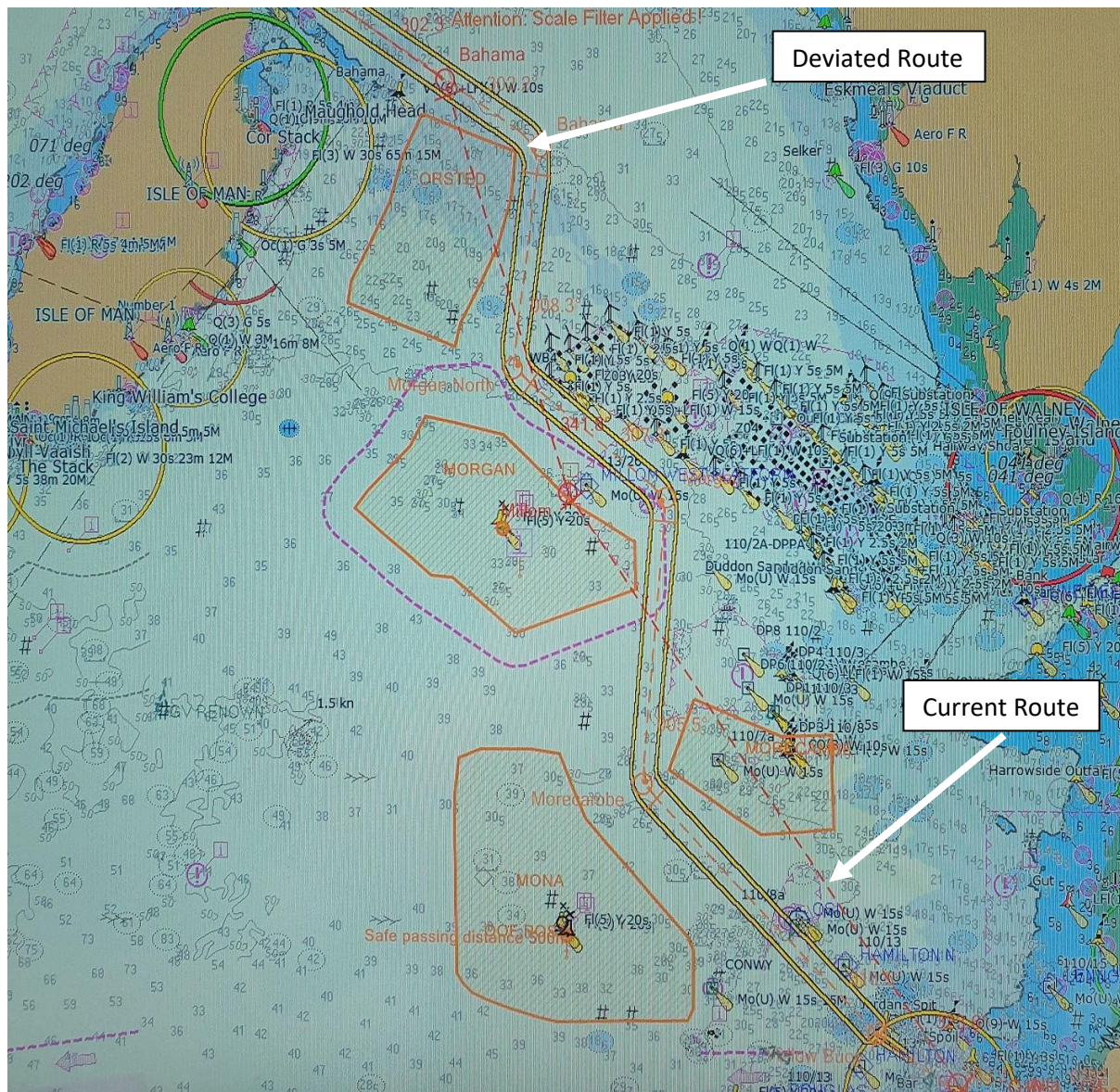


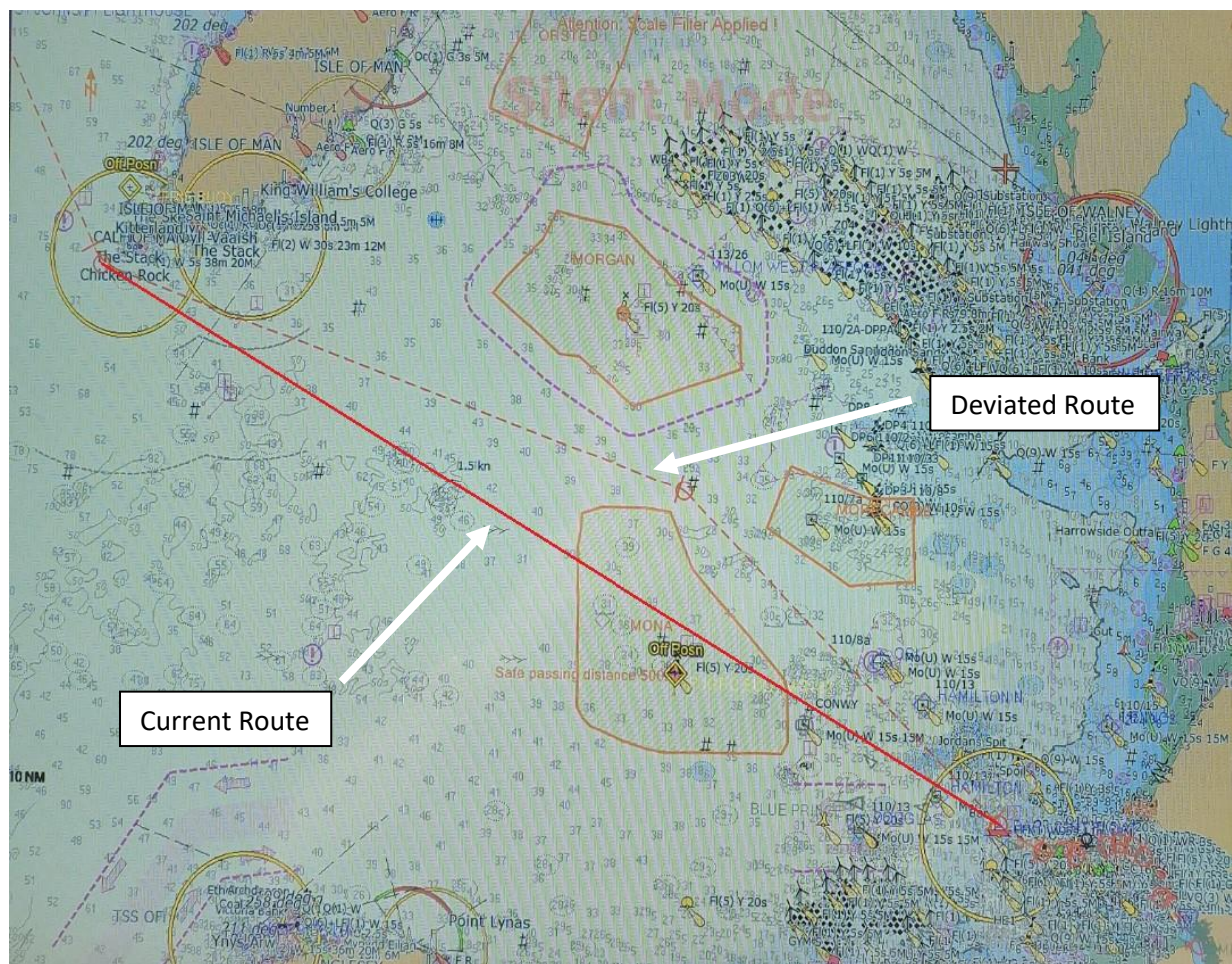
Analysis of the deviations required by the cumulative effect of the proposed development of the Morgan, Mona, Morecambe and Orsted Windfarms on Stena Lines Belfast to Liverpool services.

Passage North of the Isle of Man



This screen capture from the ECDIS of one of our EFlexer vessels shows the deviations required for our Belfast to Liverpool route when routing North of the Isle of Man. The red hatched line shows the vessels current direct route.

Passage South of the Isle of Man



This screen capture from the ECDIS of one of our EFlexer vessels shows the deviations required for our Belfast to Liverpool route when routing South of the Isle of Man. The red solid line shows the vessels current direct route.

Notes :

- These passage plans are based on the reduced footprint for Morgan and Mona as proposed by the consortia.
- The footprint for Morecambe however is plotted, as submitted in the PEIR, since the site location for the Morgan – Morecambe Transmission assets, booster station is still to be selected and therefore should the most North Westerly edge of the Morecambe Windfarm be chosen then the benefit from the proposed reduced boundary would be negated from a deviation perspective.
- The Orsted Windfarm is also plotted as Stena Line have been reliably informed by the developer that this project will proceed and that the Scoping document will be submitted in Q4 – 2023. As such this should therefore be regarded as an adjacent transboundary project.

Bunker Analysis

The following tables analyse the estimated additional bunker fuel consumption and cost for Stena Line vessels operating on scheduled services in the area. It does not factor in the additional cost in time on passage, maintenance due to additional running hours on engines, the cost of lubrication oil and sundries or the effect on vessels CII.

It uses the same thirty-five-year time frame as used by the consortia for calculating Navigational risk.

While the focus in the PEIR's is on the individual deviations around individual projects Stena Line must look at the cumulative impacts on its business over the life expectancy of the project.

In summary the cost to Stena Line in additional fuel alone over the thirty-five-year life expectancy of the project is c US\$ 10.3 Million.

Route : Belfast to Birkenhead.

Passage : Passing North of the Isle of Man around the proposed reduced footprint windfarms

Eflexer Class Vessels (Two Operating on the route)							
	Average Passage Distance in Nm	Deviation in Nm	VLSFO Bunker Consumption per Nm	VLSFO Bunker Consumption per crossing	Cost of VLSFO / MT March 2023 US\$	VLSFO Bunker cost per crossing US\$	Additional Bunker cost for Deviation per crossing (US\$)
Current Passage Distance – North of the Isle of Man	142.45			21.14892572		13030.69909	
Estimate Deviated Passage Distance for the proposed reduced footprint Morgan , Mona and Morecambe* Windfarms. Passing East of Orsted	147.7	5.25	0.148465607	21.92837015	616.14	13510.94599	480.2468953

Stena Foreteller Class vessels (One operating on the route)							
	Average Passage Distance in Nm	Deviation in Nm	HSFO & VLSFO Bunker Consumption per Nm	HSFO & VLSFO Bunker Consumption per crossing	Cost of HSFO & VLSFO / MT March 2023 US\$	VLSFO Bunker cost per crossing US\$	Additional Bunker cost for Deviation per trip (US\$)
Current Passage Distance – North of the Isle of Man	142.45		0.0587392	8.36739904	483	4041.453736	
			0.07618414	10.85243074	616.14	6686.616678	
Estimate Deviated Passage Distance for the proposed reduced footprint Morgan , Mona and Morecambe* Windfarms. Passing East of Orsted	147.7	5.25	0.0587392	8.67577984	483	4190.401663	148.9479264
			0.07618414	11.25239748	616.14	6933.052182	246.4355041
Total							395.38

Average additional fuel cost across two Eflexers & one Foreteller class vessel per crossing : 451.96

From "12. Shipping and Navigation Table 12.12" The number of Stena transits North of Morgan are: 353

Additional Fuel Cost per annum for the additional transit distances when passing North of Morgan : 159,542

Additional Fuel Cost per annum for transits North of Mona & South of Morgan: 136,552

Additional Fuel Cost per annum for transits North & South of the Isle of Man: 296,094

Additional Fuel Cost over the 35 year life expectancy of the project. : 10,363,274

Route : Belfast to Birkenhead.

Passage : Passing South of the Isle of Man around the proposed reduced footprint windfarms

Eflexer Class Vessels (Two Operating on the route)							
	Average Passage Distance in Nm	Deviation in Nm	VLSFO Bunker Consumption per Nm	VLSFO Bunker Consumption per crossing	Cost of VLSFO / MT March 2023 US\$	VLSFO Bunker cost per crossing US\$	Additional Bunker cost for Deviation per crossing (US\$)
Current Passage Distance – South of the Isle of Man	142			21.08211619		12989.53507	
Estimate Deviated Passage Distance for the proposed reduced footprint passing North of Mona and South of Morgan	143.1	1.1	0.148465607	21.24542836	616.14	13090.15823	100.623159

Stena Foreteller Class vessels (One operating on the route)								
	Average Passage Distance in Nm	Deviation in Nm	HSFO & VLSFO Bunker Consumption per Nm	HSFO & VLSFO Bunker Consumption per crossing	Cost of HSFO & VLSFO / MT March 2023 US\$	VLSFO Bunker cost per crossing US\$	Additional Bunker cost for Deviation per trip (US\$)	
Current Passage Distance – South of the Isle of Man	142		0.0587392	8.3409664	483	4028.686771		
			0.07618414	10.81814788	616.14	6665.493635		
Estimate Deviated Passage Distance for the proposed reduced footprint passing North of Mona and South of Morgan.	143.1	1.1	0.0587392	8.40557952	483	4059.894908	31.20813696	HSFO
			0.07618414	10.90195043	616.14	6717.12774	51.63410562	VLSFO
Total							82.84	

Average additional fuel cost across two Eflexers & one Foreteller class vessel per crossing : 94.70

From "12. Shipping and Navigation Table 12.12" The number of Stena transits North of Mona & South of Morgan are: 1442

Additional Fuel Cost per annum for the additional transit distances when passing North of Mona & South of Morgan: 136,552