
Passenger Load Factor					
Ardrossan – Brodick (both vessels)	**19%**	**18%**	**18%**	**20%**	**22%**
Ardrossan – Brodick (MV *Caledonian Isles*)	19%	18%	18%	19%	20%
Ardrossan – Brodick (MV *Isle of Arran*)	14%	18%	21%	24%	24%
Claonaig – Lochranza	**7%**	**7%**	**8%**	**10%**	**11%**
Vehicle Deck Load Factor					
Ardrossan – Brodick (both vessels)	**52%**	**46%**	**46%**	**55%**	**58%**
Ardrossan – Brodick (MV *Caledonian Isles*)	53%	49%	49%	57%	62%
Ardrossan – Brodick (MV *Isle of Arran*)	35%	37%	40%	54%	53%
Claonaig – Lochranza	**24%**	**24%**	**25%**	**33%**	**36%**

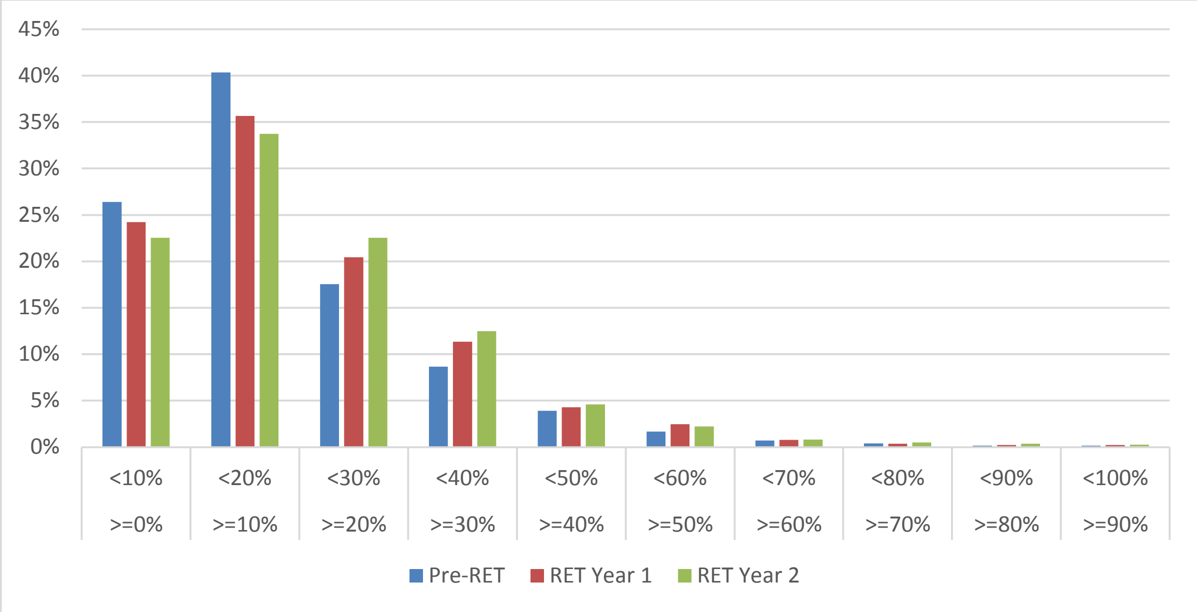
These figures confirm the very low pre-RET average passenger load factors, around 18% for Ardrossan-Brodick and 8% for Claonaig - Lochranza. Figures for the vehicle deck are higher at around 46% and 25% respectively. The additional summer capacity introduced in 2013 explains the reduction in the Ardrossan-Brodick load factors in 2012-13 relative to 2011-12.

With RET, it can be seen that the average vehicle deck load factor on Ardrossan-Brodick increased by 12 percentage points, from 46% to 58%. Although still low, vehicle deck load factors on Claonaig-Lochranza have increased from 25% to 36%. Average passenger load factors remain relatively low on both routes, albeit they have increased marginally.

Spread of loadings

Annual average figures can conceal a wide range of variation between individual sailings. To provide an indication of the spread of loadings across sailings, these data are shown below in terms of the percentage of sailings which operated within different load factor ranges. These data are shown for the pre and post RET scenarios for both passengers and vehicle deck load factors. For example, in the figure below, around 40% of pre-RET sailings between Ardrossan and Brodick operated with a passenger load factor of between 10% and 20%. The figure below establishes the spread of passenger loadings on the Ardrossan – Brodick route:

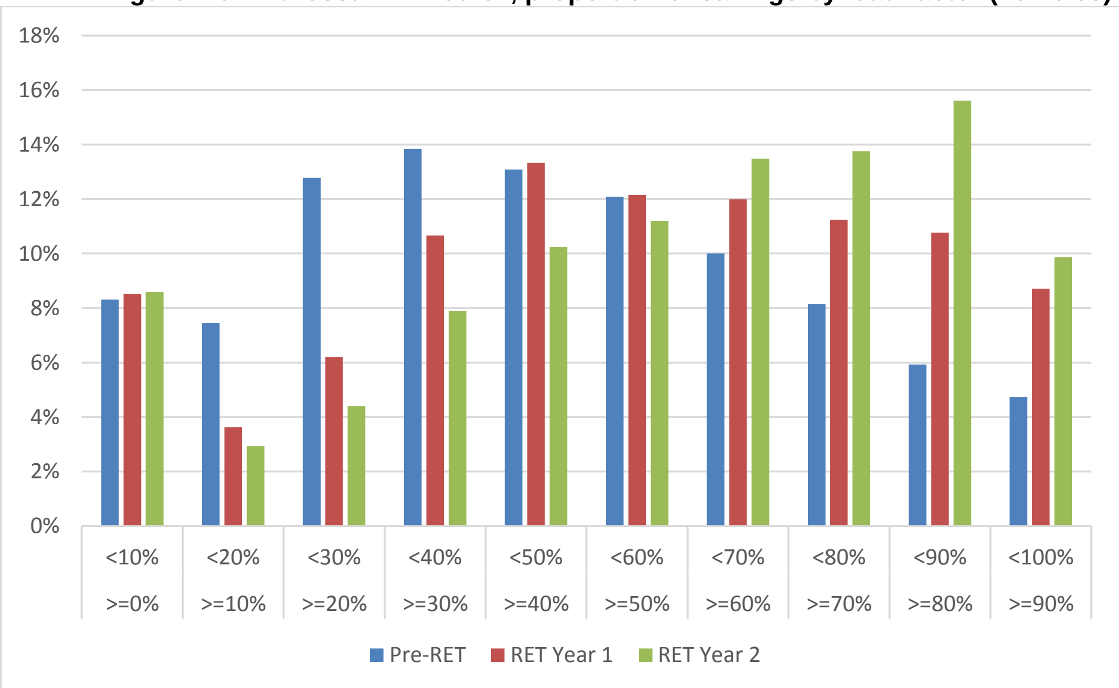
Figure 4.5: Ardrossan – Brodick, proportion of sailings by load factor (passengers)



The above figure clearly demonstrates that, even since the introduction of RET, a shortage of passenger capacity is almost never a problem on the Ardrossan – Brodick route. Whilst the introduction of RET has led to progressively higher passenger carryings, 96% of sailings in 2015-16 were operating at less than 50% utilisation in terms of passenger capacity. There is therefore considerable scope for further growth in passengers.

The situation is somewhat different in terms of the vehicle deck on the Ardrossan – Brodick route:

Figure 4.6: Ardrossan – Brodick, proportion of sailings by load factor (vehicles)

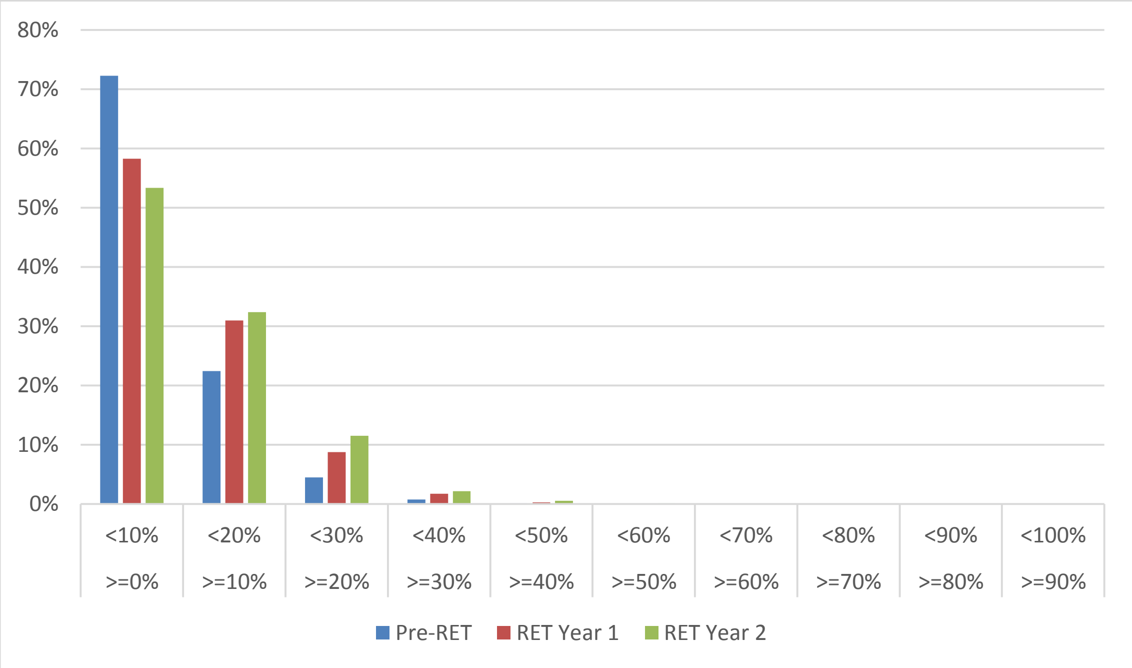


The introduction of RET has had a significant impact on vehicle deck utilisation on the Ardrossan – Brodick route, with a year-on-year increase in the number of sailings with a utilisation greater than 80%. On average, in the three years prior to the introduction of RET, only 11% of sailings had a vehicle deck utilisation in excess of 80%. This increased to 20% in the first year of RET (2014-15) and 26% in year two (2015-16). It is also notable that the number of sailings where the car deck utilisation on this route is greater than 90% has doubled since the introduction of RET.

The above figure is supported by the survey evidence, where an increasing number of island residents, businesses and visitors reported difficulties in securing a reservation on the ferry. The data and surveys suggest that that there is only very limited scope for vehicle growth on the Ardrossan – Brodick route on peak sailings, potentially restricting some of the positive impacts of RET on the island. The introduction of the new ferry, which will replace the MV *Caledonian Isles* as the primary vessel in 2018, is expected to significantly address the identified capacity issues. This represents a 17 PCU increase on the MV *Caledonian Isles*[11] and a 51 PCU increase on the MV *Isle of Arran*[12]. However, as is common across the network, it is anticipated that there will still be popular sailing times and peak travel days on which demand for vehicle deck space may exceed supply.

Figure 4.7 shows the spread of passenger utilisation on the Claonaig – Lochranza route:

Figure 4.7: Claonaig - Lochranza, proportion of sailings by load factor (passengers)



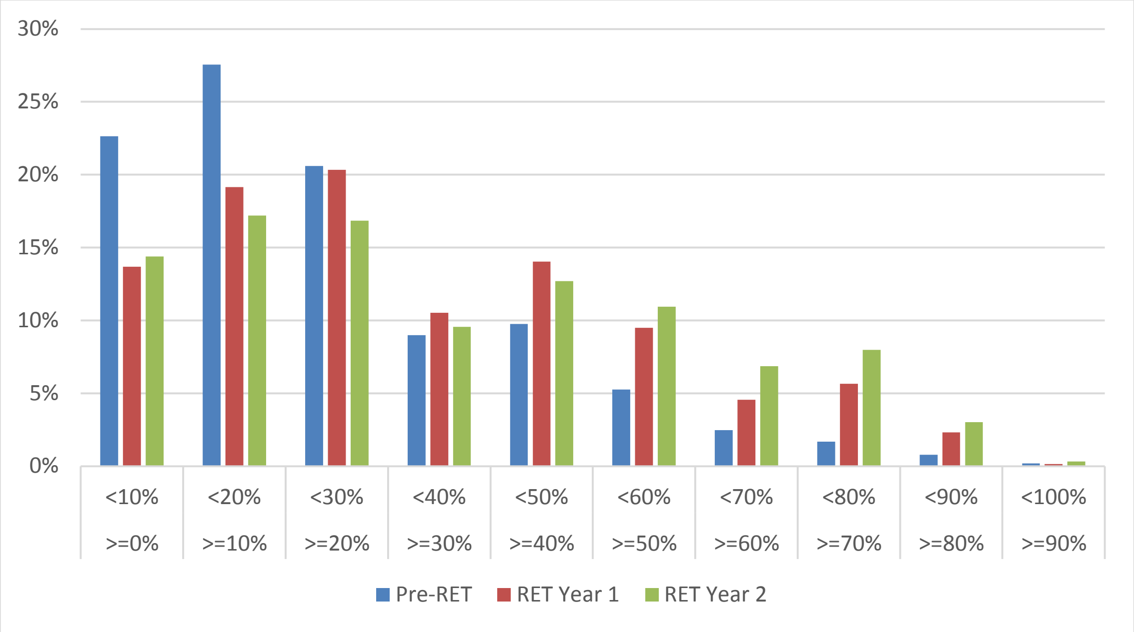
As with the Ardrossan – Brodick route, RET has led to an increase in passenger utilisation on Claonaig – Lochranza, but there remains significant scope for

[11] http://www.cmassets.co.uk/ferry/mv-caledonian-isles/
[12] http://www.cmassets.co.uk/ferry/mv-isle-of-arran/

expansion of passenger carryings. Indeed, 99% of all sailings on this route operated with a passenger utilisation of less than 50%.

Finally, Figure 4.8 shows the spread of vehicle deck utilisation on the Claonaig – Lochranza route:

Figure 4.8: Claonaig - Lochranza, proportion of sailings by load factor (Vehicles)



Vehicle deck utilisation on the Claonaig – Lochranza route has increased significantly in each year since RET was introduced. However, the number of sailings with greater than 80% vehicle deck utilisation remains relatively small (only 3% of all sailings in 2015/16) overall, so there remains scope for vehicle growth on this route. The introduction of the new, hybrid vessel MV *Catriona* on this route in September 2016 has further expanded available capacity.

Demand management

The Scottish Government's *Ferries Plan 2013-2022* stated that the operator has the opportunity to propose measures to manage demand where projections indicate that RET has made this necessary. The *Ferries Plan* further stated that such measures would only be introduced if they are agreed by the community. CalMac and Transport Scotland engaged with the Arran Ferry Committee regarding possible demand management measures prior to the introduction of RET.

During the peak summer period, demand on the Ardrossan – Brodick route is managed by restricting over-height vehicles, which can reduce capacity by obstructing the deployment of the mezzanine decks. For example, in Summer 2015, over-height vehicles were not permitted to travel on the MV *Caledonian* Isles and could thus only travel on the MV *Isle of Arran* on the following dates:

Figure 4.9: 2015 Restricted Sailings

NOTE

Restricted sailings - high vehicles: Please note that a vehicle height restriction applies on certain sailings. The following sailings are only available to vehicles with an overall height which does not exceed 1.98 metres. **Ardrossan to Brodick:** Friday 22 May: 0945, 1230, 1515. Saturday 23 May: 0945, 1230, 1515, 1800. Fridays 19 June until 21 August: 0945, 1230, 1515. Saturdays 20 June until 22 August: 0945, 1230, 1515, 1800. **Brodick to Ardrossan:** Sundays 24 May until 23 August: 1105, 1350.

Following the operator’s engagement with the Arran Ferry Committee, it was decided that there would be no other demand management measures implemented on the Ardrossan-Brodick route and no demand management measures implemented on the Claonaig – Lochranza route.

Loadings by day of week

It is useful to briefly profile the use of the Arran services by day of the week since RET was introduced, identifying the busiest days / sailings. The table below summarises the ‘top 10’ busiest sailings in each direction in terms of lane metres on the Ardrossan – Brodick route (as the dominant vehicle carrying route):

Table 4.5: Ardrossan – Brodick – top 10 typical busiest sailings by LMs (July & August 2016)

Ardrossan - Brodick	**Brodick - Ardrossan**
Saturday – 12:30	Saturday – 11:05
Saturday – 09:45	Sunday – 16:40
Saturday – 15:15	Sunday – 11:05
Sunday – 15:15	Saturday – 13:50
Sunday – 12:30	Sunday – 13:50
Monday – 12:30	Sunday – 19:20
Friday – 15:15	Saturday – 16:40
Friday – 12:30	Saturday – 08:20
Wednesday - 09:45	Friday – 13:50
Friday – 09:45	Friday – 16:40

Weekends dominate the busiest sailings, with all but two of this ‘top 10’ in either direction being on a Friday, Saturday or Sunday. Whilst total lane metres carried Monday – Thursday are generally less than at the weekend, it is the same subset of sailings that are typically the busiest in each direction. The above sailings are those which the existing demand management measures are largely targeted at.

Wider transport demand

Despite the increases in passenger carryings on the ferry, bus patronage on Arran actually dropped by 2% per annum in the two years of operation compared to the last pre-RET full year. This aligns with the finding that, in response to RET, a significant number of resident concessionary pass holders and people who previously travelled to Arran as foot passengers (and hence used a bus to / from Brodick) are now taking a car onto the ferry.

The trend of foot passengers now taking cars onto the ferry is supported by the Office of Road & Rail (ORR) station usage data. The data identifies a 14% decrease in the number of passengers using Ardrossan Harbour station in financial year 2015-16 compared to 2014-15 (set against a 0.3% average increase in passenger numbers across all North Ayrshire railway stations). Whilst the date ranges are not directly comparable, it is clear that the use of the rail connection at Ardrossan has declined – prior to RET, 18% of ferry passengers travelled to / from Ardrossan by rail. This figure has now declined to 14%.

Traffic and cycle count data are not available for Arran.

Perceptions of demand and capacity

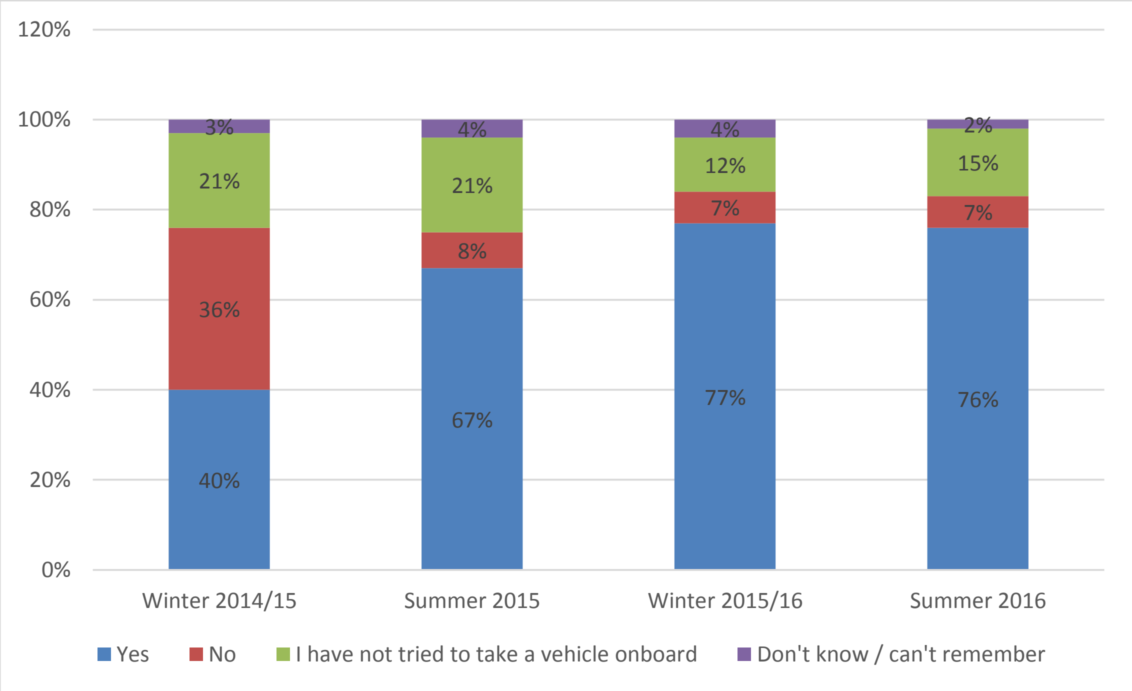
Whilst the operator data provides a clear profile of demand for the ferry and current / emerging capacity issues, it was also important to assess perceptions of 'busy-ness' amongst island residents and users, given that perceptions can impact on travel choices. The focus in terms of capacity is on the vehicle deck as there are no evidenced passenger capacity issues throughout the year.

Residents

The four onboard surveys undertaken between March 2015 and August 2016 show an incremental increase in the number of residents finding it difficult to book a place on both ferry services for their vehicles. Indeed, on the Ardrossan – Brodick route in summer 2015, around one third of residents reported at least some degree of difficulty in booking a place on the ferry. This figure more than doubled to 75% (n=173) of respondents reporting difficulties securing a booking in the summer 2016 surveys.

The onboard surveys further suggested that, for a majority of residents, there has been at least one occasion since RET was introduced that they have failed to secure a space for their car on the Ardrossan – Brodick ferry. This is illustrated in the figure below:

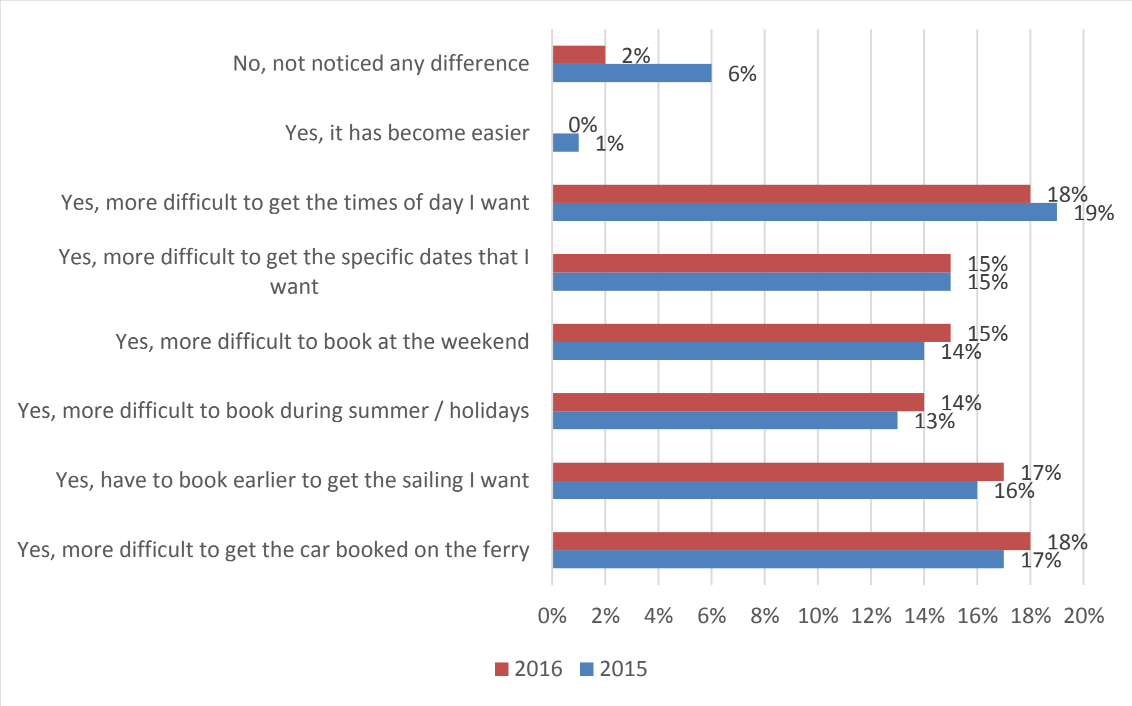
Figure 4.10: Have there been any occasions when the sailing you wanted to travel on was fully booked for vehicles [since RET was introduced]? – onboard resident survey



This problem again appears to have worsened over time with 40% (n=50) of residents recording this problem in the winter 2014/15 survey and 67% (n=139) in the summer 2015 surveys, compared to 77% (n=174) (winter) and 76% (n=207) (summer) for the same surveys in the following year. There is no clear trend on the Claonaig – Lochranza route.

The above findings are echoed by the household survey, which provides a more detailed breakdown of when Arran residents are having difficulties getting their car onto the ferry. This is shown in Figure 4.11 below:

Figure 4.11: Ability to book ferry travel since the introduction of RET



Note: this was a multiple response question

The figure above shows that the majority of Arran households have experienced at least some difficulties in securing a booking for their car on the ferry (93% (n=744) in 2015 and 98% (n=604) in 2016). Indeed, just under one fifth of households have found it more difficult to book a car onboard generally (17% (n=136) in 2015, 18% (n=112) in 2016). Respondents in both survey years reported difficulties securing bookings at a variety of times and there does not appear to be a dominant ‘problem’ period (e.g. weekends, school holidays etc).

In terms of the frequency by which households experience booking difficulties, the household surveys do suggest that the issue was more marked in the second year of RET. Some 66% (n=234) of respondents in summer 2015 responded that they had experienced at least one occasion when they had been unable to secure a vehicle booking, which increased to 75% (n=173) in 2016. Further, the proportion of respondents citing frequent failures to secure car deck space doubled, from 13% (n=47) in 2015 to 28% (n=65) in 2016.

From a resident perspective, capacity issues are associated mostly with departures from Brodick (the reverse being true for visitors). Monday morning departures from Brodick and Friday departures from Ardrossan are generally cited as being the most problematic, with weekends in both directions also featuring prominently in public responses (which is broadly consistent with the carryings and utilisation data).

The surveys suggest that the vast majority of residents would either travel on an alternative sailing (67% on average over the two survey years) or travel as a foot passenger only (19% on average over the two survey years) if they could not secure a vehicle booking. It can be argued that, for this group, capacity issues represent an inconvenience but do not necessarily prevent certain activities occurring (e.g. business trips, leisure trips etc). The position is broadly similar on the Claonaig – Lochranza route.

The remaining 15% of residents generally indicated that they would not travel if they could not secure a space for their vehicle on the ferry. This represents a welfare loss to these individuals as they are prevented from making a trip they would otherwise make. Conversely, however, this could actually represent a benefit for the Arran economy as it could prevent a degree of economic leakage (e.g. shopping on the mainland).

It should be noted that capacity constraints on the Arran routes are not seen to be a new problem – an average of 44% of respondents to the two resident surveys noted that they had previously experienced difficulties securing a car booking on the Ardrossan – Brodick route.

As part of the onboard surveys, residents were asked about various elements of the service which may be impacted by increased demand, responding on the basis of a five-point scale. The table below summarises the proportion of respondents to each question that noted a negative impact in terms of service (for example, in the first row of the table, respondents noted that ferry services were 'slightly busier' or 'a lot busier' than before). It is important to note that the numbers contained in the table represent the perceptions of those surveyed rather than factual statements about the service.

Table 4.6: Impact of RET on service aspects – views of Arran residents

	Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	**Onboard Survey Average**	Household Survey 2015	Household Survey 2016	**Household Survey Average**
Ferry is slightly busier / a lot busier	85%	90%	88%	89%	**88%**	85%	94%	**90%**
It is slightly / much more difficult to find a seat	42%	45%	49%	27%	**41%**	61%	69%	**65%**
Queue for refreshments is slightly / a lot longer than before	42%	30%	42%	23%	**34%**	45%	88%	**67%**
Overall level of service onboard the ferry has slightly / significantly declined	0%	5%	7%	15%	**7%**	10%	13%	**12%**
Punctuality of the service is slightly / very much worse	0%	25%	23%	12%	**15%**	44%	51%	**48%**

There is evidently a strong perception amongst island residents that the ferries have become busier since the introduction of RET, with an average of 88% of respondents to the onboard resident survey reporting a step change in perceptions of busyness. This view was broadly echoed in the household survey results.

The increased busyness of the ferries is also reflected in the proportion of survey respondents who indicated that it is now more difficult to find a seat (41% onboard, 65% household) and that the queue for refreshments is longer (34% onboard, 67% household). It is interesting to note that, whilst residents surveyed onboard the ferry perceive the vessels to be busier, only a small number of residents feel that this has had an impact on the overall level of service and the punctuality of the ferry.

Visitors

The surveys suggest that visitors to Arran tend to book their ferry travel relatively far in advance. Correspondingly, visitors tended to report fewer problems securing a space for their car on the ferry. Nonetheless, in keeping with the feedback from island residents, there were increasing reports of vehicle capacity issues amongst visitors responding to the summer onboard surveys. In the summer 2016 surveys, 28% (n=233) of visitors on the Ardrossan – Brodick route and 30% (n=10) on the Claonaig – Lochranza route reported a degree of difficulty in securing a vehicle booking. This effect is most likely to be experienced by those who are not booking far in advance or are potentially turning up on the day without a booking, unaware that capacity can be constrained. It was not possible to quantify the number of visitors who had been unsuccessful in securing a booking and thus did not travel to Arran.

On average, just over a quarter of visitors (excluding new ferry users) responding to the summer 2015 and 2016 surveys indicated that they had experienced at least one occasion where they had failed to secure a vehicle booking on the Ardrossan – Brodick ferry, with a slightly higher number reporting this issue in the 2016 surveys. From a visitor perspective, capacity constrained sailings are generally from Ardrossan and are unsurprisingly concentrated around the weekends. Saturday is generally the changeover day for self-catering accommodation, whilst the weekend days are likely to be the peak days for day-trippers.

The surveys suggest that the majority of visitors (over 85% on average across the two survey years) would either use an alternative sailing (68% on average) or travel as a foot passenger instead (19% on average) if their preferred sailing is fully booked for vehicles. This is broadly consistent with island residents. The one difference is that a very small proportion of visitors (less than 2%) would consider using the Lochranza – Claonaig route as an alternative, which residents would not.

On average, just over 10% of all visitors on the Ardrossan - Brodick route indicated that they did not travel to Arran on the occasion that they could not secure a vehicle booking on their preferred sailing. This represents potential trade that has not been realised for the island, and potentially for Scotland if trips are diverted to other countries or cancelled altogether. The results in relation to the Claonaig – Lochranza route do not show a clear pattern over the two summer survey periods.

As with the resident survey, visitors who had used the service prior to the introduction of RET were also asked about various elements of the service which may be impacted by increased demand, responding on the basis of a five-point scale. The table below summarises the proportion of respondents to each question that noted a *negative* impact in terms of service:

Table 4.7 Impact of RET on Service Aspects – Visitors to Arran

	Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Average
Ferry is slightly busier / a lot busier	58%	59%	50%	46%	**53%**
It is slightly / much more difficult to find a seat	34%	18%	25%	75%	**38%**
Queue for refreshments is slightly / a lot longer than before	35%	13%	16%	64%	**32%**
Overall level of service onboard the ferry has slightly / significantly declined	1%	3%	2%	17%	**6%**
Punctuality of the service is slightly / very much worse	0%	25%	6%	41%	**18%**

The visitor responses are very similar to those of the residents, albeit the scale of impacts is general seen to be lower. On average across all of the surveys, 53% of visitors have noticed that the ferries are now busier, whilst around one third note that it is more difficult to find a seat and that the queue for refreshments is now longer. As with residents, there was not considered to be a marked decline in the quality of the service, despite a significant uplift in users.

5 Tourism In Arran

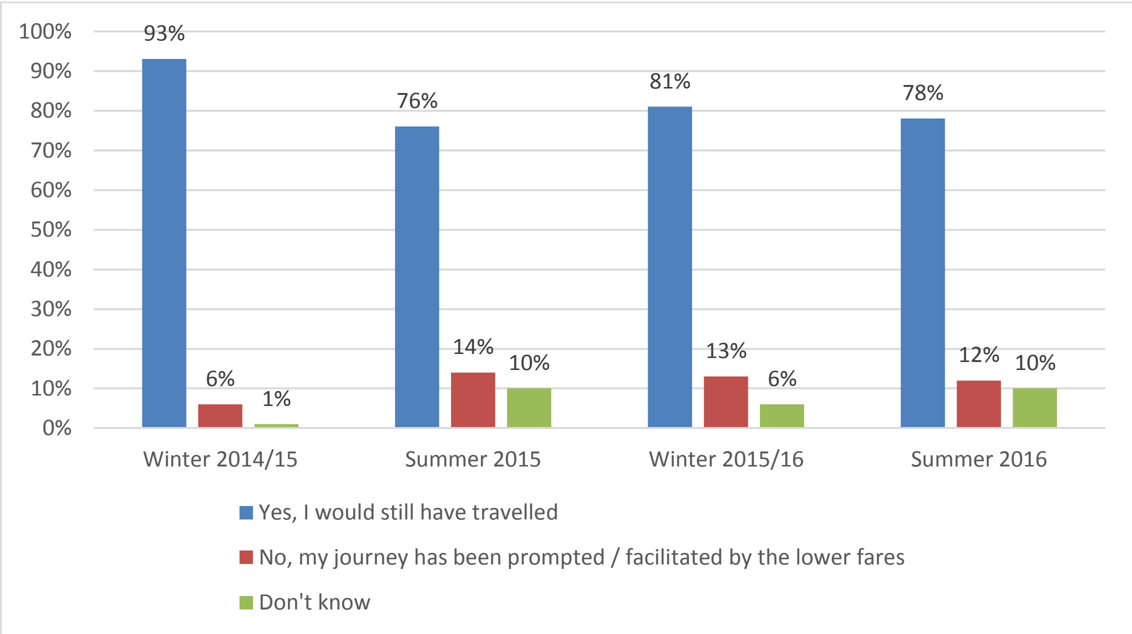
The introduction of RET on routes firstly to Coll, Tiree & the Western Isles and latterly Colonsay, Islay and Gigha has demonstrated the potentially significant contribution that reduced fares can make to supporting island tourism. However, the level of ferry fares was historically seen as a barrier to growing tourism in Arran and thus an objective of the RET roll-out was to grow this market.

The evaluation of the impact on tourism is drawn from a combination of the onboard survey of visitors and the feedback from tourism businesses obtained through the panel surveys (a panel of 20 businesses approached in each study year).

Decision to Visit Arran

The critical question from a tourism perspective is the extent to which RET has prompted entirely new trips to Arran. Those who would have made the journey irrespective of whether RET had been introduced or otherwise would benefit financially from the lower fares but there would be no net impact at the Arran level (unless those visitors spent their ferry fare savings on the island). Figure 5.1 sets out whether visitors would still have been making the trip they were on when surveyed had RET not been introduced:

Figure 5.1: Had RET fares not been introduced on the Ardrossan – Brodick route, would you still be making this ferry journey today? (onboard survey of visitors)

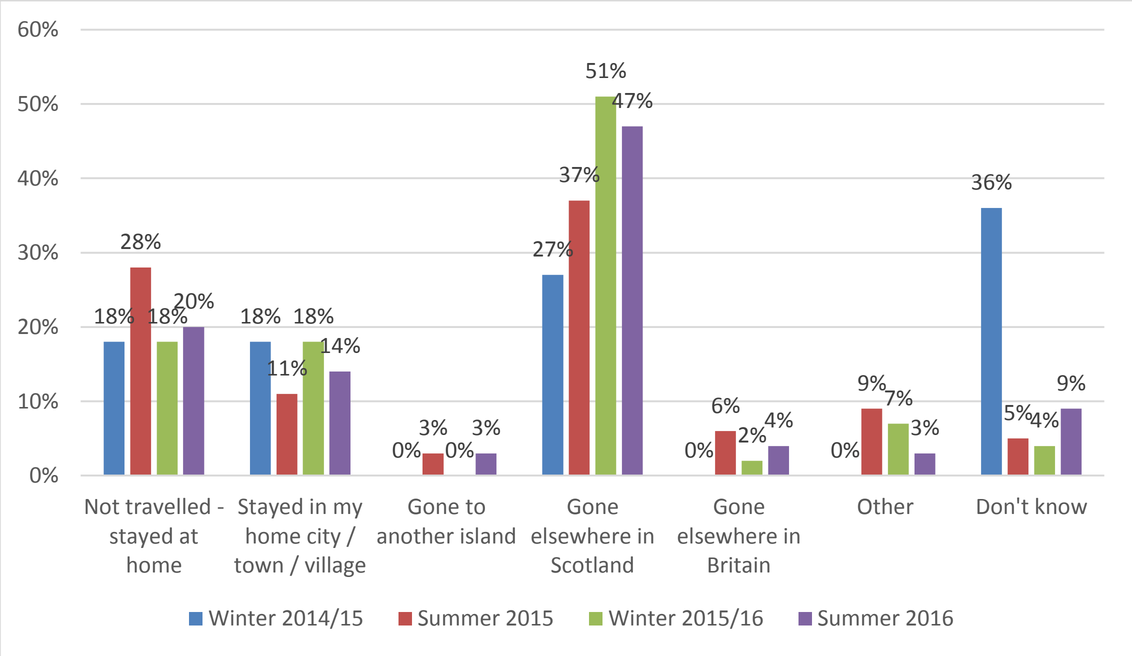


The above figure clearly demonstrates the positive impact that RET had in encouraging increased visitation to Arran. On average across all four surveys, around **11%** of visitors questioned on the Ardrossan – Brodick route responded that their journey had been prompted / facilitated by the lower fares. The proportionally higher number of 'Don't Know' responses in the summer surveys reflects a lesser awareness of RET amongst visitors in the peak season. Across the four onboard surveys, 10% of resident trips would not have been undertaken had RET not been in place. These figures of 11% and 10% are in line with the overall increase in Ardrossan-Brodick passenger numbers of 9% in Year 1 and 6% in Year 2.

On the Claonaig – Lochranza route, an average of **17%** of respondents across all four surveys indicated that their visit had been prompted / facilitated by the lower fares. This highlights the proportionally greater use of this route by tourists, although there was also a suggestion from the business panel that lower fares have enhanced opportunities for island/peninsula-hopping holidays.

The visitors whose journey to Arran was prompted by RET fares were also asked where they would have gone had RET not been introduced. The responses are set out in Figure 5.2 below:

Figure 5.2: Alternative destination if RET had not been introduced (Ardrossan – Brodick respondents)



It should be noted that the vast majority of visitor respondents to the onboard survey lived in Scotland. Therefore, for those who would have stayed at home or in their local area, there would likely no demonstrable net loss at the Scotland level.

It is clear from the above figure that the majority of visitors who noted that their journey had been prompted by RET would have undertaken a Scottish trip / holiday in any case. A significant proportion of those surveyed in the summer were only making day-trips (Summer 2015, 59% (n=663) and Summer 2016, 49% (n=423)) and thus were likely taking advantage of the opportunity to visit an island which was previously perceived as too expensive to visit for only one day (particularly with a car). Without RET, it is likely that many of these trips would have been to destinations along the Clyde coast, given that the bulk of day-trippers emanated from Greater Glasgow.

RET did however play a key role in attracting visitors to Scotland or retaining them within Scotland. Considering the two summer surveys, an average of 5% of visitors would have gone elsewhere in Great Britain, whilst an average of 6% of visitors selected ‘Other’, which typically involved trips abroad. Overall of the 11% of visitors who stated that their journeys were prompted by RET, a further 11% would not have visited or stayed in Scotland without the introduction of RET on the Arran services, i.e. around 1% of total visitors to the island. This group of visitors is likely to represent a much larger proportion of those staying in paid accommodation for more than one night. The introduction of RET to the Arran routes has therefore made a positive contribution to the Scottish tourism industry in the last two years.

The findings in relation to the Claonaig – Lochranza route were broadly similar to those of the Ardrossan – Brodick route.

Tourist Activities

Arran was the first island to receive RET which is sufficiently proximate to the Scottish mainland to offer realistic day-trip prospects. An average of 40% of all visitor respondents to the onboard surveys on the Ardrossan – Brodick route were making a day-trip to the island (the proportions for the Claonaig – Lochranza route are broadly similar). It can be argued that the reduced fares offered by RET have made Arran a more realistic day-trip opportunity for those in the west of Scotland.

Whilst the day-trip market is significant, the majority of visitor respondents to the surveys were planning on staying at least one night on the island. There was a broad spread of different types of accommodation used, which suggests that Arran is successfully attracting different segments of the tourism market. Unsurprisingly, hotels and other fixed / permanent accommodation tend to dominate in the winter. It is interesting to note that Bed & Breakfast (B&B) / guesthouse accommodation is very lightly used during the winter, principally because such accommodation providers often close during this period. However, the business survey found that an increasing number of B&Bs are starting to offer an extended shoulder season due to the equivalent extended tourism season spawned by RET.

On average across the four surveys, 40% of visitors surveyed on the Ardrossan – Brodick route did not pay for accommodation whilst on Arran, likely reflecting the relatively high level of second home ownership on the island and the high proportion of 'visiting friends & relatives' travel.

Figure 5.3: Estimated Visitor Spend per Party (Summer 2016 Onboard Surveys)

On average, it is estimated that day trippers spent in the region of £100 per party or £33 per person. Visitors staying for at least one night spent around £140 per party (£53 per head) excluding accommodation and a further £418 per party (£158 per head) on accommodation for those who paid for accommodation.

Where visitors were paying for accommodation, the vast majority surveyed were paying less than £300 for accommodation for their travelling party in total. This reflects the popularity of Arran as a short-break destination, particularly for weekend / Friday – Monday stays. The business survey also suggested that the wider roll-out of RET across Scotland is supporting the island/peninsula-hopping market, with short stays in each island. In 2015, this was predominantly seen as combining an Arran trip with Kintyre, Islay and to a lesser extent Gigha. However, with the roll out of RET across the remaining CHFS islands in October 2015, there is believed to be a strong island hopping market combining the entire Firth of Clyde & Kintyre.

In terms of activities, there is unsurprisingly a significant proportion of visitors pursuing outdoor activities on the island. Across all four waves of the survey, in excess of 40% of visitors were partaking in one or more of hillwalking, walking and/or beaches and fishing, a figure that increases to over 50% in the summer surveys.

Visitor attractions are also very popular in the summer months, with around 13% of Ardrossan - Brodick users visiting an attraction. A number of paid visitor attractions consulted as part of the business survey reported a significant growth in visitor numbers, an extended season and the recruitment of additional staff.

The winter visitor surveys identified a significant number of respondents that were not undertaking any activities whilst on Arran. This can largely be accounted for through second home owners and the visiting friends & family market.

6 The Arran Economy

RET is a policy intended to stimulate economic activity in Scotland's island communities and enhance economic integration with mainland Scotland, with commensurate benefits for Scotland as a whole. This chapter therefore considers evidence relating to the economic impact of RET at the island and national level.

As was noted at the outset of this report, it is difficult to make an evidence-based judgement on the impact of RET on the Arran economy because:

- The supply side response to RET (i.e. investment, property prices etc) will on the whole be more gradual than on the demand side (i.e. ferry carryings, visitor numbers etc). Over time, RET may encourage new business formation, business investment / expansion, changes in the Arran labour market, development / property market impacts etc. However, whilst the research has identified early signs of supply side changes, they will not be fully manifested for a number of years.

- Published data sources significantly lag the situation ‘on the ground’ – key datasets such as the Census and Scottish Household Survey will not yet report post-RET metrics.

As a result, the evaluation of the impact of RET on the Arran economy largely draws upon the business and household surveys and is thus largely qualitative, although a number of businesses have cited examples of how they have amended their behaviour in light of RET being introduced. A long-term monitoring & evaluation framework has been developed with a view to tracking the supply side outcomes and impacts over an extended period of time and evaluating them at a later date.

In keeping with the Scottish Transport Appraisal Guidance, the analysis of economic impacts in this evaluation takes the widest possible perspective, addressing:

- the impact of RET on the Arran economy as a whole;
- displacement of activity to the Scottish mainland; and
- views on the social, economic and cultural opportunities in Arran.

Aggregate impact on the Arran economy

The business survey explored in some detail the impact of RET on the Arran economy as a whole. In the Year 2 (2016) wave of the surveys, businesses generally confirmed the figures they had provided in 2015 and supplemented this information with further anecdotal evidence. There was a slightly increased reluctance to discuss issues such as customer numbers, turnover etc.

The 2015 business survey also obtained a higher response rate, with a total of 21 businesses responding. By comparison, there were a total of 14 detailed responses in 2016. A number of businesses chose not to respond because they were too busy (despite the interviews taking place in November, which is very late in the season), which in itself highlights the RET impact. Others briefly explained that their 2015 response remains current.

The analysis below therefore draws principally on the 2015 survey, with key findings from the 2016 survey included where appropriate (although it should again be noted that there was a broad consistency of views between the two years).

Customer Numbers

Businesses strongly affirmed that RET has increased footfall – in 2015, sixteen (80%) businesses indicated that customer numbers have increased. Half (50%) of the businesses survey reported a 5%-10% increase in customer numbers, with a further 25% reporting an 11%-20% increase. The largest increases were, unsurprisingly, concentrated in the tourism sector – e.g. hotels, B&Bs, holiday lets, cafes, golf courses, tourist attractions etc. This level of increase was consistent with that reported in the 2016 surveys, with a number of the leisure / tourism businesess which responded indicating that they had to take on additional staff mid-season because the growth in visitor numbers was so overwhelming.

A handful of businesses in both 2015 and 2016 reported a reduction in customer numbers. These were predominantly ‘high street’ retail businesses, the respondents noting that mainland competition was proving challenging (this is discussed in more detail below).

Of the businesses that reported increases in customer numbers, two key points emerged:

- RET has significantly extended the tourist season on Arran; and
- The increased visitor numbers are supporting the more remote / rural areas of the island.

In relation to the extended tourist season, although the majority of businesses indicated that the increase in customer numbers / turnover was concentrated in particular period(s) of the year, mainly the school Easter and summer holidays, there was a unanimous view amongst tourism related businesses that the season has been extended. This has taken the form of both increased visitor numbers between the peaks (i.e. between the Easter and summer holidays) and extensions to the season at both ends. For example, in the 2016 research, a number of accommodation providers noted that they had higher than normal bookings in March, October and November (indeed one large hotel was fully booked in early November). Holiday letting businesses also reported a significant increase in out of season bookings.

In relation to the greater support for the more remote areas of the island, a range of businesses, particularly in the tourism sector, reported that previously high car fares meant that large numbers of visitors came to Arran as foot passengers. As a result, these visitors (particularly day trippers) often did not venture far beyond Brodick and Lamlash. Businesses in both survey years noted that the large reduction in car fares has encouraged more visitors to bring their car to the island and explore the north, west and south coasts. Businesses in locations such as Kildonan, Blackwaterfoot, Lochranza, Shiskine, Machrie and Corrie have all noted significant increases in customer numbers and attribute this largely to RET.

In the 2015 survey, of the 16 businesses that had noted an increase in customer numbers, 11 (69%) indicated that the increase had been driven by a particular subset of customers, including day trippers, tourists in general, and holiday makers travelling by car. Three of these businesses noted an increase in the number of coach parties. Five (31%) businesses indicated a more even spread across the board.

Of the 16 businesses that had noted an increase in customer numbers, 14 (88%) felt that the impact would be sustained over the coming years, particularly as levels of awareness of RET increased. Two (12%) businesses thought that there would be a 'novelty effect' in the early years of the scheme which would wear off. The 2016 survey reiterated these findings, with businesses expressing confidence that RET has supported a sustained uplift in the Arran economy. In addition, very few consultees suggested that the roll-out of RET to the remainder of the Clyde & Hebrides in October 2015 had impacted negatively on their business. It was explained that this likely reflects the appeal of Arran as a destination and the overall lower cost of island hopping. Indeed, some businesses felt the wider roll-out of RET to be beneficial as it opens up more opportunities for island hopping.

Anonymised feedback from businesses included:

- Hotel provider: month-on-month average occupancy since April 2015 has been 89% (July and August 100%). In the corresponding period in 2014, the average occupancy was approximately 79%. *(2015 survey)*
- Guesthouse: estimated 10% increase in occupancy rates compared to pre-RET. *(2015 survey)*
- Guesthouse: No overall change in average occupancy May – August 2015 when compared to the same period during 2014 (92% both years). However, occupancy in April 2015 was "much greater" than April 2014. *(2015 survey)*
- Hotel: 5.2% increase in occupancy rates; 8% more like-for-like person nights and 11% more 'chance' non-resident diners in the restaurant when compared to 2014. *(2015 survey)*
- Tourist attraction: Footfall has increased by 20% since the introduction of RET. *(2015 survey)*
- Restaurant: In April & May 2016, the business struggled to cope with the dramatic increase in customer numbers. *(2016 survey)*
- Accommodation letting company: 10% increase in short break enquiries and an increase in bookings for the shoulder months since the introduction of RET. *(2015 & 2016 survey)*

Turnover

Businesses were also asked to indicate if turnover had changed since the introduction of RET. In 2015, fourteen businesses (70% of respondents) indicated that turnover had increased overall. Five businesses (25% of respondents) indicated that they were 'unsure' or that the level of turnover had 'stayed the same'. One of the businesses indicated that there had been an overall decrease in the level of turnover. A 5%-10% increase in customer numbers was reported by 27% of the businesses, 37% reported an 11%-20% increase, and a further 27% reported an increase in turnover of more than 30%.

The findings of the 2016 business survey were broadly similar, with the increase in turnover being largely sustained or indeed increasing due to an overall uplift in visitor numbers. Indeed, one leisure business noted that the increase in turnover has been so dramatic that they can now afford to close the business over the winter months.

The feedback in relation to turnover is very similar to that obtained in relation to customer numbers. Tourism related businesses experienced the largest increase in turnover, whilst ‘high street’ retail businesses exposed to competition from the mainland fared less well (although only one business reported a negative impact). There was again seen to be an uplift in turnover in businesses in the more rural areas of the island, commensurate with the increase in visitor numbers.

Labour market impacts

Consultation at the outset of this evaluation identified a degree of concern that RET fares would have a negative impact on the Arran labour market. Whilst a prosperous island overall, employee jobs in Arran tend to be concentrated in lower paid sectors such as tourism and retail and there was a concern that young people in particular would take advantage of lower fares to work on the mainland. Whilst this would have positive benefits for the island and at the national level, there was a concern that Arran businesses would experience skills shortages and would be unable to fill lower paid posts.

The business surveys suggest that these concerns were largely misplaced. Whilst the household survey does indicate that Arran residents believe there are improved employment opportunities on the Scottish mainland, this has not had a negative impact on the island labour market. Indeed, there has been some evidence of in-commuting from the mainland to take up positions on Arran.

Businesses were asked to indicate if RET has impacted on their ability to attract / retain labour. In 2015, twelve (60%) businesses stated that RET has had no impact, and three of the businesses (15%) are family-run and hence labour impacts were considered not applicable. Five (25%) businesses indicated that RET had impacted on their ability to attract / retain labour.

A number of specific comments were received from businesses in relation to the expansion of their workforce. These include:

- Manufacturing business: “The business suffers from skills shortages within the factory and requires to employ staff from the mainland to fill such roles - the introduction of RET has helped in this regard”. *(2015 survey)*
- Leisure & accommodation provider: “RET has had a very positive impact on the business’ ability to retain staff. Two years ago, the business employed two seasonal staff, but there was insufficient business to support the employment of permanent part-time staff. This year [2015], due to the increase in revenue attributable to RET, the business has been able to employ one full-time worker who can be retained all year round. The business considers that this would not have been possible prior to RET.” *(2015 survey)*
- Retail business: “RET has been massively positive in relation to the business’ ability to attract / retain labour, and school-age staff from Ardrossan can now be recruited for weekend shifts”. *(2015 survey)*

- Accommodation letting company: This company noted that they have taken on two new members of staff as a result of the RET induced business. *(2016 survey)*

There was some limited feedback of staff poaching between Arran firms but this was the exception rather than the rule. There was also a concern expressed by a small number of businesses in the 2016 survey that it is becoming increasingly difficult to attract and retain staff in hospitality and catering. Overall, however, RET has had a notable positive effect on the Arran labour market, although long-term monitoring is required to determine whether skill shortages do emerge as the island economy continues to expand.

Investment

It is anticipated that RET will support business expansion / investment on Arran, although these impacts will likely be manifested over the longer term. In the 2015 business survey, interviewees were asked if the lower fares had encouraged them to make new investments. Three (15%) businesses have made new capital investments since RET was introduced in October 2014, and RET was an influencing factor in each case:

- Hotel: Since the introduction of RET in October 2014, the business has invested in new budget accommodation. It is considered that the business would likely have made this investment regardless, “but RET has given us the confidence”. *(2015 survey)*
- Hotel: The business has invested in a number of new rooms since RET was introduced in October 2014. RET has been a “key driver” in making this investment: “we knew RET was coming.” In addition, RET is considered to have driven the uptake of the new rooms. *(2015 survey)*

Significant capital investment in the next 3-5 years is planned for six (30%) of the businesses, and RET has been an influencing factor for five out of six of these businesses. Two (10%) businesses indicated that capital investment is ‘possibly’ planned in the next 3-5 years, but RET is not an influencing factor. Twelve (60%) businesses have no current plans for capital investment in the next 3-5 years.

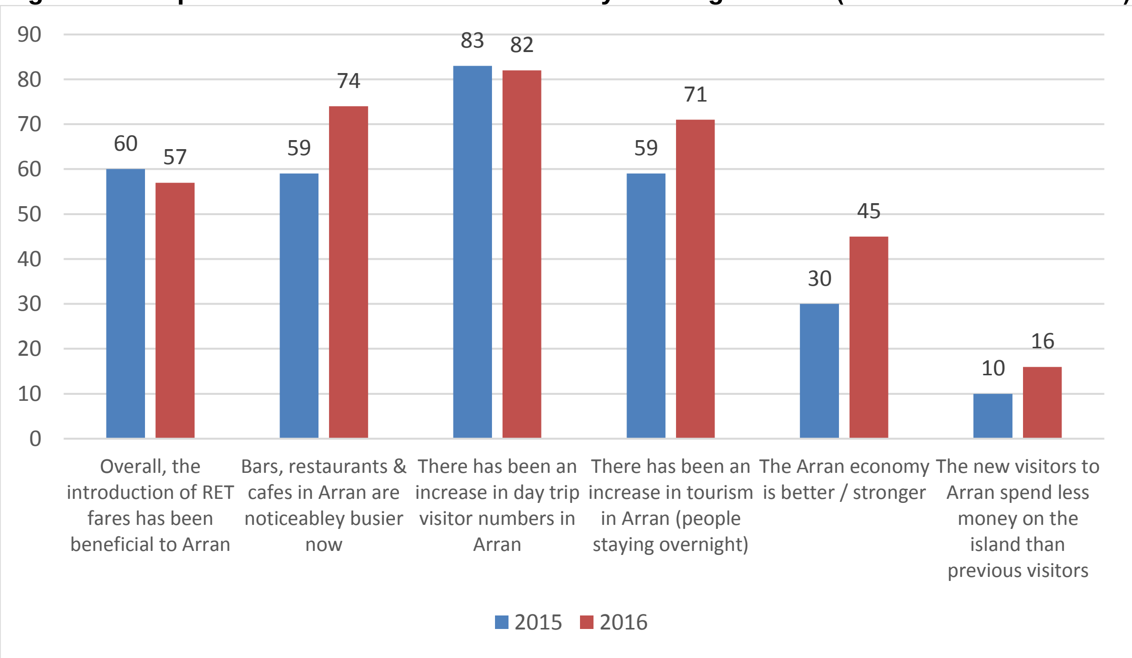
Similar results were reported in the 2016 business survey, with a belief that the RET impact is ‘here to stay’ and will thus prompt investment. Businesses in 2016 did however note that investment & growth could be constrained if infrastructure (e.g. roads, toilet blocks etc) is not improved and if ferry capacity cannot meet the increasing demand to visit Arran. Comments were also received in relation to ensuring that public transport services on Arran are fully integrated with ferry services, and capable of transporting luggage, bicycles etc.

Resident views

In the household survey, respondents were asked to note whether they agreed or disagreed with a series of statements in relation to economic activity in Arran (on a five-point scale of 'strongly agree' to 'strongly disagree'). In order to provide a clear visual representation of the results, the data has been presented in terms of net agreement / disagreement for each statement (with "don't knows" excluded). The household survey findings are supplemented by appropriate material from the business survey.

Figure 6.1 sets out views from the household survey on the aggregate impact of RET on the Arran economy:

Figure 6.1: Impact of RET on the Arran economy – net agreement (don't knows excluded)



The above figure clearly demonstrates the positive perception of RET in Arran. There was strong agreement in the household survey that the introduction of RET fares has, overall, been beneficial to Arran – there was a net agreement of 60% in 2015 and 57% in 2016).

Outwith the obvious benefit of lower fares for Arran residents, a key driver of this perception has clearly been the positive impact in terms of tourism. There was over 80% net agreement that RET has increased day trip numbers in Arran, whilst there was also a widely held view that there has been an increase in tourists staying overnight on the island. It is particularly notable that the non-day trip tourism has been perceived to increase in 2016, which is in keeping with the findings from the wider surveys and carryings data.

The increase in tourism across the piece is likely to be the main driver underpinning the view that the Arran economy is stronger, with a net agreement with this statement of 30% in 2015 and 45% in 2016 (a 50% increase in net agreement over the course of one year).

It is notable from the survey responses that there is an increasing perception that the 'new' visitors to Arran are spending less than existing / previous visitors. This is likely a result of the increased number of day trippers but may also reflect a potential change in the demographic of the typical Arran tourist.

Potential displacement impacts

Whilst the evidence does clearly demonstrate that RET has on the whole been highly beneficial for Arran, it is important to bear in mind that transport is a 'two-way street'. Whilst a reduction in the cost of travel to / from Arran is beneficial to islanders in a number of respects, lower fares also give rise to the prospect of increased competition for island businesses. This can be thought of both in terms of:

- island residents making purchases on the mainland which they would otherwise have made on the island; and
- mainland firms entering the Arran market to compete with local firms, tradesmen for example.

Whilst any leakage from Arran would not have a net negative impact at the national level, it would be considered negative at the island level.

Business views

Whilst businesses were, on the whole, very positive about RET, there was an awareness of increased off-island competition amongst a number of firms.

In the 2015 surveys, 13 (65%) businesses had experienced an increase in residents making more use of mainland-based retail and leisure facilities. Two (10%) businesses had not experienced an increase in residents making more use of mainland-based services and facilities; three (15%) business indicated that this was a possibility; and two (10%) were unsure. Of the 16 interviewees who 'had' or 'possibly had' experienced a loss of custom to the mainland, six (38%) felt that this was to the detriment of island businesses, and specific reference was made to businesses including local retail outlets, petrol providers and shorefront businesses in Brodick. Some 10 (62%) businesses did not consider that there was a detrimental impact on local businesses, and indicated that residents were travelling to the mainland to purchase items which are unavailable on Arran and / or that any increase in residents making more use of mainland based facilities is negated by the increased numbers of visitors using Arran-based facilities.

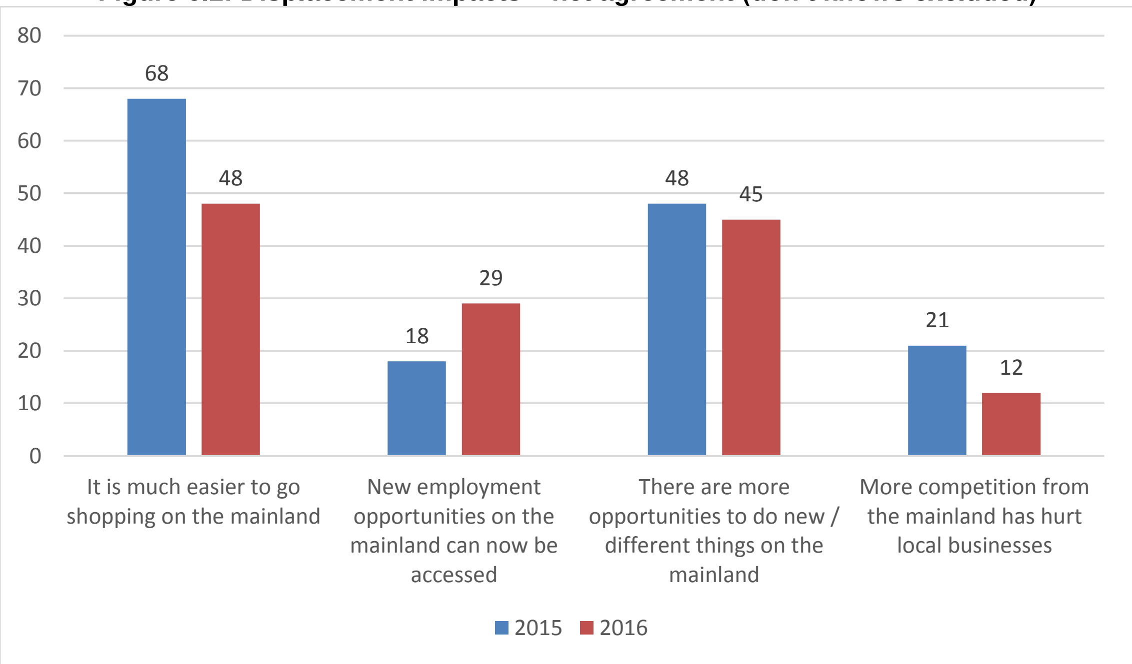
These findings were broadly echoed in the 2016 surveys, with the majority of Arran businesses interviewed responding that their firm either had a competitive advantage by operating on Arran or that the increase in visitor numbers outweighed any disadvantage associated with economic leakage. The businesses which reported a reduction in trade were generally concentrated in retail (e.g. groceries, fuel etc) and identified difficulties in competing with the economies of scale offered by large mainland chains. It was however noted that these businesses were already challenged by the growth in internet shopping, which allowed island-based customers to access a wider range of opportunities outwith Arran. Nonetheless, the surveys do strongly suggest that smaller retail firms and convenience stores have faced more challenging conditions since the advent of RET.

In order to further assess the potential displacement impact, the study team consulted with a major supermarket chain located in Ardrossan to enquire as to whether they had recorded an increase in business from Arran. As the business is easily identifiable, the findings of this consultation have been provided to Transport Scotland confidentially and independent of this report.

Resident views

The following figure sets out the views from the household survey in terms of potential displacement impacts.

Figure 6.2: Displacement impacts – net agreement (don't knows excluded)



The findings from the household survey clearly demonstrate a degree of leakage from Arran. In the 2015 survey, 68% of respondents agreed that they find it much easier to go shopping in the mainland as a result of RET. Interestingly, this reduces to 48% in 2016, which may reflect a potential 'novelty' impact in the first full year of RET and / or increasing capacity issues. One business consultee noted that the reduction in ferry fares is allowing island residents to travel further afield (either taking a car onboard or getting the train) for shopping.

Outwith shopping, the survey does demonstrate a clear view amongst Arran households that there are more opportunities to do new / different activities on the mainland (48% net agreement in 2015 and 45% in 2016). Overall, this has to be seen as a positive effect as it represents an improvement in accessibility for islanders, which may however facilitate a degree of economic leakage.

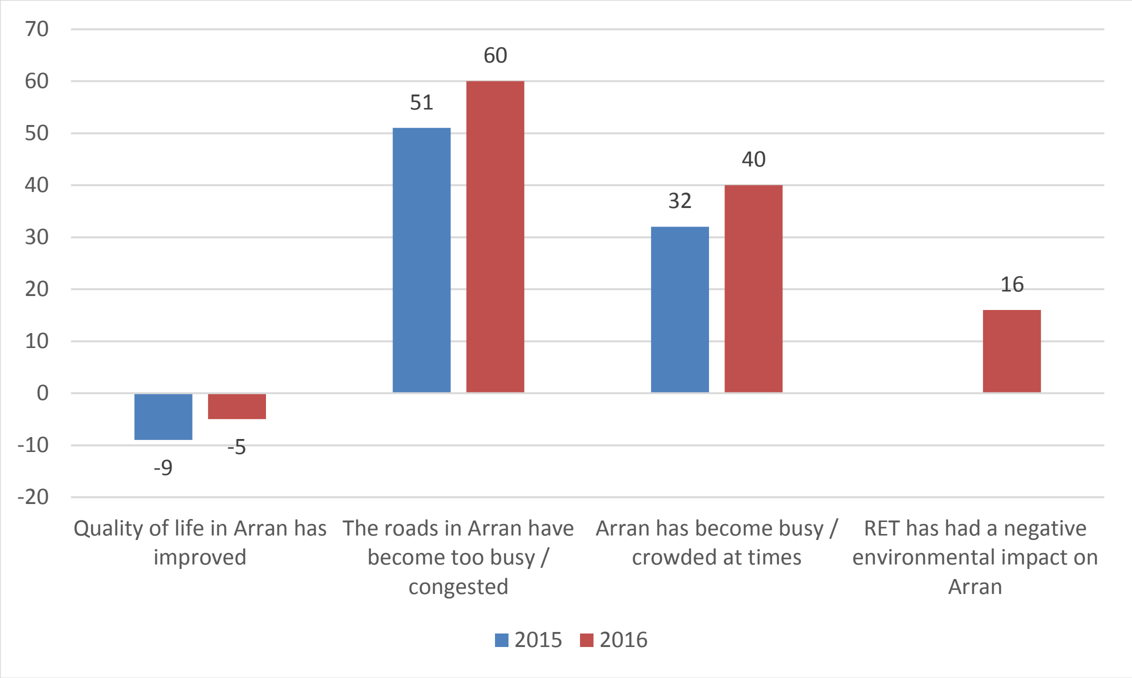
The household survey also identifies a perception amongst residents that increased competition from the mainland is negatively impacting on local businesses. This is an important finding, although it does have to be treated with a degree of caution given that it is householders rather than businesses themselves making this statement. At any rate, the perception of the impact seems to have dissipated to some extent between 2015 and 2016, which may reflect the increasing strength of local businesses cited previously.

The household survey also identified an increase in employment opportunities on the mainland for Arran residents. This again can be seen as a positive for Arran if it leads to residents moving into work or more productive jobs, although it would reduce the size of the labour force on the island, which the business survey suggests is being somewhat stretched by RET-related growth. It is illustrative that 29% (n=72) of respondents in 2016 agree that opportunities for employment on the mainland have increased (compared to 18% (n=82 in 2015).

Social, economic and cultural opportunities

Whilst it is widely agreed that the introduction of RET has been of significant benefit to the Arran economy, respondents to the household survey were asked how it had impacted on the quality of life more generally – the results are illustrated in the figure below:

Figure 6.3: Quality of life – net agreement (don't knows excluded)



Arran residents indicated that RET has had several negative impacts in terms of quality of life factors. A net 9% of respondents in 2015 noted that the quality of life in Arran had declined, reducing to 5% in 2016. The lesser perception of negative quality of life impacts in 2016 is interesting in that it coincides with the year in which the island was busier. This may to a degree reflect the initial early realisation of longer-term benefits such as improved job opportunities, higher wages etc which will lag the introduction of RET. At this stage, however, this point remains anecdotal and can only be fully evidenced through tracking views on the quality of life over a longer-period of time (as recommended in the proposed long-term monitoring framework).

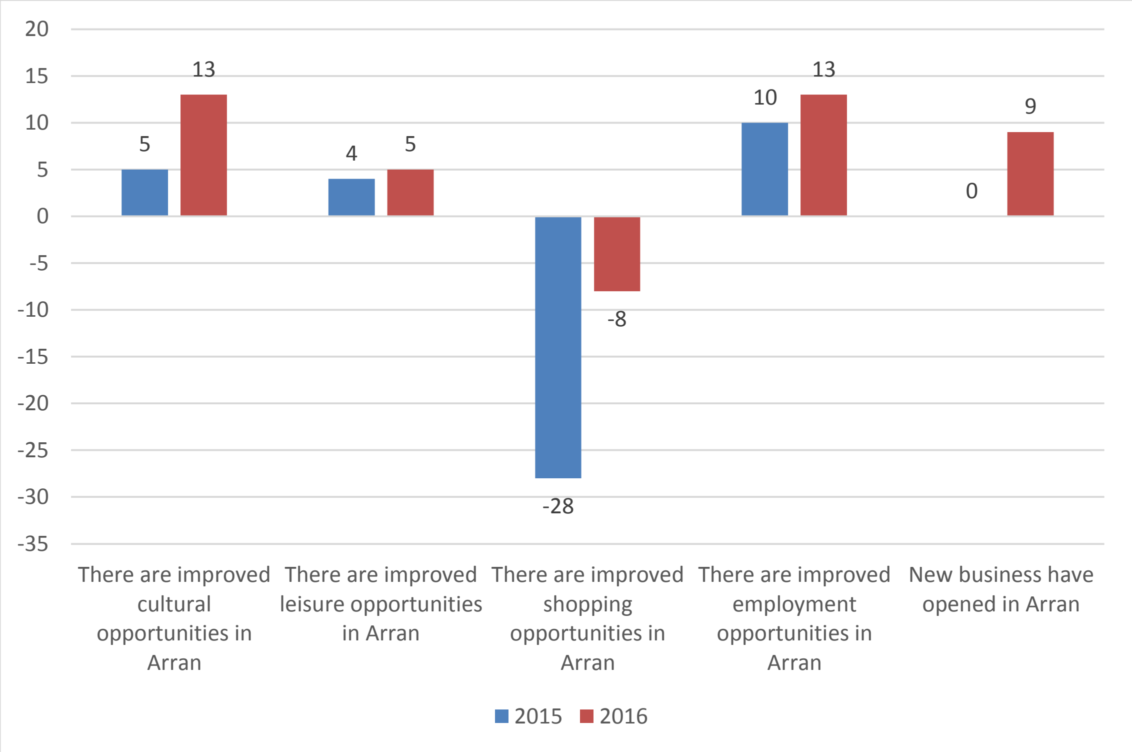
The business survey also picked up a number of comments on quality of life impacts. Whilst the increased trade brought about by RET has been welcomed, various business consultees cited an increase in the number of 'booze cruises' to the island and incidences of (generally alcohol-related) anti-social behaviour. A number of accommodation providers also cited occasional problems of accommodation being left in a very poor state on departure, which it is claimed rarely happened prior to RET being introduced.

The increase in the number of people on the island, particularly at peak times, appears to be the key issue, with a net 60% of respondents indicating that the roads have become too busy / congested and a net 40% noting that the island itself has become too busy / crowded at times. The concerns about on-island congestion are again greater in 2016 than in 2015, which ties in with the increased demand identified in the carryings data and with survey respondents. This could give rise to a number of medium-term challenges for North Ayrshire Council, which is responsible for roads and parking management.

A net 16% of residents in 2016 agreed that RET has had a negative environmental impact on the island, stemming largely from increasing numbers of people and vehicles on Arran. This question was not asked in 2015, so it is not possible to make a year-on-year comparison.

From a wider socio-economic perspective, the introduction of RET has influenced access to social, economic and cultural opportunities. Figure 6.4 below sets out the level of net agreement amongst household survey respondents to statements in relation to social, economic and cultural opportunities:

Figure 6.4: Social, economic and cultural opportunities – net agreement(don't knows excluded)



The above figure illustrates that, overall, RET has expanded the range of social, economic and cultural opportunities for the island of Arran. These can be thought of as the 'softer' benefits of reduced fares.

It is particularly notable that island residents perceive enhanced employment opportunities and note the opening of new businesses in Arran. The creation of job and enterprise opportunities is important in ensuring the long-term socio-economic sustainability of the island (although it is noted from the business survey that it tends to be additional lower paid jobs which are emerging).

It is again interesting to note that there is an improved perception of employment / business opportunities in 2016 than in 2015 (particularly in terms of the latter). This again suggests that the 'supply-side' on Arran (employment, business investment etc) is beginning to respond to the opportunities offered by RET, a point again supported by the business survey where a number of firms noted that they are beginning to commit to investments in e.g. new campsites, refurbished hotels etc.

The other key point of note from the above survey is that residents feel that shopping opportunities on Arran have declined (-28% in 2015 and -8% in 2016). It is again worth noting the disparity between the two survey years, with 2016 respondents less in agreement that island shopping opportunities had worsened. This may reflect either a reduction in the RET novelty effect and / or a supply-side response in Arran, for example involving new businesses opening or existing businesses expanding or diversifying their product ranges.

Supply chain impacts

The final issue to address in relation to the Arran economy is the impact of RET on the island supply chain. Like any island, Arran is dependent on its sea connections to ensure the effective functioning of its supply chain, both inbound and outbound. Given the relatively low volume of goods being moved, the Arran supply chain is principally served by a small number of local haulage firms. This is common across most Scottish islands – the small size of the market and the logistical challenges of working expensive assets around a ferry connection generally dissuades larger national firms from entering island markets. Indeed, high volume lines, such as supermarket traffic, are often sub-contracted to island firms from larger national haulage companies.

Again, given the need for an island to be largely self-sufficient from a haulage perspective, there usually emerges one or two dominant firms which can meet all of the island's needs, supported by smaller firms filling niche markets. The 'full service' haulage firms generally focus on ensuring:

- that they have a sufficient base volume to be price competitive when bidding for more valuable traffic; and
- the operation of a diverse fleet of vehicles (e.g. curtain-sided trailers, refrigerated trailers; timber vehicles; specialist plant etc.) capable of meeting the 'full service' needs of the island economy.

Whilst the main haulier in an island will generally have a near monopoly position, such companies are generally well attuned to local needs and the markets they serve. They are overall a key part of the functioning of an island supply chain and thus the impact of any ferries policy which has a bearing on their business has to be carefully considered and evaluated.

The RET policy does not extend to large commercial vehicles (CV) on any route. With some limited exceptions in Coll, Tiree and the Western Isles, haulage firms continue to pay the same lane metre rate now as they did prior to the introduction of RET for passengers, cars and commercial vehicles. Transport Scotland is currently carrying out a Freight Fares Review, which will consider different approaches to fare setting for commercial traffic, but this has not yet been completed.

Whilst RET fares do not apply to CVs, the policy did introduce a change in the length at which a vehicle is defined as 'commercial'. Prior to the introduction of RET, any vehicle measuring more than 5 metres in length was classed as a CV. When RET was introduced, this threshold was increased, with only vehicles over 6 metres in length being considered CVs. This policy change meant that a large number of vans which were previously considered as CVs could now travel for a car fare (which in itself was significantly reduced in price when RET was introduced). The impact of this change is discussed in more detail below.

Impact of the 6m Rule

The negative impact of the 6 metre rule on the volume of CV lane metres carried is set out in Chapter 4, which demonstrates a marked reduction in both the number of CVs and CV lane metres since RET was introduced. A handful of island haulage firms were consulted on this issue. Given the small scale of the local market, it would be difficult to anonymise their responses. These have thus been provided confidentially to Transport Scotland.

7 Conclusions

The introduction of RET fares to the Arran routes in October 2014 has broadly delivered the objectives set by Transport Scotland at the conception of the scheme.

The advent of RET on the Arran routes has led to a significant increase in the demand for ferry services. This has particularly been the case in relation to vehicle carryings, with an additional 76,000 vehicles carried across the two routes in 2015/16 compared to the last pre-RET year (2013/14). Passenger carryings have also increased but at a much slower rate than vehicle carryings, which suggests that a number of ferry users that previously travelled as foot passengers are now taking a car onboard. CV and CV LM carryings have declined, largely as a result of the '6m rule'.

Arran is the first island in close proximity to the Central Belt in receipt of RET, and has accordingly experienced a larger absolute impact than any other island previously receiving RET. As a result of the introduction of RET, residents of both Arran and the west central mainland have access to increased opportunities for discretionary travel to and from the island.

The step-change in demand for the Arran ferry services has however given rise to growing capacity issues on the Ardrossan – Brodick route. The operator carryings data highlights emerging capacity issues on this route, with a quarter of all sailings in 2015-16 being defined having a car deck utilisation greater than 80%). There are particular concentrations of peak sailings around the weekend and in the high summer months. The emerging capacity issues were also highlighted in the surveys, with a significant proportion of island residents and visitors reporting occasions when they could not secure a vehicle booking on the ferry. Businesses also expressed concerns that capacity issues could, if not addressed, stymie the positive impacts of RET.

The increase in ferry service demand has in part been driven through a step-change in the scale of the Arran tourism market. As well as a large increase in tourism volumes, the survey and carryings data clearly highlight an extension of the season at both ends, with increased visitor numbers in the shoulder months (i.e. between Easter and the school summer holidays and in September and October). The opportunities afforded by RET have also enhanced the attractiveness of island / peninsula hopping.

At the Arran level, the increased number of visitors bringing cars to the island has had a disproportionately positive effect for the remote / rural areas of Arran, particularly on the west coast. At the national level, it is highly significant that 11% of visitors surveyed noted that they would not have visited Scotland if RET had not been introduced to the Arran services – this represents a net benefit at the national level.

The large uplift in tourism has translated into a positive impact on the Arran economy. Arran businesses were highly positive about the impact of RET, with the majority of firms citing an increase in both footfall and turnover. The tourism sector has been the largest beneficiary, with a number of tourism businesses taking on new staff, investing in and expanding their operations. Whilst the net economic effect has been highly positive overall, there have been a small number of 'losers', including retail firms exposed to mainland competition and some local haulage firms.

There is a widely held view amongst Arran residents that RET has been beneficial for the Arran economy, largely because of the positive impact in terms of tourism. There is also an overwhelmingly positive view amongst residents that RET has enhanced the social, cultural and economic opportunities on the island. Despite this, however, Arran residents responded that the quality of life has declined since the reduced fares were introduced, with congestion, negative environmental impacts and increased incidences of anti-social behaviour being cited.

Whilst the early indications suggest that RET has been hugely positive for Arran, the full effects of such a fundamental change in transport costs can only be understood over a longer time period. As is common with a transport improvement, the 'demand-side' responds almost immediately to a reduction in cost, changing travel patterns and leading to an influx of visitors. However, the supply-side will typically respond much more slowly and, in the short-term, may constrain the positive impacts of lower fares to some extent. For example, ferry capacity, availability of on-island accommodation, tightness of the island labour market, housing availability / prices will all have a bearing on the ongoing success or otherwise of RET. Tracking the interaction between the RET-related demand uplift and the longer-term changes (positive and negative) on the supply-side is therefore necessary to fully understand the impact of RET on Arran. An ongoing monitoring and evaluation framework has been prepared as part of this research project and should be implemented in the years ahead.

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