Glen Sannox & 802 Monthly Report – [January 2022]

1.0 General

Executive Summary

Three months have elapsed since release of the third iteration of the Glen Sannox construction schedule, now revised under the control of the Yard in-house planning team to include the recently identified works from the September/November on board survey of remaining works.

Production output is also now expedited under a revised management structure where specific responsibilities are under the direct accountability of named individuals. Despite efforts to work smarter, programme start and completion dates continues to be missed. [redacted]

This level of disconnect between required production efficiency vs actual yard process efficiency provides clear enough indication that the vessel programme remains significantly in delay.

FMPG is now stating that time constraints will now prevent an unspecified number of issued building deficiencies (OOR's) raised against poor design and substandard building standards from being carried out. The machinery spaces must be fit for purpose for acceptance.

Manning numbers have increased and are now above pre-Christmas levels, [redacted]

Many work packages pursed this period are either over manned or suffer from a lack of equipment or consumables.

Risk and change management planning remains inconsistent with normal commercial shipbuilding practice, the decision to condemn and replace at least 400 cables in sub zones 203 and 303 without rationalising cable designation or consider alternative type approved corrective action is most unusual. Not least because works (time needed) to verify the remaining cables would have been easily accommodated in parallel with the delays currently faced to set the main switch boards to work. That said, any programme clashes to set equipment to work would normally be carried out under a safety tagout procedure allowing installation safety procedures to be upheld. Project risk management reporting makes no attempt to report the acceptable tolerances against each identified risk, such a position will maintain a continual uncertainty as to whether the project delivery date can ever be considered realistic. Unresponsiveness to programme delays is a fundamental risk currently threatening both vessel delivery dates, however, this risk is not identified as a top twenty issue.

Production focus over this reporting period has not prioritised areas where completion priority must be met if the vessel programme is to maintain credibility. Planned completion dates for energising the main switchboards, as well as the start of commissioning for auxiliary systems, have both been missed. It is unlikely that the main switchboards will be able to be energised for another two months because of late background completion within the engine control room, deep cleaning of cabinets and subsequent OEM equipment and safeties verification.

The following RAG assessment summarises key project performance indication over this reporting period.

Process Stage	[		
Overall Project RAG Status	Red	Amber	Green
	√ 801 and 802		
Programme RAG	√ 801 and 802		
Cost RAG	-	-	-
Quality RAG		√ (801)	

Key

Primary objectives are at serious risk and remedial action is necessary.

There is a problem and the objectives may be at risk.

The item is progressing as planned and that no action is necessary.

Consistent programme slippage is quantifiable against each of the revised project completion dates listed below, slippage is directly related to the yards' inability to service critical project execution tasks and/or recover the impact of such delays.

	Original	Previous	Previous	Previous
Projected Completion Date (as advised by Shipyard)	May 2018 July 2018	@ 09 Dec 2019 801: 11 Oct 2021 802: 06 July 2022	@ 21 Aug 2020 801: 14 April 2022 802: 08 Dec 2022	@ 24 June 2021 801: 25 July 2022 802: 03 April 2023
	Latest			
Projected Completion Date (as advised by Shipyard)	@ 26 Nov 2021 801: 30 Aug 2022 802: 03 April 2023			

Progress is being made on board the Glen Sannox, however, the works undertaken do not appear to follow the programme and continue to appear to be largely driven by the availability of materials as opposed to prioritised programme needs. The current level of production output continues to be insufficient to meet the requirements of either vessel programme, the instances of work partial completion is a serious issue throughout the vessel. [redacted] gives a visible insight of the fact that not a single space onboard Glen Sannox is yet complete. Reconciliation of production delays experienced on Glen Sannox remains limited to an increase in structural workers and the formulation of a revised production management.

Warranty Issues 801 & 802

The Yard has yet to provide information on how this essential post-delivery benefit will be managed, as the current position held of no allowance will have significant [redacted] implications. Clarification has not been received as of 15th February 2022.

Yard Supervision

[redacted]

The absence of verification inspection callouts, as well as the need to issue repetitive Owner Observation Reports (OORs) all support the need for higher levels of onboard management control. It is understood that in January 2022 the Yard will move to implement

a change in production governance by appointing responsible Foremen to each work zone. Each will be tasked with the responsibility to ensure timely completion of the remaining works through to delivery. This approach brings FMPG production management into line with industry production norms, [redacted]

2.0 Changes to Site Supervision Team

FMPG has been notified of the imminent arrival of [redacted] operations personnel, both will assist the site team until the delivery of Glen Sannox.

3.0 Design Changes Approved

Ongoing design changes affecting the constructability of the vessels design are driven exclusively within the Shipyard process, a good example would be the still outstanding 700 piping technical queries that have still to be implemented. Concerns that the vessel construction design is not frozen at this late stage of the project should be seen as a significant risk to the project, the impact of which is not currently accounted for in either vessel programme.
(Note of changes; changes to be authorised & recorded in Design Change Register)

4.0 Agreed Changes to Delivery Date

The recently announced decision to change out between 400 to 939 electrical cables (legacy cables) in the main and auxiliary machinery spaces needs to be considered withing the 801-construction programme. The issue is not suitably discussed with CMAL, indication of intent in this matter was provided as a formal letter dated 9th February 2022.
(Note of changes; changes to be authorised & recorded in Contract Variations Register)

5.0 Agreed Changes to Price

(Note of changes; changes to be authorised & recorded in Contract Variation Register)

6.0 Changes Awaiting the Owner's Approval

(Note of changes outstanding for approval by the Owner in excess of Buyer's Representative authority as stated in Consultancy Agreement Cl. 3.4)

7.0 Surveys / Inspections

Two routine verification inspection calls outs have made during this reporting period on Glen Sannox and two on Hull 801 such low rates of as built verification remain a source of serious concern.

8.0 Progress Against Programme

The below time slice delay analysis considers the current programme variance referenced against the FMPG 801 Building Programme issued 26th November 2022. To summarise, all planned completion dates up to the cut-off date of this report have not been achieved. All are significant precursor activities that need to be completed in support of commissioning activities. We have concerns about the work durations applied to each planned activity as most appear to be unrealistic and possess no foundation when compared to other similar new build projects. The critical path presents a scenario where almost all remaining tasks are deemed as critically driving the longest sequence of events to deliver the vessel. [redacted

801 Milestone Variance

Yard Reference	Task Name	Start	Finish (28 June 2021 Programme)	Finish (26 Nov 2022 Programme)	Base Line Varience In Days
	Delivery Glen Sannox - Hull 801				
	Key Milestones				
801ScA0000Mc00	Commence Commissioning	17/12/21			60
801KM7191	Main Equipment Installation Complete		23/11/21	12/01/22	34
801KM7606	Z11 Wheelhouse all Electrical Equipent Installed		08/12/21		
801ScA0000Mc01	Main Switchboards Energised Milestone			03/02/22	12
801STBD000101	Turn Ship		24/01/22		
801ScA0000Mc02	First Run Generators (Harbour Emergency & Diesel)		15/04/22	22/03/22	
801ScA0000Mc03	Main Engine Commissioning Complete Milestone		28/03/22	15/04/22	
801ScA0000Mc04	CPP Set UP (Gear Boxes) Com plete Milestone			17/04/22	
801ScA0000Mc05	Generator Load Test Complete Milestone			02/05/22	
801ScA0000Mc06	PMS Set Up Complete Milestone		24/05/22	24/05/22	
801ScA0000Mc07	Bow Thrusiter Commissioning Complete Milestone		01/06/22	01/06/22	
801ScA0000Mc08	Ramps / Bow Doors Commissioning Complete Milestone		18/06/22	18/06/22	
801ScA0000Mc09	Dock Trial			29/06/22	
801KM7520	Inclining Exercise		01/06/22		
801ScA0000Mc10	Dry Dock		06/06/22	20/07/22	
801ScA0000Mc11	MES Trials			21/07/22	
801ScA0000Mc12	Commissioning Preparations For Sea Trials		22/07/22	22/07/22	
801ScA0000Mc13	Builder Sea Trials		27/06/22	28/07/22	
801ScA0000Mc14	Owners Sea Trials			31/07/22	
801SW6640	Shipwide Outfit Complete		24/06/22		
801SW7170	Zonal Outfit Complete		05/07/22		
801ScA0000Mc29	Main Engine Inspection		05/08/22	05/08/22	
801ScA0000Mc15	LNG Tank Commissioning			13/08/22	
801ScA0000Mc16	LNG Bunkering		23/08/22	23/08/22	
801ScA0000Mc17	LNG Dock Trial		11/07/22	24/08/22	
801ScA0000Mc18	LNG Sea Trials		25/07/22	30/08/22	
	Delivery		25/07/22	30/08/22	

Key Project Dates Variance 801

Task Name	Start	Finish (28 June 2021 Programme)	Finish (26 Nov 2022 Programme)	Base Line Varience In Days
Key Dates				
801 - Complete Install Pipework in SZ 0303 (Pipes, Cable & Transformer Space)			11/12/2021	66
801 - Completion of Wheelhouse Windows			14/01/2022	32
801 - Commence Installation in Zone 09	18/01/2022			
801 - Commission Auxiliary Systems Start	27/01/2022			19
801 - Commission Auxiliary Systems Complete			08/03/2022	
801 - Main Engine & Gearbox Commissioning Complete			17/04/2022	
801 - Main Equipment Installation Complete			28/04/2022	
801 - All Checkwire Complete			23/06/2022	
801 - Inclining Exercise	24/06/2022			
801 - Shipwide Outfit Complete			30/06/2022	
801 - Zonal Outfit Complete			05/07/2022	
801 - Zonal Outfit Complete			23/08/2022	

Sub Zone Completion Variance 801

Task Name	Duration	Start	Finish (28 June 2021 Programme)	Finish (26 Nov 2022 Programme)	Base Line Varience In Days
Delivery Glen Sannox - Hull 801					
Zones					
Sub Zone 03-01 (DB Mid Ship Tanks & Voids - Frames 41 - 67)	503.13 days	Mon 06/07/20		19/01/2022	27
Sub Zone 03-02 (FO Serv & Settling Tanks)	277.13 days	Mon 15/03/21		18/01/2022	30
Sub Zone 03-03 (Pipes, Cable & Transformer Space)	316.63 days	Mon 08/02/21		27/01/2022	21
Sub Zone 03-04 (Sewage Treatment Tank Space)	313.63 days	Mon 08/02/21		24/01/2022	24
Sub Zone 03-05 (Stabiliser Starboard)	239.13 days	Sun 09/05/21		31/01/2022	17
Sub Zone 03-08 (Stabiliser Port)	242.63 days	Mon 26/04/21		21/01/2022	27
Sub Zone 01-01 (Tank Top - Voids & Tanks Aft - Frames 04 - 18)	195.88 days	Mon 05/07/21		08/02/2022	9
Sub Zone 01 -02 (Double Bottom Generator Room)	169.88 days	Mon 02/08/21		07/02/2022	10
Sub Zone 01 -03 (Double Bottom Main Engine Room)	173.88 days	Mon 02/08/21		11/02/2022	6
Sub Zone 02-03 (Main Engine Room & Escape)	452.13 days	Mon 28/09/20		15/02/2022	2
Sub Zone 03-06 (LNG Tank Space)	241.13 days	Sun 09/05/21		02/02/2022	15
Sub Zone 06-01 (Deck 3 Aft Store Spaces Frames -5 - 6)	283.38 days	Mon 29/03/21		08/02/2022	9
Sub Zone 06-02(Stair Escape Vent, Lift & Access Starboard Side Frames 40 - 66)	182.38 days	Mon 09/08/21		28/02/2022	

Electrical Distribution Boards Variance 801

Task Name	Duration	Start	Finish (28 June 2021 Programme)	Finish (26 Nov 2022 Programme)	Baseline Varience in Days
Local Distribution Panel - P02 - 415V Dist Engine Room - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - P03 - 415V Dist Engine Room - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L11 - 230V Dist Hyd Room - Energse		04/02/2022		04/02/22	11
Local Distribution Panel - P04 - 415V DistAux Machinery Space - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L10 - 230V Dist Nitrogen Room - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L13 - 230V Dist Board - Hyd Room - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L09 - 230V Dist Eng Room - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L08 - 230V DistAux Machinery Space - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L14 - 230V Dist Board - Hyd Room - Energse		04/02/2022		04/02/22	11
Local Distribution Panel - P01 - 415V DistAux Machinery Space - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - P06 - 415V Reefer Skt Dist - Energise		04/02/2022		04/02/22	11
Local Distribution Panel - L03 - 230V Dist Deck 6 - Energise		24/02/2022		25/02/22	
Local Distribution Panel - E02 - 230V Emerg Dist Deck 6 - Energse		24/02/2022		25/02/22	
Local Distribution Panel - P08 - 415V Dist AHU Humidifier - Energise		24/02/2022		25/02/22	
Local Distribution Panel - L15 - 230V Dist Board -AHU Room - Energise		24/02/2022		25/02/22	
Local Distribution Panel - EP01 - 415V Dist Emerg Gen Room - Energise		24/02/2022		25/02/22	
Local Distribution Panel - L01 - 230V Dist Inst Room - Energise		24/02/2022		25/02/22	
Local Distribution Panel - P07 - 415V DistAir Handling Mchy - Energise		24/02/2022		25/02/22	
Local Distribution Panel - E01 - 230V Emerg Dist Inst Room - Energise		26/02/2022		26/02/22	
Local Distribution Panel - E05 - 230V Emerg Dist Workshop - Energise		26/02/2022		26/02/22	
Local Distribution Panel - E04 - 230V Emerg Dist Deck 4 - Energse		01/03/2022		02/03/22	
Local Distribution Panel - L12 - 230V Dist Board - Store - Energise		18/03/2022		18/03/22	
Local Distribution Panel - P05 - 415V Galley Dist - Energise		18/03/2022		18/03/22	
Local Distribution Panel - L06 - 230V Dist Deck 5 - Energise		18/03/2022		18/03/22	
Local Distribution Panel - E03 - 230V Emerg Dist Deck 5 - Energse		18/03/2022		18/03/22	
Local Distribution Panel - E06 - 230V Emerg DistAH U - Energise		25/03/2022		26/03/22	

Resource Allocation Glen Sannox & Hull 802

Manning resources numbers only returned to pre-Christmas levels during week four, working hours during week four where significantly reduced because of the restricted access to both vessels caused by damage to the Glen Sannox gangway and unsafe scaffolding on hull 802 caused by storm Malik. The levels of programme variance set out in section 8 above provides insight into the level of inefficiency attached to the management of resources as accurately forecast completion dates continue to allude the Yard Production. [redacted] workers have insufficient access to welding equipment or consumables and more commonly insufficient technical detail supporting ongoing work packages.

Hull 801 Worker Resources

Week	44	45	46	47	48	49	50	51	52	2022 1	2	3	4	5	6	
Yard Worker/Day																
Welders	5	5	5	5	5		3			4	4	4	4	4		
Pleters/Burners	4	4	4	4	3		2			2	2	3	3	3		
[redacted]	40	43	43	43	62		24			30	38	71	70	70		
Engineers	6	6	6	6	7		4			5	6	5	6	6		
Yard Pipe Fitters	6	6	6	6	6		4			4	8	7	7	7		
Painters	8	8	8	8	8		6			8	10	9	8	8		
Joiner	6	6	6	6	4		4			3	4	6	6	6		
Shipwright	0	0	0	0	2		0			2	2	5	5	5		
Stagers	7	7	7	7	7		7			8	10	8	9	9		
Ancills	7	8	8	8	13		12			12	14	14	12	12		
Average Total Per Day	89	93	93	93	117		66	Numbers Unreliable Over Holiday Period 23 Dec through 5th January		78	98	132	130	130		
Weekly Hours 5 Day Week	4450	4650	4650	4650	5850		3300			3900	4900	6600	2600	6500		
Week	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**1**	**2**	**3**	**4**	**5**	**6**	
Contractors																
[redacted]	12	19	19	19	22		23			19	24	25	50	50		
	12	12	12	12	9		6			8	9	8	9	9		
	5	5	5	5	5		4			5	5	5	5	5		
	3	3	3	2	3		3			3	3	3	3	3		
	28	30	30	30	52		20			18	35	34	45	50		
	0	0	0	3	2		2			0	0	0	0	3		
	4	4	4	4	4		4			3	5	6	6	6		
				CONSIDERED ABOVE												
	4	4	4	5	5		4			5	5	5	3	3		
Total Per Day	68	77	77	80	102		66	Numbers Unreliable Over Holiday Period 23 Dec through 5th January		61	86	86	121	129		259 Combined Total Workers
Weekly Hours 5 Day Week	3400	3850	3850	4000	5100		3300			3050	4300	4300	2420	6450		12,950 Combined Total Hours

Hull 802 Worker Resources

Week	44	45	46	47	48	49	50	51	52	2022 1	2	3	4	5	6	
Yard Workers																
Welders	2	2	2	2	5	3	3			3	3	2	2	3		
Pleters/Burners	2	2	2	2	2	0	0			2	2	3	3	3		
[redacted]	38	38	38	38	12	9	9			10	22	22	28	31		
Engineers	0	0	0	0	0	0	0			0	0	0	0	0		
Yard Pipe Fitters	0	0	0	0	0	2	2			0	0	0	0	0		
Painters	4	4	4	4	4	4	4			4	6	5	0	0		
Joiner	2	2	2	2	0	0	0			0	0	0	0	0		
Shipwright	3	3	3	3	2	2	2			3	3	3	3	3		
Stagers	4	4	4	4	4	4	4			4	4	2	2	2		
Ancills	4	5	5	5	0	1	1			6	6	6	6	6		
Total Per Day	59	60	60	60	29	25	25	Numbers Unreliable Over Holiday Period 23 Dec through 5th January		32	46	43	44	48		
Weekly Hours 5 Day Week	2950	3000	3000	3000	1450	1250	1250			1600	2300	2150	880	2400		
Week	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**1**	**2**	**3**	**4**	**5**	**5**	
Contractors																
[redacted]	0	0	0	0	0		0			0	0	0	0	0		
	0	0	0	0	0		0			0	0	0	0	0		
	0	0	0	0	0		0			0	0	0	0	0		
	0	0	0	0	0		0			0	0	0	0	0		
	2	2	2	0	0		0			0	0	0	0	0		
	0	0	0	0	0		0			0	0	0	0	0		
	0	0	0	0	0		0			0	0	0	0	0		
										0	0	0	0	0		
										0	0	0	0	0		
Total Per Day	2	2	2	0	0		0	Numbers Unreliable Over Holiday Period 23 Dec through 5th		0	0	0	0	0		48 Combined Total Workers
Weekly Hours 5 Day Week	100	100	100	0	0		0			0	0	0	0	0		2400 Combined Total Hours

Yard Production Reporting

The level of detail contained in production reports remains heavily restricted and largely generic.

Owners Observation Reports 801

Progress to close out Owner Observation Reports (OOR's) remains slow and is performed largely out of sequence with the requirements of the vessel programme. Please note the context behind the closure of 43 OOR's in December is as a result of a detailed review to clean the current list based on an objective review on merging related deficiencies. At the time of writing circa 120 OOR issues remain to be reviewed, the impact of which remains unknown and not factored into the vessel programme.

Year	2021							2022						
Month	June	July*	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
OOR's Raised	37	25	4	7	0	26	8	8	9	0	0	0	0	0
OOR's Closed	0	28	33	32	12	28	45	7	12	0	0	0	0	0

Inspection Call Outs

The frequency with which inspections are called are made remain to all intent and purpose is zero; validation of deliverables based upon quality standards or acceptance criteria raises the question of why the Yard fails to identify the importance and impact of late in the day

identification of quality standards, corrective actions left until the last moment will simply not be carried out.

801 Commissioning

Despite not meeting a single planned Level 1 activity completion date since the release of the revised baseline programme in June 2021. The latest update of the programme continues to report the start of commissioning works as 17th December 2021, presumably because the planning tool used is either set up against a set of constrained dates or each task is scheduled manually against the base line. As it stands the commissioning schedule should be seen as nothing more than a working list of dated activities that do not reflect the interdependencies between tasks and therefore do not highlight the ongoing impact of current known delays.
Maintaining this date has no foundation in terms of logical production achievement as the current delays to mechanically complete auxiliary system in support of commissioning start-up will not in our opinion now be achievable until mid-April 2022 at the earliest. According to yard commissioning programme, the electrical shore supply system 868 will be commissioned by 18th December, this work is not started at the time of writing, 17th of February 2022. The electrical shore supply must only be turned on when the 415V Main Switchboard is ready to be powered up. When will the 415V Main Switchboard be powered up from the shore supply? There are numerous unresolved issues regarding access and maintenance in the engine and generator rooms. These issues must be prioritised and resolved in order to deliver a vessel that meets Flag, Class, and building specifications. We've been told that "882 Transformers" and "872 Main and Emergency Switchboards" will be put into service. Which transformers/switchboards will be commissioned, and how extensive will the commissioning be? Is there any information available to support the Motor Control Centres and associated auxiliary system commissioning tests?

At this point in the project, we are still waiting for the Yards commissioning plan for all ship's equipment and systems to be released.

Hull 802

FMPG has advised of significant changes (delay) to the baseline schedule dates issued 28th June 2021 supporting block erection and completion, ref, email dated 28th September 2021, entitled Review of the Block Erecting and Consolidation Programme. Whilst it is acknowledged rescheduling of works within the programme is wholly under the responsibility of the yard and that the yard seeks to maintain overall key dates for Hull Assembly Completion (802KM002) and Superstructure Complete (802KM003), respectively 26th January 2022 and 21st July 2022. [redacted]

802 - FMPG Baseline Planning Detail

Of the twenty planned activity start/finish task dates, eight are late to finish and twelve are reported as late to start. In short no level one activity task group is yet signed off as complete.

Of the twenty scheduled activities with a planned start or finish date at the cut off of 30th November 2021, eight are late to finish and twelve are reported as late to start, ie FMPG has not upheld a single planned completion date in support of the baseline programme.

Activity ID	Activity Name	Remaining Duration	Start	Finish	Status as of 30th November 2021
802 - L1 PLAN		467d	25-Aug-20A	03-Apr-23	
Milestones		466d	24-May-21	03-Apr-23	
802MILECMAL2102	Commence Zone 2 Pipework Manufacturing	0d	24-May-21*		
802MILECMAL2004	Complete Preparation of Unit 48	0d		25-May-21	Late to Finish by 158 Days
802MILECMAL2103	Commence Zonal Hotwork Programme - Zone 2	0d	21-Jun-21*		
802MILECMAL2104	Commence Zone 2 Pipework Installation	0d	12-Jul-21*		
802MILECMAL2101	Commence Tank Testing	0d	26-Jul-21*		Late to Start by 126 days
802MILECMAL2105	Complete Preparation of the Funnels	0d		16-Sep-21*	Late to Start by 70 days
802MILECMAL2109	Complete Pre-Fitting Out (PFO) - Zone 2	0d		30-Sep-21*	Late to Finish by 61 days
802MILECMAL2106	Completion of Cryogenic Pipework - Zone 2	0d		28-Oct-21*	Late to Finish by 61 days
802MILECMAL2108	Erect Foc'sle Block (U49/50/51) at Berth	0d	07-Dec-21*		Late to Start by 33 days
802KM002	802 Hull Assembly Complete	0d		26-Jan-22*	
802MILECMAL2107	Shaftline - Final Line of Sight Achieved	0d		21-Feb-22*	
802KM003	802 Superstructure Complete	0d		21-Jul-22*	
802KM004	802 Launch	0d		15-Aug-22*	
802KM005	802 Commission Auxiliary Systems Complete	0d		11-Oct-22*	
802KM006	802 Main Engine and Gearbox Commissioning Complete	0d		21-Nov-22	
802KM007	802 Zonal Outfit Complete	0d		30-Nov-22	
802KM008	802 Enter Dry-Dock	0d	26-Jan-23*		
802KM009	802 Inclining Exercise	0d	09-Feb-23*		
802KM010	802 Builders and Owners Sea Trials Complete	0d		20-Feb-23*	
802KM011	802 LNG Bunkering Complete	0d		20-Mar-23*	
802KM012	802 LNG Sea Trial Complete	0d		28-Mar-23*	
802KM013	802 Delivery	0d		03-Apr-23*	
Structure		281d	25-Aug-20A	05-Jul-22	
Unit Assembly		262d	25-Aug-20A	08-Jun-22	
A1170	Block 1	4d	25-Aug-20A	27-May-21	Late to Finish by 186 days
A1190	Block 3	86d	24-May-21*	21-Sep-21	Late to Finish by 70 days
A1210	Block 5	98d	07-Jun-21*	21-Oct-21	Late to Finish by 40 days
A1280	Block 12	87d	08-Jun-21*	07-Oct-21	Late to Finish by 54 days
A1200	Block 4	151d	14-Jun-21*	20-Jan-22	
Block Assembly		171d	13-Aug-21	21-Apr-22	
A1290	Block 11 Upper	25d	13-Aug-21*	16-Sep-21	Late to Finish by 75 days
A1300	Block 12 Foc'sle	46d	04-Oct-21*	06-Dec-21	
A1310	Block 10/11 Wheelhouse	85d	13-Dec-21*	21-Apr-22	
Launch		116d	06-Dec-21	05-Jul-22	
802A7020	Launch Arrangement	104d	06-Dec-21*	14-Jun-22	
802A7030	Launch Preparation	12d	15-Jun-22*	05-Jul-22	
Outfit		366d	21-Jun-21	30-Nov-22	
Zone 01 Outfit		142d	12-Jan-22	03-Aug-22	
802Z01HTWK001	Z01 - Install all Compartment Hotwork incl. hull outfit/walkways/elec seats	46d	12-Jan-22*	16-Mar-22	
802Z01HVAC001	Z01 - Install HVAC & Hangers	26d	26-Jan-22*	02-Mar-22	
802Z01PIPE001	Z01 - Install Pipework	73d	26-Jan-22*	11-May-22	
802Z01PIPE003	Z01 - Pipework Testing	73d	23-Feb-22*	08-Jun-22	
802Z01HVAC002	Z01 - HVAC Testing	49d	02-Mar-22*	12-May-22	
802Z01EQUI001	Z01 - Install Equipment (Steel/HVAC/Elec)	73d	16-Mar-22*	29-Jun-22	
802Z01ELEC003	Z01 - Electrical cables - Reeve to Band Cables	79d	11-Apr-22*	03-Aug-22	
Zone 02 Outfit		207d	21-Jun-21	19-Apr-22	
802Z02HTWK001	Z02 - Install all Compartment Hotwork incl. hull outfit/walkways/elec seats	68d	21-Jun-21*	23-Sep-21	Late to Finish by 68 days
802Z02PIPE001	Z02 - Install Pipework	63d	12-Jul-21*	07-Oct-21	Late to Finish by 58 days
802Z02PIPE003	Z02 - Pipework Testing	77d	29-Sep-21*	24-Jan-22	
802Z02EQUI001	Z02 - Install Equipment (Steel/HVAC/Elec)	85d	04-Oct-21*	08-Feb-22	
802Z02ELEC003	Z02 - Electrical cables - Reeve to Band Cables	131d	06-Oct-21*	19-Apr-22	
802Z02HVAC001	Z02 - Install HVAC & Hangers	57d	28-Oct-21*	25-Jan-22	
802Z02HVAC002	Z02 - HVAC Testing	35d	13-Dec-21*	08-Feb-22	
Zone 03 Outfit		169d	19-Jul-21	22-Mar-22	
802Z03HTWK001	Z03 - Install all Compartment Hotwork incl. hull outfit/walkways/elec seats	108d	19-Jul-21*	16-Dec-21	
802Z03HVAC001	Z03 - Install HVAC & Hangers	83d	03-Aug-21*	25-Nov-21	Late to Start by 101 days
802Z03PIPE001	Z03 - Install Pipework	98d	03-Aug-21*	16-Dec-21	Late to Start by 101 days
802Z03PIPE003	Z03 - Pipework Testing	90d	30-Aug-21*	11-Jan-22	Late to Start by 92 days
802Z03EQUI001	Z03 - Install Equipment (Steel/HVAC/Elec)	110d	06-Sep-21*	15-Feb-22	
802Z03ELEC003	Z03 - Electrical cables - Reeve to Band Cables	134d	07-Sep-21*	22-Mar-22	Late to Start by 84 days
802Z03HVAC002	Z03 - HVAC Testing	27d	16-Dec-21*	01-Feb-22	
Zone 04 Outfit		189d	20-Sep-21	23-Jun-22	
802Z04PIPE001	Z04 - Install Pipework	85d	20-Sep-21*	25-Jan-22	Late to Start by 81 days
802Z04EQUI001	Z04 - Install Equipment (Steel/HVAC/Elec)	123d	25-Oct-21*	26-Apr-22	
802Z04HTWK001	Z04 - Install all Compartment Hotwork incl. hull outfit/walkways/elec seats	60d	01-Nov-21*	01-Feb-22	
802Z04ELEC003	Z04 - Electrical cables - Reeve to Band Cables	152d	10-Nov-21*	23-Jun-22	
802Z04PIPE003	Z04 - Pipework Testing	85d	15-Nov-21*	22-Mar-22	
802Z04HVAC001	Z04 - Install HVAC & Hangers	19d	22-Nov-21*	16-Dec-21	
802Z04HVAC002	Z04 - HVAC Testing	13d	30-Mar-22*	19-Apr-22	
Zone 05 Outfit		122d	29-Nov-21	31-May-22	
802Z05HTWK001	Z05 - Install all Compartment Hotwork incl. hull outfit/walkways/elec seats	25d	29-Nov-21*	11-Jan-22	
802Z05HVAC001	Z05 - Install HVAC & Hangers	40d	13-Dec-21*	15-Feb-22	
802Z05HVAC002	Z05 - HVAC Testing	34d	05-Jan-22*	21-Feb-22	
802Z05PIPE001	Z05 - Install Pipework	72d	19-Jan-22*	03-May-22	
802Z05EQUI001	Z05 - Install Equipment (Steel/HVAC/Elec)	53d	09-Feb-22*	26-Apr-22	
802Z05PIPE003	Z05 - Pipework Testing	67d	09-Feb-22*	17-May-22	
802Z05ELEC003	Z05 - Electrical cables - Reeve to Band Cables	64d	28-Feb-22*	31-May-22	

Block Erection Status - 802

Blocks 50 & 51 craned on board the vessel, prior to starting erections joint hot work when resources become available. Work continues the fabrication of aluminium superstructure in the lower fabrication shed.

FMPG has, for the time being, abandoned any work on deck 5, further delaying the revised consolidation erection program.

Hull 801

Wheelhouse Navigation

Communications and Safety Console Installation

Work has not started on the [redacted] upgrade, the ongoing works to outfit the bridge area should in no way be considered as being performed in a controlled environment, aluminium grinding particulate covers most surfaces and will contaminate the safety critical equipment and cabinets. Correspondence has been entered into with FMPG the outcome of which is still awaited.

While window installation continues, access to install an underslung scaffold to facilitate the installation of the outermost port and starboard bridge wing windows has been restricted due to inclement weather. Our onboard patrolling inspections have identified a significant number of localised points of burn damage to the installed glazing units as a result of insufficient protection, which is disappointing given that CMAL raised the possibility of damage to installed windows several months ago but went unheeded. Following cleaning, the yard will conduct a detailed survey and report their findings.

Additionally, we notice that the window washing unit has been installed in the void beneath the bridge. The position chosen gives insufficient access for maintenance.

Ongoing External Structural Works

Panama Eyes

On-going work stalled because of poor weather. Work started on removal back in week 33, work remains to be completed as of week 43. Scheduled completion of this work (801Z05HTWK001) was planned as 29th November 2021. Bad weather has delayed their subsequent installation onboard.

Modified Mooring Rope Bits

Modification works to increase the height dimension is now complete, all units have now been installed on the forecastle.

Hull Belting

On-going work stalled because of poor weather - Planned completion of hot works in zones 1,2 & 3 is respectively 9 December 2021, 30 July 2021 and 16 August 2021. Arguably this work should have been a component deliverable of the 7th May 2020 milestone claim for structural completion. Work is currently abandoned because of bad weather.

External Deck Coating Works

On-going work stalled because of poor weather - Uncoated structural components remain open to the elements for the second winter season, please reference [redacted] to gain a full understanding.

Forward And Aft Masts

Remaining structural and outfitting works are on hold because on continued poor weather conditions.

Clam Shell Door Installation

Work has progressed well this period, the first trial opening of the doors has now been attempted, a few issues remain to be resolved prior to the arrival of the TTS OEM on the 6th of December. It should be noted that the door movement was achieved by using external jacks, not the dedicated vessel hydraulic system.

Main and Auxiliary Engine Exhaust Resilient Supports

Works are ongoing, OOR's have been raised against several significant defects that must be progressed in line with the building programme to ensure the installation is fit for purpose, the yard is expected to prioritise this work in support of first start of main and auxiliary engines.

Structural Compensation of Pipe Transits

Work is ongoing to fit compensation pieces in all affected areas. This work's out of sequence impact is hugely damaging to the progress of works set out in the master schedule. The delay impact will significantly impact the earliest date at which testing, and commissioning works can start. This hold point is not factored into the current planning philosophy.

Structural Plenums

Work continues in the fabrication of structural plenums. No reference is made within the level 1 baseline program as to when this work is scheduled to be completed.

Deadweight Issue

Update expected week 50 during FMPG project update meeting.

Glen Sannox Piping

LNG

No progress is reported this period

Zone 2 Machinery Space Isometric Pipe Installation

50 workers on site 15-night shift - Continue to focus their efforts to complete the main sea water cooling and fuel oil piping circuits, the speed of completion is still hampered by poor prioritisation and ongoing delays associated with ad hoc ship constructed spool pieces and the delays associated with the time take to complete off site galvanization. No complete system pipe pressure tests or flushing procedures have yet been started onboard. The delays associated with presenting the pressure test of the now largely complete sea water system hinge upon the yards lack of instruction to complete outstanding OOR deficiencies Reasonable progress has been recorded against the deck 5 port installation of the main chilled and reheat water pipe headers. Installation of the stainless Mapress potable water system on deck 6 starboard side is now started, the contractor has installed the main header below the contractual ceiling height of 2.2m. Delays preventing the fuel oil system and fuel oil transfer systems progressing centre upon circa 10 missing pipe spools, late procurement of the engine connecting flexible hoses, missing priming cock spigots before and after pumps, missing orifice plates on the discharge side of the booster pumps and missing installation of the pneumatic diaphragm salvage pumps remain to be resolved. Work to commence the remaining installation of pipes located in zone 5 (Bow Thrust Space) is on hold because of ongoing access issues require by the yard painters. Work to complete the Zone 4 area remains on hold because of missing material and valves. Logical pressure testing of complete systems require FMPG works to be completed in Zone 3.

FMPG Responsible Piping Installation

The yard team of pipe installers continue to work in spaces 0307 (Hydraulic Room), 0309 (Engine Control Room), 1002 (Emergency Diesel Space) and 0303 (Pipe Cable & Transformer Space). Work focusses on fitting missing pipe and pipe supports. Progress is slow in all areas. The fuel oil piping and storage tank installation in the emergency generator space have not progressed this week.

Piping, Cable & Transformer Space - 0303

Minimal production progress is again reported over this reporting period. The overall level of piping completion this period; penetrations through to the P&S stabiliser spaces are now complete allowing final spool pieces to be installed for some transiting systems. Progress is assessed to remain at 85% for mechanical installation. The late procurement of glycol system valves and pipe spools is now averted, and work has restarted on the installation. Work to install the Mapress stainless steel press fitted pipe for the [redacted] system is underway, the standard of installation is not in line with the makers installation guidelines. Late installation of the LNG liquid pipe transits, and a lack of available resources to complete this area remain the principal issue faced by the yard. Scheduled completion of this area was planned as 16th August 2021 and is still to be met.

Forward Machinery Space (0402) – 801

Work has mainly stopped in this area, assess is hampered because of installed scaffolding. Furthermore, we assume that this is driven by late procurement of key components, pipe installation was scheduled to be completed 31st August 2021, hot work was scheduled to be completed 03rd September 2021, HVAC testing is also scheduled to be completed as well of 13th August 2021.

Central Hydraulic System Installation - 801

Work has started on the pipe installation, the main header is now run from the sewage treatments space (0304), through the pipe, cable and transformer space (0303), initial feedback is the installation standard is high, progress is slow as the contractor is unavoidably forced to await the shipyard driven hot works (bulkhead penetrations, support attachments to tank tops etc.) be completed. Many co-ordination issues have prevented pipe runs in the machinery spaces from following the 3D model coordination routing. Site run pipes have now been installed that will likely impact the access to the main engine cylinder heads during routine maintenance procedures, the issue is under discussion with the yard.

Zone 2 Walkways - 801

At the time of writing the yard has appointed an external contractor to review what improvements can be made to the onboard installation, their findings are awaited.

Electrical - 801

50 Workers on site (including [redacted] 6 people working night shift) [redacted] subcontractor [redacted] have started to pull CAT 7 cables on deck 6. The shipyard has announced that the ongoing process to verify legacy cables in the main and auxiliary machinery spaces will be superseded by a blanket removal of circa 700 signal cables (to be verified). Work continues to install second fix cable ways in the accommodation and machinery spaces. [redacted]

Accommodation Outfitting

Seven Installers currently on site – work currently focusses on:

1. Fitment of vertical panel support channels, deck 6 forward passenger lounge.
2. Installation of deck 6 Class insulation in the HVAC fan room forward bulkhead.
3. Installation of deck 6 thermal insulation around window vertical structure.
4. Opening A60 door apertures on deck 5.
5. Support for passenger handrails in accommodation area.

HVAC Installation - 801

Work is progressing on deck 7, the standard of installation is satisfactory, it is very likely that the remaining installation of chilled water, re heat pipe work and cable tray installation will warrant the partial takedown of installed ducts as a result of [redacted] modelling detail.

Cardinal Date Status

Milestone' Completion of Car Deck Recesses' originally due 9 April 2021 and is now claimed as complete 7 May 2021, is now scheduled to be complete 24 May 2021 under the guidance set out in the re-baselined programme. The balance of work needed to complete the remaining 17 structural recesses remains to be started. The programme slippage currently stands at 188 calendar days. Clearly the baseline expectations underpinning the RBP are unrealistic.

Work to complete the claimed milestone of structural completion claimed 7 May 2021 remains ongoing. Many other areas need to be worked and completed to achieve 'full' Steel/Aluminium Structural Completeness. Examples are, installation of all remaining internal bulkheads, aluminium bulkheads within the accommodation areas, installation of all stairwells, completion of welding of all Panama fairleads, completion of lift shafts, installation of all windows, installation of Forward Mast and the cutting / opening of bow doors and associated major structural works.

Aft Mast: As of week 21, 2021, milestone completion claimed 7 May 2012. However, final acceptance by CMAL inspection was not possible as the build quality of vent pipe supports, and poor standard of internal structure coating was insufficient to satisfy normal industry build standards, or the requirements set out in the contractual specification.

Belting: Milestone completion claimed 7 May 2021; As of week 30, 2021, work remains incomplete on the starboard side of the vessel, work has been progressed this period to complete the port aft belting, this is not expected to complete until week 34, 2021. Programme slippage currently stands at 115 calendar days.

9.0 Next Stage Payment Due

n/a

10.0 Forthcoming Period Events

11.0 Tests & Trials Due

A revised programme of works has been issued for November 26th, 2021. All planned dates have either been missed or are not progressing as planned. Detailed comment is made in paragraph 8.0: Progress Against Programme.

12.0 Risk Register Update – Glen Sannox

CMAL reviewed the top twenty findings identified under FMPG's revised risk process concluded in November 2021. The document shared raises several significant concerns as to the process now followed. As the register only considers the implications of identifying the inherent risk at the point of identification as opposed to reporting the context of risk reduction (residual risk) after controls have been put in place. Risk No 5 is a case in point, 'There is a risk that equipment in stores cannot be located in a timely manner to support work packages. This issue first appeared in the register review dated October 2019 and again in March 2020, the inherent risk value was assessed as two hundred and fifty on both occasions and the desired residual risk value was adjudged to be thirty. Jump forward to February 2022 where the residual risk is now assessed to stand at two hundred. No tolerance limit is set on any of the reviewed documentation so it is impossible for the yard to assess whether the outcome of this risk should it occur can be absorbed or not.

Risk No's 2, 3, 6 and 7 are linked by a common theme in that they all relate to a poor understanding of the remaining works to complete the vessel. The highest risk value of two hundred and fifty is allocated to each risk. The planned mitigation of No 2 is to freeze all changes not yet completed by the yard unless they have a safety implication. This raises the question of how and when previously agreed works and outstanding technical queries will now be completed post-delivery. The Yard quantifies the extent of this risk as the impact of 160 individual modifications with unknown impact.

Risk No's 1, 8, 9 & 15 deal with commissioning risk that are all linked by the common thread of programme delay. This risk is assessed with a lower likelihood of impact than No's 2, 3, 6 and 7 despite the measurable programme delay now faced by the project. The programme variance now faced to commission the main switch boards will now introduce a 2-month delay impact on the commissioning works, the risk impact of which to the programme is completely ignored.

13.0 Safety & Environmental

	This Month	Cumulative
RIDDORS	0	0
Fatality	0	0
Lost Working day Case	0	7
Medical Treatment Case	0	26
First Aid Case	1	91
Property Damage	0	1
Fire Incident	0	0
Environmental Incident	0	0
High Potential Near Miss	0	4
Near Miss	0	2
Total No. of Recordable Injuries	0	1

Figure 1 Data From FMPG February 2022 Project Report

Print Name: [Jim Anderson]

Signature:

Date: [18 February 2022]

[redacted]