

Scotland's Opportunities

White paper

Ref: MG/SO/WP002 Rev 00 July 2020





Contents Page

1	Executive summary	Page 3
2	Introduction	Page 4
3	Fleet renewal opportunity	Page 5
4	A long-term strategy	Page 7
5	Ferries for Scotland's future	Page 5
5.1	Double ended vessels	Page 11
5.2	Monohull vessels	Page 12
5.3	Route mapping	Page 13
6	Build strategy	Page 15
6.1	Build methods	Page 16
6.2	Scottish supply chain	Page 21
6.3	Series production	Page 21
7	Fulfilling the build schedule	Page 23
7.1	Value to Scotland	Page 25
7.2	Moving forward	Page 26

Executive summary

This document proposes a viable plan to capture the west coast ferry renewal in Scotland. It outlines the benefits of a standard fleet design where possible and how to address the barriers to standard fleet design where it is not. This plan is based on lessons learned from other countries and entities who have faced and overcome similar challenges to those facing Scotland now.

It also outlines how a native shipbuilding enterprise can be encouraged that would have the capacity to confidently deliver and capture as much of the workshare in Scotland, with minimal public investment and reduced risk.

Spending on an aging fleet cannot be avoided, and this strategy uses this to encourage worldwide expertise to be drawn to Scotland. The goal should be to attract both individual and corporate expertise and finance where it may be presently lacking in the scale required to deliver such an ambitious fleet renewal programme.

This can all be achieved by offering brownfield plots backed by a common marine facility that allows multiple users to share core infrastructure on an economic and equitable basis.



Introduction

No matter how you view the future, the global maritime industry is set for significant long-term growth and disruption largely driven through challenging environmental targets, growing worldwide supply chain demands and rapid technological developments.

A growing question for the Scottish maritime industry revolves around how we can prepare and be ready to credibly take advantage of these long-term opportunities and drive lasting change that will add significant long-term value, not only to the Scottish economy but to future generations of skilled workers in Scotland.

The key to this question will be how Scotland positions itself and prepares a native industrial base that is fit for purpose and able to capitalise on these long-term opportunities.

This whitepaper discusses a proposal on how to attract and grow the right industries to Scotland, and the Clyde in particular, by solving two of the key factors presently acting as a bottleneck to growth within the Scottish maritime industry.

The first, and most fundamental, looks at the required base load of work that can be used to attract the right industrial players at all levels of the supply chain. The second investigates how to seed, with relatively low capital expenditure, a competitive base of operations that can attract external investment from which new entrants can operate and grow locally. There are numerous options for this, of which the proposed Scottish Marine Technology Park (SMTP) at Old Kilpatrick is but one.

Fleet renewal opportunity

A significant opportunity for the Scottish maritime industry, and one which could kickstart this native industrial offering, is that of the ferry fleet renewal. The challenges facing the Scottish ferry fleet renewal are complex and well publicised. Nevertheless, this programme of work could be considered an opening to re-establish a domestic industry offering that is capable of addressing this demand, turning a national need into a national opportunity.

However, therein lies the root of the challenge. Scotland simply does not have the local, in country, capacity to build these ships against the fleet renewal timelines as they presently stand. Therefore, if the timeline cannot be stretched the challenge becomes:

- How to de-risk the fleet renewal programme?
- How to encourage a credible Scottish offering in the time available?

Caledonian MacBrayne alone, currently operates thirty four vessels, a number of which are now of a significant age and require immediate replacement. These include five small vessels and four major vessels which have all come to the end of their design life. In the next ten years there are a total of seventeen vessels, eight major vessels and eleven small vessels, which will reach the end of their thirty year design life and subsequently require replacement. The clear goal for the procurement of the future ferry fleet will be to deliver these vessels on time and to a competitive cost, ensuring that the ferries are available to provide a reliable lifeline service to island communities for years to come.

Ultimately, this is a significant opportunity in the long-term for Scotland but it will need a clear strategy for the next thirty plus years, looking ahead to all vessel replacements and how to achieve the service goals such as reliability and environmental targets. This paper discusses the opportunities that will be presented by learning lessons from other countries with similar ferry service profiles, and considers the significant added value that could be captured within Scotland by adopting facets of these successful strategies.





A long-term strategy

A key aspect to delivering a strong future for the Scottish ferry service is having a long-term strategy for both vessel replacement and onshore infrastructure. Currently, CMAL presents a clear three year strategy through their corporate plan with a more broad short- to medium-term development strategy through the Vessel Replacement and Deployment Plan published by Transport Scotland.

BC Ferries, a similar Canadian ferry operator, have a near-term replacement plan published in 2018, that stretches out to 2031. This covers the replacement of nineteen vessels, six major vessels and thirteen minor vessels, over the period. This acts as their short-term plan and is something the Scottish ferry industry could aspire to, if given the right support. It would then allow the creation of an outline replacement strategy for the next thirty years. This would provide benefits through significant pre-planning for vessel replacements, allowing designs to be refined and finalised well before construction is commenced and any necessary infrastructure improvements made before vessels enter into service.

On top of this, there are clear benefits to developing a larger, more generational plan on a thirty - sixty year timescale. This would provide the chance to look further ahead at both long-term infrastructure changes but also vessel advancements. There are key generational technology changes that will come into play over longer timeframes, such as environmental legislation affecting fueling decisions and advancing technology allowing for autonomy and reduced manning. These factors must be considered now as a core principle in design to ensure that in the medium- to long-term existing vessels and current and future designs are prepared for the changing demands.

Scotland is well placed to lead development of ferry design, with multiple ship designers, such as OSD-IMT and BMT, as well as leading maritime research bodies, such as the University of Strathclyde. By looking ahead to the generational changes in vessel design and infrastructure requirements, Scotland can anticipate the replacements and ensure it is well positioned to achieve service goals. If this was combined with a forward looking vessel replacement plan, further complemented by existing expertise in the offshore, subsea and renewable sectors, Scotland could rebuild the foundations that would allow it to once again become a world leader in maritime technology and development.

The development of a long-term thirty year plan and a generational thirty - sixty year plan can have clear benefits for the strategy outlined below, providing a clear commitment to vessel builds around which the industry can develop, ensuring the greatest added value to Scotland.

Ferries for Scotland's future

**"The best time to plant a tree was 20 years ago.
The second best time is now"**
 - Chinese proverb

The ultimate goal is to provide ferries that will continue to serve the local island communities and the tourist industry reliably. It is also critical to ensure that the vessels are procured on time and to cost. To tackle this, it will be important to capitalise on a level of consistency throughout both vessel design and supply chain. This can be achieved through a core vessel design development with specific operational route variants.

We understand the challenges of a core vessel design principle when applied to the West Coast Island ferry service and agree that a single, one size fits all is not feasible. There are also routes on the west coast that are outliers and have specific needs that cannot be readily served by a single standard design.

However, this is where the short- and medium-term plans feed into a long-term, generational strategy. Compromises necessary on standard designs, driven by infrastructure and short-term requirements, should feed into long-term strategies that look to remove these barriers to standardisation at the point in time when subsequent replacements come on stream. This is not a problem for future generations to solve, it is one for which the groundwork must be laid now in order for future generations to have a chance of succeeding.

If a comparison is drawn again to similar ferry operators throughout the world, such as BC Ferries, they have a "Standard Vessel Strategy" which breaks down their thirty six vessels into five distinct classes with only three unique vessels outside these designations. This has been found to significantly improve redundancy and resiliency within the fleet. Additionally, from the operator's perspective it has reduced training, maintenance and operational costs over the ship's life.

Achieving a minimum number of core designs should be one of the main goals for the future of Scottish ferries.

It is accepted that there will be much debate on what represents a minimum number of core designs and what they will ultimately look like, however the principle remains. We have attempted in this document, to present a concept for this minimum number as a starting point for discussion. However in doing so, it also allows us to articulate the opportunity presented to Scotland by virtue of de-risking an alternative ship construction approach. Again, this approach is independent of the final look and feel of the core design.

In our assessment, the proposed vessels have been split into two main denominations, double ended designs and traditional monohull designs. Although catamarans have been proposed by others in the past, there are additional challenges to implementing these on a wide scale throughout the west coast fleet and so have not been considered here at this time.

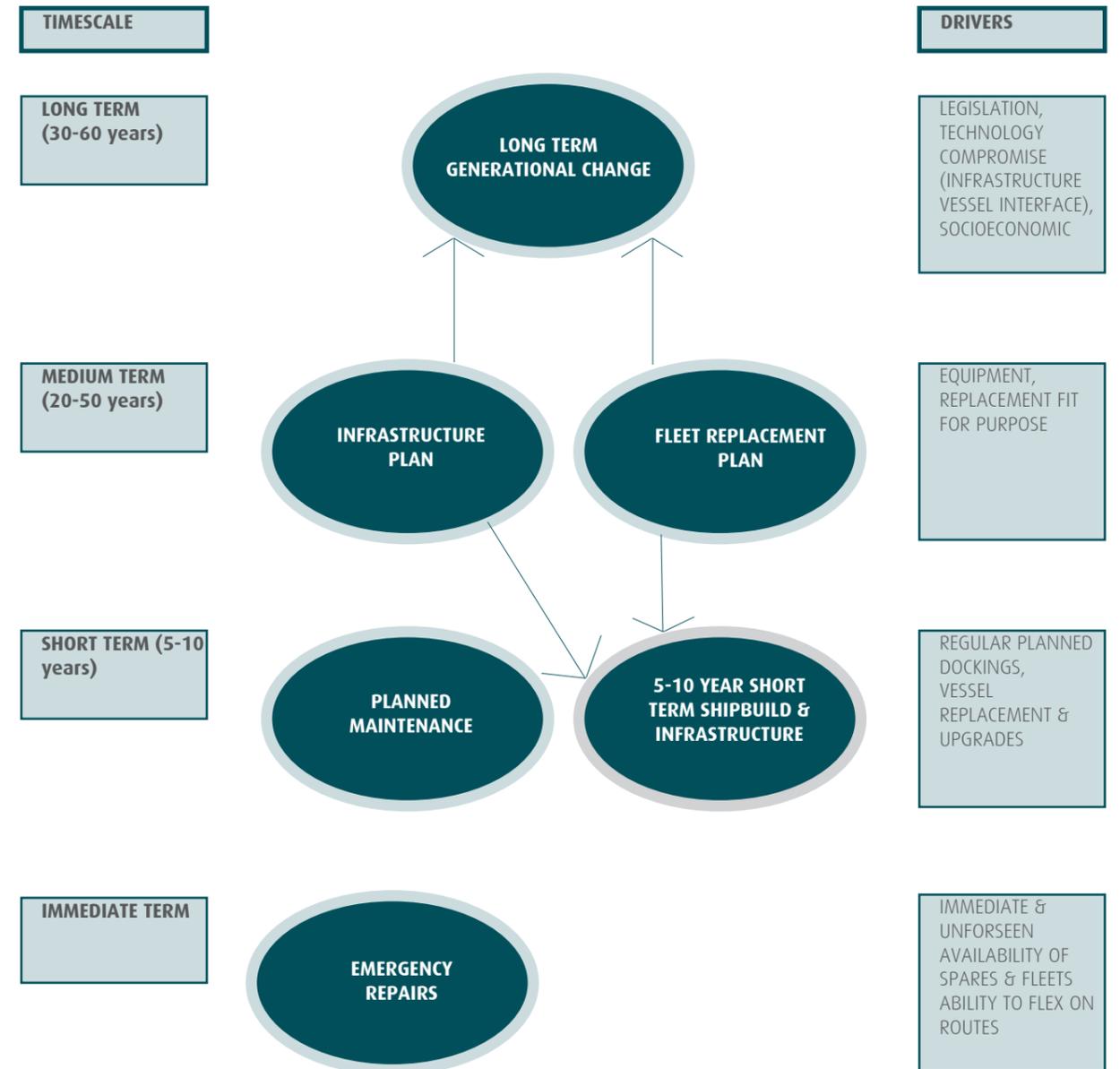


Figure 1: Long term generational change plan

Double ended vessels

Of the small, double ended vessels currently within the fleet, there are nine different vessel variations out of the fifteen total vessels within this class. To provide a level of consistency within this class of vessel, a core design could be developed with three separate variants, covering the majority of differences between the current nine variants.

This will account for three separate length variations, 30m, 40m and 50m designs, with minor variations to beam and as close to a constant draught as possible. This will potentially allow the vessels to operate on all routes which were previously served by nine different vessel variants while providing a level of consistency in operations between the routes due to the core design. Even if an all routes strategy is not fully realised, this feeds into the requirements of the sixty year vision and short-term, holistic, compromises are made but these compromises guide the long-term generational strategy.

Additionally, any improvement here would provide opportunities for greater interoperability as and when required and the flexibility and cost savings that come with that.



Monohull vessels

Considering the traditional monohull designs currently in service, there are twelve different variations out of the thirteen vessels operating. This excludes Lochnevis as a custom design for the Inner Hebrides. To introduce a level of standardisation across this portion of the fleet, a core design, again with up to three variants, are proposed; a 70m variation and a 90m variation with an option for a 100m+ variation, however this would be dependent on overall demand and port facilities. This approach would look to drive towards peak routes adopting multiple 90m vessels instead of individual 100m+ vessels allowing for flexible vessel numbers on certain services during peak demand while simultaneously offering fleet resilience during periods of low demand off season dry docking outages.

Again it is worth repeating, the intrinsic benefit of this strategy is that information on barriers to a standardised fleet, of which there are many, would be addressed in the short term fleet replacement plan via local design modifications so the vessel is fit for purpose and feed into the longer term infrastructure and generational plan so that, if required, these compromises are removed in subsequent vessels where it makes sense to do so.



Route mapping

These proposed designs can be mapped to the routes currently operated by Caledonian MacBrayne along with the existing vessels being used. It is accepted that there will be specific challenges on routes that must be addressed by this mapping, but nevertheless it shows the potential for standardisation if the correct time frame is adopted while maintaining, or improving, the service operability throughout the fleet.

There is a wealth of learning and experience locked up in the operators of these vessels. Thousands of years of operational and maintenance experience should all be fed into the standard set of core designs. The production of these designs cannot be a desk based study. Structured consultation with the operators of the fleet ashore and at sea is fundamental to getting a fit for purpose fleet.

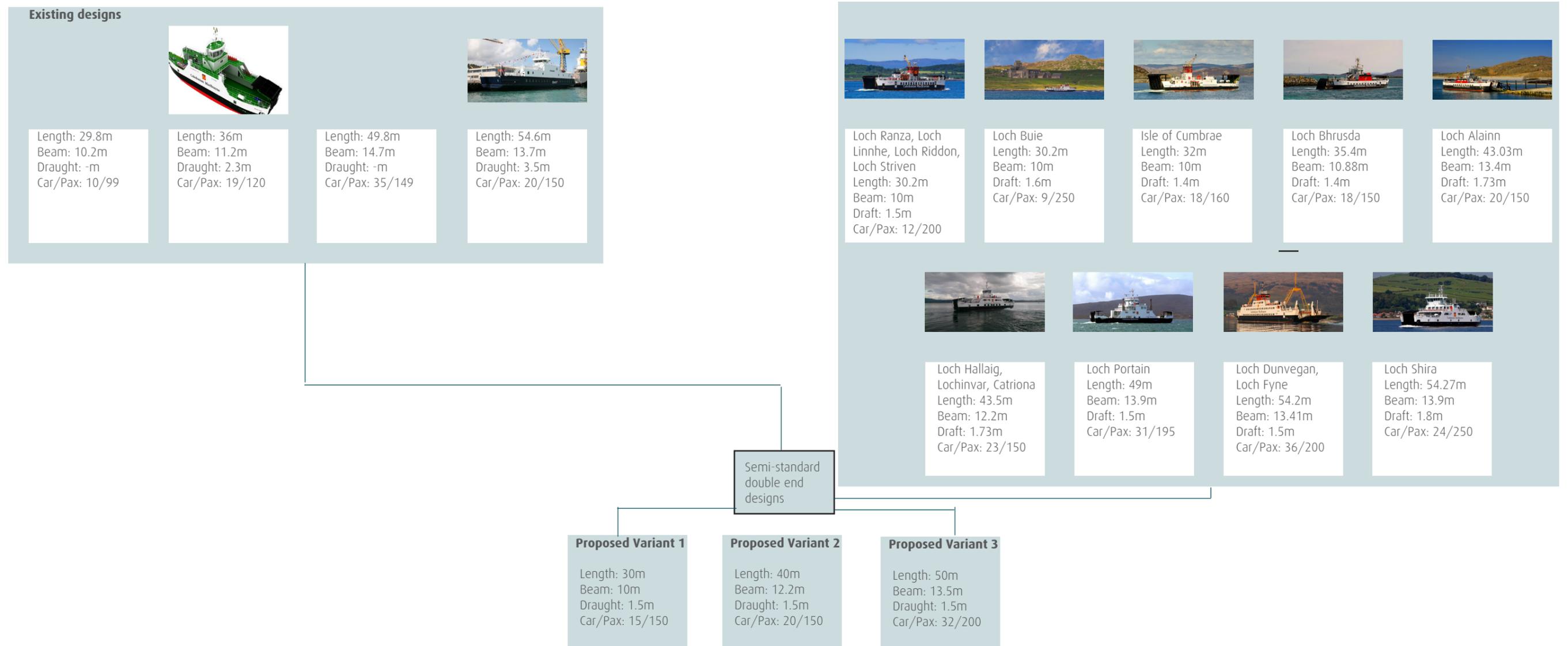


Figure 2: Existing small CMAL vessels.

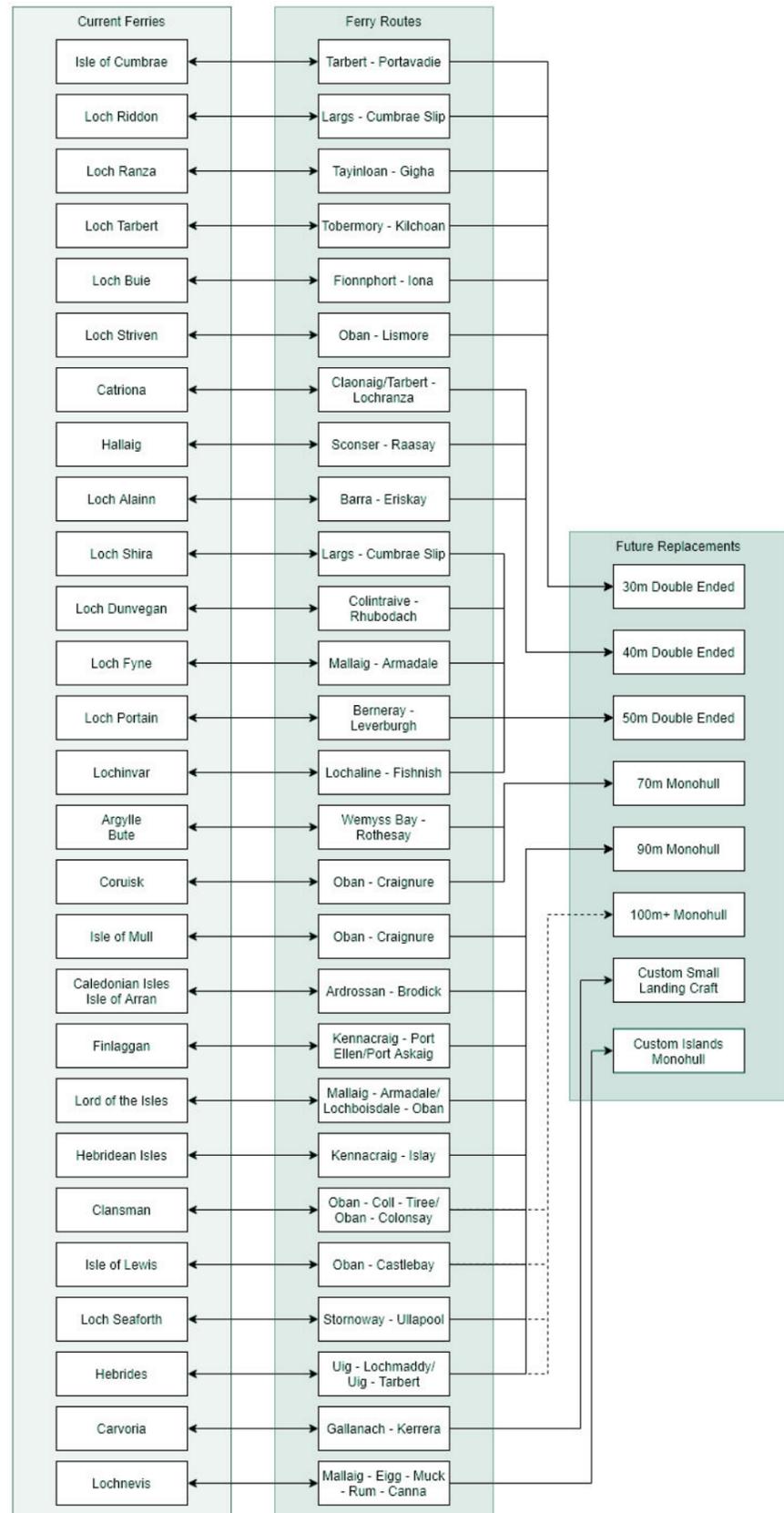


Figure 3: Route and ferry mapping

Build strategy

Build methods

When we think of shipbuilding in Scotland, we think of steel plates and raw materials flooding in the front gate of a shipyard which then, over time takes the shape of the final ship. This then gets launched down a slipway and into the water for outfitting and delivery to an owner.

This methodology however is changing. The modern modular construction of ships lends itself to a more distributed build employing 'Centres of Excellence' to get benefits of scale. Couple this with the concept of series production of variants on core designs and a controlled launch using a semi-submersible barge or shiplift, removing the need for a post launch dry docking, and you have a recipe for a modern, alternative approach to affordably delivering the west coast fleet renewal that can be scaled quickly and delivered in Scotland in the timescales being discussed.

Adopting the principles of a series design would initially allow the basic, empty hull to be constructed outside Scotland while the high value elements of complex steelwork and outfitting are completed within Scotland. This will maximise the return to the Scottish economy while enabling the local industry to take root and prepare for wider generational opportunities in the maritime sector. This would allow design, equipment supply and outfitting to all remain within a local supply chain, still providing significant value to the local industries and reducing low value manhour tasks to areas where the steelwork cost can be significantly lower.

By buying in the highly competitive, highly automated and low "value add" scopes of work to Scotland, in the first instance at least, it will allow a significant focus on specific, high value skills. This will maximise the in country technological value add while minimising risk and accelerating the build timescales. The proven approach of partnering with internationally recognised Centres of Excellence to efficiently provide the low-cost basic steel hulls for in-country completion, is flexible enough to allow a suitable facility to be developed in the short-term and this could be operational to facilitate the current timescales for fleet renewal.



This can be likened to importing the bare chassis of a car and then developing and adding the value and technology around it locally.

It is worth noting that the outsourcing of the bare hulls need not be a long-term solution either. If an internationally competitive, in-country offering could be developed over the next decade then it could pursue the contracts for bare hull supply as well. This aligns with the National Shipbuilding Strategy where clusters of expertise collectively become exponentially more competitive and able to win work. It also feeds into the possibility of replicating successful initiatives such as that at the Advanced Forming Research Centre but aimed at automated welding and production.

This aspiration is closely aligned with the goals of the Advanced Forming Research Centre and Lightweight Manufacturing Centre and newer proposed shipbuild automation centres on the Clyde. It is not enough to do what others are doing, we need to find a way of doing it better. A local need for bare hulls built as efficiently as possible would drive many project and guide the metrics and areas of research all local to the point of application.

To understand the value add this offers to the west coast fleet renewal a high level desk study based on publicly available information and industry norms indicates the following split of in-country and outsourced value for upcoming projects outlined in CMAL's latest corporate plan.

Starting from the premise that we wish to maximise both the in-country value add and the ability for Scotland to attract the capability within the timescales necessary to take advantage of the fleet renewal we have:

- Bare hulls built to a standard design and competitively tendered in volumes that permit the economies of series production
- Delivery of hulls to Scottish completion halls for equipment installation and outfitting by a locally enabled and competitive supply chain
- Equipment is then integrated and the vessel commissioned

It is worth noting that this model can also be applied to the maintenance and servicing of these same hulls throughout their lifetime. The same facilities used for outfit completion can also be used for repair and annual dockings.

We would recommend exploring what these figures could mean for the local supply chain and understand what we are swapping when we initially outsource the bare hull for greater local throughput.

Project	Value (£ millions)								
	Total value	Basic structure value	Specialist structure value	Propulsion value	Electrical value	Navigation & controls value	Auxiliary systems value	Outfit and furnishings value	Total value to Scotland
New Islay ferry	45	8	3	3	4	5	6	6	26
Gourock - Dunoon new ferries	12	2	1	1	1	1	2	2	7
New Loch class vessels	60	10	4	4	5	6	8	8	34

Figure 4: Domestic value add.

It is also worth outlining what is included with the bare hull as it can cover a wide range of possibilities. We are proposing the bare hull is principal watertight structure and major lockout items only delivered against variants of core series designs and cognisant of the next stages in the outfit process. Therefore, it would not include items such as watertight doors, superstructure, deck equipment, bollards, handrails, ramps, davits and pipe outfit.

Taking an approximation from weight and manhour data, these specialist structural items contribute approximately 10% of the manhours while representing 25% of the value in steel work. These specialist, higher value aspects would be kept within Scotland with many small scale fabricators able to deliver these scopes. This would provide value to local suppliers with opportunities to protect against the typical boom-bust timeline of the maritime industry with a continual shipbuilding commitment. It is also worth noting that of the 32% of the total value contributed by propulsion, around only 7% would be captured in-country due to main manufacture occurring overseas.

However, even with excellent advance design and planning, there will still be challenges in series production as will be highlighted later. The first of class will always be more expensive as issues with a design created in an office meets the reality of the shop floor. Again, the series production comes to the fore, as the design and execution can be improved for the next build, so that continuous improvement in productivity is realised. This process can be accounted for and it must be ensured that continuous improvement is at the heart of the series production plan.

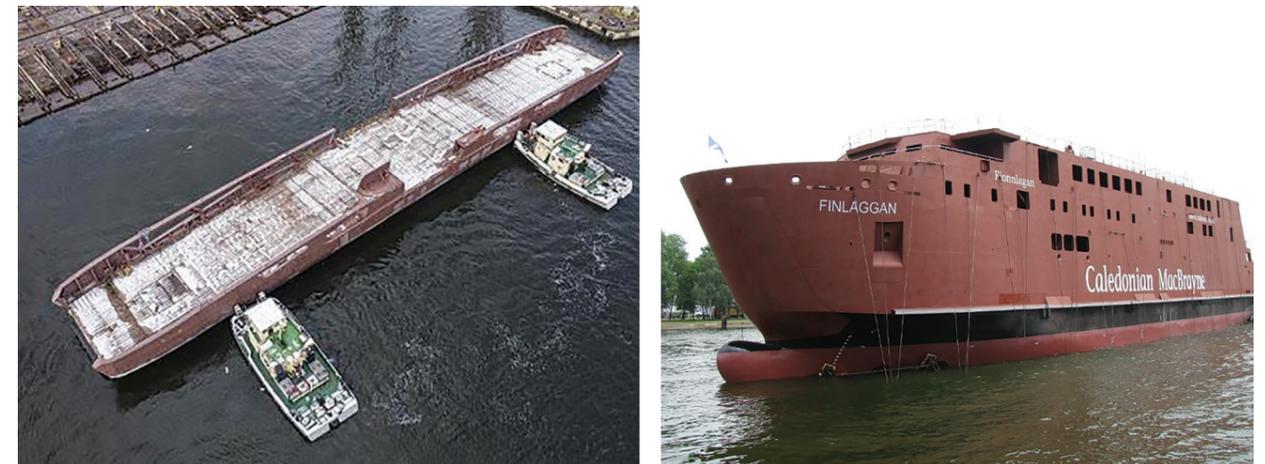


Figure 5 & 6: Example of imported bare hull before in-country value is added.

As previously mentioned, this bare hull proposal leaves a large work scope which can be bid for locally. For example, bollards, watertight doors, superstructure units, pipe spools, ramps or bow doors do not need to be imported from other countries. These can be efficiently built locally by small fabricators operating from a unit that could be anywhere in Scotland. This would only ever be a single day's haulage away or, on the other side of an industrial park as part of a wider Centre of Excellence.

Onto this we can add the high value items such as hydraulics, electrical works, painting, pipework, and all other equipment necessary for a ship to function which can all be locally sourced.

This is how the series production aspect shines in the operational environment. All the vessels built through the series production method would utilise the same equipment sourced from international manufacturers already operating in Scotland. Therefore, the cost of spares drops, maintenance then becomes locally sourced, allowing international suppliers to increase their in-country presence and employ and train more local engineers and staff. Then, the same facility that outfitted and launched the vessel can bid for regular maintenance.

Developing a focused build strategy, exporting the lower value, high manhour hull construction, and focusing on the more specialist, high value work, will give Scottish industries the best opportunity to create high quality ferries in Scotland.

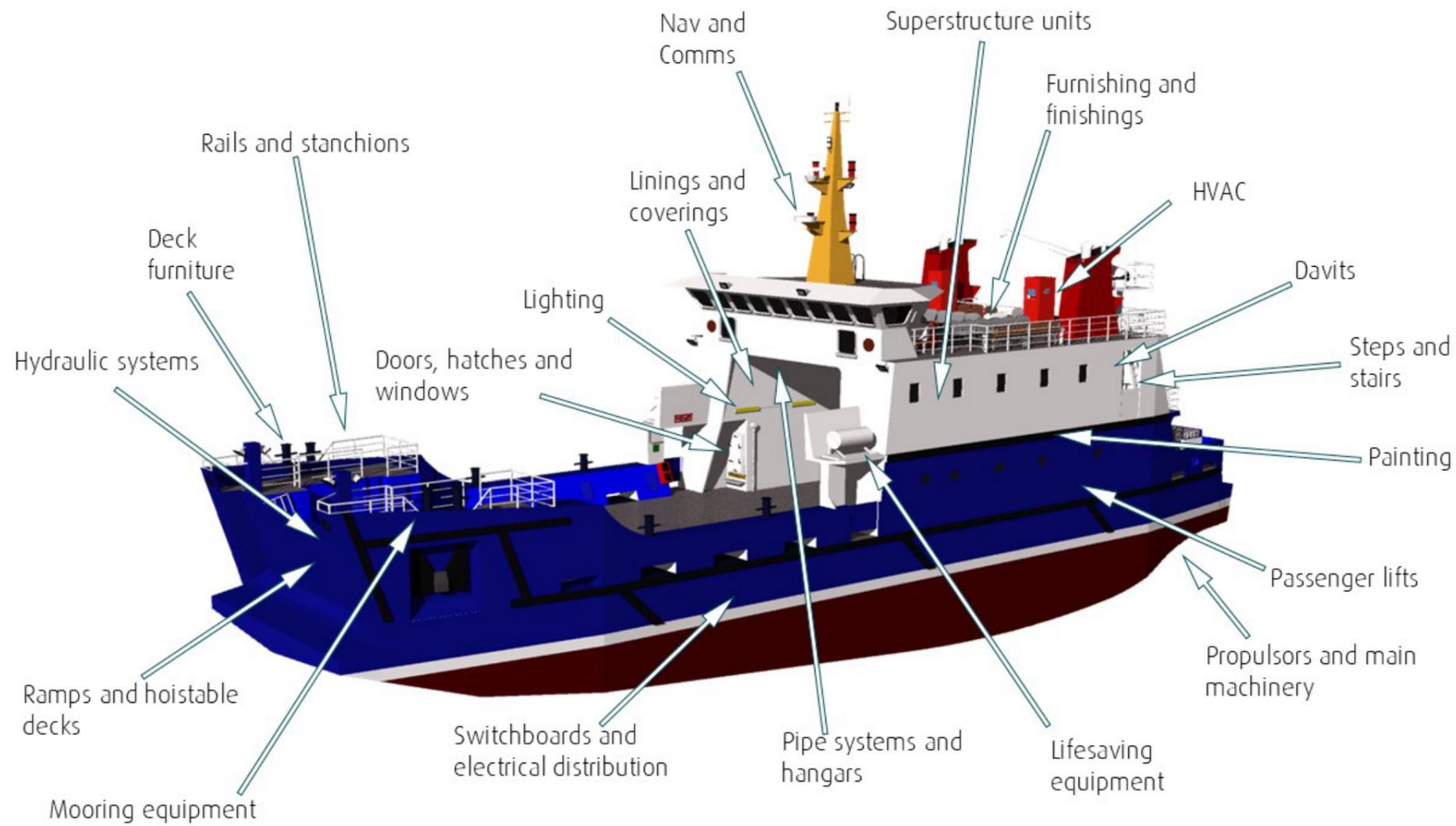


Figure 7: overview of equipment that may be supplied

Scottish supply chain

A key aspect of this proposed strategy is maintaining and expanding the local Scottish supply chain which will then be in a position to capitalise on continuous ferry builds for the next thirty or more years. This could be in a cluster format, a strategy which has clearly worked in Norway and the Netherlands, and there are opportunities to develop this in Scotland.

One of the key geographical areas that would benefit from this is the Clyde. Ferguson Marine are already established as a commercial shipbuilder and the current development of the Scottish Marine Technology Park at Old Kilpatrick would complement this. With continued backing from the fledgling Clyde Mission along with willing and forward thinking local authorities, local bases can be developed on or near these sites to capitalise on an existing supply chain. Through this, it will be entirely possible to encourage a competitive commercial shipbuilding environment.

As noted previously, Scotland already has a number of world-renowned suppliers including Wärtsilä, Finnings CAT, MAN Energy Solutions, Alfa Laval and Kongsberg. There is also potential to attract others if sufficient business was available, such as that provided by a clear long-term ferry construction plan.

A high-level breakdown of the existing offering can be shown in the following simplified figure, outlining how the build strategy and the local supply chain (for major components) could work in tandem to ensure that there is significant value added to the local economy.

This strategy of build can be effectively implemented using a clear build process outlined in figure eleven.

Series Production

As noted, a key aspect in terms of reducing both build issues and cost is by maximising the benefits of a series production. This can be achieved using variants of a core design and outfit strategy detailed previously.

Based on shipbuilding data from a world leading shipyard, shown in the figure overleaf, it is clear that even for the most efficient yards in the world, maximum benefit in optimising production hours is achieved when six hulls from one class of vessel are built but with initial savings starting to be realised after building hull number three or four.

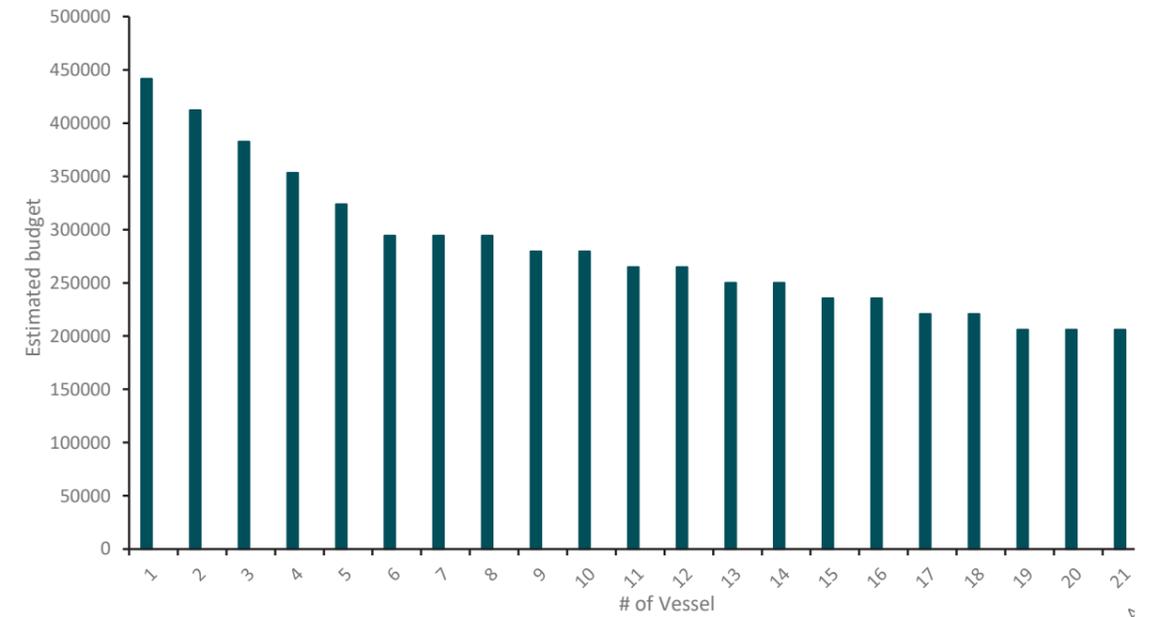


Figure 8: Efficiency of series production.

Series production will be able to reduce build time, once a yard streamlines a process. By having a commitment to the construction of a series of vessels, this will grant yards and suppliers an opportunity to develop their offering around these contracts. This initial boost of work will breathe life into a supply chain that can then expand well beyond Scotland’s borders and start competing with incumbents internationally.

To really give Scotland the best chance to capitalise on this shipbuilding opportunity, there needs to be a commitment, both in terms of vessel construction and location. By showing commitment for series production with a clear build strategy and schedule, the Scottish shipbuilding industry will have the chance to develop around ferry construction, providing significant value to local industries.

Another important aspect to this strategy is the increased throughput. In-country value is dependent on both the value per vessel to the local supply chain and the number of vessels produced. By maximising the former in a manner that reduces risk and time to build, you significantly increase the effectiveness of the latter by enabling a greater number to be built locally. However, it is key to strike a balance between value to the local supply chain and the total production level and the strategy must be designed to be effective in both ways.

This approach will allow a significant focus on skills within the key activities providing the most value to Scottish industries. By initially importing bare hulls, Scottish industries can focus on the specialist steelwork, outfitting and commissioning activities. This will offer considerable opportunities for the development of the next generation of maritime talent within Scotland, especially with a long-term commitment to ferry construction, encouraging development of complementary training programs, apprenticeships and academic programs to enhance the in-country capability for these services for years to come.

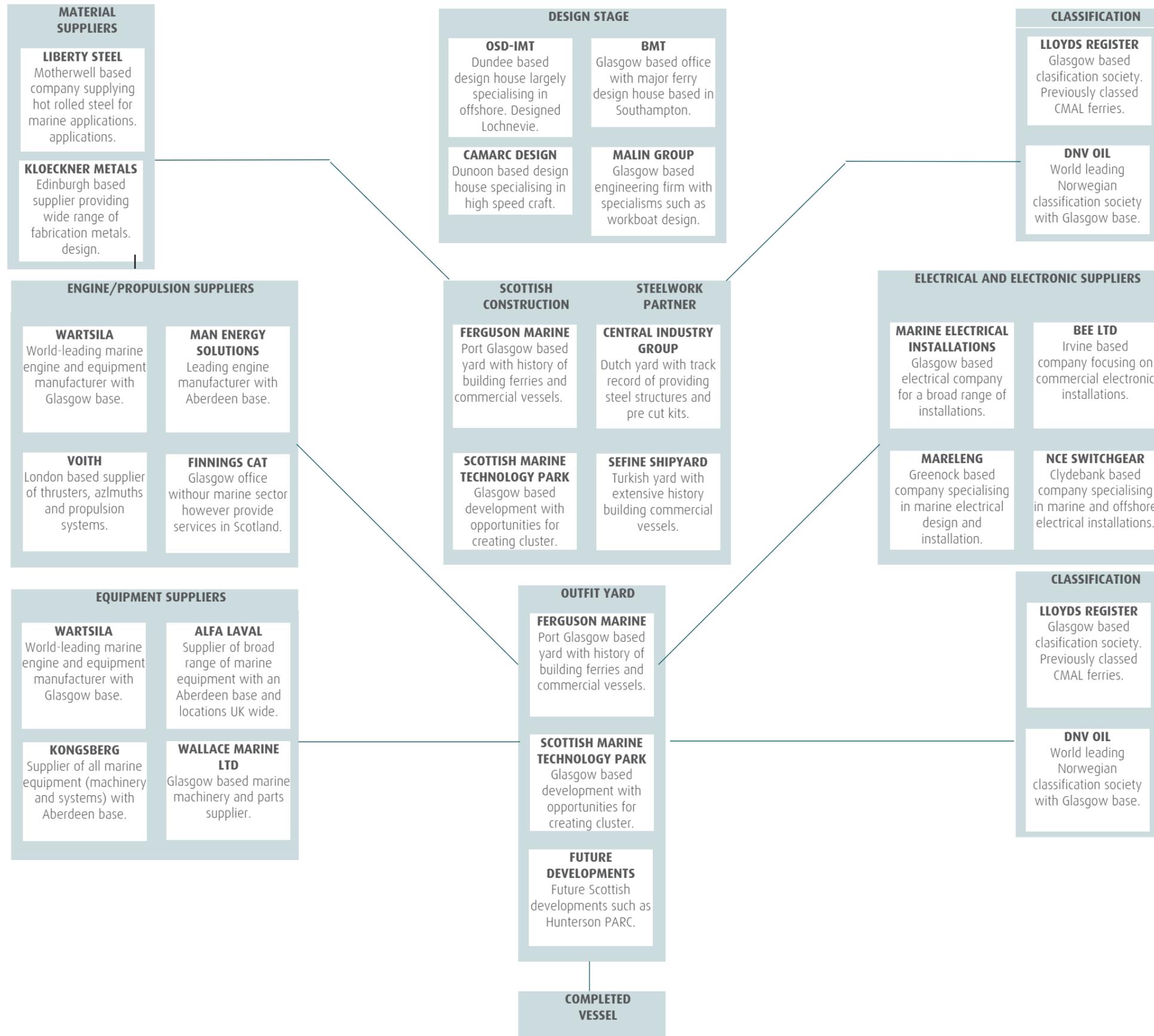


Figure 9: Supply chain

Fulfilling the build schedule

Taking this approach to producing ferries, what additional capacity does the current industrial offering in Scotland need in terms of construction capability?

As mentioned earlier, the ferry fleet currently requires five minor vessels and four major vessels which are all at the end of their design life. Based on the CMAL corporate plan, within the next three years, there will be one major vessel built and two additional minor vessels with a contract award for a minimum of four new Loch class vessels (which are urgently required). This can be shown in the following figure, where black milestones represent end of life dates and blue milestones represent CMAL’s milestones outlined in their corporate plan, shown in figure ten.

Within Scotland, there is a limited shipbuilding capacity in close proximity to the main suppliers outlined above. Ferguson Marine is the only established commercial shipbuilder with the ability to build these vessels, but as it stands, there would be limited capacity in the near future as they complete the current builds that are ongoing. They also have limited space to expand their operations without moving to adjacent land. This aside, if free, the facility could likely build one major vessel or two minor vessels at a time, which may not be sufficient to fulfill the significant requirement in the short-term for Scottish ferries.

Delivering the capacity in an efficient, timely and scalable manner, will require the clustering of capability, facilities and outfit halls along with suppliers all incorporated on a common marine facility that would be shared by a number of users on an equitable and commercially viable model.

One example of this, as mentioned briefly within the build strategy, is the development of the Scottish Marine Technology Park at Old Kilpatrick. This provides large scale shipbuilding and marine supply chain opportunities within a clustered format. As it is ideally located on the Clyde, this could provide a complementary solution with Ferguson Marine (or even offer space to expand their offering), enabling the construction and outfit of numerous vessels concurrently. Additional benefits could be gained through clustering by bringing together leading maritime companies and experts onto one site.

Using these two sites in conjunction could allow for a more intensive build schedule, potentially in the format outlined in figure eleven.

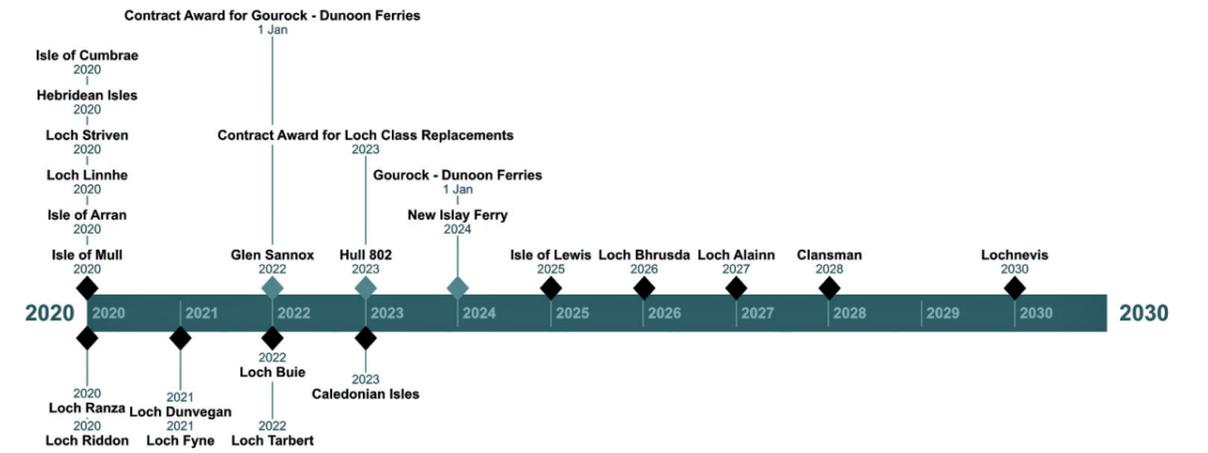


Figure 10: Milestones in CMAL’s corporate plan.

	Newbuild Programme					Annual Spend (Avg £53m)
	Loch Class			Large Ferry		
	30m (£10m)	40m (£12m)	50m (£15m)	70m (£35m)	90m (£45m)	
2023	Q1	start			start	42
	Q2		start			
	Q3	deliver				
	Q4					
2024	Q1	start	deliver		start	56.5
	Q2			start	deliver	
	Q3	deliver				
	Q4					
2025	Q1	start		deliver		58.5
	Q2		start		start	
	Q3	deliver			deliver	
	Q4					
2026	Q1	start	deliver			54.5
	Q2			start		
	Q3	deliver			start	
	Q4			deliver	start	
2027	Q1	start		deliver		51.5
	Q2		start			
	Q3	deliver				
	Q4					
2028	Q1	start	deliver		start	56.5
	Q2			start		
	Q3	deliver			deliver	
	Q4					
2029	Q1	start		deliver		56.5
	Q2		start		start	
	Q3	deliver			deliver	
	Q4					
2030	Q1	start	deliver			58.5
	Q2			start		
	Q3	deliver			start	
	Q4				deliver	
2031	Q1	start		deliver		47.5
	Q2		start			
	Q3	deliver				
	Q4				deliver	

Figure 11: Intensive build schedule.

This intensive build schedule could be met if the capability of Ferguson Marine and a site like the Scottish Marine Technology Park could be combined for a common goal. With FMEL’s capability to build one major vessel and with a cluster operation at the Scottish Marine Technology Park facilitating both two minor vessels, potentially with both fabrication and outfitting assistance to FMEL, this Centre of Excellence could successfully deliver the renewal program required.

If the model is proven to be a success then Scotland has a number of other brownfield sites adjacent to the marine environment that could imitate variants of this same strategy, potentially expanding to further marine sectors, such as aquaculture, renewables and commercial marine.

Ultimately, if the goal is to keep as much of the construction or outfit within Scotland, additional capacity is required and soon. The Scottish Marine Technology Park could provide a viable option in the near future with other developments providing further options in the long-term.



Figure 11: Scottish Marine Technology Park plan

Value to Scotland

If we were to enable the local supply chain to maximise the value from the west coast vessel replacement it could see returns from the three year corporate plan of around £67 million with Scottish businesses completing the outfit, specialist steelwork and commissioning of these vessels. If this was extended over the next ten years, based solely on the replacements required and not available capacity, this could equate to over £250 million available to be won by an enabled and competitive Scottish supply chain across the following specialities.

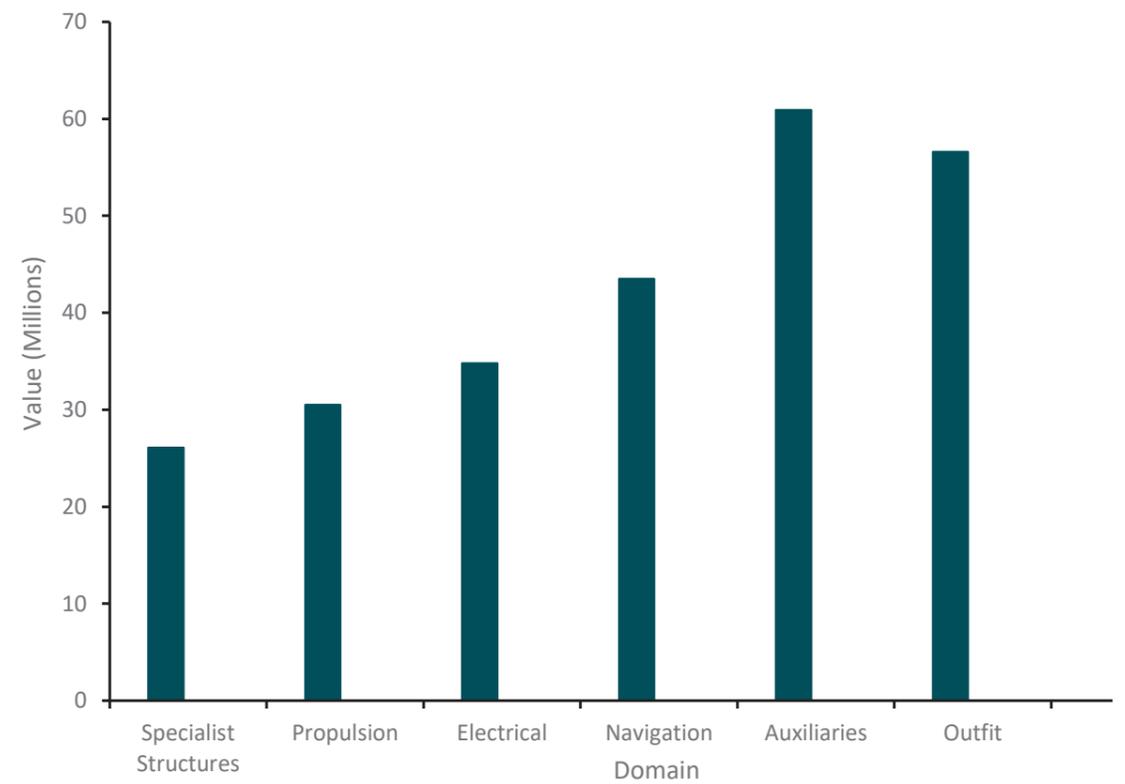


Figure 12: Value of local supply chains to Scotland

If this investment is applied to the renewal timeline proposed previously, the value invested to the Scottish supply chain will be considerable. Assuming that from 2023, the continual drumbeat production can be maintained, a total of £280 million would be invested in the Scottish supply chain from 2023 until 2031 solely from the capital expenditure for the new fleet:

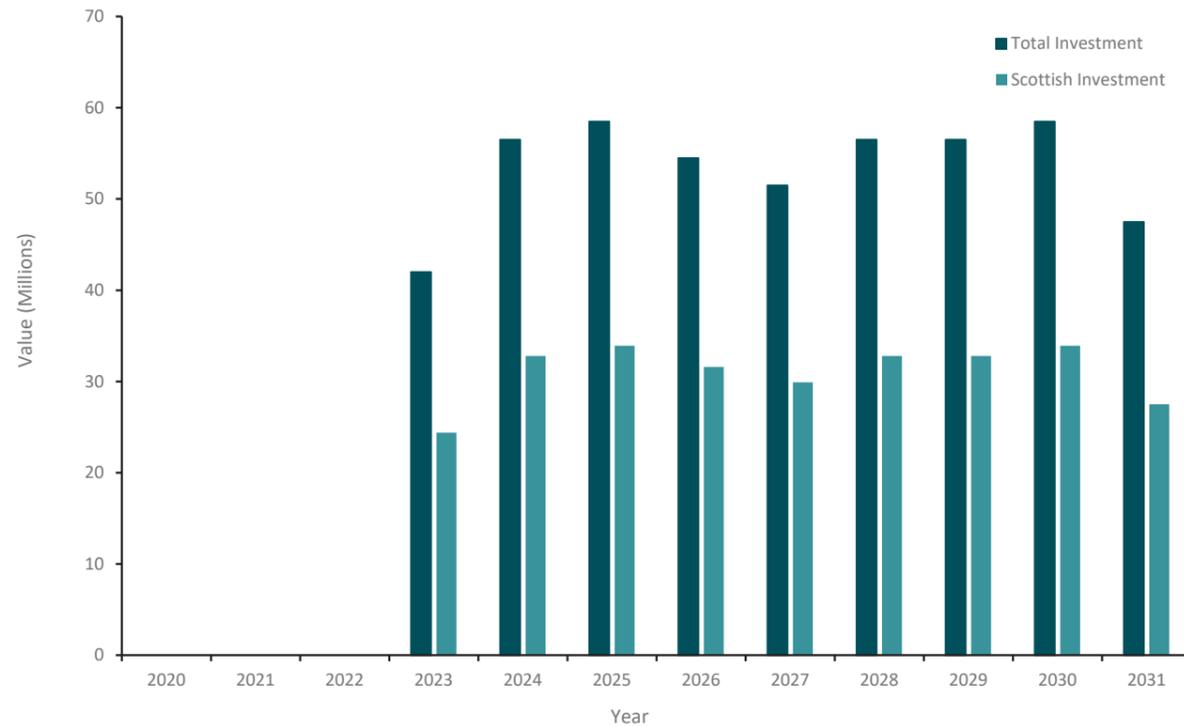


Figure 13: Investment in supply chain

As mentioned previously, the new fleet could benefit from using the Centre of Excellence as a maintenance and repair base, capitalising on economies of scale generated through multiple vessels using the same equipment and being outfitted by the same teams. This would allow for further value add within the local supply chain. Based on historical data, annual maintenance and repair costs equate to around 0.75% of the vessel’s build cost, giving a further £3.3 million being spent within the local Scottish supply chain in line with the above schedule. This only accounts for the new build fleet, however if the existing fleet of thirty four vessels was incorporated, the spending could increase significantly.

This spending within the supply chain could attract some of the major companies outlined above, especially with a clear commitment for future builds. More importantly, this value could significantly benefit some of the more local, smaller Scottish companies, offering unique opportunities for growth and development within Scotland. This magnitude of spending would drive significant job creation and numerous opportunities for developing the next generation of marine industry workers.

Moving forward

To effectively capitalise on this opportunity for Scottish industry, the Scottish ferry stakeholders and the industry as a whole need to take a strategic view of the future and:

- Devise a short- and medium-term renewal plan that maximises adoption of series builds
- Devise a medium- and long-term infrastructure plan that looks to address the areas where series adoption is difficult or impossible
- Enable the set up and development of local offerings at the head of the supply chain to prime contract the vessel replacement by providing serviced plots on which they can land on normal commercial terms with shared access to the critical marine infrastructure required to launch and commission new vessels

None of this is impossible against the timelines above and while there is a lot of detail to be worked out, it is feasible and represents an exciting future for Scotland’s maritime manufacturing industry to complement what it already has.

With the correct investment in the Scottish shipbuilding industry, we could truly develop to be an industry leader. Importantly, it could provide Scottish jobs, working on Scottish ferries with the aim to benefit Scotland’s future. Ultimately, there must be a clear path around how we aim to improve the industry and replace the existing service. We must look to the future but make changes now to ensure that Scotland can become a maritime pioneer yet again.



www.malingroup.co.uk

Glasgow Head Office

South Rotunda
100 Govan Road
Glasgow G51 1AY
Tel: +44 (0)141 221 3075

Glasgow Fabrication Facility

Unit F8, Westway
Porterfield Road
Renfrew PA4 8DJ
Tel: +44 (0)141 885 9328

Aberdeen Office

Regent House
36 Regent Quay
Aberdeen AB11 5BE
Tel: +44 (0)1224 288 918

Imagery: images on page 3 credit to Adam Marikar, images on pages 1, 6, 7, 11 credit to Andrew Buchanan.