

Net Zero, Energy and Transport Committee  
“A modern and sustainable ferry service for Scotland”  
Submission by Arran Ferry Action Group – 27/06/2022

Arran Ferry Action Group commends the Net Zero, Energy and Transport Committee Inquiry on their decision to conduct this inquiry into ‘a modern and sustainable ferry service for Scotland’ and thank the committee for the invitation to give evidence and submit papers for consideration. The so called ‘lifeline’ ferry services to the islands of Scotland are currently in a precarious position. A fundamental ‘root and branch’ review of the operating models, vessel types, and service level is urgently required to provide direction to the level of service that is required, at a cost that is sustainable for the taxpayer, in addition to reducing the environmental impacts. It must be as wide-ranging and detailed as possible. It must seek the best expert opinion and international best practice to inform the future direction of a truly modern and sustainable ferry service for Scotland that could be the envy of the world. We offer these comments on the draft remit as published to provide background and direction to the committee for the focus of the Inquiry.

1. What do island residents, businesses, and other ferry users need from Scottish Government-supported ferry services?

- Meeting the needs of island and remote rural communities and businesses, including secure jobs providing ferry services.

Meeting the needs of island residents, businesses and other frequent ferry users are of fundamental importance to the long term sustainability of the island economies and therefore the viability of the islands themselves.

It cannot be overstated how reliant the modern island communities are on a reliable ferry service, particularly for islands such as Arran.

They are the means of travel for medical appointments at mainland hospitals, for islanders travelling for work or pleasure, and for the many island producers to get goods or livestock to market. The current connectivity crisis has many wide-ranging negative social and economic impacts.

They are the sole means of supplying the island with goods and services, ranging from fuel to food stuffs and stock for shops, along with bringing the lifeblood of the tourism based economies - visitors.

For Arran, around £65 million of economic impact is directly attributable to the reliable operation of the ferry. This is according to The Fraser of Allander Institute Report commissioned by North Ayrshire Council in 2020. The ease of travel to and from the islands is critical to the large tourism industry, with its significant volume of local employment.

Subjects such as extending the operating day allowing easier commuting from or to the islands, more frequency of services, more reliable services, (which means reliable vessels and ports), with increased resilience and operating ranges in adverse weather are key areas of attention.

Maintaining and improving connectivity to more remote areas such as Lochranza on the north of Arran and Kintyre is also important.

Balancing the vastly differing usage profiles of residents and local business and that of visitors is also critical, particularly while capacity is effectively constrained. This can be done by adopting intelligent ticketing systems such as that seen on the island on Samsø in Denmark. Mull and Iona Ferry Committee and Arran Ferry Action Group recently collaborated on a survey of users on this concept, which returned overwhelming support.

Having ferries actually based on islands as their home port could be a pathway to re-populating islands with quality jobs providing the ferry services.

- Meeting the needs of mainland communities and businesses, including visitors.

Many island economies have re-shaped themselves to become year round tourist ‘destinations’. This is particularly the case with the ‘near’ islands such as Arran, Mull or Islay. This is currently being negatively impacted by both the direct impacts of the disruption to the service, and the

reputational damage caused by the disruption to the service and the consequent lack of confidence.

Nearby mainland businesses need a reliable ferry service to allow them to offer goods and services to the islands in a cost competitive manner.

- Service needs at different times of the year.

There is a significant variation in demand through the year. A modern and sustainable ferry service would have the ability to dynamically adjust capacity to reflect demand variation through the year. This would most efficiently be delivered through the use of multiple smaller vessels to provide a flexible service, while allowing sufficient maintenance periods in the off-peak periods. The current fleet is not sufficiently flexible to deliver this goal.

- What needs are better met by other modes, e.g. air where available?

While this may be an option for many other islands, there is no airstrip on Arran. This could be a future project, however, given the close proximity and therefore short sailing time, it is doubtful this would be a cost efficient opportunity for the taxpayer. It would be more beneficial to improve the ferry service.

- How should the Scottish Government support council-run ferry services?

Arran Ferry Action Group has no opinion on council operated services, other than the same core operating principles of optimum frequency and reliability with cost efficiency should be applied to deliver good value.

2. What institutional and funding arrangements would most likely deliver service patterns, vessels, and crewing arrangements that meet the needs of current and potential future ferry users?

- Can the current tri-partite arrangement (Transport Scotland, CMAL, Ferry Operator) for managing most ferry service provision be improved?

The current tri-partite model is extremely cumbersome and hugely inefficient for the taxpayer. There are numerous areas of overlap. There is no direct chain of responsibility. There is no motive to make cost and efficiency savings. This all means a poor deal for the taxpayer.

In our opinion, the procurement agency (CMAL) and the operator (currently CalMac) should be merged. The chain of responsibility and decision making is immediately made clearer.

Transport Scotland should set the overall service framework and award the contracts, with funding through the Scottish Government.

The operator (CMAL-CalMac) would own, operate, and procure vessels to operate the contract. The contracts would be of a length where the operator has incentive to invest in new tonnage, at a minimum of 10 years.

- Can current tendering arrangements be improved, e.g. through service unbundling?

There are significant advantages to unbundling the services into smaller contracts. One aspect this could encourage is Community Interest Companies running their own services. The onus to operate efficiently falls on the operator to make the system work, rather than the current status quo where there are minimal imperatives for cost efficiency, as ultimately the Scottish Government will cover the cost. Best practice from services in Norway and Denmark should be considered.

- Can Scottish Government subsidies be better deployed to meet the needs of current and future ferry users?

In the short-medium term, there are limited opportunities to fundamentally reshape the network operation to save cost and improve efficiency. The delays in the delivery of new vessels have prevented the release of certain older vessels to cascade through the network and allow a more

flexible service. The lead time for delivering the number of new vessels required is such that this is a ~10+ year project at significant cost.

The acquisition of available used vessels on the market is a key priority. The selection criteria need to be revised so as not to exclude vessels that would be suitable. We refer specifically to the MV Pentalina. At a cost of significantly less than that spent on the MV Loch Frisa, the MV Pentalina would have a much greater impact on the network. The key benefit of deploying this vessel on the Arran route would be releasing MV Isle of Arran to act as a much needed additional vessel for the entire major vessel network.

In the longer term, with a fundamental reshaping of the entire service, significant improvements can be made to the service across the network that will cost the taxpayer less in build and operating costs, and likely reduce the required operating subsidy markedly, while simultaneously improving service delivery.

- Are current services providing best value for the taxpayer?

The most simple answer is 'no'.

The level of required subsidy is significant at ~£150m per year. That is £750m through the life of this Parliament. That number \*excludes\* the infrastructure spend of between £500-750m.

Around £1.5 billion spend over the life of this Parliament on ferries for minimal demonstrable improvement in service.

The taxpayer and islanders are getting a poor deal at this point. We are plunging hundreds of millions of pounds into new vessels that 'bake in' the 'high cost' structure into the system, meaning it will require significant subsidy to operate for decades to come.

The current service position is extremely precarious. We have a situation where an ageing fleet is operating more sailings, with increasing demand while the basic vessel capacity is broadly static.

Meanwhile, we have increasing unreliability, with increased technical cancellations in a now rapidly deteriorating fleet that is being stretched like never before. Barely a week goes by without one of other islands lifeline ferry service being significantly disrupted by technical failures. There are numerous impacts to the taxpayer resulting from this disruption, ranging from the direct reduction in tax revenue from VAT and Corporation Tax, to the knock-on costs of many cancelled medical appointments.

3. What vessel size, type, deployment and crewing arrangements would best satisfy the needs you have identified?

- Vessel size and type.

What is abundantly clear is that the current operating model is not sustainable for the islands, the operator, nor the taxpayer.

The current procurement model of large, complex, high displacement monohulls locks the high lifetime cost into the system. They are expensive to build. Each new vessel takes a long lead time from concept to delivery (around 4-5 years) and are essentially unproven prototypes. They are expensive to operate. They have many other disadvantages such as high windage, high powering requirements and high crewing levels. This creates a reliance on high capital investment and high subsidy from Government. This is not sustainable.

In a similar manner to the railway infrastructure, utilising multiple smaller units offers significant advantages. They offer the increased frequency, longer operating days, increased redundancy and resilience, and significant operating savings that could transform the service provision.

Using examples already on the network. Consider the differences between the Ullapool – Stornoway route and the Wemyss Bay – Rothesay route. One route has a large single vessel offering a low frequency service, with no redundancy. The other operates two smaller matched vessels, with a long operating day and high frequency at peak times, combined with 50% redundancy. The second model is much preferred.

Look further up the Clyde to Western Ferries with the dynamically-adjusted, demand-led service provision with up to four vessels operating at peak time. High frequency and high redundancy.

While there are various local requirements that define various elements of the vessel type and service profile, multiple smaller units is clearly a preferred model.

The gains can be more significant when medium speed ro-pax catamarans are considered. These vessels offer huge savings in build cost, build time, and operating cost over equivalent sized monohulls. I refer to the excellent presentations by Dr Ballantyne, Professor Baird and Professor Vassalos at Strathclyde University Maritime Safety Research Centre on the untapped potential of medium speed ro-pax catamarans.

Through life costs in the order of 50% of equivalently sized monohulls are normal. You can quite literally do twice as much with the same investment! Look at the MV Alfred in the Pentland Firth to see what is possible.

Monohulls are particularly inefficient in revenue deadweight terms, at around 20% of the total displacement of the vessel producing any revenue. Catamarans are normally double that at around 40%, proving their efficiency.

Across the network the single most significant constraint on capacity is simply the available car deck space. A catamaran has a significantly larger available deck space for vehicles when compared to a similarly sized monohull.

A standardised fleet of two base designs of maybe 80m and 90m long catamarans could be the optimal position. A larger fleet of smaller vessels would still require a similar overall level of crew, if not more, with more senior positions available such as for deck officers or engineers.

- Sustainable propulsion systems.

The drive to Net Zero is critical to a long term sustainable ferry service. When considering emission reductions, you must first consider areas where reduction in the powering requirements are possible. Reducing the emissions on a high power vessel is of less overall impact than reducing the powering requirements in the first instance. You will never achieve significant reduction in emissions or net zero with the current large, heavy, monohull vessel type. They are fundamentally too heavy, high wetted surface drag and high wave making resistance hull forms that require significant power. Ideas like dual fuel or other hybrids are attempting to solve the symptom, not the root cause. They often add significant complexity and therefore additional weight to the vessel, further compromising the powering requirements.

Looking at other similar best practice, example such as the Norwegian vessel being constructed in Turkey at the same yard as the Islay vessels and has a similar capacity and operating profile, but is fully electric. This is achieved through minimising complexity, minimising displacement and consequently minimising powering requirements where possible.

To make the required significant reduction to emissions you need to reduce the power requirements of the vessels. That basically means selecting low drag efficient hull forms. The optimum low drag and low power requirements are found in medium speed ro-pax catamarans.

Powering requirements of 50% of equivalent monohulls are common place, which means a 50% reduction in fuel consumption and emissions. Reducing power requirements also lowers the technical bar to new and innovative technologies such as full electric or other alternative propulsion systems.

- Compatibility with harbour facilities.

Designing ever larger monohulls to build capacity means significant alterations are required to the harbours. For example, to bring Glen Sannox / Hull 801 into service on the Arran route, major alterations were required in Brodick and are planned in Ardrossan. This adds significant cost to the overall projects budgets. For the Arran route, while the original infrastructure was deemed life expired and required updating anyway, the additional requirements for the new larger vessels added maybe 50% to the total budgets.

Multiple smaller units would not require the same level of major alterations. In the current Ferry Investment Plan of the £580m, over £300m is earmarked for landside infrastructure development. This could be much better spent on new vessels.

- Onboard crew accommodation.

For the shorter 'major vessel' routes, such as Arran, Mull, Islay, and Bute, where the vessel should be able to base at one port of the route reliably, there is limited need for onboard accommodation. The savings in removing this element are significant. Principally, it reduces the complexity and therefore the displacement of the vessel. This means the vessel can be cheaper to build, cheaper to operate, and allow a significant saving to operate the required service level. Crew accommodation could be constructed ashore as required, or ideally the vessel crew live and work in the communities they serve, bringing vital employment to the islands. Building a large and flexible fleet of reliable standardised smaller vessels with the inherent high level of redundancy this delivers, would reduce the current need to move vessels around to fill the gaps created by inevitable breakdowns. Basic accommodation would be provided for passage making on delivery.

- Current procurement criteria and processes: what are their strengths and weaknesses? Are they "future proofed" to accommodate new technologies and the need for sustainable low-carbon travel?

The current procurement process is effectively and demonstrably not fit for purpose.

There is no motivation for cost saving. Vessels become over specified, overly complex, overly expensive to build, on overly long design and build lead times, and result in overly high operating costs over the life on the vessel. Mistakes made in the disastrous procurement of FMEL 801/802 need to be learnt and never repeated, although there is a risk that similar errors will again be made with the New Islay Ferry project.

The procurement should be for the operator, who has the clear incentive to make efficiency and cost savings and deliver high levels of service. It must start with a clear and robust 'Service Requirement' that defines the principal requirements that the vessel must meet. Tried and tested standardised designs should be used where possible, avoiding expensive prototypes and reducing the need for significant design effort with each new order.

New technologies are inevitably less likely to be adopted as the status quo becomes entrenched. The pathway to net zero and low carbon travel must be through reducing displacement and hull form resistance to reduce the initial powering requirements. This is the key advantage of medium speed ro-pax catamarans when compared to the equivalent monohull vessels.

END.