

Morecambe Offshore Windfarm: Generation Assets Examination Documents

Volume 9

The Applicant's Response to ExA's Written Questions 3GEN2 and 3GEN3

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Glossary of Acronyms

Aft. Agreement For Lease CAA Civil Aviation Authority CPP1 Central Processing Platform 1 DCO Development Consent Order dDCO Draft Development Consent Order DEFRA Department for Environment Food and Rural Affairs EN-1 Overarching National Policy Statement for energy EN-3 National Policy Statement for Renewable Energy Infrastructure ES Environmental Statement ExA Examining Authority ExQ2 Examination Questions 2 HRA Habitats Regulations Assessment NE Natural England NPS National Policy Statement OSP Offshore Substation Platform OWF Offshore Wind Farm PDE Project Design Envelope RIAA Report to Inform Appropriate Assessment RIES Report on Implications for European Sites RTD Red Throated Diver SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions WTG Wind Turbine Generator	A C1								
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DCO Development Consent Order dDCO Draft Development Consent Order DEFRA Department for Environment Food and Rural Affairs EN-1 Overarching National Policy Statement for energy EN-3 National Policy Statement for Renewable Energy Infrastructure ES Environmental Statement EXA Examining Authority EXQ2 Examination Questions 2 HRA Habitats Regulations Assessment NE Natural England NPS National Policy Statement OSP Offshore Substation Platform OWF Offshore Wind Farm PDE Project Design Envelope RIAA Report to Inform Appropriate Assessment RIES Report on Implications for European Sites RTD Red Throated Diver SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions	CAA	Civil Aviation Authority							
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RIAA Report to Inform Appropriate Assessment RIES Report on Implications for European Sites RTD Red Throated Diver SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions	OWF	Offshore Wind Farm							
RIES Report on Implications for European Sites RTD Red Throated Diver SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions	PDE	Project Design Envelope							
RTD Red Throated Diver SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions	RIAA	Report to Inform Appropriate Assessment							
SPA Special Protection Area TCE The Crown Estate VMC Visual Meteorological Conditions	RIES	Report on Implications for European Sites							
TCE The Crown Estate VMC Visual Meteorological Conditions	RTD	Red Throated Diver							
VMC Visual Meteorological Conditions	SPA	Special Protection Area							
3	TCE	The Crown Estate							
WTG Wind Turbine Generator	VMC	Visual Meteorological Conditions							
	WTG	Wind Turbine Generator							

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Glossary of Unit Terms

km	kilometre	1
km²	square kilometre	1
m	metre	1
MW	Megawatt	1



Glossary of Terminology

Agreement for Lease (AfL)	Agreements under which seabed rights are awarded following the completion of The Crown Estate tender process.
Applicant	Morecambe Offshore Windfarm Ltd.
Application	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables would be present.
Agreement for Lease (AfL)	Agreements under which seabed rights are awarded following the completion of The Crown Estate tender process.

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1 Introduction

- 1. This document presents the Applicant's response to the Examining Authority's (ExA) third written questions 3GEN2 and 3GEN3 to the Applicant on 25 March 2025 (PD-018).
- 2. It also addresses questions contained within the Report on Implications for European Sites (RIES) (PD-017): RIESQ35 and RIESQ36.

2 Responses ExQ 3GEN2 and 3GEN3

2.1 Response to ExQ 3GEN2

2.1.1 3GEN2 a) and c)

- 3. For ease of reference, 3GEN2 a) and c) is provided here:
 - 'a) noting that the generating capacity of the proposed development is not defined within the dDCO and that 480MW is described as being the 'nominal' capacity within the ES, please explain what is meant by "agreed capacity of 480MW"?'
 - 'c) do the terms of the AfL contain any provisions or conditions such as requiring a minimum generating capacity to be delivered as part of the proposed development and, if so, what is this in megawatts?'
- 4. The Applicant entered into an Agreement for Lease (AfL) for the Generation Assets (the Development) with The Crown Estate (the Landlord) on 17 January 2023. The generating capacity under the AfL is set at 480MW. There is a mechanism to reduce this, however, only with the agreement of The Crown Estate. Any reduction can only be agreed if TCE is satisfied with it and if it complies with two criteria: the specified Minimum Density Requirement and the Minimum Capacity. Under the AfL, the Minimum Density Requirement is 375MW, calculated in respect of the whole of the Development Site (which is wider than the Order Limits, as it is based on the Applicant's original lease bid area). The Minimum Capacity is a percentage of the generating capacity (360MW).
- 5. The Applicant notes that the generating capacity of the proposed development is not secured within the draft Development Consent Order (dDCO) (Document Reference 3.1), however a number of other parameters are secured in Schedule 2 Table 2 including the maximum number of wind turbine generators (35) and maximum total rotor swept area (1,858,252m²). These parameters secure a project design envelope (PDE) that would allow the Project to deliver a generating capacity of 480MW while allowing for the flexibility required for the detailed design this is discussed further in the Applicant's response to part (b) below.



2.1.2 3GEN2 b)

- 6. For ease of reference, 3GEN3b is provided here:
 - 'b) can the applicant please provide further explanation or evidence to support its position that the potential loss of a single WTG as result of a 7km buffer from the original Liverpool Bay SPA (or any other reduction in WTG numbers) would affect the viability of the proposed development?'
- 7. This response sets out the Applicant's position in the following steps, leading to a conclusion:
 - "Impact on the Project Design Envelope (PDE) of RTD Buffer Zones from 7km – 10km" - this section explains the impact on the 35 turbine indicative layout of RTD buffers from 10 km down to 7km
 - "Why is the PDE Applied for Appropriate?" acknowledging that the final design may have fewer turbines than the PDE maximum of 35 shown in the indicative turbine layout, this section explains why it is not appropriate to reduce the Project PDE at this time to an envelope smaller than the maximum of 35 turbines assessed and applied for
 - "What RTD Buffer are Natural England Suggesting?" this section notes that the only RTD buffer Natural England has advised is 10km
 - "The ExA's Question" this section notes that the ExA is asking about the implications of RTD buffers down to 7km
 - "HRA 'No Alternative Solutions' Test" this section sets out how the question of viability fits into the broader HRA' no alternative solutions' test, and notes that from the context of REISQ35 and RIESQ36 the ExA is interested in the question of viability from an HRA derogation case perspective. This section does also directly address the exact ExA questions asked
 - "Conclusion" this section reaches a conclusion that even a 7km RTD buffer is not an alternative solution for the purposes of the HRA derogation case
 - "Further Detail on Incremental boundary reduction in relation to the original (pre-2017) SPA boundary". This section provides further detail and background to the buffer zones and their efficacy, and is an appendix to the answer
- 8. This response also addresses the RIESQ35 and RIESQ36 (PD-017). The second part of RIESQ36 (relating to the Crown Estate) is answered by parts (a) and (c) addressed above.
 - Impact on the Project Design Envelope (PDE) of RTD Buffer Zones from 7km 10km
- 9. As noted by the ExA, the Applicant identified in response to ExQ2 2HRA6 that accommodating a buffer from the original Liverpool Bay SPA would have the potential to impact upon the viability of the Project to deliver the agreed capacity of 480MW.



- 10. **Figure 2.1** and **Figure 2.2** show different buffer zones in 500m increments from the boundary of the original Liverpool Bay SPA. As can be seen, for the 35 turbine notional layout (**Figure 2.2**) a 7km buffer results in the loss of one turbine location and a 10km buffer results in the loss of 14 turbine locations (this is a visual representation of what was described in response to 2HRA6). Note the reference to a 7km buffer means the area shown as the 6.5km 7km area within the wind farm site coloured light green on **Figure 2.1** and **Figure 2.2**. The Windfarm Site is already located 6.5km from the SPA so a 6.5km buffer is an inherent part of the site selection.
- 11. As is evident, this layout maximises the use of (i.e. 'fills up') the space available taking into account the constraints on the site necessary for the efficient and safe delivery of the scheme as they are known and secured within the DCO. This includes the buffers secured as Protective Provisions (i.e. aviation and marine buffers, pipeline and cable buffers), the identified archaeological exclusion zones, subsea wells, the minimum spacing between turbines (intra-row and inter-row) and with lines of orientation compliant with the requirements of MGN654 and its Annexes.
- 12. Whilst the layout maximises the use of the site, it does not (and currently cannot) factor in any further unknown constraints that might be applied to avoid, for example further archaeological exclusion zones, important benthic habitats, or other obstructions or obstacles (such as unfavourable ground conditions) all of which would not be identified until the detailed design stage after further site investigation works. The Applicant notes that the majority of offshore wind farms in the UK (particularly those developed at commercial scale) have encountered constraints post-consent that necessitate further refinements to the project layout and design. So it may be there are additional constraints to those shown on the notional layout.

Why is the PDE Applied for Appropriate?

- 13. As explained above, it can be readily seen that the maximum WTG PDE of 35 turbines results in a loss of at least one turbine location (but could be more when the final layouts are agreed) at a 7km buffer. So why does the Project need up to 35 turbines?
- 14. The Application is based on a Rochdale envelope or PDE, and so it is necessary for layouts to be notional at this stage. The Rochdale envelope approach is appropriate because it is not yet possible or appropriate to identify a turbine model (including its associated capacity). The key reasons for this include uncertainties around the supply chain and the rapid advancement of technology. Additionally, timescales for consent determination and funding mechanisms (such as eligibility for Contracts for Difference) can exacerbate existing supply chain tensions, as a project will only be in a position to finalise design and select its technology once it has a more established route to market.

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- 15. This approach to offshore wind farm applications is the norm and supported by NPS Policy (EN-3, para. 2.8.74) which recognises the need to preserve flexibility on turbine selection. Identifying a specific turbine model many years in advance of commencement of construction would result in inefficient energy generation because projects would be installing out of date technology. It is therefore standard for all offshore wind DCOs to be based on the Rochdale envelope to allow for selection of the turbine later in the development process and maximise the latest technology. In particular, technology improvements and refinements mean that turbines are increasingly able to generate more renewable energy from similar size WTG dimensions, and now incorporating features such as a 'power boost' allowing for the rated maximum capacity to be increased in certain wind conditions.
- 16. It is also now well-established for offshore wind DCOs not to specify a maximum capacity both of individual WTGs as well as the total wind farm generating capacity, and instead assess the project and be determined by physical dimensions and for ornithology, in particular the maximum total rotor swept area (this is the approach taken by the Project – see paragraph [95] of the draft Explanatory Memorandum (REP5-004) and Schedule 2 (Table 2) and Condition 9(1)(a) of Schedule 6 to the draft DCO (REP5-002)). This approach ensures that the generation capacity of each site can be maximised whilst not exceeding design parameters that could alter the overall impacts on receptors. This is supported by the NPS. 1 The PDE for the Project has been developed to accommodate a range of reasonably foreseeable turbine capacities while constructing the 480MW project objective (and agreed with TCE) - 35 x 13.5MW machines to 30 x 16MW machines (which are both capacities available or in development in the wind turbine market). The Applicant considers this a reasonable and well-accepted approach to defining the PDE for an offshore windfarm, and this Project in particular.
- 17. As such there is no scope to further narrow the PDE or finalise the layout at this time, and the envelope of up to 35 turbines as shown on the Figure 2.2 remains appropriate, meaning that even a 7km buffer will result in the loss of at least one turbine location from the notional layout. It would also restrict the opportunity for further design optimisation and design efficiencies at the detailed design stage, meaning that, in practice, it may result in the loss of additional turbine locations.

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¹ In the specific context of HRA derogation cases, the starting position of the Secretary of State in relation to Critical National Priority infrastructure (such as the Project) will be "[...] for each location to maximise its capacity" (paragraph 4.2.21 of NPS EN-1).



What RTD Buffer are Natural England Suggesting?

18. Natural England's response to the DCO Application (RR-061) was to "advise that every effort is made to avoid the impact on red-throated diver distribution within the 'original' SPA area. This would most effectively be delivered by committing to a red-line boundary change or structures exclusion zone to ensure no turbines are located within 10km of this area." Natural England has not, to date, expressly proposed a boundary reduction threshold (below 10km), below which no AEoI, in-combination with other projects, would be achieved.

The ExA's Question

19. However, the Applicant understands that the Examining Authority is asking about possible RTD buffer zones, right down to 7km.

HRA 'No Alternative Solutions' Test

- 20. The Applicant's consideration of the viability of proposed mitigation, should be seen in the context of the key relevant test for RTD impacts the HRA 'no alternative solutions' test. The Applicant submits that viability questions are an important part but only a part of this test.
- 21. The Applicant's position is that the correct question in terms of an HRA 'no alternative solutions test' is whether there is a viable alternative solution which meets the project objectives and is less damaging to the SPA. The Applicant refers to section 4.1 of the Habitats Regulations Assessment Without Prejudice Derogation Case Red-Throated Diver at Liverpool Bay / Bar Lerpwl SPA (Clean) Revision 03 (Volume 9) (Document Reference 9.37). This cites the Department for Environment Food and Rural Affairs (DEFRA) et al. guidance on HRA, which states:

"An alternative solution is acceptable if it:

- achieves the same overall objective as the original proposal
- is financially, legally and technically feasible is less damaging to the European site
- and does not have an adverse effect on the integrity of this or any other European site"
- 22. When moving to consider a buffer as marginal as 7km (keeping in mind the Project siting already has a 6.5km buffer), one might ask would the loss of single turbine definitively make the whole project unviable? The ExA asks this specific question. Of course, at this time, the answer is 'no-one can know'. It would be next to impossible for any offshore windfarm to identify at the consent stage (i.e. many years before the detailed design is settled and project economics are known) the precise tipping point where it becomes unviable. For this Project, it is possible that higher capacity turbines may be available in future for use by the Applicant which would allow for the Project objectives to be realised with fewer WTGs, however this is not currently certain or

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- knowable, hence the need for the PDE that has been assessed, applied for and secured under the DCO (as discussed above).
- 23. But the viability or feasibility of a possible alternative is only part of the question of whether a 7km buffer (or 8km / 9km / 10km) is an alternative solution in HRA terms whether the alternative would achieve the project objectives and be effective in reducing impacts are also part of the question (as seen from DEFRA guidance quoted above). Any additional buffer tightens the constraints on the Project. As noted above, it can be readily seen on the 35 turbine notional layout (and also the 30 turbine notional layout) shown at Figure 2.1 and 2.2, that even a 7km buffer results in the loss of a turbine. It is also important to note that maximising the generating capacity from an offshore windfarm requires more than squeezing as many of the highest capacity turbines into the available space as possible. Layout taking account of the prevailing wind, spacing and internal wake is critical, increasing the density by placing more turbines closer together can have the effect of reducing the generating capacity through internal wake losses.
- 24. As such any further reduction in the site area at this stage would materially risk achieving Project Objective 1 and the delivery of around 480MW of clean energy. It would also jeopardise Project Objectives 2 and 3, which seek to provide significant electricity generation capacity within the UK and to maximise generation capacity at low cost to the consumer from viable developable seabed.
- 25. Equally importantly, if such a buffer were to be considered, the Secretary of State would need to be satisfied that such a buffer would actually be effective in appreciably reducing any adverse effects on site integrity. The Applicant maintains, as has been set out in Offshore Ornithology Technical Note 3 (Red-Throated Diver at Liverpool Bay SPA Update Assessment)_Rev 01 (REP1-082), that there is no evidence to demonstrate that any buffer (let alone a buffer greater than the 6.5km which is already a feature of the site selection), would appreciably reduce adverse effects on red-throated diver². This is further reinforced by the distance between the Project and the areas of the Liverpool SPA in which red-throated diver are present at densities sufficient to support designation as outlined within Section 3 of Additional information to support assessment of Red-throated Diver feature at Liverpool Bay SPA Revision 01 (Volume 9) (REP4-054). The areas of the Liverpool SPA which

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² By way of background, see ExA Report on EA1N (EN010077-009800-EA1N-Recommendation Report-Vol2 Ch18-31 COMPLETED.pdf): "No other alternative design has been assessed and therefore it is not known whether an avoidance of an AEOI could be achieved through a buffer somewhere between 2km and 10km, whilst also retaining a feasible and viable project. Consequently, the ExA's view is that there has been no compelling evidence presented that a feasible alternative solution currently exists which would have lesser adverse effects or avoid AEOI on this or any of the sites considered (the OTE SPA, FFC SPA, and Alde-Ore Estuary SPA)." (para. 24.5.40)



were originally identified for red-throated diver at the point of site designation are more than 10km from the Order Limits as shown on Figure 1 within REP4-054.

Conclusion

- In short, the Applicant's position is that a site with any additional buffer (beyond the current 6.5km) for red throated diver is not an alternative solution in terms of the HRA 'no alternative solutions' test because: (i) it would jeopardise delivery of the Project objectives for the reasons set out above; (ii) it is not appropriate to define the PDE any more precisely at this time (nor is it viable to relocate project site entirely to create a 10km buffer (taking into account paragraph 4.2.21 of NPS EN-1: "the fact that there are other potential plans or projects deliverable in different locations to meet the need for Critical National Priority Infrastructure is unlikely to be treated as an alternative solution."); and (iii) a greater RTD buffer would not be demonstrably effective in appreciably reducing the impacts on the SPA.
- 27. Finally, and to reiterate, the Applicant's clear position remains that there is no adverse effect on site integrity in respect of red-throated diver at the Liverpool Bay SPA, a conclusion which was supported by the Secretary of State within the Round 4 Plan Level HRA (see The Crown Estate Letter from the Secretary of State on Plan Level HRA as Appendix 1 to REP4-054). However, notwithstanding this position, the Applicant has prepared a without prejudice derogation case identifying that (in addition to no alternative solutions) there are imperative reasons of overriding public interest and, importantly, compensation measures located outside of the Order Limits for any such adverse effects, which NE confirmed at Deadline 5 would be sufficient: "Natural England is satisfied that the measure is technically capable of delivering appropriate compensation" [REP5-082].

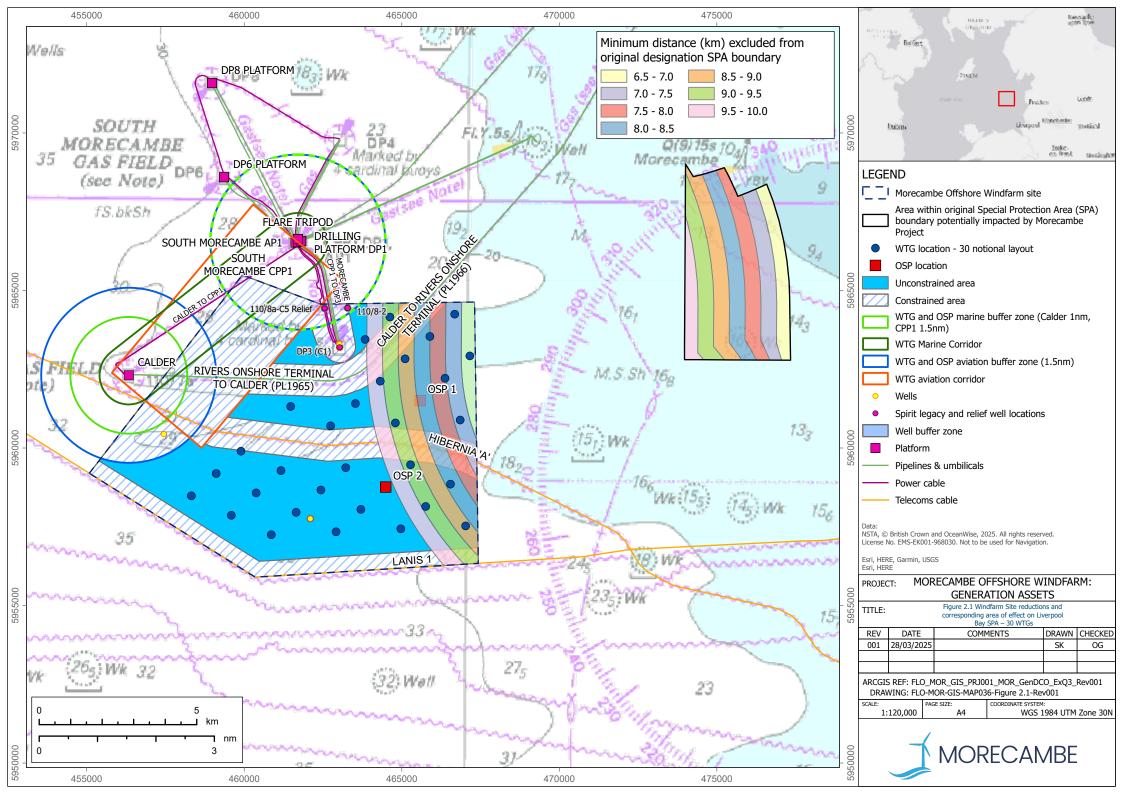
Further Detail on Incremental boundary reduction in relation to the original (pre-2017) SPA boundary

- As noted above, the results of the analysis of potential boundary reduction in 500m increments from 7km to 10km are presented in **Figure 2.1** and **Figure 2.2**. Further detail is provided within **Table 2.1**. This confirms that the total area of effect would reduce from 17.99km² (the area of the SPA impacted with the Application Order Limits boundary, as presented in the RIAA (Document Reference 4.9)) to 15.72km² with a 7km buffer, and then reduces sequentially to 1.53km² with a 9.5km buffer. This area of impact is equivalent to 0.92% to 0.09% of the original SPA boundary (compared to 1.06% with the Application Order Limits boundary).
- 29. Taking into account the displacement gradient, the effective area of displacement with a 7km buffer would be 5.46km² (0.32% of the original SPA),



3.27km² (0.19%) at 8km and 1.23km² (0.07%) at 9km³. This compares with 6.29km2 (0.37%) with no additional buffer (as presented in Table 8.16 of the RIAA (Document Reference 4.9)).

³ As the displacement gradient advised by Natural England is presented in 1km increments, it is not possible to estimate effective area of displacement at 500m intervals, and has therefore has been calculated for 1km bands only.



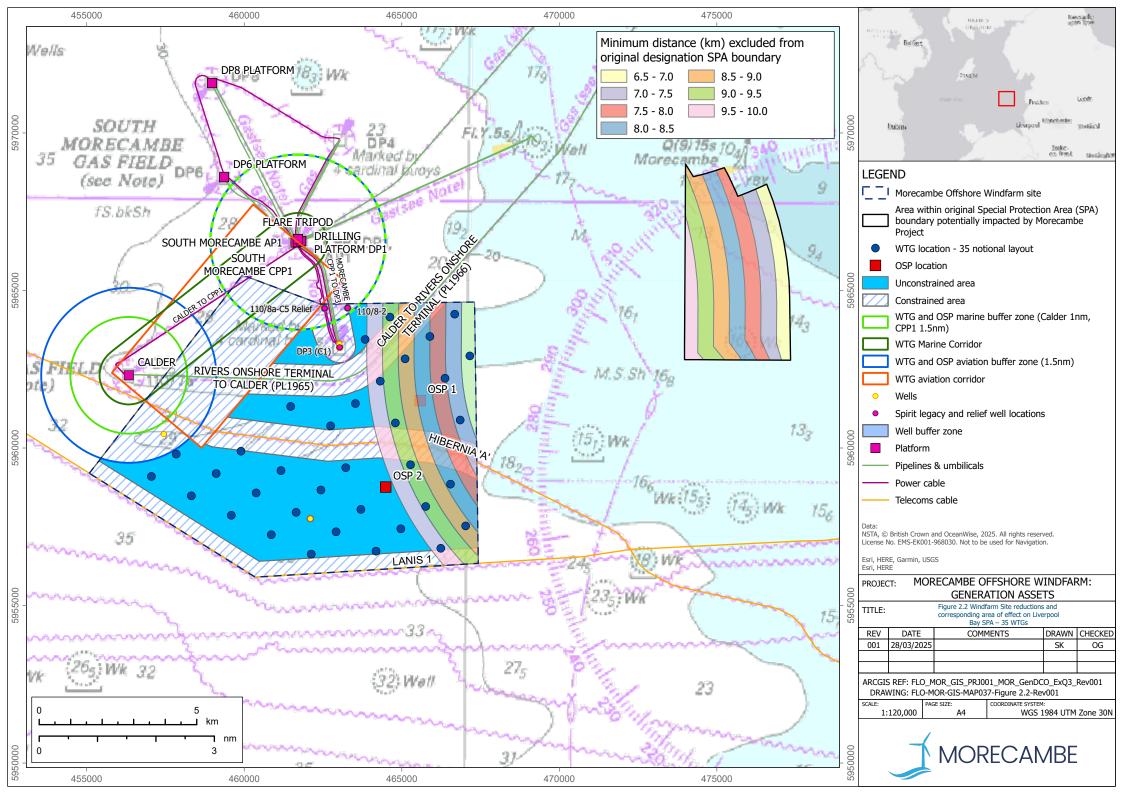




Table 2.1 Summary of Project site boundary reduction and corresponding area of effect on Liverpool Bay SPA

Total area of effect					Relative area of effect									
Minimum	SPA	% of	% of	Gradient	Area	7	km buffe	r	8	km buffe	r	9	km buffe	r
distance excluded from SPA	Impact Area (km²)	pre- 2017 SPA ¹	current SPA ²		within band (km²)	Relative area (km²)	% of pre- 2017 SPA ¹	% of current SPA ²	Relative area (km²)	% of pre- 2017 SPA ¹	% of current SPA ²	Relative area (km²)	% of pre- 2017 SPA ¹	% of current SPA ²
(6.5km)	17.99	1.06%	0.71%											
7km	15.72	0.92%	0.62%	40%	5.49	2.20								
7.5km	13.10	0.77%	0.52%											
8km	10.23	0.60%	0.40%	34%	5.99	2.04			2.04					
8.5km	7.25	0.43%	0.29%											
9km	4.24	0.25%	0.17%	29%	4.24	1.23			1.23			1.23		
9.5km	1.53	0.09%	0.06%											
10km	0.00	0.00%	0.00%											
	<u> </u>	I		Total	15.72	5.46	0.32%	0.22%	3.27	0.19%	0.13%	1.23	0.07%	0.05%

¹ Assumes area at designation of 1702.93km²

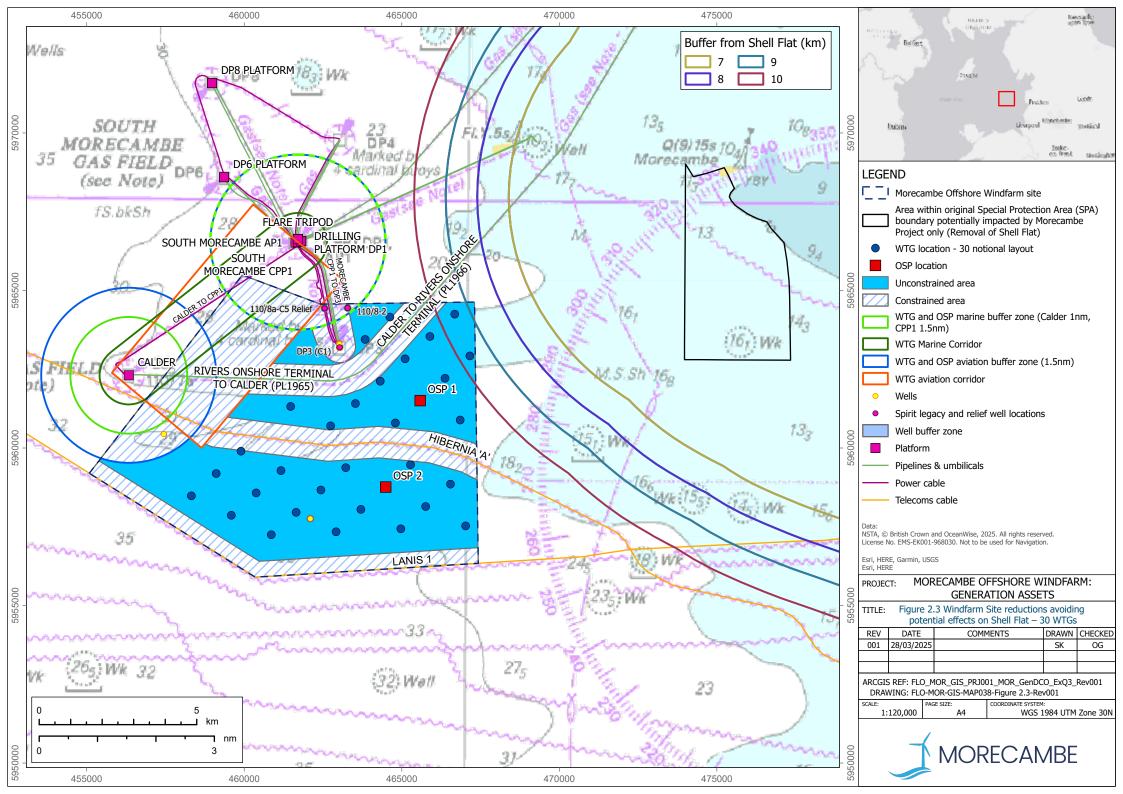
² Assumes current SPA are of 2527.58km²

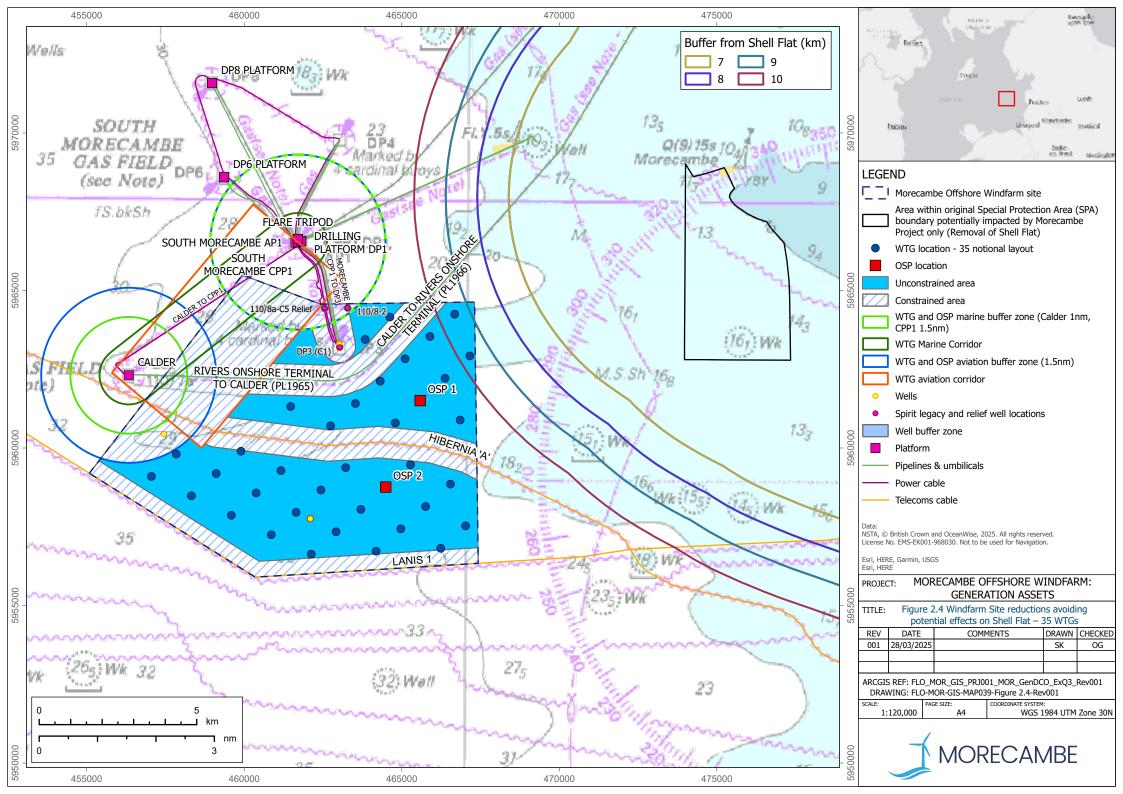


Boundary reduction to avoid potential effects on Shell Flat

- 30. Through discussion with NE the Applicant has been requested to consider the implications of buffers around the most sensitive parts of the Liverpool Bay SPA; including on Shell Flat, an area of sandbank habitat covered by shallow water which is designated as a Special Area of Conservation but it also entirely within the Liverpool Bay SPA.
- 31. The exclusion of a potential effect on Shell Flat is shown on **Figure 2.3** and **Figure 2.4**, and would reduce the area of effect within the original SPA boundary to 16.77km² (0.98%). However, the area of effect is less relevant in this context, as effects on the area of importance (i.e. Shell Flat) would be entirely avoided. A 10km buffer would result in the loss of between one and two notional WTGs from either layout presented, while a 9km buffer could be accommodated without any notional WTG loss.

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2.1.3 3GEN2 c)

32. The responses to 3GEN2 c) is included within the response to 3GEN2 a) in Section 2.1.1 above.

2.2 Response to ExQ 3GEN3

2.2.1 3GEN3 a)

33. Individual plans to demonstrate the impact that each of the incrementally smaller buffers from the original Liverpool Bay SPA would have on the notional layout and number of WTGs that could be accommodated within the Windfarm Site (i.e. 10km, 9km, 8km, 7km and with no buffer associated with the SPA affects the site), with all other existing buffers and corridors as shown on Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007) unchanged are presented in **Section 3**.

2.2.2 3GEN3 b)

- 34. As requested, the Applicant has provided a set of plans showing the alternative scenarios for buffers around Liverpool Bay SPA and Oil and Gas Platforms. Plans for each alternative SPA buffer scenario in (a) plus each of the increased buffer scenarios from the Calder and Central Processing Platform 1 (CPP1) platforms are presented in **Section 5** to **Section 8**.
- 35. **Section 4** presents plans for each alternative SPA buffer scenarios with the existing buffers and corridors as shown on Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan_Rev 02 (REP5-007). A description of the plans and the combination of buffers they show is also provided in each section.

2.2.3 3GEN3 c)

- 36. The Applicant does not seek to repeat arguments previously made on the calculations used by Spirit Energy and their aviation consultants on the distances needed for access in day VMC as these are fully explained in previous submissions, including The Applicant's Response to Spirit Energy's Deadline 4 Submission Appendix A: Helicopter Access (REP5-063). But for ease, the Applicant will reiterate its position in relation to the two distances that have been requested to be shown:
 - 1.9nm Spirit Energy has calculated a distance of 1.9nm for a day VMC approach. Spirit Energy has applied "professional judgement" to add an additional 1nm to their calculated distance. However, this is not supported by draft CAA CAP 764, relevant HeliOffshore industry guidance or any other industry best practice.

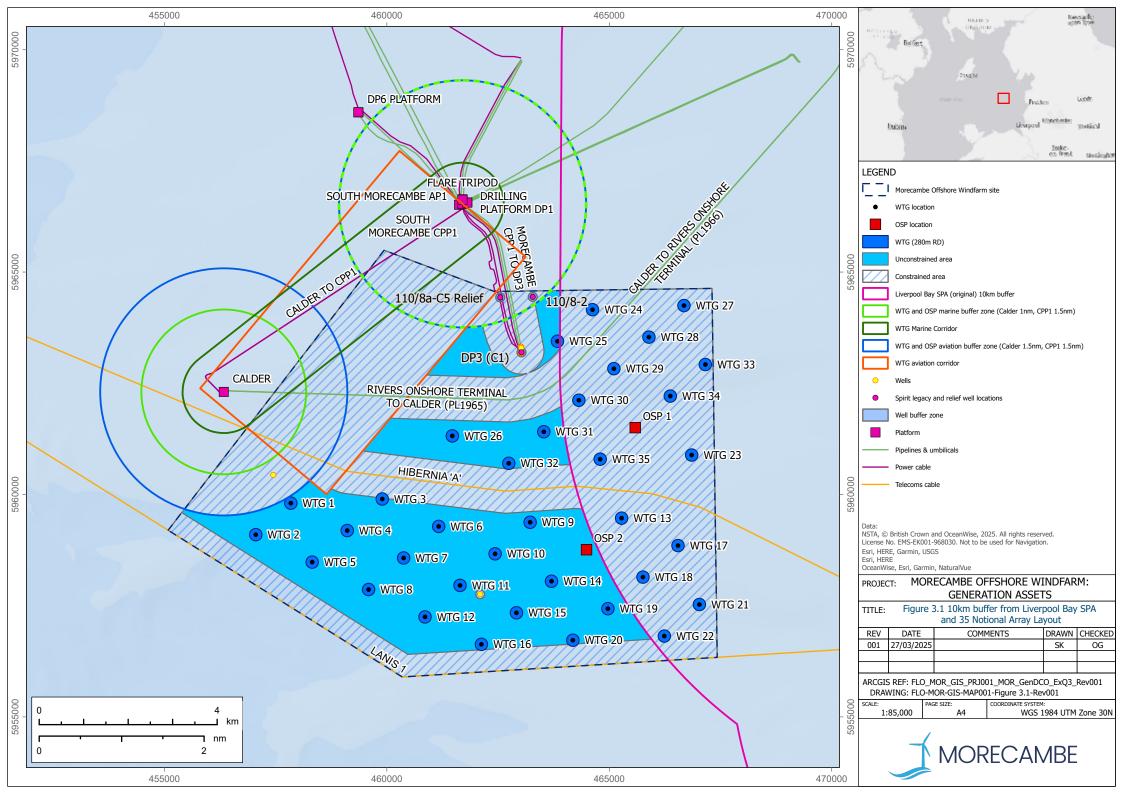


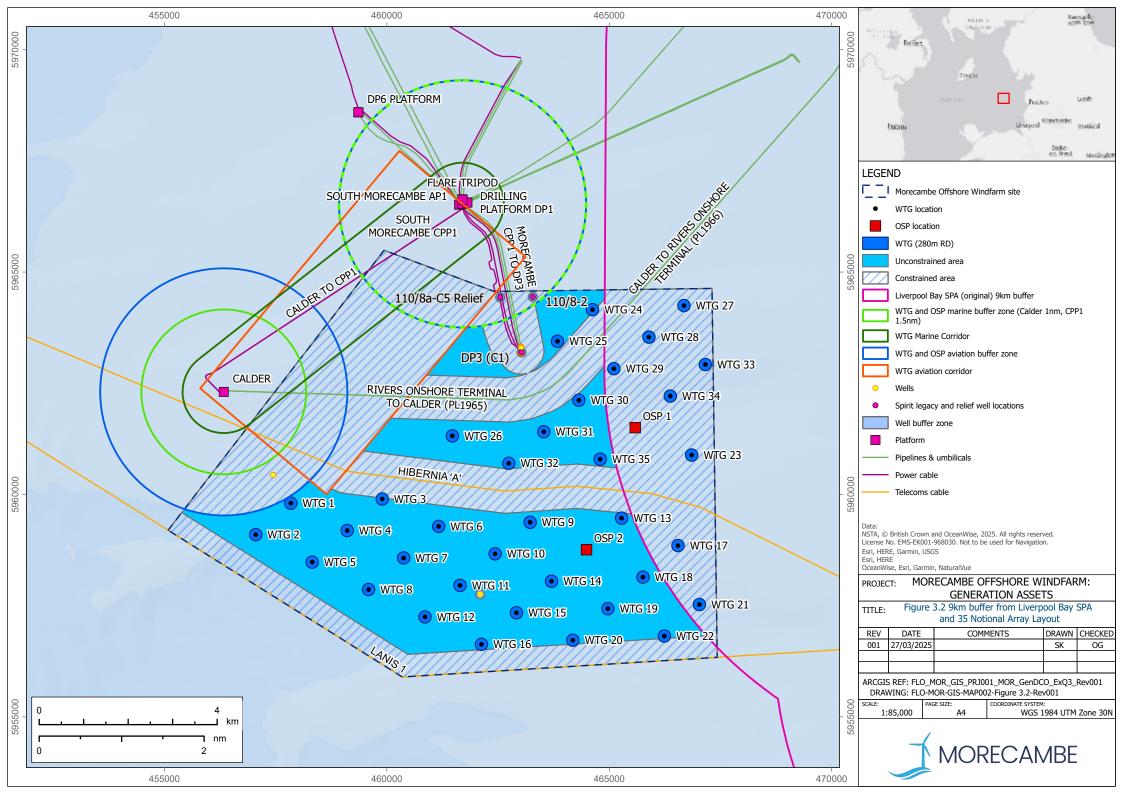
- 2.4nm Spirit Energy has calculated a distance of 2.4nm for a night VMC approach. This has been calculated by adding 0.5nm to the distance calculated for day VMC on the basis that NHV, Spirit Energy's aviation operator for the Morecambe Hub, in their operations manual apply an additional 0.5nm to the stabilised approach point (SAP) in night VMC compared to day VMC. The Applicant's aviation consultants Anatec highlight that there is no basis in any guidance for this additional 0.5nm, and that a more appropriate distance for the SAP at night is 1nm based on the requirements of the draft CAA CAP 764.
- 37. The Applicant also makes a further point in relation to the 2.4nm buffer for night VMC, that should the proposed CAA 'rule change' be bought in this would restrict all flights within 3nm of a wind turbine generator to daytime VMC access only. Therefore, a buffer of 2.4nm to allow for nighttime VMC access would not allow for access, and the aviation operator would need to either obtain an AltMoC or to restrict flights to daytime VMC only.
- 38. The Applicant has calculated and demonstrated within previous submissions, most recently REP5-063, that any increase in the day VMC buffer from the 1.5nm secured by the Applicant in protective provisions is unnecessary and would serve to further reduce the area available for the installation of wind turbine generators and impact the viability of the Project and its ability to delivery on the Project Objectives (for similar reasons to those set out in response to 3GEN2(b) above). The Applicant has demonstrated in its submissions on these matters that that there would be no restriction on safe continued operation, maintenance and decommissioning of the Affected Assets: but that instead any residual impacts on the South Morecambe Hub could be mitigated through the alternative maintenance strategies which the Applicant has already committed to compensating Spirit Energy for.

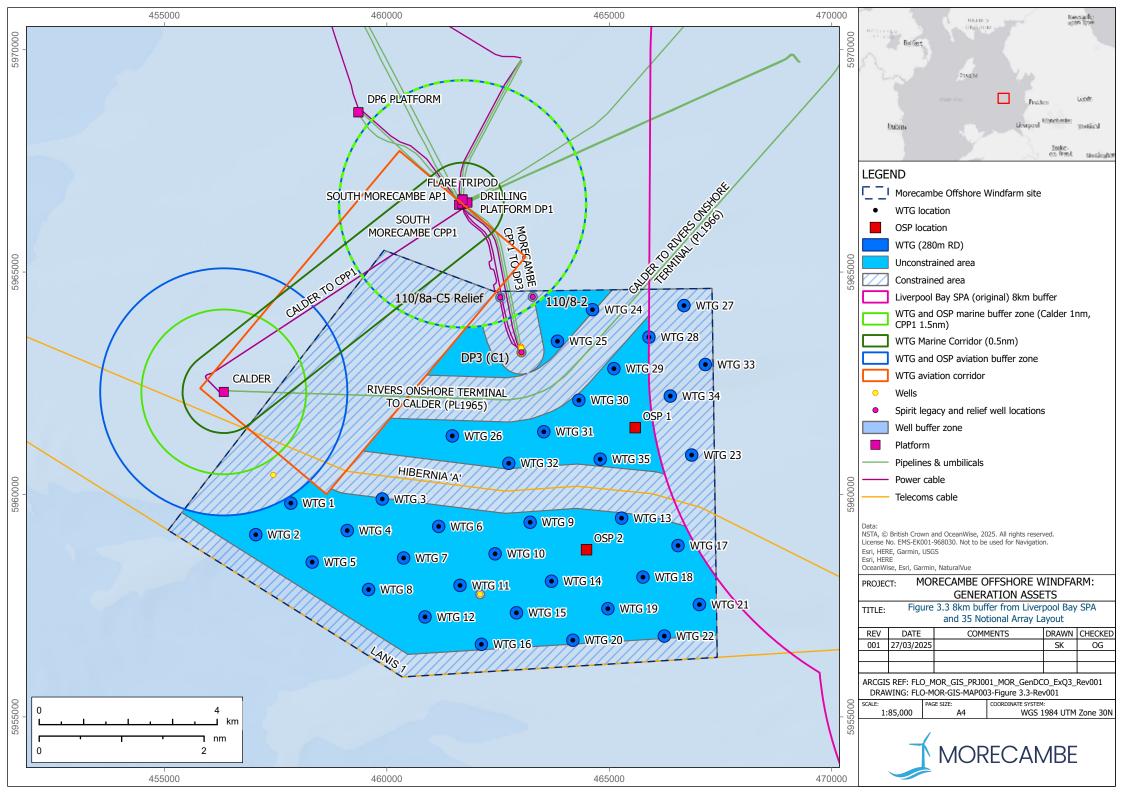


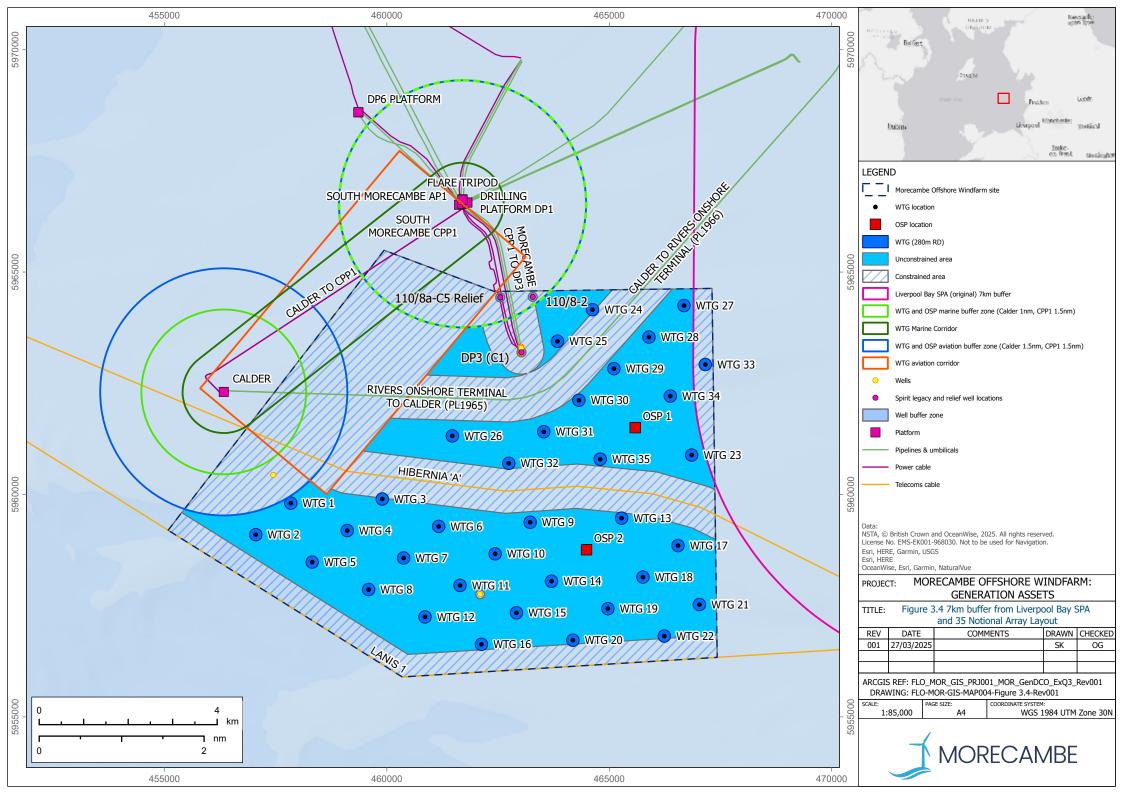
3 Liverpool Bay SPA and Notional Array Layout

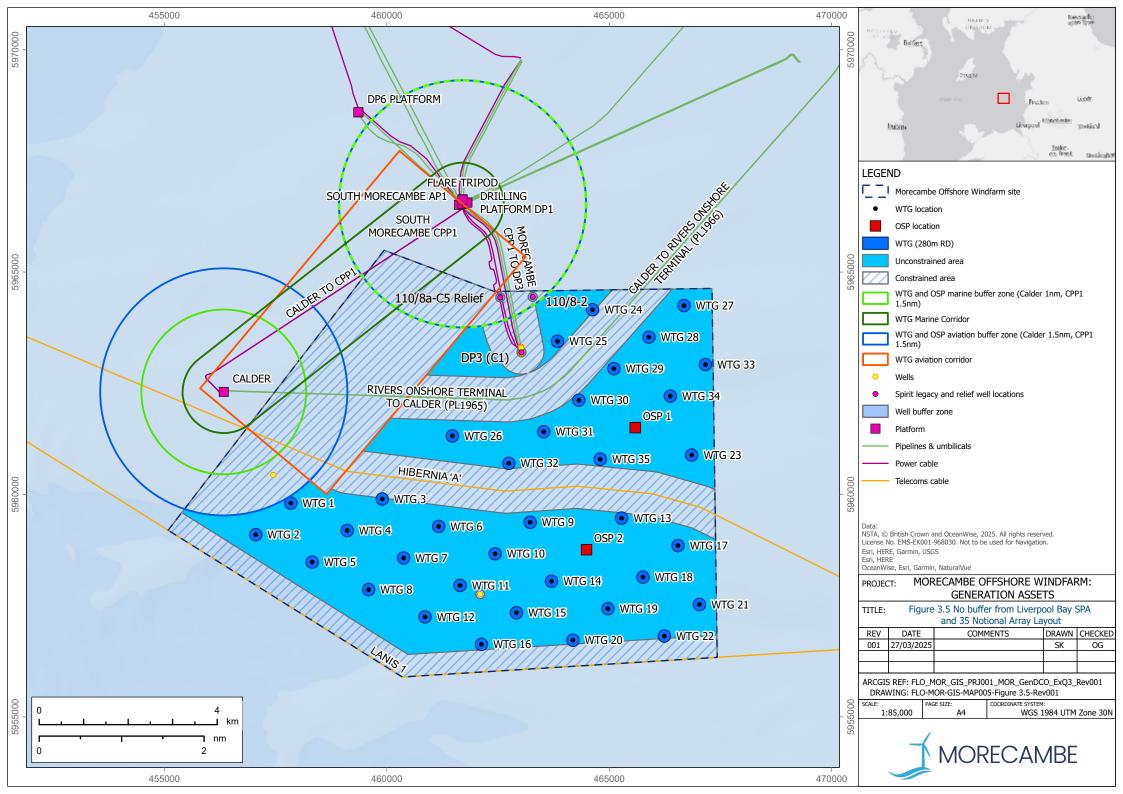
- 39. The figures presented in this section demonstrate the impact that each of the incrementally smaller buffers from the original Liverpool Bay SPA would have on the notional array layout and number of WTGs that could be accommodated within the site (i.e. 10km, 9km, 8km, 7km and with no buffer associated with the SPA affects the site). All other existing buffers and corridors as shown on Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007) remain unchanged.
- 40. Figures have been provided for both the 30 WTG and 35 WTG notional array layouts. Therefore, this section includes 10 figures in total:
 - Figure 3.1 10km buffer from Liverpool Bay SPA and 35 Notional Array Layout
 - Figure 3.2 9km buffer from Liverpool Bay SPA and 35 Notional Array Layout
 - Figure 3.3 8km buffer from Liverpool Bay SPA and 35 Notional Array Layout
 - Figure 3.4 7km buffer from Liverpool Bay SPA and 35 Notional Array Layout
 - Figure 3.5 No buffer from Liverpool Bay SPA and 35 Notional Array Layout
 - Figure 3.6 10km buffer from Liverpool Bay SPA and 30 Notional Array Layout
 - Figure 3.7 9km buffer from Liverpool Bay SPA and 30 Notional Array Layout
 - Figure 3.8 8km buffer from Liverpool Bay SPA and 30 Notional Array Layout
 - Figure 3.9 7km buffer from Liverpool Bay SPA and 30 Notional Array Layout
 - Figure 3.10 No buffer from Liverpool Bay SPA and 30 Notional Array Layout.

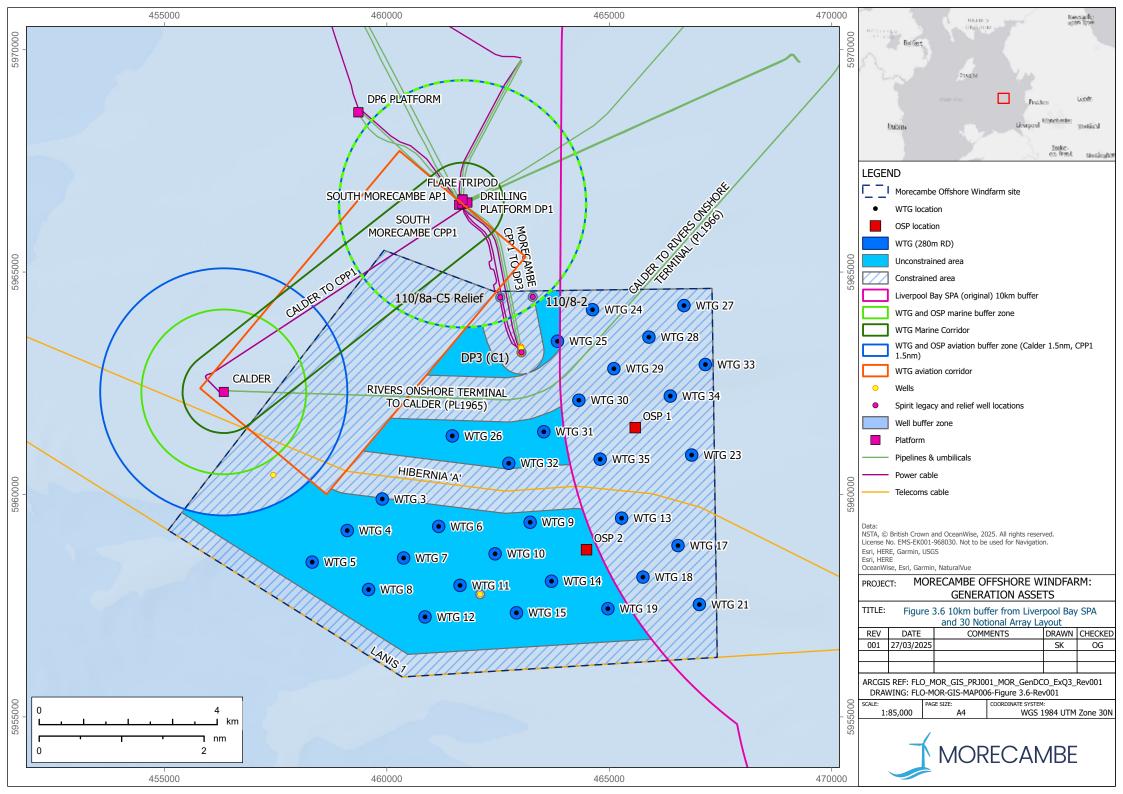


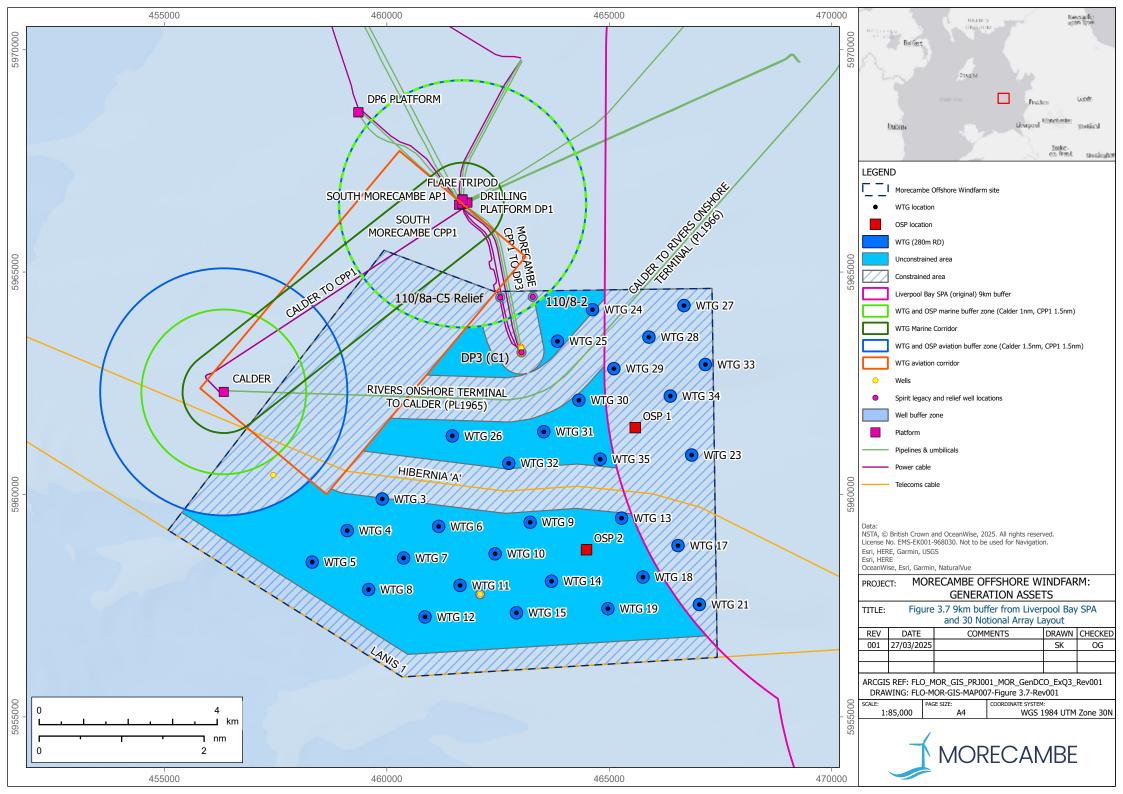


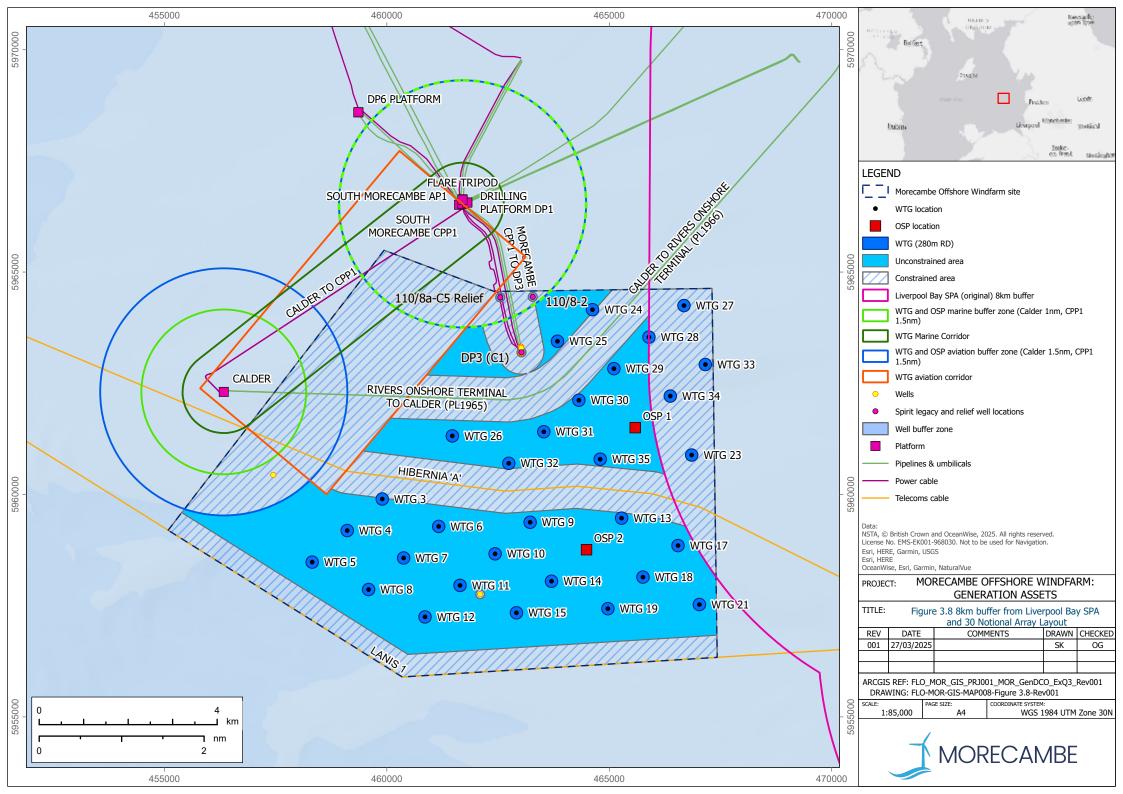


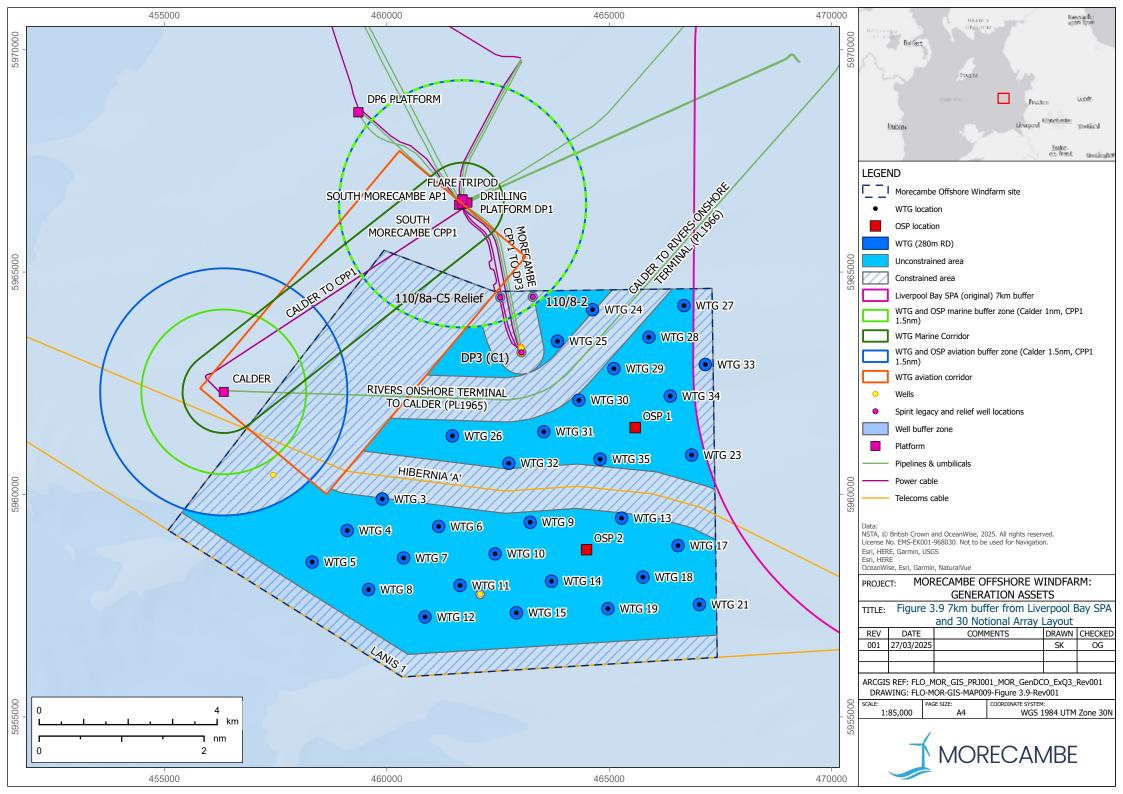


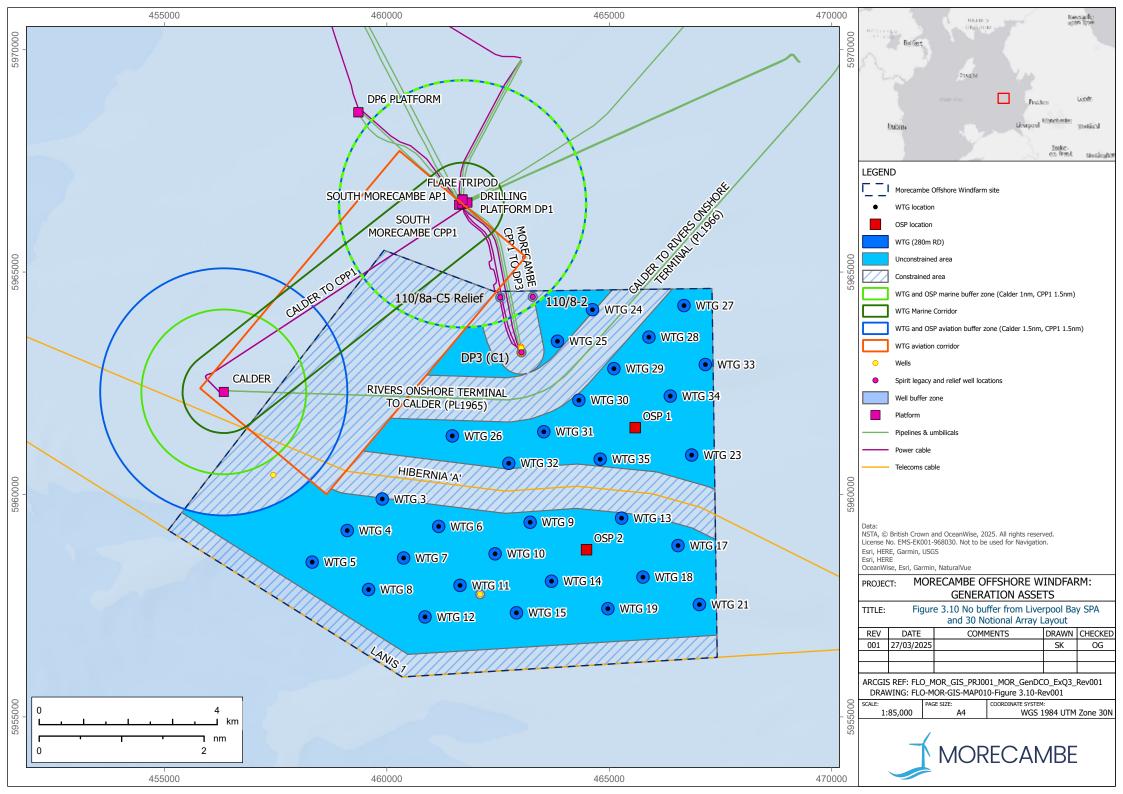








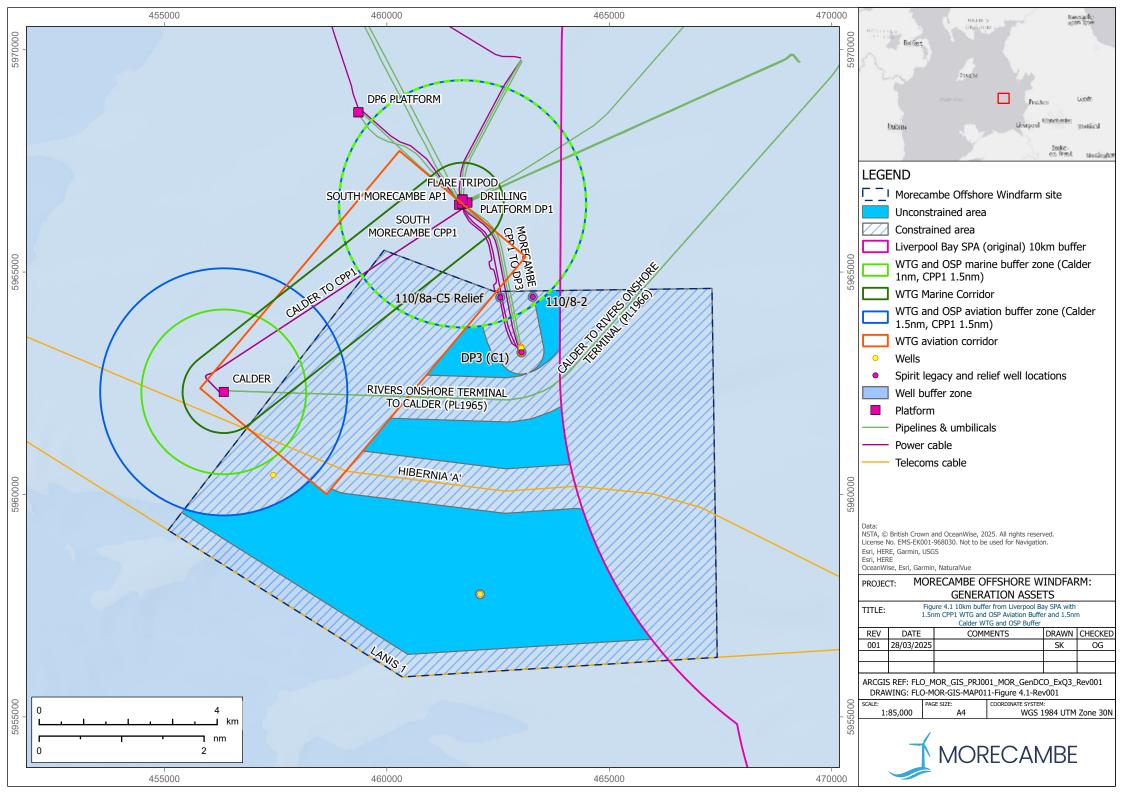


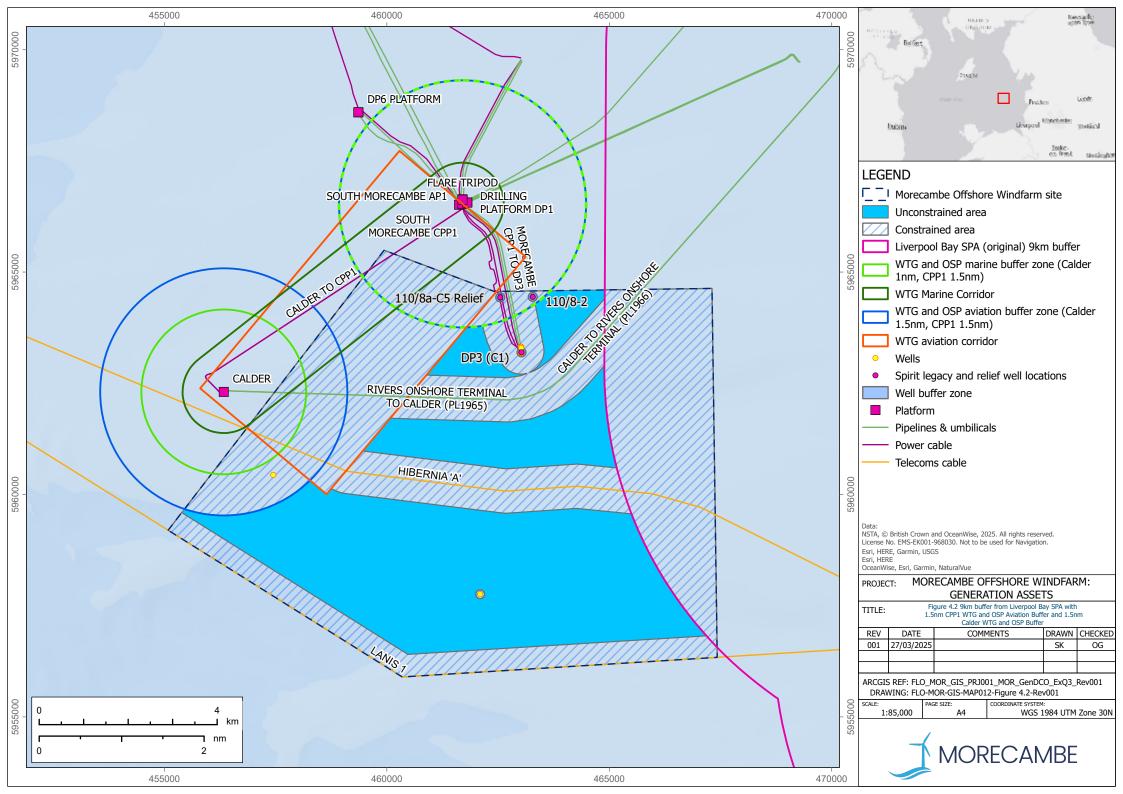


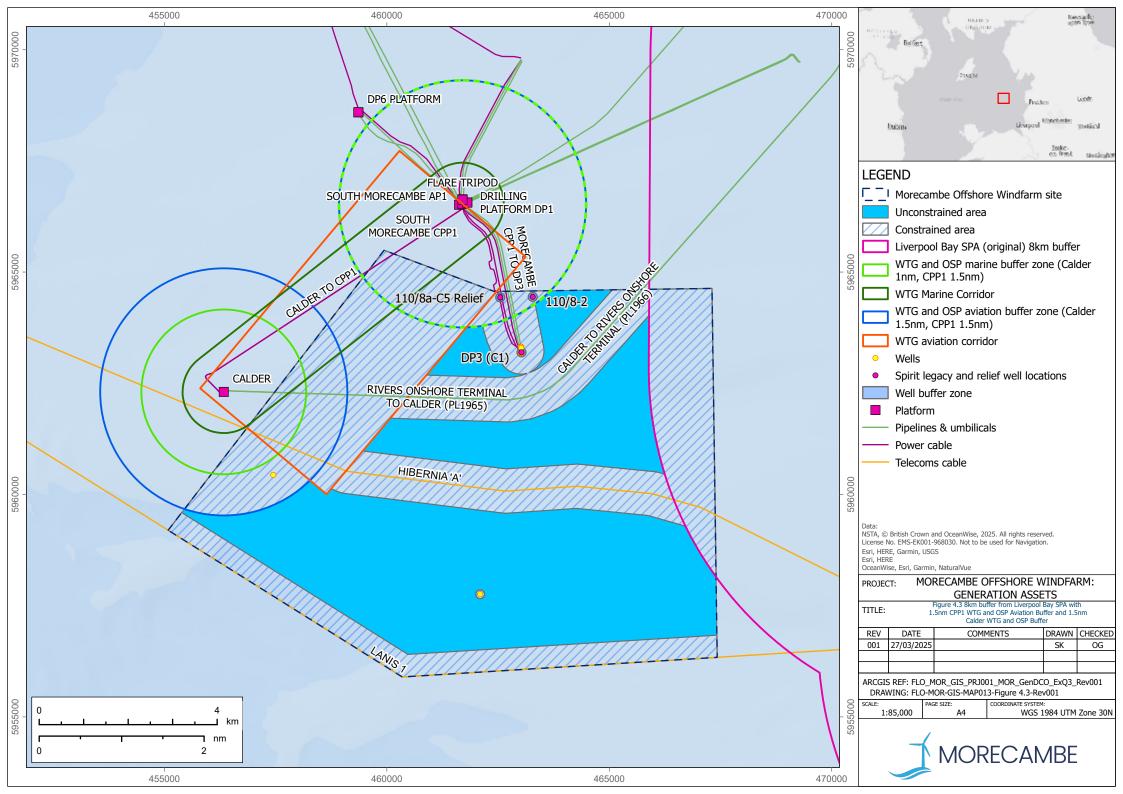


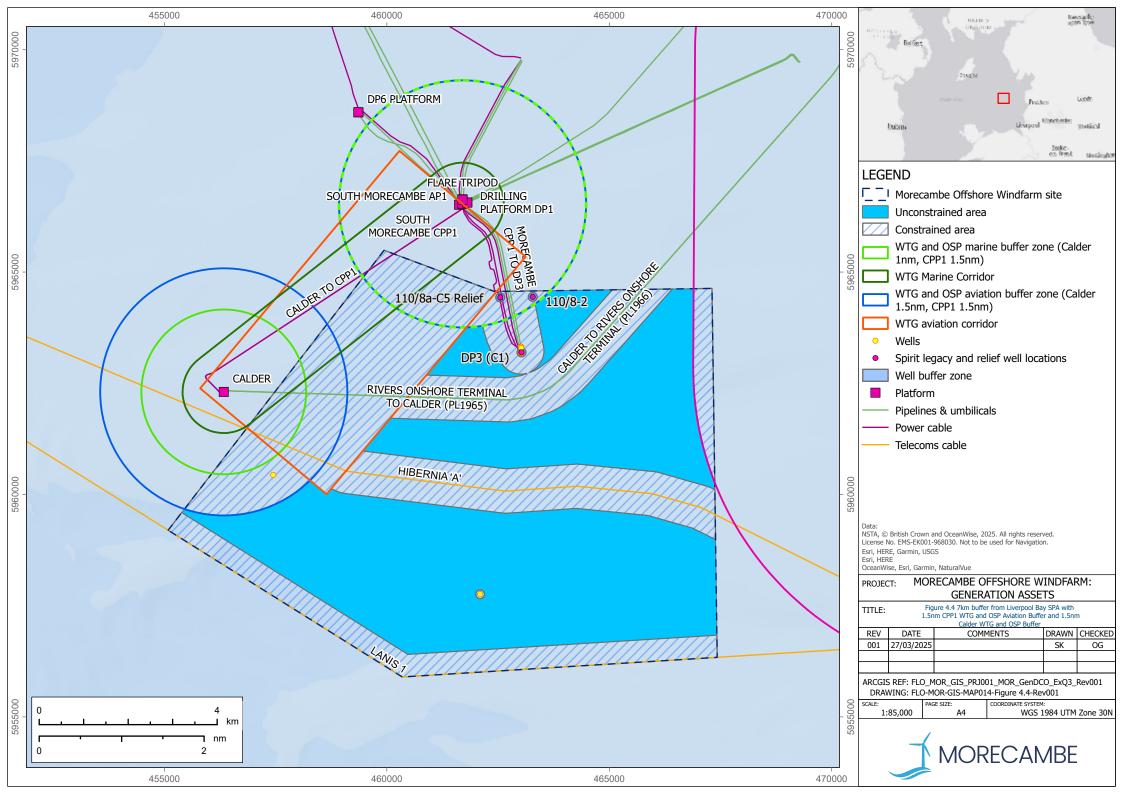
4 Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer

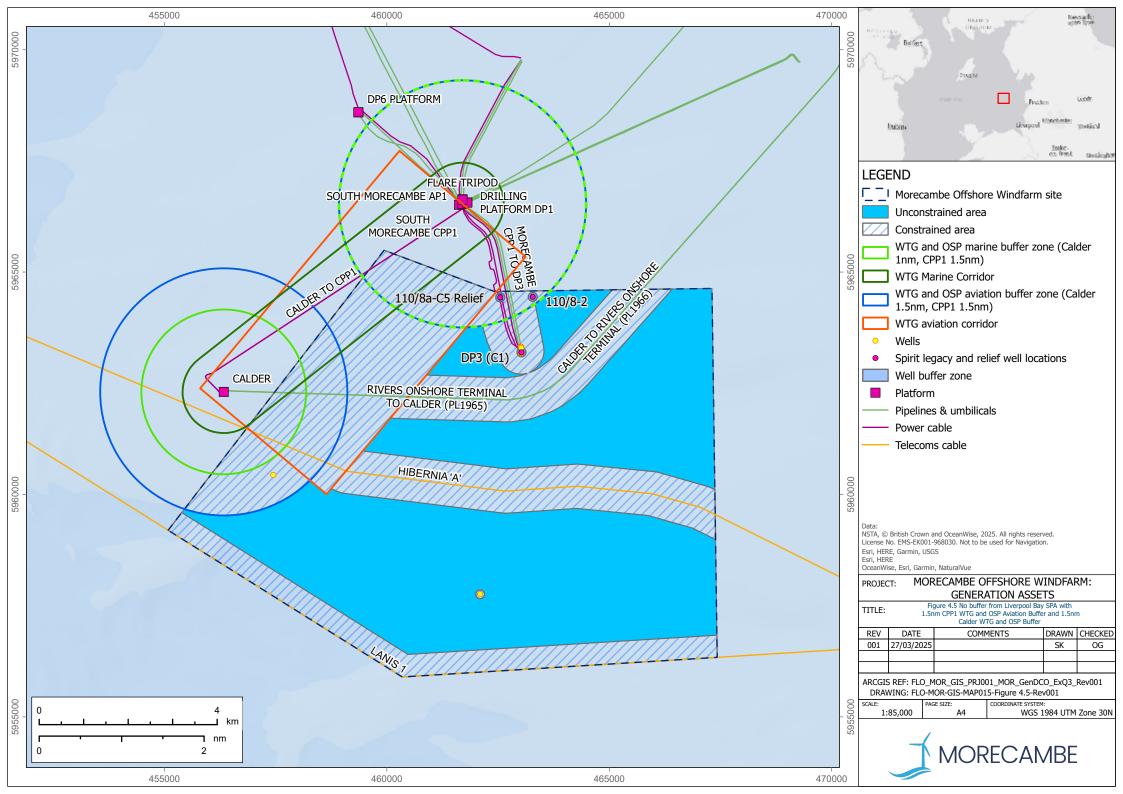
- 41. The figures presented in this section show the existing 1.5nm buffers presented in Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan_Rev 02 (REP5-007) with the range of alternative buffers (10km to no buffer) from Liverpool Bay SPA.
- 42. These plans do not show the WTG notional layout in order to remain consistent with the plan Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007).
- 43. This section includes 5 figures in total:
 - Figure 4.1 10km buffer from Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer
 - Figure 4.2 9km buffer from Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer
 - Figure 4.3 8km buffer from Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer
 - Figure 4.4 7km buffer from Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer
 - Figure 4.5 No buffer from Liverpool Bay SPA with 1.5nm CPP1 WTG and OSP Aviation Buffer and 1.5nm Calder WTG and OSP Buffer







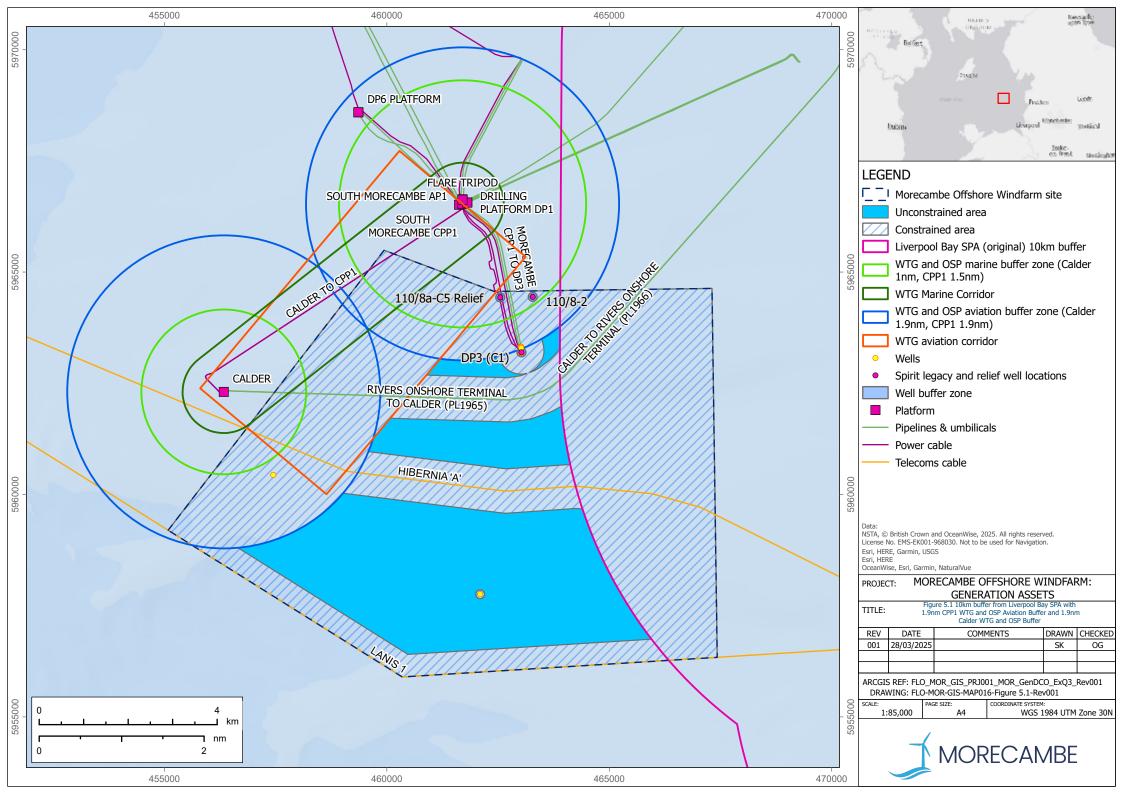


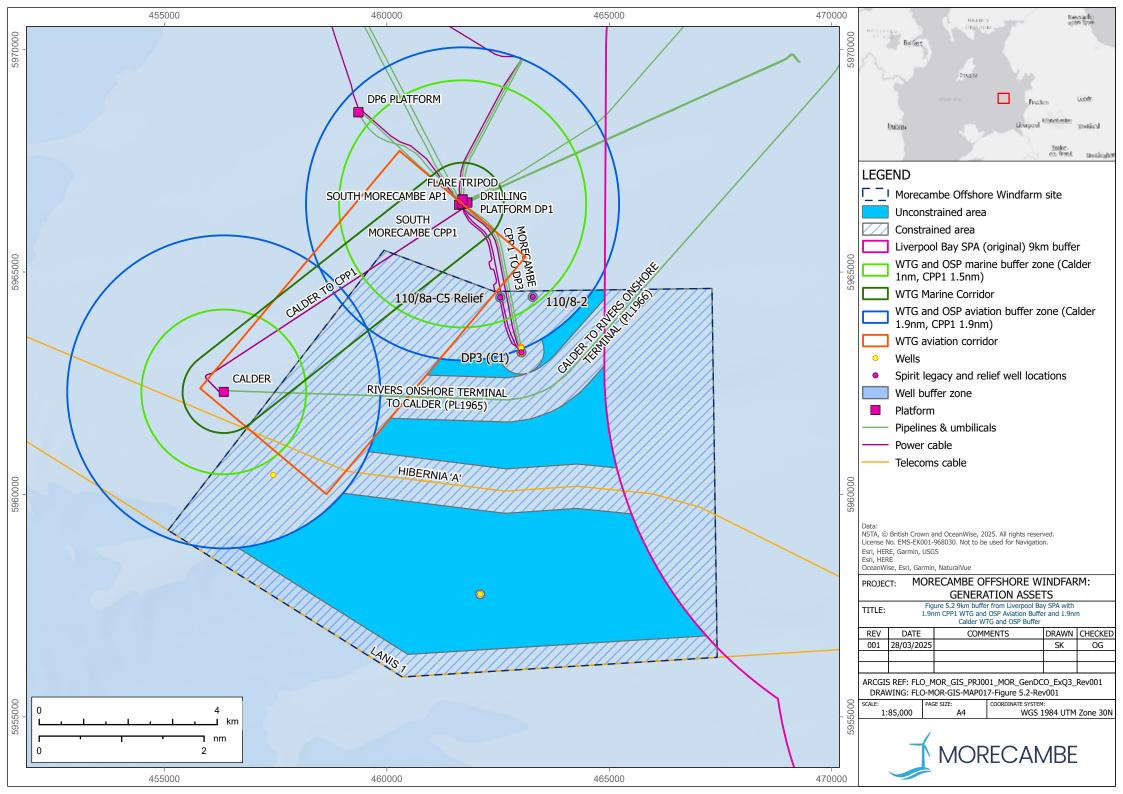


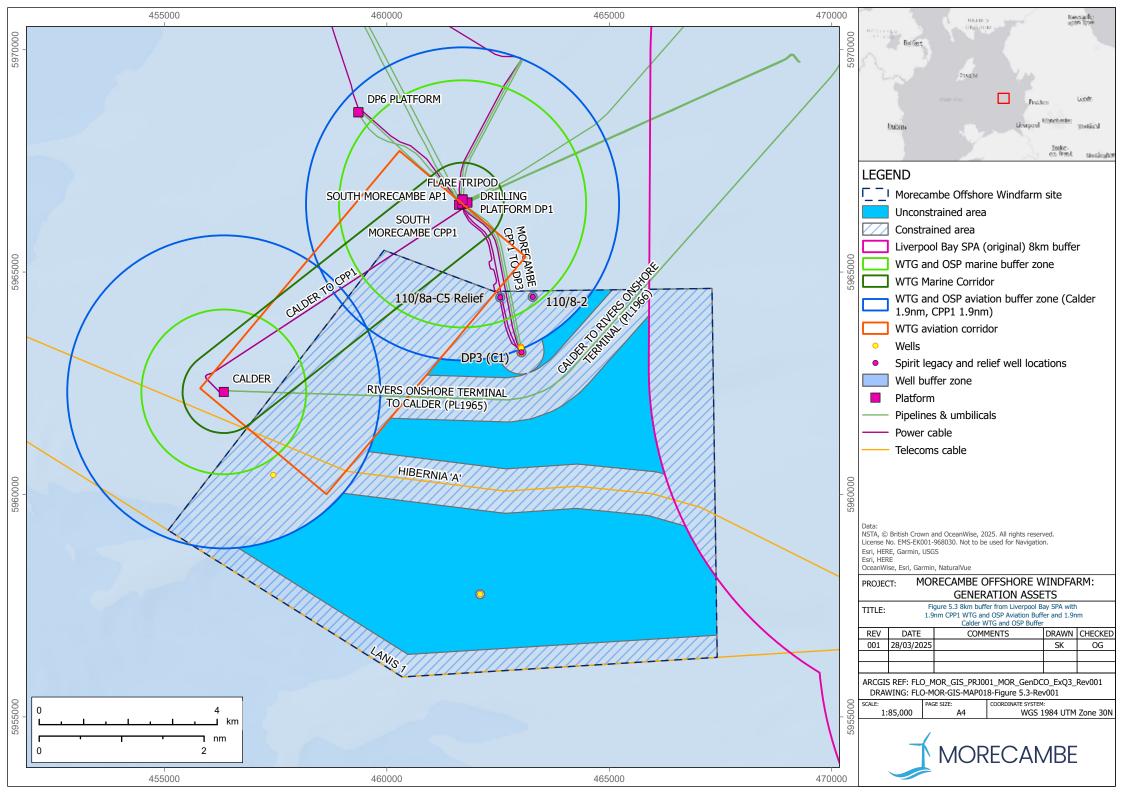


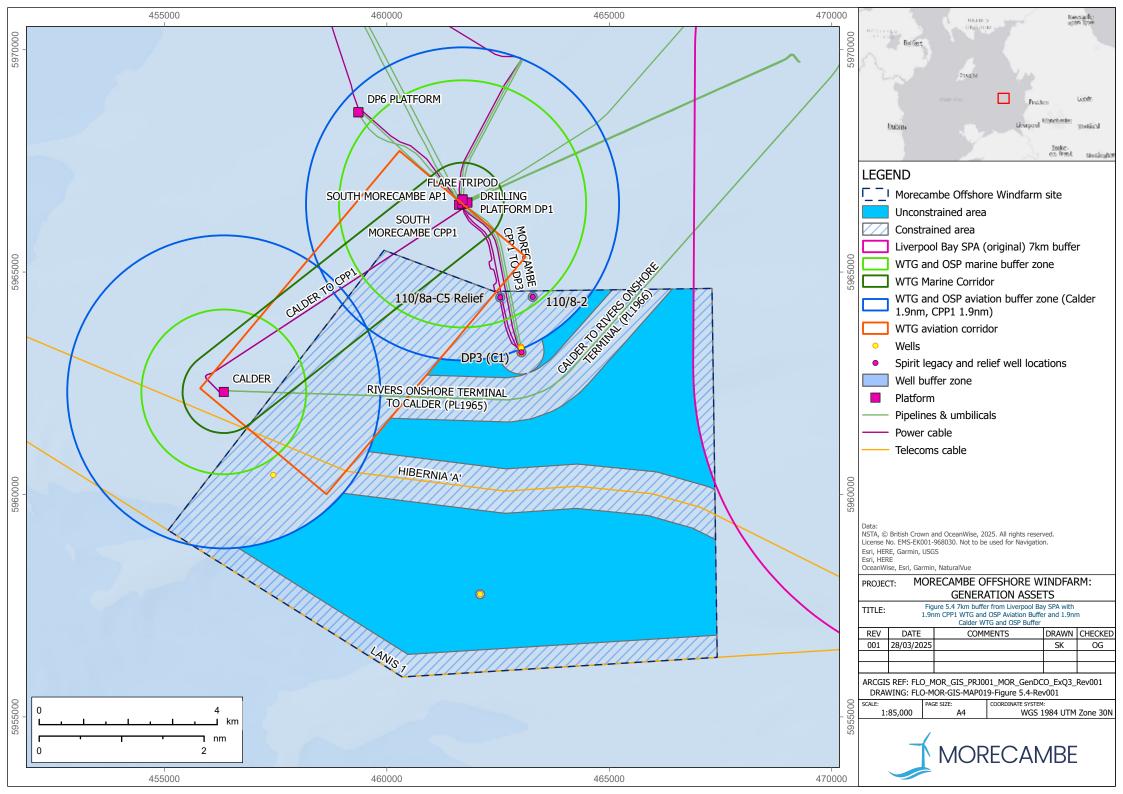
5 Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer

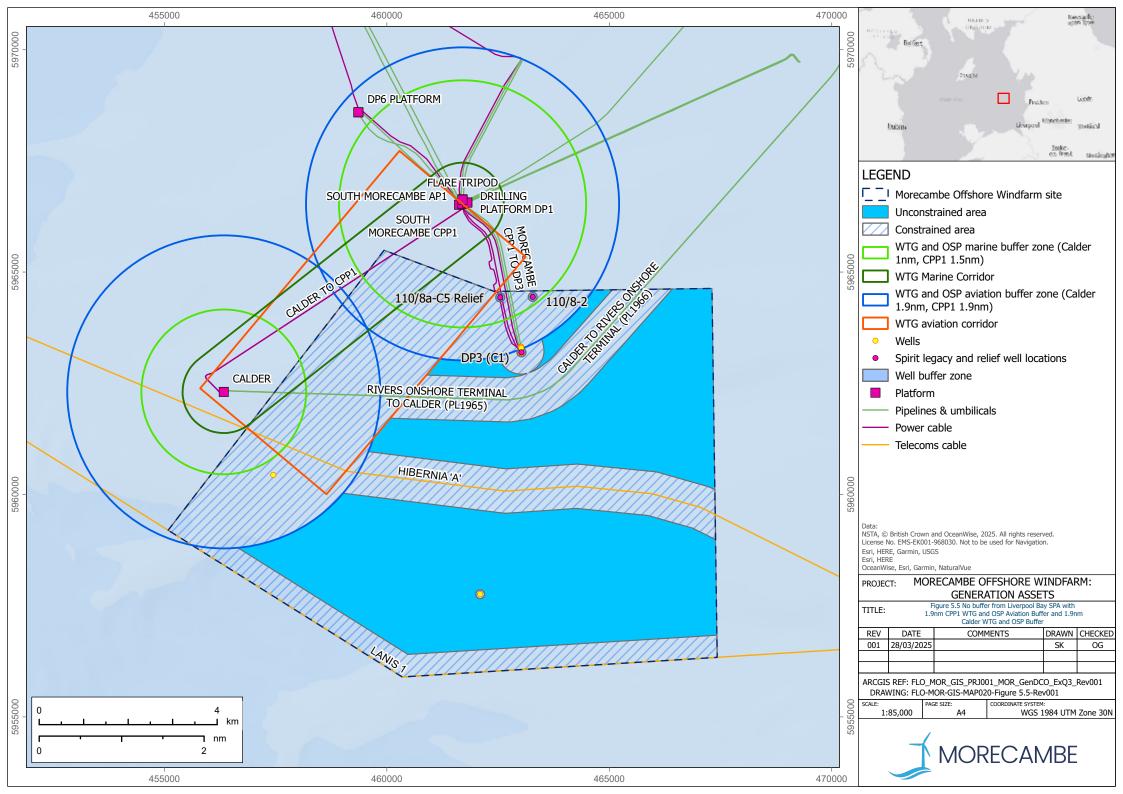
- 44. The figures presented in this section show the following:
 - 1.9nm CPP1 WTG and OSP Aviation Buffer
 - 1.9nm Calder WTG and OSP Buffer
 - The range of alternative buffers (10km to no buffer) from Liverpool Bay SPA.
- 45. These plans do not show the WTG notional layout in order to remain consistent with the plan Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007).
- 46. This section includes 5 figures in total:
 - Figure 5.1 10km buffer from Liverpool Bay SPA with 1.9nm CPP1
 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP
 Buffer
 - Figure 5.2 9km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer
 - Figure 5.3 8km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP
 - Figure 5.4 7km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer
 - Figure 5.5 No buffer from Liverpool Bay SPA with 1.9nm CPP1
 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer.







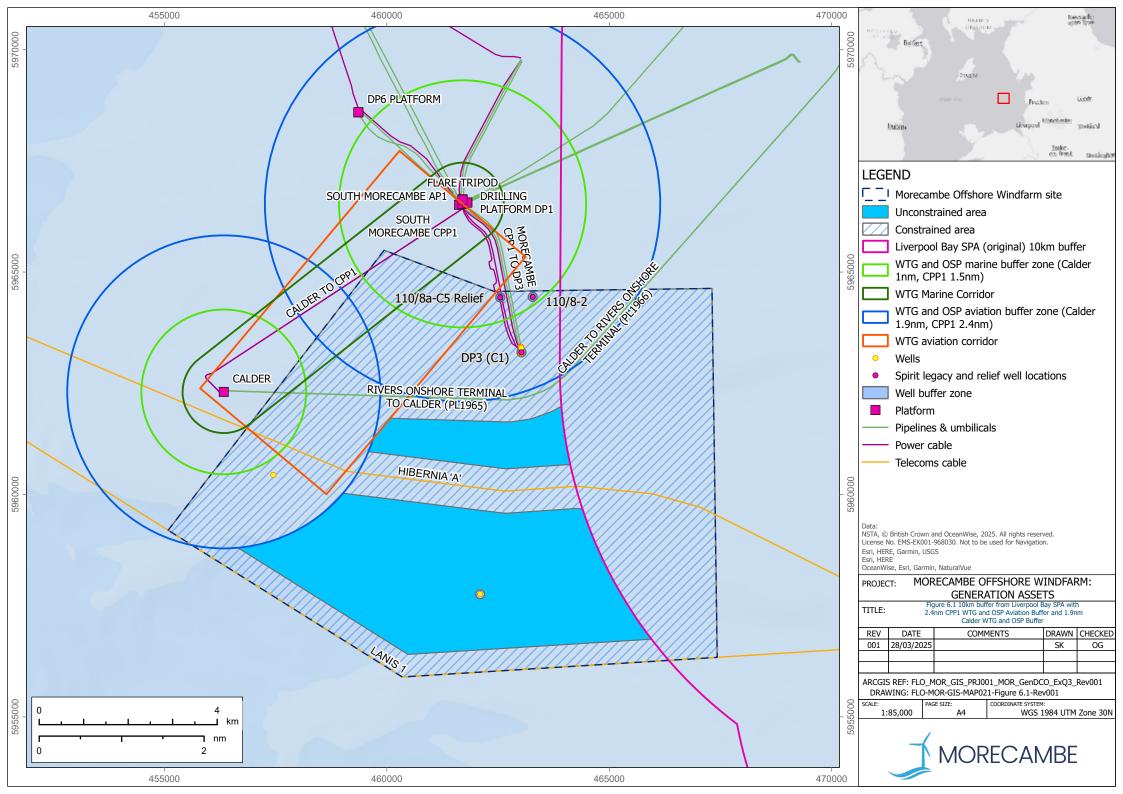


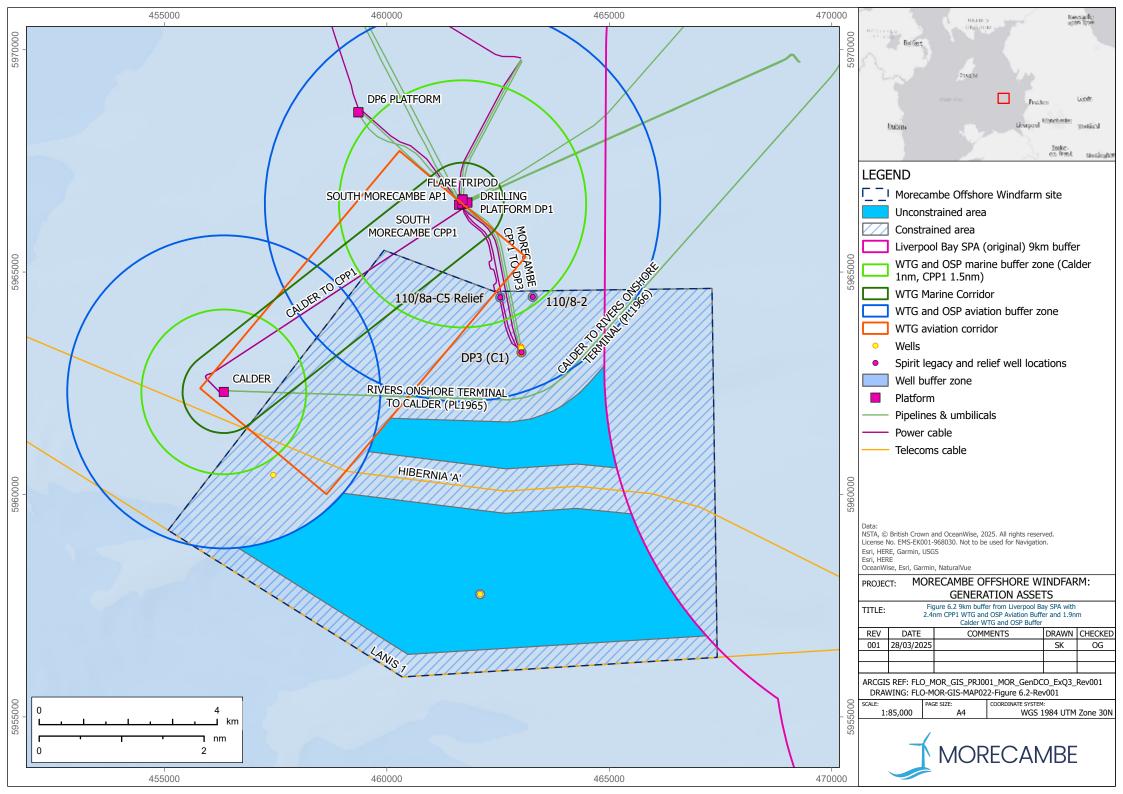


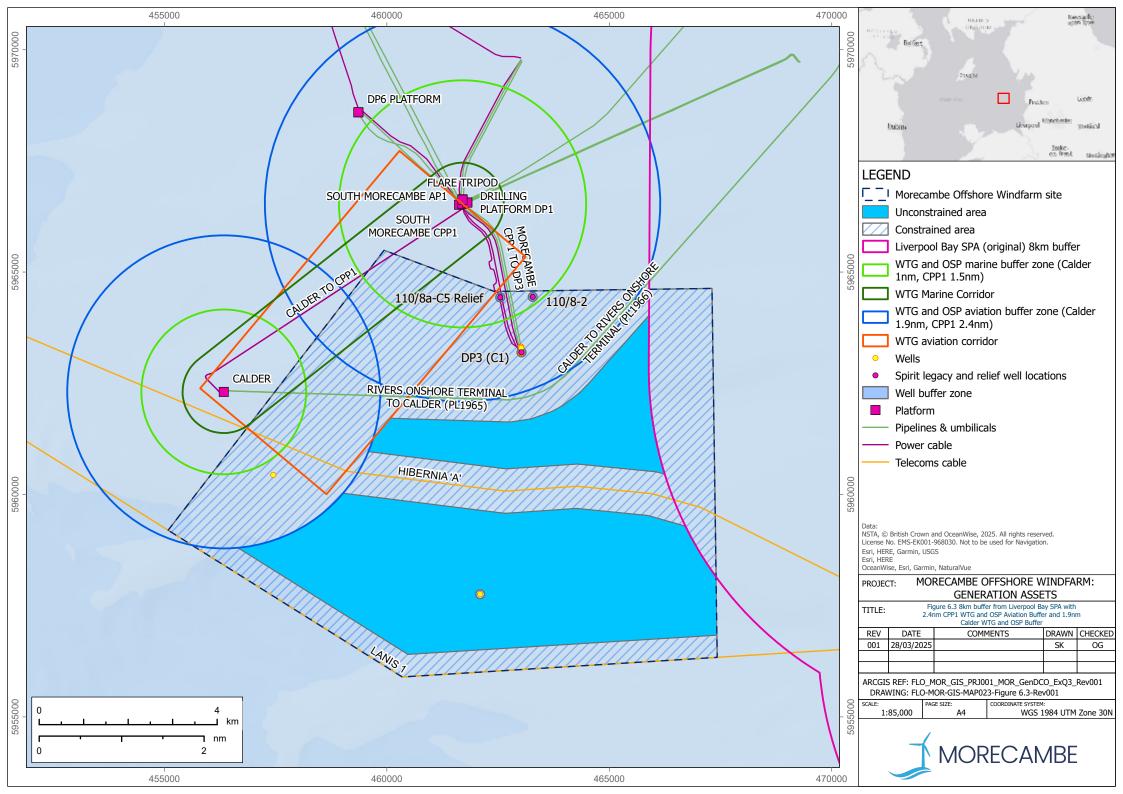


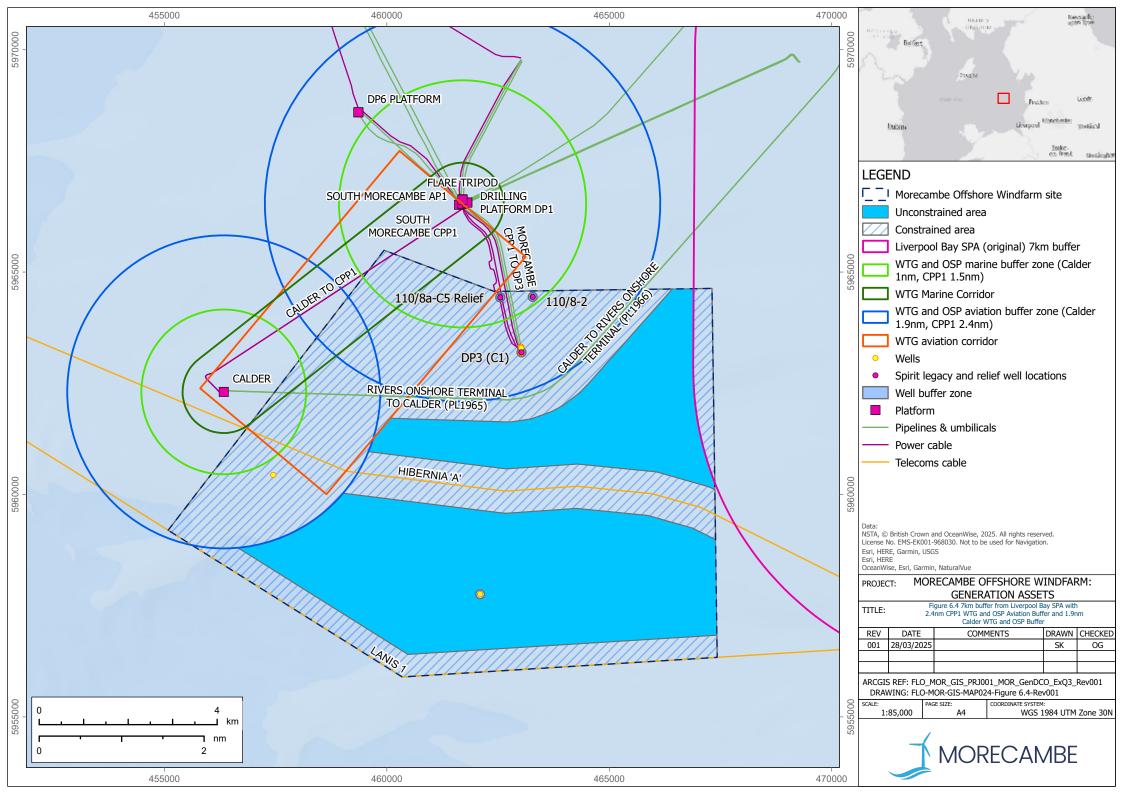
6 Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer

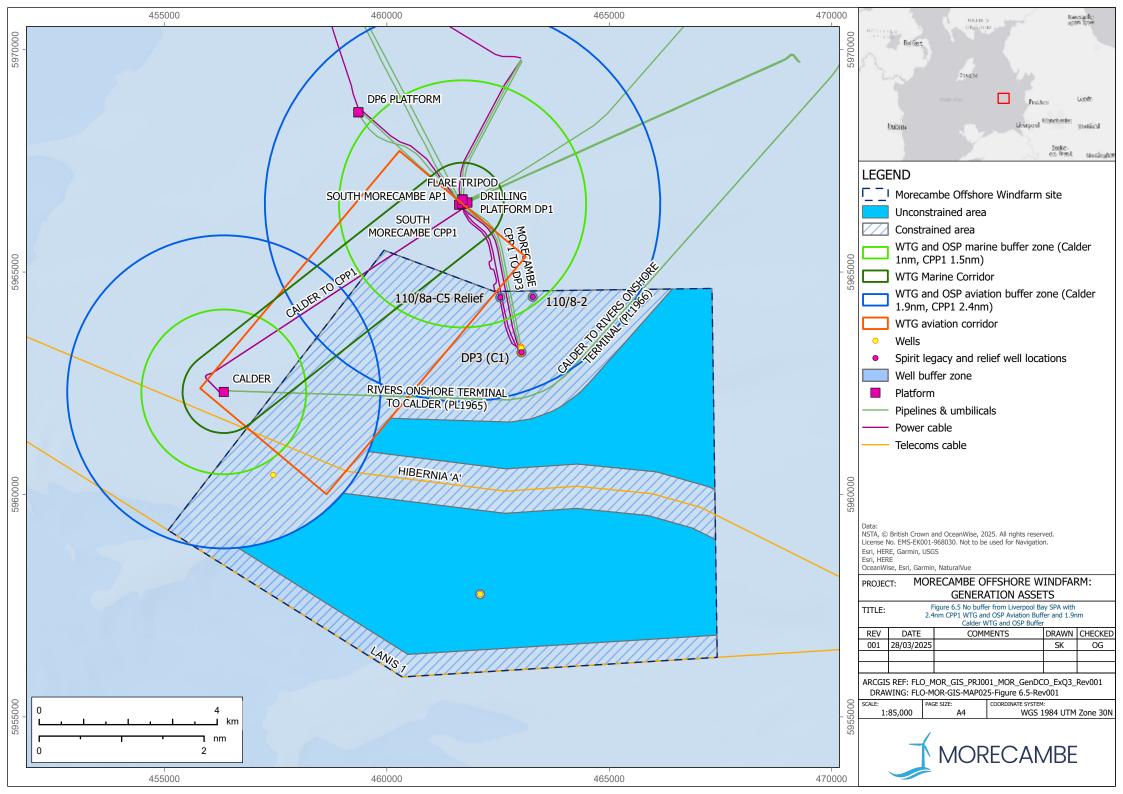
- 47. The figures presented in this section show the following:
 - 2.4nm CPP1 WTG and OSP Aviation Buffer
 - 1.9nm Calder WTG and OSP Buffer
 - The range of alternative buffers (10km to no buffer) from Liverpool Bay SPA.
- 48. These plans do not show the WTG notional layout in order to remain consistent with the plan Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007).
- 49. This section includes 5 figures in total:
 - Figure 6.1 10km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer
 - Figure 6.2 9km buffer from Liverpool Bay SPA with 2.4nm CPP1
 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP
 Buffer
 - Figure 6.3 8km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer
 - Figure 6.4 7km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer
 - Figure 6.5 No buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 1.9nm Calder WTG and OSP Buffer.







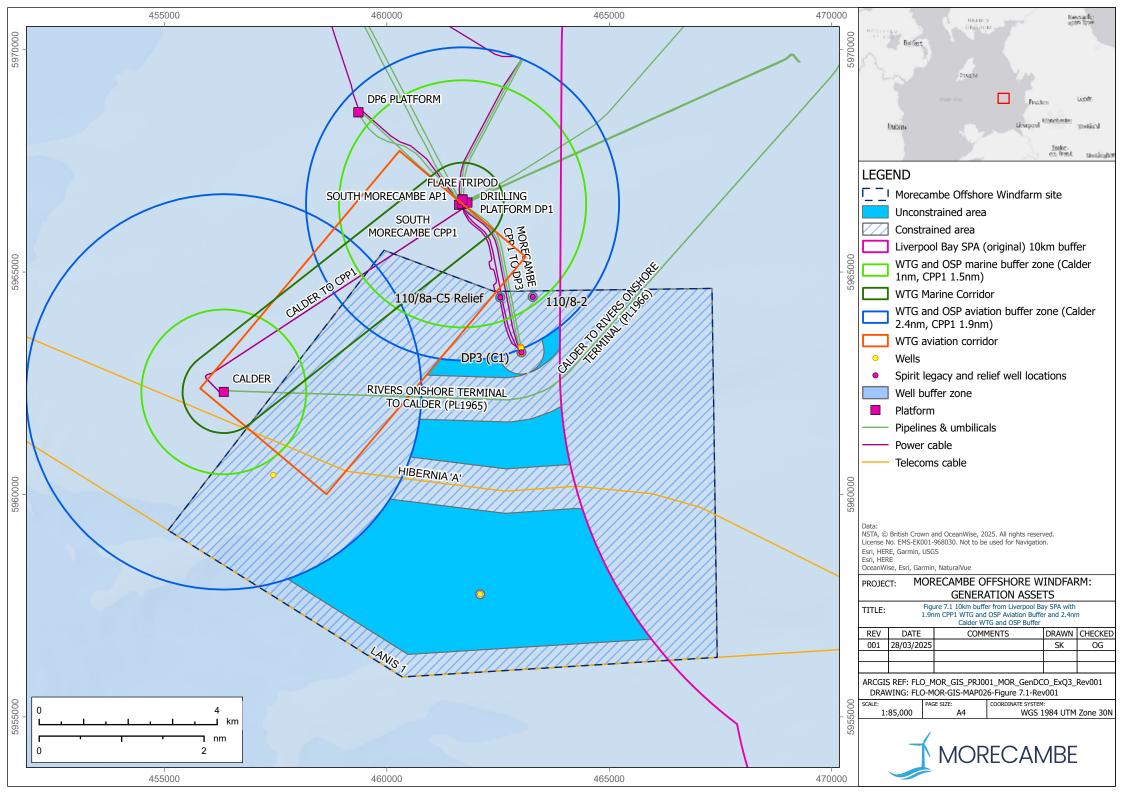


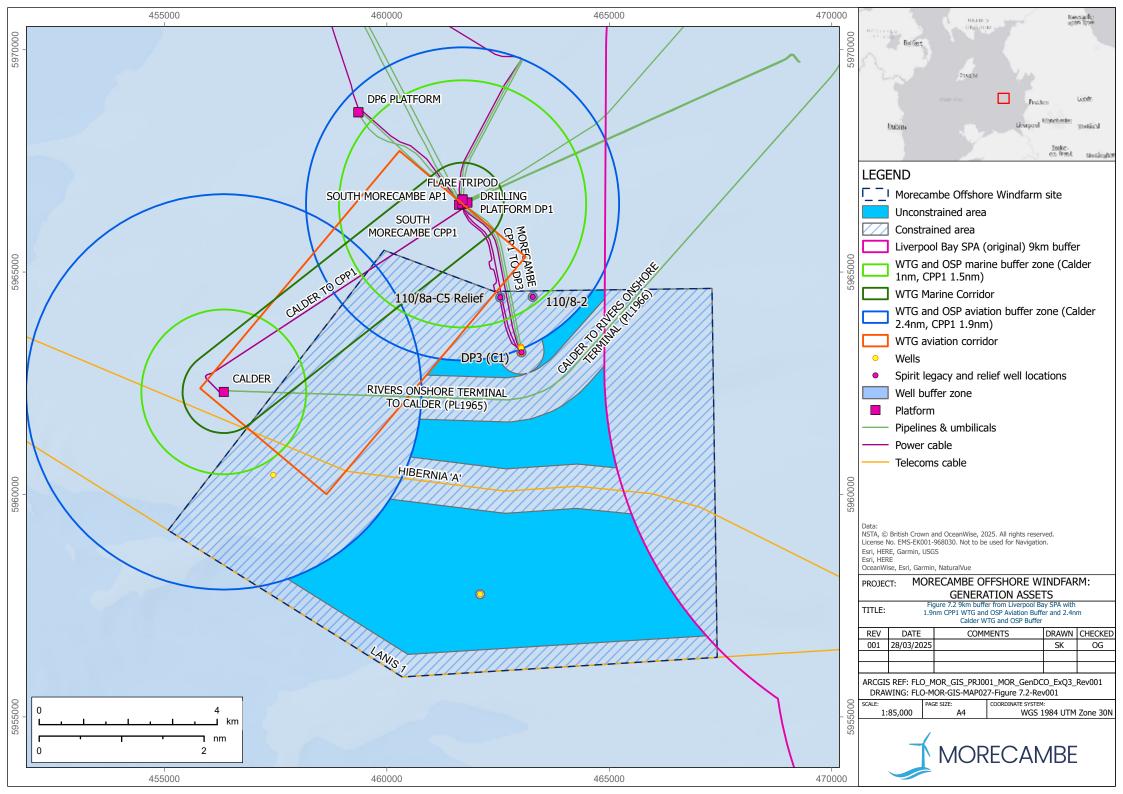


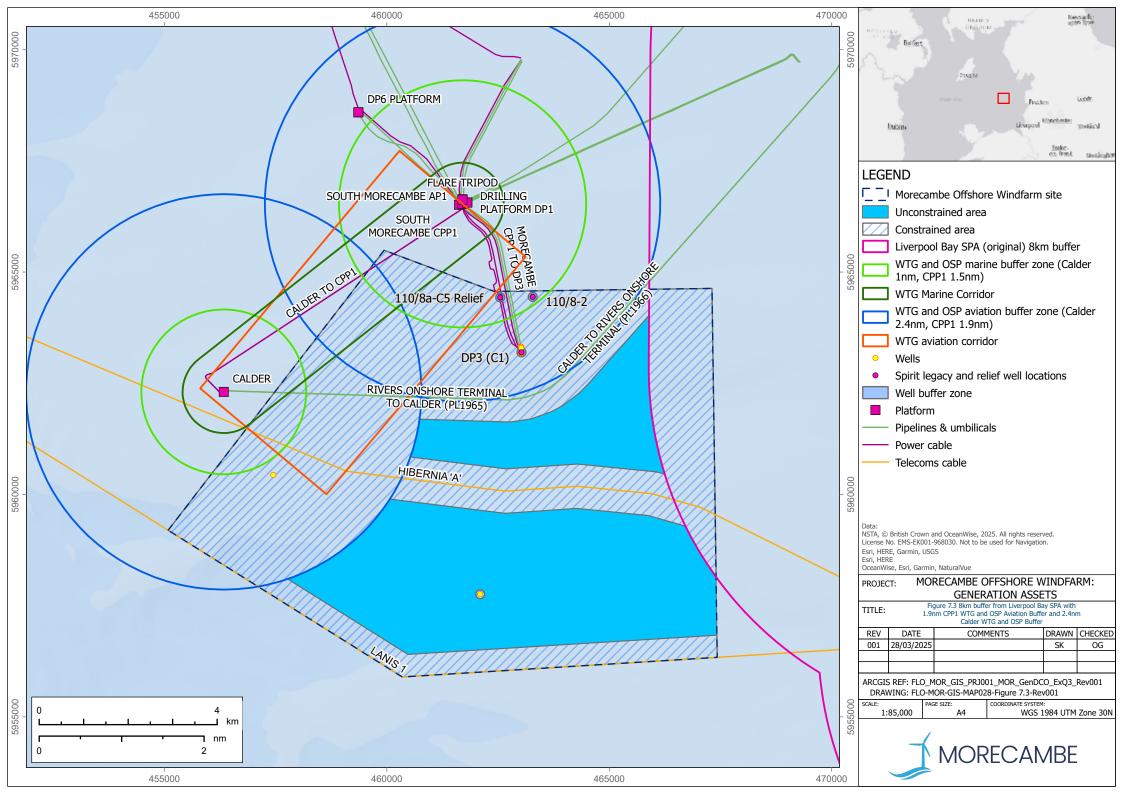


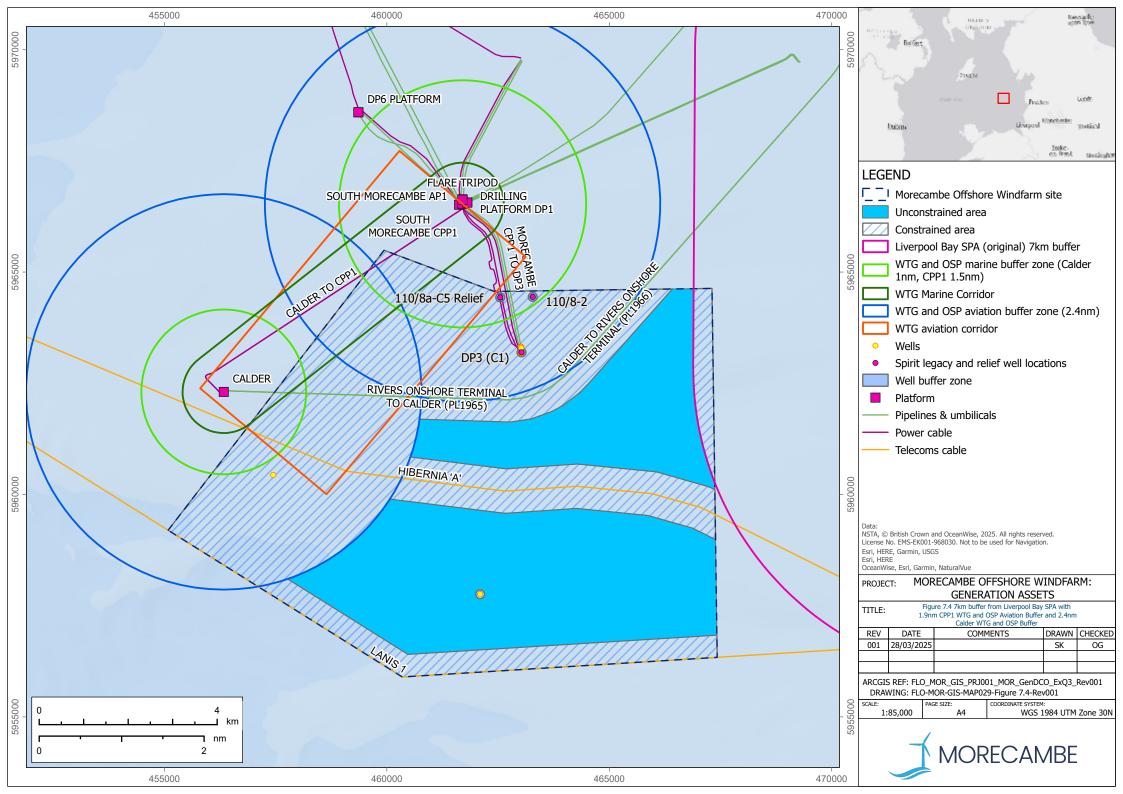
7 Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer

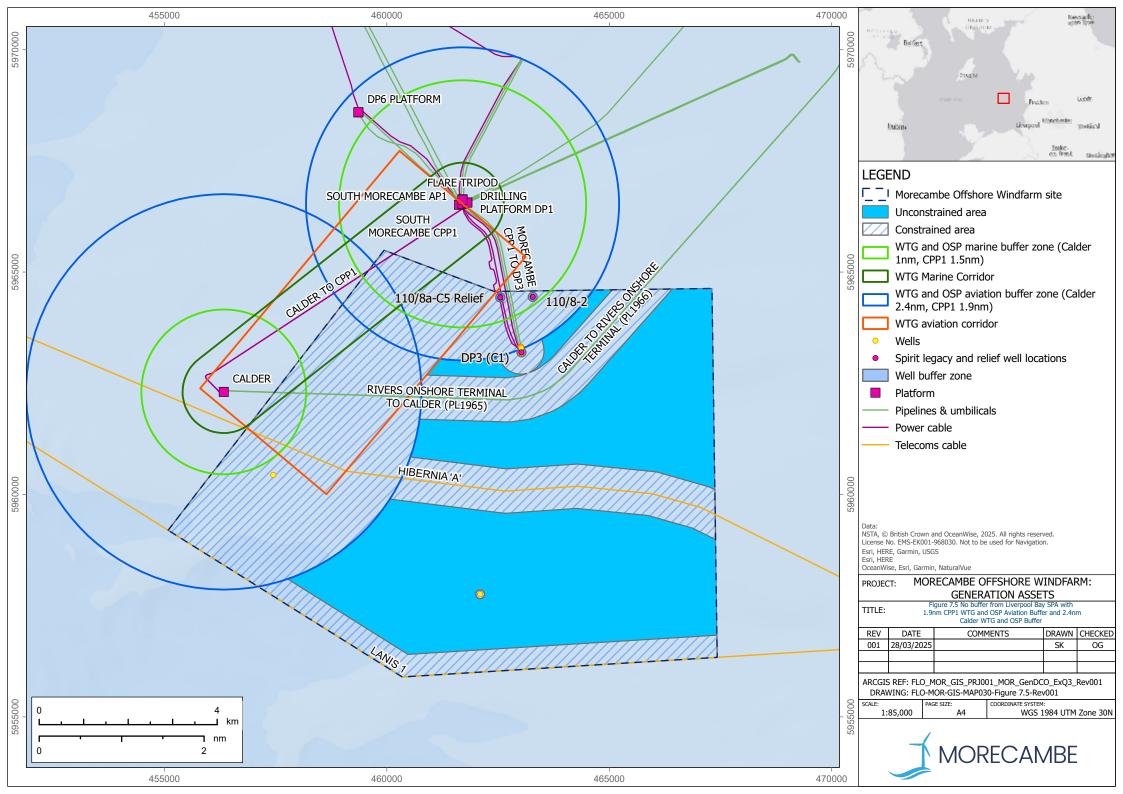
- 50. The figures presented in this section show the following:
 - 1.9nm CPP1 WTG and OSP Aviation Buffer
 - 2.4nm Calder WTG and OSP Buffer
 - The range of alternative buffers (10km to no buffer) from Liverpool Bay SPA.
- 51. These plans do not show the WTG notional layout in order to remain consistent with the plan Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007).
- 52. This section includes 5 figures in total:
 - Figure 7.1 10km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 7.2 9km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 7.3 8km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 7.4 7km buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 7.5 No buffer from Liverpool Bay SPA with 1.9nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer







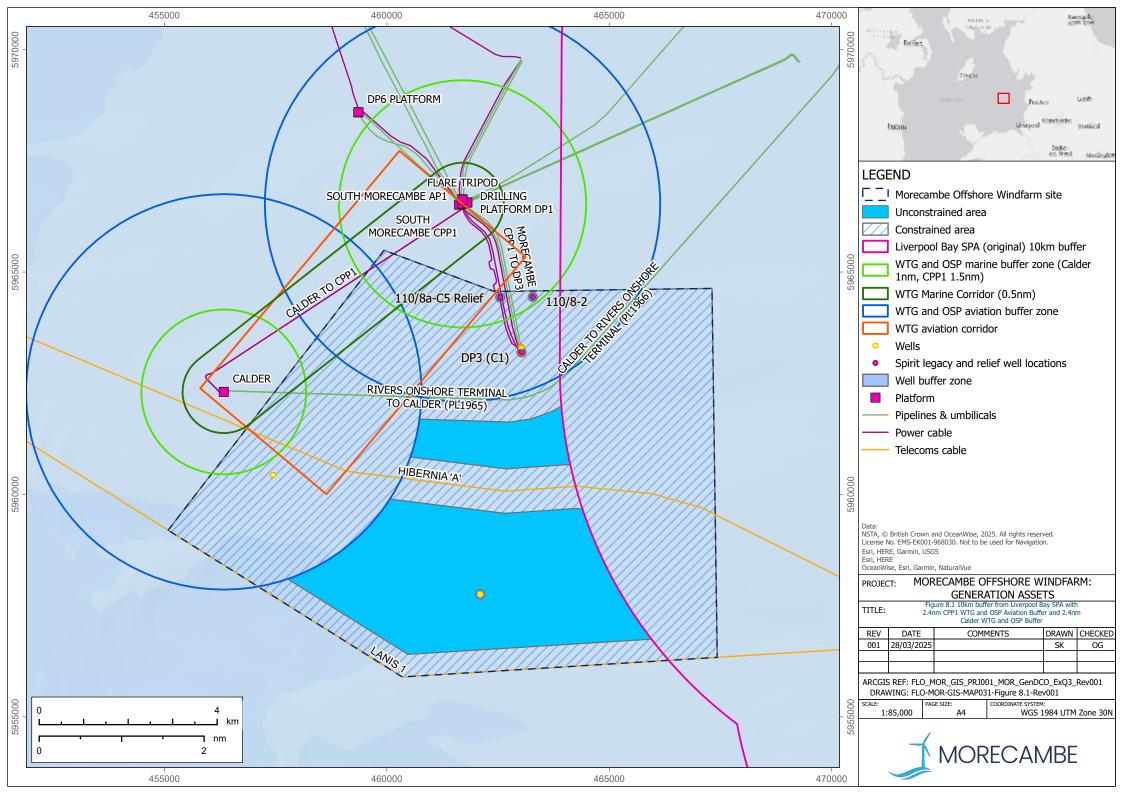


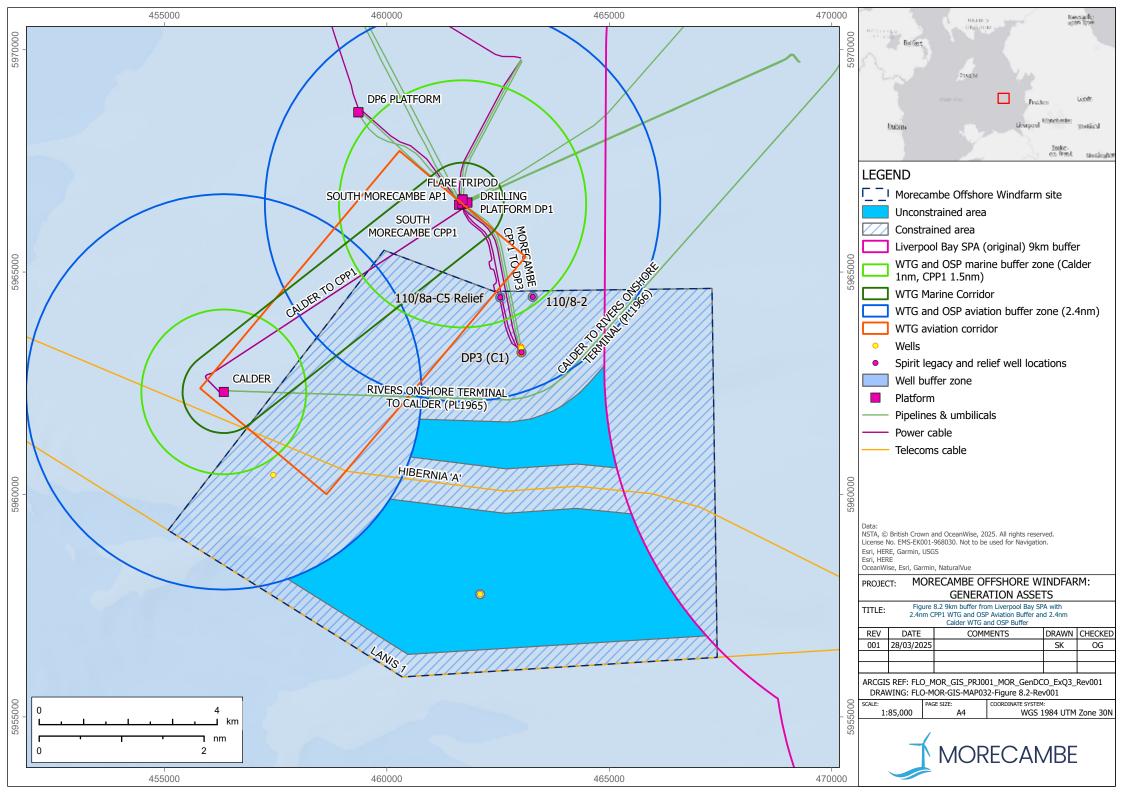


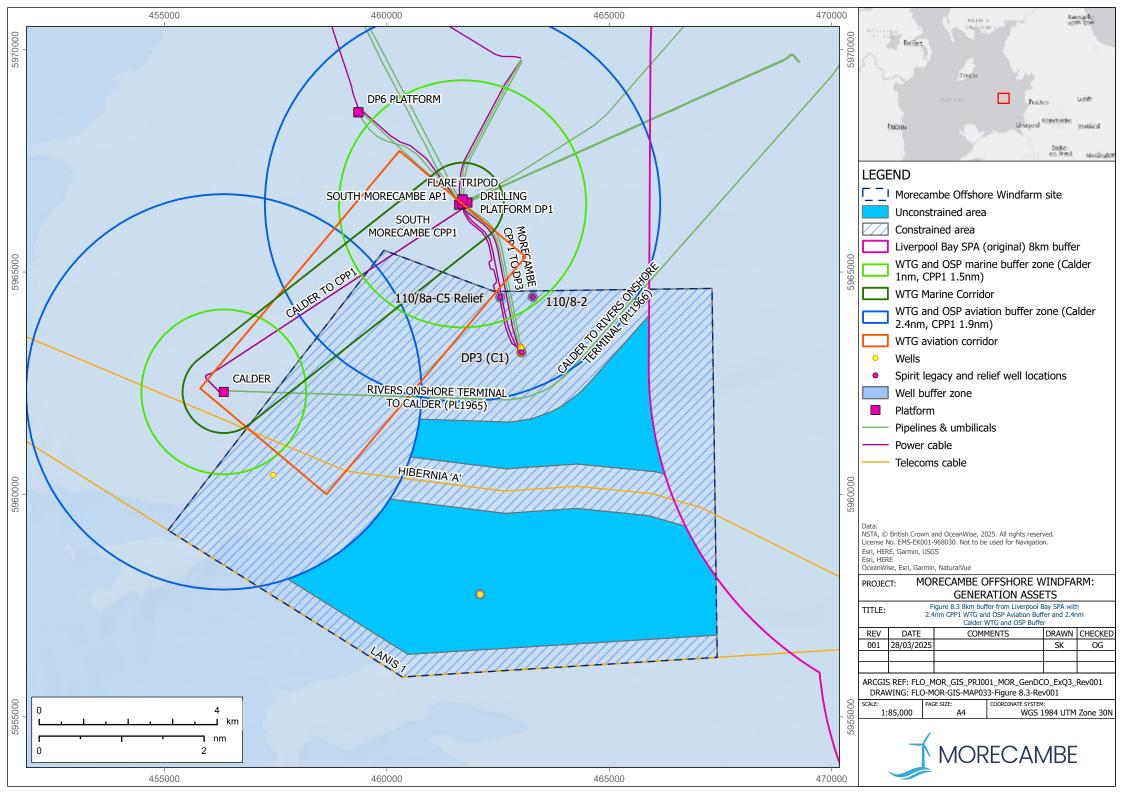


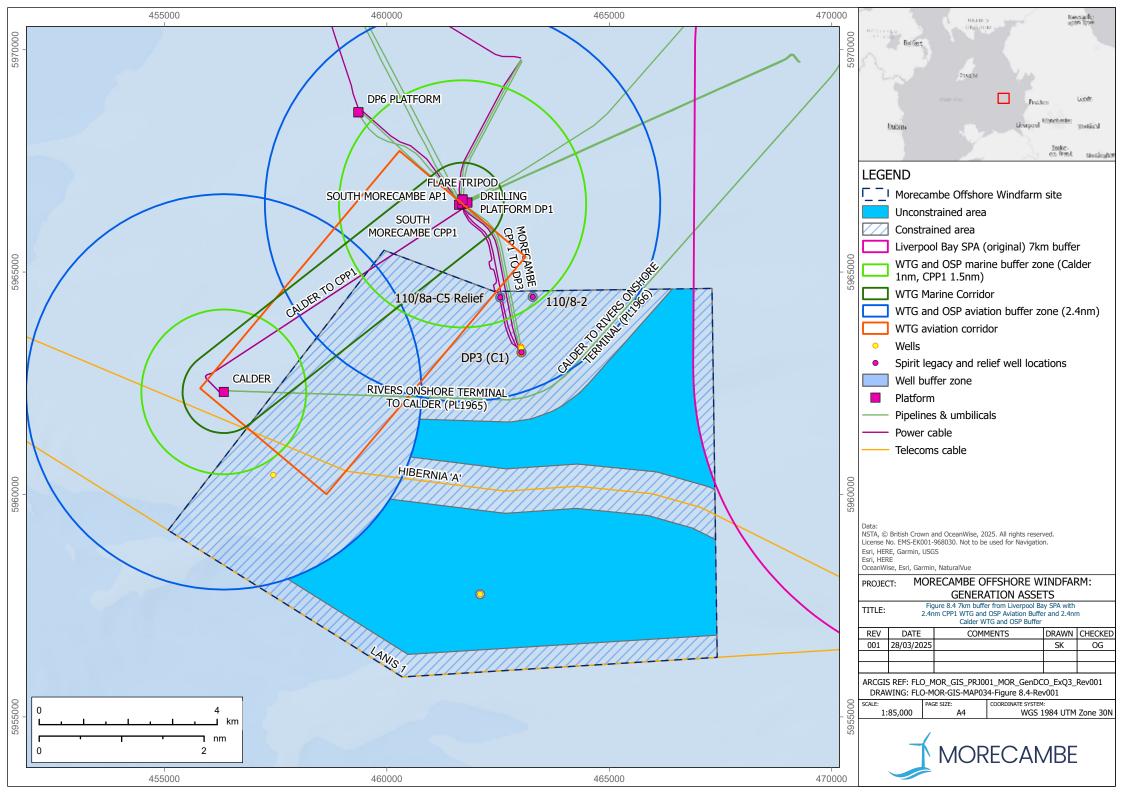
8 Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer

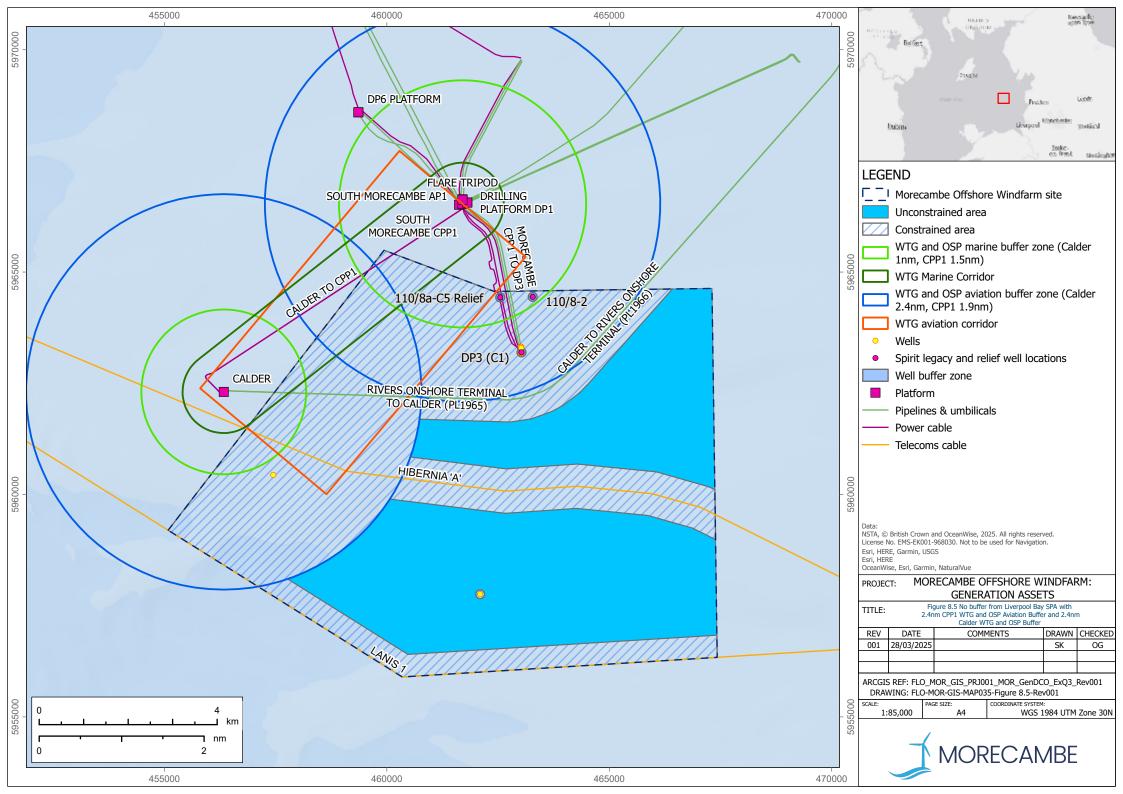
- 53. The figures presented in this section show the following:
 - 2.4nm CPP1 WTG and OSP Aviation Buffer
 - 2.4nm Calder WTG and OSP Buffer
 - The range of alternative buffers (10km to no buffer) from Liverpool Bay SPA.
- 54. These plans do not show the WTG notional layout in order to remain consistent with the plan Development Consent Order: Schedule 3 Spirit and Harbour Protective Provisions Plan Rev 02 (REP5-007).
- 55. This section includes 5 figures in total:
 - Figure 8.1 10km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 8.2 9km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 8.3 8km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 8.4 7km buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer
 - Figure 8.5 No buffer from Liverpool Bay SPA with 2.4nm CPP1 WTG and OSP Aviation Buffer and 2.4nm Calder WTG and OSP Buffer.













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