



## 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 11/7/19 to the PSG on Vessels 801 and 802:

#### 801/802 Planning/Programme

It is impossible to estimate the delivery dates for both ships. FMEL cannot provide updated programmes with vessel delivery dates. FMEL have advised that there are currently 295 persons employed by FMEL. On 21 June 2019, the Electrical contractor removed all their electricians from the shipyard and covered up most of their equipment onboard the ship. Some of the draughtspersons are leaving have secured jobs with other companies. Work on both vessels has all but come to a halt, with no signs of when the projects will be adequately resourced and managed. We understand some platers were paid off 28 June 2019.

Since the start of the project for the 2 vessels; FMEL have failed to control, plan and co-ordinate project activities, and have failed to assign the correct resources and the adequate number of resources in accordance with their original and revised plans. CMAL advised FMEL of our concerns on the project, the lack of resources and strategy early in the project. In addition to this, productivity levels are extremely low and the extent of re-work on the vessel is considerable.

According to the latest Cardinal Date Programmes received almost one year ago on 27 June 2018. Hull 801 was due to be **delivered 3** weeks ago from date of this report and Hull 802 was due to be **launched 1** week ago. Three (3) weeks after 801 should have been delivered, not a single system on the ship has been



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completed or tested. Both vessels are years away from being delivered and are showing signs of deterioration in places.

Vessel 801, there are no more than 6 persons on the vessel.

Vessel 802; there are no more than 2 persons on the vessel.

All of the FMEL workforce (except above) have been moved off projects 801 and 802 and are now allocated to other FMEL projects, our observation from our many years of experience in shipbuilding is that the Air Cushioned Barge project announced in October 2018 is behind schedule, as are the 2 projects for the fishing vessels.

FMEL have advised that 79% of the detail and production drawings are complete, as such 21% of the detail and production drawings are not yet completed; over 43 months from contract signing. Very few new or updated drawings are being issued by FMEL to CMAL.

Below table shows the key dates for 801 Main Commissioning Activities, taken from the FMEL issued Cardinal Date Programme 27th June 2018. None of the activities scheduled over the last 12 months have been achieved. CMAL cannot even begin to guess when the ship will be ready to start running engines and testing systems.

801 Main Commissioning Activities			
Activity Name	Start Date	Finish Date	Notes
Trials & Delivery	30/07/2018	28/06/2019	50 weeks overdue
Shore Supply Available	30/07/2018	30/07/2018	50 weeks overdue
First Run Auxiliary Engine	09/11/2018	09/11/2018	35 weeks overdue
Commission Systems	09/11/2018	20/05/2019	35 weeks overdue
First Run Main Engine	21/11/2018	21/11/2018	21 weeks overdue
Generator Load Test	07/12/2018	24/12/2018	31 weeks overdue
PMS Set Up	03/01/2019	19/01/2019	27 weeks overdue
Dock Trial	13/02/2019	15/02/2019	21 weeks overdue
Dry-Dock	21/02/2019	23/03/2019	20 weeks overdue
Inclining	24/03/2019	26/03/2019	15 weeks overdue
Builders Sea Trials	27/04/2019	02/05/2019	11 weeks overdue
Owners Sea Trials	04/05/2019	09/05/2019	10 weeks overdue
LNG Tank Commissioning	09/05/2019	20/05/2019	9 weeks overdue
LNG Bunkering	27/05/2019	06/06/2019	6 weeks overdue
LNG Dock Trial	08/06/2019	09/06/2019	5 weeks overdue
LNG Sea Trials	11/06/2019	14/06/2019	4 weeks overdue
Delivery	21/06/2019	21/06/2019	3 weeks overdue

CMAL Estimated Percentage Piping Completions on 801	
Pipe System	Percentage Complete
Starting Air Machinery Spaces ER and Gen room	0%
Compressed Air and Service Air Machinery Spaces and Accommodation	0%
Water Mist Accommodation	4%
Total ships hydraulic system miscellaneous except Ro-Ro	40% However, nothing linked to the main Power Packs and no piping fitted above deck 5



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CMAL Estimated Percentage Piping Completions on 801	
Pipe System	Percentage Complete
Ro-Ro Hydraulics	0%
Scuppers and Overboard Discharges	15% Most of this fitted before launch in November 2017
Sanitary Grey Water	8%
Sanitary Black Water	5%
Fire and Wash Deck:	15% Nothing fitted above Mezzanine Deck Level
FW Cooling System:	35% Nothing completed and constantly being modified
Domestic FW hot and cold:	0%
Technical Dom FW	5% Only inside machinery rooms nothing fitted above deck 3
Chilled Water System	0%

CMAL estimate that no more 20% of the electrical cables have been installed on 801 (Note this % is for cables installed, only about 2% terminated). No cables have been installed on 802.

Hull 801, it would take an organised and properly resourced shipyard 12 months to complete 801. 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.

Hull 802, it would take an organised and properly resourced shipyard 21 months to complete the vessel in its current condition. Dependent on risks as for 801 above and lessons learned from 801.

Hull 801 Underwater Hull, the ship has been alongside in the water at the quayside in FMEL since November 2017. The condition of the underwater hull and the extent of marine growth is unknown. The vessel will require to go into dry dock for a very long period for corrective work and to complete the work which was not carried out before the launch, which FMEL ignored in their rush to launch the vessel. The vessel will dry dock at a facility outside the shipyard, which will be costly, and there will be a reduction in production efficiency, when staff are working away from their normal place of work.

Hull 802 Steelwork. Most of the units for 802 have been outside unprotected for a period of two to three years. Keel laying of the ships was on 11/08/2016 and the last double bottom unit put on the slipway in February 2017. The corrosion involved now is not what can be expected on a new-build project and must be made good on an urgent basis, the following would have to be carried out before any further work progressed on the vessel.

- The coating department would have to be given the ship in its entirety with no other personnel on-board.
- The ship will have to completely scaffolded and covered (a huge tent)
- Industrial size compressors and blasters rented.
- Correct ventilation and de-humidification to hold the required atmospheric conditions throughout the blasting, coating and curing process.
- The areas would need blasting to SA2.5 then cleaned and coated under specified conditions.

The shipyard presently does have experienced coating personnel who can carry out this work, they also have qualified inspectors who can supervise this work.

Problems are with the current top management, who do not seem to know what this entails and the cost and timescale for this work. This will require major scaffolding, encapsulation, de-humidification, heating and climatic control.

The cost of this work could run to £1M to £1.5M and would take between 3 to 4 months.



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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
<b>Cutting of Steel</b>	15 Dec 2015	15 Dec 2015	-						15 Dec 2015	Achieved on original scheduled date Rev 01
<b>10% Fabrication</b>	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
<b>25% Fabrication</b>	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
<b>35% Fabrication</b>	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
<b>50% Fabrication</b>	14 Oct 2016	14 Oct 2016							09 Dec 2016	Achieved 2 months later than original and revised schedules
<b>Major Equipment and Lock Out Items Installations</b>	14 Nov 2016	13 Mar 2017 to 18 Jan 2018	-	14 <sup>th</sup> June 2017	16 <sup>th</sup> July 2017				16 <sup>th</sup> July 2017	All main equipment delivered.
<b>75% Fabrication</b>	15 Dec 2016	15 Dec 2016	10 Feb 2017						31 <sup>st</sup> March 2017	Achieved 3 and a half months later than originally scheduled.
<b>100% Fabrication</b>	16 Jan 2017	16 Jan 2017	16 June 2017	10 <sup>th</sup> July 2017	15 <sup>th</sup> Sep 2017				21 <sup>st</sup> March 2018	Achieved 14 months later than orig schedule Rev 01
<b>Berth Join Up</b>	14 Mar 2017	28 Apr 2017	14 Jul 2017	15 <sup>th</sup> Aug 2017	06 <sup>th</sup> Oct 2017				17 <sup>th</sup> Nov 2017	Achieved 8 months later than original schedule
<b>Hull Inspection Prior to Paint</b>	17 Apr 2017	26 May 2017	21 Apr 2017	24 <sup>th</sup> July 2017	tba				18 <sup>th</sup> Aug 2017	Partial area inspected only.
<b>Launch</b>	14 Aug 2017	24 Aug 2017	24 Aug 2017	24 Aug 2017	21 <sup>st</sup> Sep 2017	21 <sup>st</sup> Nov 2017			21 <sup>st</sup> Nov 2017	Achieved 21 <sup>st</sup> November 2017.
<b>Delivery</b>	25 May 2018	29 Jun 2018	25 May 2018	25 May 2018	25 <sup>th</sup> May 2018		28 <sup>th</sup> Oct 2018	21 <sup>st</sup> June 2019		

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
<b>Cutting of Steel</b>	15 Dec 2015	15 Dec 2015	-						15 Dec 2015	Achieved on original scheduled date Rev 01



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<b>35% Fabrication</b>	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
<b>50% Fabrication</b>	14 Oct 2016	18 Nov 2016	20 Jan 2017						13 Jan 2017	Achieved 3 months later than original schedule Rev 01
<b>Major Equipment and Lock Out Items Installations</b>	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.
<b>75% Fabrication</b>	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.
<b>100% Fabrication</b>	16 Jan 2017	20 Feb 2017	20 Oct 2017	13 Oct 2017				07 June 2019		Currently 30 months behind original schedule and approx. 21% behind in fabrication.
<b>Berth Join Up</b>	14 Mar 2017	05 Jan 2018	14 Dec 2017	10 Nov 2017				19 Jul 2019		Currently 28 months behind original schedule
<b>Hull Inspection Prior to Paint</b>	17 Apr 2017	02 Feb 2018	24 Nov 2017	31 Oct 2017				05 Feb 2019		
<b>Launch</b>	12 Oct 2017	20 Mar 2018	12 Jan 2018	17 Nov 2017				05 July 2019		
<b>Delivery</b>	26 Jul 2018	29 Aug 2018	26 Jul 2018	26 Jul 2018				10 March 2020		

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

