



**DOGGER BANK
TEESSIDE A & B**

**March
2014**

Environmental Statement Chapter 12 Appendix E Value Ecological Receptor Tables

Application Reference 6.12.5


Cover photograph: Installation of turbine foundations in the North Sea

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1.1. Dogger Bank Teesside A & B: VER Groups and Biotope Sensitivity (as defined by MarLIN)

- 1.1.1. The following table has been produced following consultation responses from JNCC/NE on the draft ES **Chapter 12: Marine and Intertidal Ecology** for Creyke Beck. The table lists all the impact assessment headings presented in the ES chapter and the “factors” from the MarLIN sensitivity assessment tool that relate to these impacts. The nine VER’s used as receptors in the impact assessment are also listed, alongside their representative biotopes, with the ecological sensitivity (as defined by MarLIN) of the most sensitive biotope within the VER to the specific factor presented. The ecological sensitivity classifications are taken directly from MarLIN. For further clarity, the two key elements of the final MarLIN ecological sensitivity assessment (intolerance x recoverability) are also shown.
- 1.1.2. The most sensitive biotope within the VER to the effect in question has been used to ensure that a worst-case assessment is undertaken. For some VERs, MarLIN sensitivity assessments for the component biotopes do not exist (i.e. VER B). In this instance, sensitivity assessments of similar biotopes have been used.

Table 1 CONSTRUCTION phase impacts vs MarLIN “factors” vs ecological sensitivity of most sensitive biotopes within each VER

ES Chapter 12 Impact Heading	Relevant MarLIN “Factor”	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER B - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER C - Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER D - Sandy sediment supporting relatively low diversity benthic communities outside cSAC boundary)	VER E - Coarse sediments with medium to high diversity benthic communities outside cSAC boundary	VER F - Muddy sediments with medium diversity benthic communities (including sea pens) outside cSAC boundary	VER G - Rock-based infralittoral and circalittoral habitats	VER H - Intertidal sand-based habitats	VER I - Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.IC.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.lMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.IC.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusOpor Apri SS.SSa.lFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAI Cr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
Physical disturbance to habitats and species and temporary habitat loss	Physical disturbance and abrasion	LOW (intermediate x high) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on EcorEns biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen and SS.SCS.IC.S.MoeVen ¹ biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on CR.MCR.EcCr.FaAI.Cr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
Increased suspended sediment concentration and sediment deposition	Increased SSC	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (low x high) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.IC.S.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (low x immediate) Based on SpnMeg biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CR.MCR.EcCr.FaAI.Cr.Po biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Smothering	NOT SENSITIVE (low x immediate) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.IC.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CR.MCR.EcCr.FaAI.Cr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN

¹ SS.SCS.IC.S.MoeVen and SS.SCS.CCS.MedLumVen biotope sensitivity assessments used due to no MarLIN biotope sensitivity assessment for any of the VER E biotopes. The sensitivity of these biotopes to effects likely to arise via construction, operation and decommissioning of Teesside A & B judged to be similar to those of the VER E biotopes

ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER B - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER C - Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER D - Sandy sediment supporting relatively low diversity benthic communities outside cSAC boundary)	VER E - Coarse sediments with medium to high diversity benthic communities outside cSAC boundary	VER F - Muddy sediments with medium diversity benthic communities (including sea pens) outside cSAC boundary	VER G - Rock-based infralittoral and circalittoral habitats	VER H - Intertidal sand-based habitats	VER I - Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICSLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICSLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg en/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAI Cr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
						SS.SCS.ICSMoeVen biotope sensitivity assessment within MarLIN		MarLIN		
Release of sediment contaminant resulting in potential effects on benthic ecology	Synthetic compound contamination	MODERATE (high x high) Based on SS.SCS.ICSLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on SS.SCS.ICSLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen and SS.SCS.ICSMoeVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CR.MCR.EcCr.FaAI biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (intermediate x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Heavy metal contamination	LOW (intermediate x high) Based on SS.SCS.ICSLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on EcorEns biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on SS.SCS.ICSLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen and SS.SCS.ICSMoeVen biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CR.MCR.EcCr.FaAI biotope sensitivity assessment within MarLIN	MODERATE (intermediate x moderate) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Hydrocarbon contamination	LOW (intermediate x high) Based on SS.SCS.ICSLan	MODERATE (high x high) Based on CCS.MedLumVen	MODERATE (high x moderate) Based on EcorEns biotope sensitivity	MODERATE (high x moderate) Based on NcriBat biotope sensitivity	MODERATE (high x high) Based on	MODERATE (high x moderate) Based on SpnMeg biotope sensitivity	LOW (intermediate x high)	MODERATE (high x moderate) Based on LS.LSa.MoSa.AmSco.Eur	LOW (high x very high) Based on LR.FLR.Eph.Ent

		biotope sensitivity assessment within MarLIN	biotope sensitivity assessment within MarLIN	assessment within MarLIN	assessment within MarLIN	CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	assessment within MarLIN	Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	ur biotope sensitivity assessment within MarLIN	biotope sensitivity assessment within MarLIN
Increased suspended sediment concentration leading to impacts on plankton and primary productivity	Increased SSC	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (low x high) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (low x immediate) Based on SpnMeg biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
Physical disturbance to intertidal habitats and species during landfall works	Physical disturbance and abrasion	LOW² (intermediate x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW² (intermediate x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE² (high x moderate) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE² (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW² (intermediate x high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	LOW² (intermediate x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW² (high x very high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
Potential construction phase impacts on the Dogger Bank cSAC	Physical disturbance and abrasion Increased SSC Smothering	As above for individual factors								
Potential construction phase impacts on the Flamborough Head SAC	Physical disturbance and abrasion Increased SSC Smothering	As above for individual factors								

² Although the sensitivity of the component biotopes of VERs A to G are listed here, this impact relates to effects in the intertidal region, therefore, only VER H and I (intertidal VER's) will be affected by this impact.

Table 2 OPERATIONAL phase impacts vs MarLIN “factors” vs ecological sensitivity of most sensitive biotopes within each VER

ES Chapter 12 Impact Heading	Relevant MarLIN “Factor”	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER B - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER C - Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER D - Sandy sediment supporting relatively low diversity benthic communities outside cSAC boundary)	VER E - Coarse sediments with medium to high diversity benthic communities outside cSAC boundary	VER F - Muddy sediments with medium diversity benthic communities (including sea pens) outside cSAC boundary	VER G - Rock-based infralittoral and circalittoral habitats	VER H - Intertidal sand-based habitats	VER I - Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICs.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICs.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAICr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur	Representative Biotopes LR.FLR.Eph.EntPor
Permanent loss of habitat via placement of project infrastructure (foundations, cable protection)	Substratum Loss	MODERATE (high x high) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on EcorEns biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CCS.MedLumVen and SS.SCS.ICs.MoeVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	MODERATE (high x high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
Temporary impact on benthos due to physical disturbance caused by maintenance activities	Increased SSC	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (low x high) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.ICs.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (low x immediate) Based on SpnMeg biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Smothering	NOT SENSITIVE (low x immediate) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICs.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.ICs.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN

						assessment within MarLIN				
	Physical disturbance and abrasion	LOW (intermediate x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE (high x moderate) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN

ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER B - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER C - Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER D - Sandy sediment supporting relatively low diversity benthic communities outside cSAC boundary)	VER E - Coarse sediments with medium to high diversity benthic communities outside cSAC boundary	VER F - Muddy sediments with medium diversity benthic communities (including sea pens) outside cSAC boundary	VER G - Rock-based infralittoral and circalittoral habitats	VER H - Intertidal sand-based habitats	VER I - Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusOpor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAICr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
Change in hydrodynamics and inter-related effects on benthos	Increase in wave exposure	MODERATE³ (high x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE³ (high x moderate) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE³ (high x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	MODERATE³ (intermediate x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	MODERATE³ (high x high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Decrease in wave	NOT SENSITIVE (tolerant x not)	LOW (intermediate x high)	NA	LOW (high x very high)	LOW	NA	NOT SENSITIVE (tolerant x not)	MODERATE⁴ (high x high)	LOW (high x very high)

³ The benchmark increase in wave exposure required to trigger this Moderate sensitivity to this factor is a change from existing condition to 'exposed' and 'very exposed' categories - such increases in wave exposure are not predicted to arise at Teesside A & B during the operational phase, with a maximum increase in significant wave height of 1% predicted along the south/southwest perimeter of Teesside B (in a band about 12km wide).

⁴ The benchmark decrease in wave exposure required to trigger this Moderate sensitivity to this factor is a change from existing condition to 'very sheltered' or 'extremely sheltered' category – no impact is predicted on wave exposure at the coast (where VER H is situated)

	exposure	relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	Based on SpnMeg biotope sensitivity assessment within MarLIN	Based on NcriBat biotope sensitivity assessment within MarLIN	(intermediate x high) <i>Based on</i> CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	Based on SpnMeg biotope sensitivity assessment within MarLIN	relevant) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
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ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER B - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER C - Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature (within boundary of cSAC)	VER D - Sandy sediment supporting relatively low diversity benthic communities outside cSAC boundary)	VER E - Coarse sediments with medium to high diversity benthic communities outside cSAC boundary	VER F - Muddy sediments with medium diversity benthic communities (including sea pens) outside cSAC boundary	VER G - Rock-based infralittoral and circalittoral habitats	VER H - Intertidal sand-based habitats	VER I - Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAICr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
Change in hydrodynamics and inter-related effects on benthos (cont'd)	Increase in water flow rate	MODERATE ⁵ (high x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	MODERATE ⁵ (high x high) Based on EcorEns biotope sensitivity assessment within MarLIN	MODERATE ⁵ (high x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	LOW (intermediate x high) <i>Based on</i> CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	MODERATE ⁵ (high x high) Based on SpnMeg biotope sensitivity assessment within MarLIN	MODERATE ⁵ (high x high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	MODERATE ⁵ (high x high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT SENSITIVE (low x immediate) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
	Decrease in water flow	MODERATE ⁶ (high x high)	LOW (intermediate x high)	MODERATE ⁶ (high x high)	MODERATE ⁶ (high x high)	LOW	MODERATE ⁶ (high x high)	NOT RELEVANT	MODERATE ⁶ (high x high)	NOT SENSITIVE (low x immediate)

⁵ The benchmark increase in water flow rate required to trigger these Moderate sensitivities to this factor is a change of at least two classes from the existing "Weak" flow rate (<0.5m/s - typical tidal currents are less than 0.4m/s in the study area) to "Strong" (1.5 – 3m/s). Such increases in tidal currents are not predicted to arise at Teesside A & B during the operational phase, with the maximum change in current velocity predicted to be less than 2% along narrow (3km) bands restricted to the project boundaries

⁶ The benchmark decrease in water flow rate required to trigger these Moderate sensitivities to this factor is a change of at least two classes from the existing "Weak" flow rate (<0.5m/s - typical tidal currents are less than 0.4m/s in the study area). Such decreases in tidal currents are not predicted to arise at Teesside A & B during the operational phase, with the maximum change in current velocity predicted to be less than 2% along narrow (3km) bands restricted to the project boundaries

	rate	Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	Based on SpnMeg biotope sensitivity assessment within MarLIN	Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	(intermediate x high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	Based on SpnMeg biotope sensitivity assessment within MarLIN	Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
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		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAICr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
Increase in suspended sediment concentration due to scour associated with foundations	Increased SSC	NOT SENSITIVE (low x immediate) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (low x high) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (low x immediate) Based on SpnMeg biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
Increase in sediment deposition following increase in suspended sediment concentration due to scour associated with	Smothering	NOT SENSITIVE (low x immediate) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on EcorEns biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SpnMeg biotope sensitivity assessment within MarLIN	LOW (intermediate x high) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	VERY LOW (low x very high) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	LOW (high x very high) Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN

foundations										
Introduction of new habitat in the form of foundation structures, leading to potential colonisation	Introduction of non-native species	INSUFFICIENT INFORMATION (insufficient information x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on CCS.MedLumVen biotope sensitivity assessment within MarLIN	LOW (low x high) Based on EcorEns biotope sensitivity assessment within MarLIN	INSUFFICIENT INFORMATION (insufficient information x not relevant) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	INSUFFICIENT INFORMATION (insufficient information x not relevant) Based on CCS.MedLumVen and SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN	NOT SENSITIVE (tolerant x not relevant) Based on SpnMeg biotope sensitivity assessment within MarLIN	INSUFFICIENT INFORMATION (insufficient information x not relevant) Based on CR.MCR.EcCr.FaAICr.Po biotope sensitivity assessment within MarLIN	INSUFFICIENT INFORMATION (insufficient information x not relevant) Based on LS.LSa.MoSa.AmSco.Eur biotope sensitivity assessment within MarLIN	NOT RELEVANT Based on LR.FLR.Eph.Ent biotope sensitivity assessment within MarLIN
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		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	Representative Biotopes SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	Representative Biotopes SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.Spnmeg	Representative Biotopes SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	Representative Biotopes SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	Representative Biotopes SS.SMu.CFiMu.Spnmeg SS.SMu.CSaMu.ThyNten/ AfilNten	Representative Biotopes CR.MCR.EcCr.FaAICr	Representative Biotopes LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	Representative Biotopes LR.FLR.Eph.Ent Por
Potential operational phase impacts on the Dogger Bank cSAC	Physical disturbance and abrasion Increased SSC Smothering	As above for individual factors								
Potential operational phase impacts on the Flamborough Head SAC	Physical disturbance and abrasion Increased SSC Smothering	As above for individual factors								

