



Agenda Item 11.1 – Project Updates

Duel Fuel Vessels 1 and 2 – Progress Update



Network Strategy Programme Steering Group

Network Strategy Programme Steering Group is coordinated and Chaired by Transport Scotland.

In October 2013 Transport Scotland sponsored a project to seek advice from the Tripartite group (Transport Scotland, Caledonian Maritime Assets Ltd and CalMac Ferries Ltd) of what a programme of vessel retentions, acquisitions and disposals may look like in order that the delivery of the Ferries Plan could be fulfilled. The key project deliverable is the Vessel Replacement and Deployment Plan.

The remit of the Group is to determine and develop clear roles and responsibilities for the operator (CFL) and the asset owner (CMAL) in the retention, acquisition and disposal strategy of the Clyde and Hebrides Ferry Service (CHFS) fleet. In addition, port infrastructure maintenance and improvement strategy plans within the CHFS network are also discussed and developed within the Group.

This strategic approach is intended to enable optimal delivery of the Ferries Plan and to ensure that the on-going delivery of lifeline ferry services on the CHFS network will continue to be fit for purpose and benefit from investment decisions which are transparent and well informed.

Network Strategy / Programme Steering Group membership

The membership of the Group will consist of representatives from:

- Transport Scotland (TS)
- Caledonian Maritime Assets (CMAL)
- CalMac Ferries Ltd (CFL)

The following is an update from CMAL of 28/2/19 to the PSG on Vessels 801 and 802:

Planning/Programme

It is impossible with the current situation to estimate the delivery dates for both ships. FMEL have will not provide updated programmes with vessel delivery dates.

Progress on both vessels has all but come to a halt in many areas, with no signs of when the projects will be adequately resourced and managed. Much of the shipyard resource has now been allocated to the shipyard's new projects. In addition, the fabrication of steelwork for the yard's new projects requires space in the shipyard.

CMAL have asked if FMEL if there is anything we can do collectively to speed up the programme for 801 and 802 and share a risk register, FMEL have shown no appetite to consider.

FMEL have advised that 77% of the detail and production drawings are complete, 23% of the detail and production drawings are not yet completed. We estimate it will be the at least the summer before the drawings are close to complete with current resource and planning.

FMEL have advised that there are currently 310 persons employed by FMEL and 66 sub-contractors on site.

Hull 801 will not be delivered in 2019 as per the latest programme and at the very best will be late 2020 as it currently stands. For Hull 801, typically it would take an organised shipyard 9 to 12 months to complete the



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vessel in its current condition. There are other risks which could result in further delays; such as design and installation issues and the time required to commission all the equipment/systems in the vessels, particularly given that the majority of the equipment in the vessels by the time of commissioning will have been delivered to the shipyard several years ago sitting idle for so long. Equipment damage is already being experienced.

Comparing 802 with 801: Hull 801 was launched in November 2017 and will not be delivered until at best 2020. It is unlikely that 802 will be launched in 2019. However, for comparison purposes if we say 802 could be launched in November 2019, delivery of 802 would be at best late 2021.

Since the start of the project for the 2 vessels: FMEL have failed to assign the correct resources and the adequate number of resources to the 2 vessels in accordance with their original and revised plans. From the start of the design phase and the start of the fabrication phase there has not been sufficient numbers of people employed. CMAL advised FMEL of the lack of resources early in the project. In addition to this productivity levels are extremely low and the extent of re-work on the vessel is considerable. FMEL in our opinion, do not have the know how and the right management team to get the project on any kind of track. Added to this is the financial challenges FMEL have.

Just 7 weeks ago at project Meeting No.44 at the Ferguson Shipyard offices on Thursday 10th January 2019; FMEL advised in their considered professional view, there would be no change to the launch and delivery dates given in the revised Cardinal Date Programme issued in June 2018, with Delivery dates for Glen Sannox and Hull 802 – 21st June 2019 and 10th March 2020 respectively, and date of Launch for Hull 802 05th - July 2019.

CMAL wrote formally to FMEL on 14th January 2019 with our analysis of the programme, advising that given the current state of progress and the work still to complete, in our professional opinion it will not be possible to achieve the intended delivery dates for both vessels as per the revised Cardinal Date Programme. We requested further updated Cardinal Programmes for Hulls Nos 801 and 802, with delivery dates which are realistic and achievable. With no reply from FMEL for almost 4 weeks, a follow up email was sent on 07th February 2019 asking FMEL for an urgent update regarding the delivery dates of Glen Sannox and Hull 802. Particularly given that the communities were expecting Glen Sannox delivery in just over 4 months.

At a meeting at CMAL offices on the morning of Thursday 14th February 2019, Gerry Marshall CEO FMEL indicated to Kevin Hobbs CEO CMAL, that revised Cardinal Date Programmes would be available the following week (w/c 18/02/2019). Later that very same day in the afternoon on Thursday 14th February 2019, CMAL received a 2-page letter from FMEL which advises “it was not possible for FMEL to determine when the ships will be delivered”.

Project Milestones

FMEL issued a new revised cardinal date programmes 8 months ago on the 27th June 2018, all the commissioning activities in this new programme which FMEL planned to achieve for Hull 801 have yet to be achieved with no sign when they will be achieved.

FMEL target delivery date for 801 is 21st June 2019; **16 weeks** from date of this report. With all the other numerous activities to be undertaken in the design, construction and commissioning of the vessel; there is no possibility that the rest of the schedule can be compressed to achieve the target delivery date. If design, construction and commissioning activities continue as is currently and previously observed, **it is impossible to estimate at this stage when both ships will be delivered**. Hull 801 will not be delivered in 2019 and at the very best will be late 2020 as it stands.

In just over 2 months from starting the cable installation on 801, the electrical sub-contractor is making good progress below the vehicle deck and has installed (not terminated) the main 690V and 415V power cables associated with the generators, bow thrusters, transformers, switchboards and shore supply. That said this is only a very small percentage of the many thousands of kilometres of cable to be installed. FMEL do not have resource to allow the electrical sub-contractor to progress in an efficient manner and move into all other areas of the vessel, we expect that the electrical sub-contractor will not be able to increase their resource numbers due to this.



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On 801 the outfit contractor has reduced their personnel at the shipyard as they are unable to make much progress.

Hull 802 milestone “Hull inspection prior to paint”. The FMEL revised planned date to achieve this milestone was 05th February 2019; now **3 weeks** overdue from the revised programme and **22 months** later than the original programme. As is currently observed this milestone is unlikely to be achieved this calendar year.

The target delivery date for Hull 802 is 10th March 2020 (**12 and half months** from date of this report), see latest picture below of Hull 802. Comparing 802 with 801. Hull 801 was launched in November 2017 and will not be delivered until 2020 at best. It is unlikely that 802 will be launched in 2019. However, for comparison purposes if we say 802 could be launched in November 2019, at best delivery of 802 would be well into 2021.

FMEL have stated in their 2016 accounts that there is an assumption that there will be a 14% productivity improvement in labour hours from Hull 801 to Hull 802. As is currently observed there are no signs of productivity improvements from Hull 801 to Hull 802 and in our professional opinion a far greater productivity improvement in labour hours is required not just on Hull 802 but on Hull 801.

Glen Sannox Hull 801

Original Contract delivery date: 25th May 2018

New Target Delivery Date: 21st June 2019, 13 months later than the contract date, 44 months from contract signing.

24 to 30 months is typical period from contract signing to delivery for a ferry of this size. Example MV Hebrides built by Ferguson Shipbuilders Limited, contract signing 18th February 1999, delivery 02nd March 2001.

New Target delivery date is **16 weeks** from date of this report. For a vessel this size, the vessel should be at an almost complete state 4 weeks before the date of delivery, the final 4 weeks for snagging, certification, final inspections etc. Taking this in to consideration, allows **12 weeks** to complete the vessel. The vessel will also dry dock at a facility external to the shipyard facility for 4 weeks, where in our experience there will be a reduction in production efficiency, with logistics and with staff working away from their normal place of work.

Activity Name	Start Date from CDP June 2018	No of Weeks to Start Date	Notes
Trials & Delivery	30/07/2018	-30.43	Over 30 weeks overdue
Shore Supply Available	30/07/2018	-30.43	Over 30 weeks overdue
First Run Auxiliary Engine	09/11/2018	-15.86	Almost 16 weeks overdue
Commission Systems	09/11/2018	-15.86	Almost 16 weeks overdue
First Run Main Engine	21/11/2018	-14.14	Over 14 weeks overdue
Generator Load Test	07/12/2018	-11.86	Almost 12 weeks overdue
PMS Set Up	03/01/2019	-8.00	8 weeks overdue
Dock Trial	13/02/2019	-2.14	Dependant on above activities.
Dry-Dock	21/02/2019	-1.00	One week overdue. Dependant on above activities. The vessel will dry dock at a facility outside the shipyard. There will be a reduction in production efficiency, when staff are working away from their normal place of work.



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Inclining	24/03/2019	3.43	
Builders Sea Trials	27/04/2019	8.29	
Owners Sea Trials	04/05/2019	9.29	
LNG Tank Commissioning	09/05/2019	10.00	
LNG Bunkering	27/05/2019	12.57	
LNG Dock Trial	08/06/2019	14.29	
LNG Sea Trials	11/06/2019	14.71	
Delivery	21/06/2019	16.14	16 weeks to Delivery
Attend Local Operation Trials	21/06/2019	16.14	
Contract Start to Delivery	16/10/2015	193.00	193 weeks from Contract Start Date to forecast Delivery Date

802

Original Contract Delivery Date: 26th July 2018.

New Target Delivery Date: 10th March 2020, 20 months later than the contract date, 53 months from contract signing. 24 to 30 months is typical period from contract signing to delivery for a ferry of this size.

New Target Delivery Date: **54** weeks from date of this report.

Hull 802 Launch 05th July 2019.

If delivery of Hull 801 is delayed, this may effect the launch date of Hull 802, as space is tight at the FMEL quayside for 2 vessels this size to be alongside at the same time. See also paragraph below regarding FMEL's "Kaiser Principle" on the number of hours to complete a task when ship is at the quayside compared to in the module hall or slipway.

New Target Launch date: **18** weeks from date of this report.

Next fabrication milestone is 100% fabrication, which was originally planned to be achieved on 16th January 2017; **2 years overdue and not yet achieved, currently at 77% Fabrication**, new planned date 07th June 2019. In FMEL's recently published 2016 accounts, FMEL have stated "the Kaiser Principle also known as the 1/3/8 rule, states that if a task is carried out Module Hall and takes one hour, that the same task would take 3 hours on the slipway and 8 hours at the quayside". There has been no significant work carried out on 802 for over 13 months whilst in the Module Hall and the slipway.



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801 Milestones	Original Scheduled Date See Note 1	Revised Scheduled Date See Note 2	Revised Scheduled Date See Note 3	Revised Scheduled Date See Note 4	Revised Scheduled Date See Note 5	Revised Scheduled Date See Note 6	Revised Scheduled Date See Note 7	Revised Scheduled Date See Note 8	Actual Date	Comments
Cutting of Steel	15 Dec 2015	15 Dec 2015	-						15 Dec 2015	Achieved on original scheduled date Rev 01
10% Fabrication	18 Apr 2016	13 Jun 2016	-						10 Jun 2016	Achieved 2 months later than orig schedule Rev 01 Achieved in line with revised schedule Rev 03
25% Fabrication	14 Jun 2016	26 Jul 2016	-						04 Aug 2016	Achieved 2 months later than original schedule Rev 01 Achieved in line with revised schedule date rev 03
35% Fabrication	15 Aug 2016	12 Sep 2016	-						06 Oct 2016	Achieved 8 weeks later than original schedule Rev 01 Achieved 4 weeks later than revised schedule Rev 03
50% Fabrication	14 Oct 2016	14 Oct 2016							09 Dec 2016	Achieved 2 months later than original and revised schedules
Major Equipment and Lock Out Items Installations	14 Nov 2016	13 Mar 2017 to 18 Jan 2018	-	14 th June 2017	16 th July 2017				16 th July 2017	All main equipment delivered.
75% Fabrication	15 Dec 2016	15 Dec 2016	10 Feb 2017						31 st March 2017	Achieved 3 and a half months later than originally scheduled.
100% Fabrication	16 Jan 2017	16 Jan 2017	16 June 2017	10 th July 2017	15 th Sep 2017				21 st March 2018	Achieved 14 months later than orig schedule Rev 01
Berth Join Up	14 Mar 2017	28 Apr 2017	14 Jul 2017	15 th Aug 2017	06 th Oct 2017				17 th Nov 2017	Achieved 8 months later than original schedule
Hull Inspection Prior to Paint	17 Apr 2017	26 May 2017	21 Apr 2017	24 th July 2017	tba				18 th Aug 2017	Partial area inspected only.
Launch	14 Aug 2017	24 Aug 2017	24 Aug 2017	24 Aug 2017	21 st Sep 2017	21 st Nov 2017			21 st Nov 2017	Achieved 21 st November 2017.
Delivery	25 May 2018	29 Jun 2018	25 May 2018	25 May 2018	25 th May 2018		28 th Oct 2018	21 st June 2019		New target date: 13 months later than original planned date, 44 months from contract signing

802 Milestones	Original Scheduled Date See Note 1	Revised Scheduled Date See Note 2	Revised Scheduled Date See Note 3	Revised Scheduled Date See Note 4				Revised Scheduled Date See Note 8	Actual Date	Comments
Cutting of Steel	15 Dec 2015	15 Dec 2015	-						15 Dec 2015	Achieved on original scheduled date Rev 01



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10% Fabrication	18 Apr 2016	13 Jun 2016	-						10 Jun 2016	Achieved 2 months later than original schedule Rev 01 Achieved in line with revised schedule Rev 03
25% Fabrication	14 Jun 2016	02 Aug 2016	-						04 Aug 2016	Achieved 2 months later than orig schedule Rev 01 Achieved in line with revised schedule date rev 03
35% Fabrication	15 Aug 2016	26 Sep 2016	-						06 Oct 2016	Achieved 8 weeks later than original schedule Rev 01 Achieved 2 weeks later than revised schedule Rev 03
50% Fabrication	14 Oct 2016	18 Nov 2016	20 Jan 2017						13 Jan 2017	Achieved 3 months later than original schedule Rev 01
Major Equipment and Lock Out Items Installations	14 Nov 2016		TBA	16 Oct 2017					15 June 2018	“Installation” of all the “Major Equipment” has not been commenced on the 14th November 2016 as per original plan.
75% Fabrication	15 Dec 2016	19 Jan 2017	05 May 2017	22 Sep 2017					21 March 2018	Aluminium Panels stored at Westway facility. Achieved 15 months later than originally scheduled.
100% Fabrication	16 Jan 2017	20 Feb 2017	20 Oct 2017	13 Oct 2017				07 June 2019		Currently 25 months behind original schedule and approx. 23% behind in fabrication.
Berth Join Up	14 Mar 2017	05 Jan 2018	14 Dec 2017	10 Nov 2017					19 Jul 2019	
Hull Inspection Prior to Paint	17 Apr 2017	02 Feb 2018	24 Nov 2017	31 Oct 2017					05 Feb 2019	As is currently observed there is a real risk that this milestone will not be achieved in this calendar year.
Launch	12 Oct 2017	20 Mar 2018	12 Jan 2018	17 Nov 2017					05 July 2019	
Delivery	26 Jul 2018	29 Aug 2018	26 Jul 2018	26 Jul 2018					10 March 2020	New planned date: 20 months later than original planned date, 53 months from contract signing.

Note 1: From Cardinal Programme Rev 01 dated 14 Dec 2015
 Note 2: From Cardinal Programme Rev 03 dated 16 May 2016
 Note 3: Email from FMEL 09 Dec 2016
 Note 4: 12th May 2017

Note 5: Emails Week 28/2017
 Note 6: Email 04 Sep 2017
 Note 7: Meeting FMEL 03 Nov 2017
 Note 8: Announced by FMEL August 2018

