

Annex D: Costs to private and public sectors (profile of costs over 20 years) and key assumptions

This annex sets out the sector specific cost assumptions and their sources used to derive the costs of designating 41 third tranche Marine Conservation Zones (MCZs) over the 20 year IA period. The methodologies used are summarised from sections 6.10 onwards of the IA and contain links to detailed methodology papers written for the Regional MCZ Projects. Design of the methodologies involved heavy stakeholder input during previous tranches designation, including unit cost assumptions from industry, affected public agencies and other government departments. Those same assumptions have been used here but in all cases updated and the best available data is used. In addition, pre-consultation engagement has been undertaken with key organisations in relation to potential management scenarios and future developments. Where appropriate, responses and information provided has been used to inform the assessment of costs and site selection for the 3rd tranche. These costs will be further tested during formal consultation.

The potential management scenarios used to derive commercial fisheries, recreation and management costs are given in Annex A. Please note that all figures in the following tables are in 2015 prices and £m rounded to 3 decimal places. Therefore, tables may not sum exactly due to rounding. All costs that are one-off and do not repeat later in the IA period or would not repeat beyond the IA period, are considered as transitional and such costs are identified below. All other costs, including those one-off costs which repeat periodically (e.g. licence application costs) are not classed as transitional costs as they would continue to be incurred in the future.

Business Costs:

Aggregates: Best Estimate and Low estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Licence application costs (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.028	0.000	0.000	0.000	0.000	0.000	0.114	0.006
Total (£m)	0.000	0.085	0.028	0.000	0.000	0.000	0.000	0.000	0.114	0.006												
Present value costs (£m)	0.000	0.055	0.018	0.000	0.000	0.000	0.000	0.000	0.072	0.004												
Assumptions: Costs are based on additional assessment costs for considering impacts of aggregate activities on the conservation objectives of MCZ broad-scale habitats on a site specific basis. In 2011 the cost per future licence application was provided by the British Marine Aggregate Producers Association (BMAPA, pers. comm. 2011). For tranche 3 this has been updated by inflation with the ONS GDP deflator to 2015 prices equating to £0.028m. The Crown Estate (pers. comm. Feb 2017) and BMAPA (pers. comm. Feb 2017) identified that 4 licence applications for existing production or option areas within 1km of proposed sites are due for renewal. 3 are due for renewal in 2032 (£0.028m x 3 = £0.085m) and 1 in 2033 (£0.028m), giving a undiscounted total of £0.028m + £0.085m = £0.114m																						

Aggregates: High Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Licence application costs (£m)	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.004
Total (£m)	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.085	0.004													
Present value costs (£m)	0.000	0.000	0.000	0.000	0.000	0.072	0.000	0.072	0.004													

Assumptions: The costs are based on additional one-off costs for licence applications in strategic resource areas that overlap with or are in close proximity to T3 MCZs during the 20 year period covered by the IA. The Crown Estate (pers. comm. Feb 2017) and BMAPA (pers. comm. Feb 2017) anticipate that additional costs will be incurred for 3 licence applications, during the 20 year period of the IA, with a cost of £0.028m per licence (unit cost used is the same as best estimate). It is assumed that the additional cost will be incurred in 2024 as indicated by The Crown Estate (pers. comm. Feb 2017) equating to a cost of 3 x £0.028m = £0.085m. All other costs associated with this scenario are baseline costs as they relate to the existence of an MCZ network rather than the 3rd tranche specifically. Assumptions used for the high estimate (i.e. costs in strategic resource areas) means that site specific high cost estimate is not available.

Cables: Best Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Licence costs for all regions within 12nm (£m)	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.043	0.002
Total (£m)	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.011	0.043	0.002
Present value costs (£m)	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.006	0.029	0.001

For the tranche 1 IA, the UK cable protection committee (UKCPC) estimated the additional cost to an operator of assessing the impacts of a future cable installation on broad-scale habitats protected by a MCZ to be £0.010m, for each future cable installation. This unit cost was uprated by inflation using the GDP deflator from 2011 to 2015 for the Tranche 3 IA; this gives the additional cost of £0.011m per licence. Costs are assumed to occur for cables that cross an MCZ within 12nm of the shoreline, but not those that are wholly beyond 12nm as they do not require a licence or EIA. As it is not known where or when new telecoms and interconnector cables will occur, regional rather than site specific estimates are provided and potential licence applications was agreed with the UKCPC. The best estimate assumes that 4 cables license applications will incur an additional cost at the end of every 5 year period across all regions over the 20 year IA period. This calculates the costs from the 127 regional MCZ project sites proposed in 2011 (99 inshore sites). Hence this is then scaled down by 25.3% to estimate the cost for the 25 recommended inshore regional MCZ project sites in the 3rd tranche (25/99 = 25.3%), resulting in a cost of £0.011 every 5 years x 4 cables x 25.3% = 0.011 every 5 years (total £0.043). As the estimates of licence numbers by region were developed based only on the regional MCZ project sites, the new option sites are not included in this cost calculation. Nevertheless the additional cost from these sites are expected to be minimal, hence it was seen as disproportionate to repeat the original analysis to include the new option sites. These assumption will be tested at consultation.

Cables: Low Costs Estimates																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
License costs for all regions within 12nm (£m)	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.021	0.001
Total (£m)	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.021	0.001
Present value costs (£m)	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.003	0.015	0.001
Assumptions: Unit cost assumptions and scaling are the same as the best estimate described above. The low cost estimate assumes that 0.5 licence applications, in each of the 4 regions, will incur an additional cost at the end of every 5 years period (i.e. 8 across all regions over the 20 year IA period), scaled down this results in a cost of £0.011m x 2 x 25.3% = £0.005m every 5 year.																						

Cables: High Costs Estimates																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
License costs for all regions within 12nm (£m)	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.064	0.003
Total (£m)	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.016	0.064	0.003
Present value costs (£m)	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.008	0.044	0.002
Assumptions: Unit cost assumptions and scaling are the same as the best estimate described above. The high cost estimate assumes that 1.5 cables, in each of the 4 regions, will incur an additional cost at the end of every 5 years period (i.e. 24 across all regions over the 20 year IA period), scaled down this results in a cost of £0.011m x 6 x 25.3% = 0.016 every 5 years																						

Commercial fisheries (UK): Best Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Gross Value Added lost	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	0.109	2.187	0.109
Total (£m)	0.109	2.187	0.109																			
Present value costs (£m)	0.109	0.106	0.102	0.099	0.095	0.092	0.089	0.086	0.083	0.080	0.078	0.075	0.072	0.070	0.068	0.065	0.063	0.061	0.059	0.057	1.608	0.080

Assumptions: Costs arise when management of some fishing activities change due to the designation of an MCZ relative to baseline management. Gear types affected and management required are specific to the site and the feature which the MCZ is designated to protect. For example, if a feature is sensitive to static gears, such as pots and trapping, then the management scenario is likely to require restriction to the particular gear implying landings from the gear will be affected. The management scenarios are site specific (provided in Annex A) and are based on the sensitivity of features to different gear types and whether a feature has a 'maintain' or 'recover' General Management Approach (GMA) as discussed in the main body of the IA. Actual management chosen is a regulator decision (MMO and IFCAs) and this IA contains a range of illustrative examples for each site. Although costs are calculated on the basis of year of designation (2019), in reality regulators could take up to 2 years to impose management measures as any bye-law must go through due process and may have its own impact assessment. However, as it is not known in which year measures will be in place for a particular site, costs are conservatively calculated from a 2019 basis, which may lead to a potential over estimate.

Estimates of the value of landings taken from each MCZ by the UK fleet between 2010 and 2014 were generated using IFCA sightings data for the under 15m fleet and satellite VMS data for the over 15m fleet. It provides information on the spatial distribution of the value of landings by broad-scale gear types 'static' and 'mobile'. For the purposes of the IA and in the absence of further information, it is assumed that mobile gears are bottom abrading (i.e. bottom trawls and dredges) which is likely to lead to an overestimate of costs on the sector, since some will be midwater gears that are unlikely to be affected by management.

These estimates of fishing revenues are converted into Gross Added Value (GVA) using average Seafish multipliers for each gear type 'mobile' and 'static'. This is based on 2010-2014 Seafish Fleet Economic Survey data on industry revenues and costs. GVA ratio is the percentage of revenue that constitutes GVA and for mobile it is assumed to be 39% and static 48%.

The best estimate is the 50th percentile, i.e. the mid-point of the range of management scenarios, for mobile gear types where they were considered equally likely to be imposed and the 25th percentile, i.e. at the lower end of the range of management scenarios, for static gear types where the high cost scenario is considered unlikely. The default of 75% displacement (and 25% loss in GVA) of fishing activity is based on low overlap of the MCZs with core fishing grounds for the best estimate. Fishing revenues for each site were sense checked with local IFCAs and the MMO. Although this displacement assumption did not receive significant challenge for the first and second tranche IAs, all assumptions will be tested at consultation and figures refined as necessary.

Summary for best scenario:
Cost for gear type = baseline landings value x best estimate management scenario assumption x displacement assumption where only 25% of landings will be lost x GVA as proportion of landings (more information on how the costs are derived are provided in this Annex D spreadsheet)

Commercial fisheries (UK): Low Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Gross Value Added lost	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total (£m)	0.000																					
Present value costs (£m)	0.000																					

Low scenario assumes no additional management therefore cost to the fisheries sector is zero

Commercial fisheries (UK): High Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Gross Value Added lost	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	18.315	0.916
Total (£m)	0.916	18.315	0.916																			
Present value costs (£m)	0.916	0.885	0.855	0.826	0.798	0.771	0.745	0.720	0.695	0.672	0.649	0.627	0.606	0.586	0.566	0.547	0.528	0.510	0.493	0.476	13.470	0.674

Assumptions: The GVA for each site is calculated using the same method as the best estimate. High cost scenario is the highest potential management scenario (detailed in Annex A for each site), This scenario assumes no displacement of fishing to other areas, i.e. 100% of overlapping fishing GVA is lost.

Summary for best scenario:

Cost for gear type = baseline landings value x high estimate management scenario assumption x GVA as proportion of landings (more information on costs calculation is provided in this Appendix D spreadsheet)

Oil and Gas and CCS: Best Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional costs to future applications in Licensed 26th	0.209	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.172	0.059
Additional cost to decommissioning licences (£m)	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.046	0.002
Additional costs to future CCS apps. (£m)	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.200	0.010
Additional costs to future applications in Licensed 27th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.016
Additional costs to future applications in Licensed 28th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Additional costs to future applications in Licensed 29th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.002
Total Costs (£m)	0.209	0.000	0.000	0.050	0.012	0.000	0.000	0.050	0.000	1.329	0.000	0.050	0.000	0.000	0.012	0.050	0.000	0.000	0.000	0.012	1.773	0.089
Present value costs (£m)	0.209	0.000	0.000	0.045	0.010	0.000	0.000	0.039	0.000	0.975	0.000	0.034	0.000	0.000	0.007	0.030	0.000	0.000	0.000	0.006	1.356	0.068
<p>Assumptions: All costs to this sector are based on additional costs from appropriate assessments of environmental impacts of future oil and gas and CCS developments. There are 8 phases during application process (1. survey, 2. drilling exploration, 3. actual drilling, 4. development, 5. operation, 6. maintenance, 7. decommission and 8. post closure monitoring). All unit costs were updated using the GDP deflator from 2011 (base price year for the Tranche 1 IA) to 2015 (base price year for the Tranche 3 IA) following consultation with DECC (Pers. Comm. 2016); For phase 1, 6 and 7 the costs are £0.002m each; for phases 2, 3 and 4 this increases to £0.004m each; for phase 5 this is £0.021m. Phase 8 costs are not expected to take place within the 20yr IA period and so are not included in calculations. Costs were calculated based on phases of the application process.</p> <p>The number of applications that will be submitted during the 20 year IA period will be dependent on the number of blocks offered during oil and gas licencing rounds, and the stages of development that are carried out in each of those blocks over the 20 year IA period.</p> <p>Hence the number of future licence applications was estimated based on: the number of blocks offered in the 26th oil and gas licencing round; The known status of blocks offered in the 26th oil and gas licencing round; The number of blocks offered in the 27th, 28th and 29th oil and gas licencing round that provided additional acreage to those offered in the 26th round; the expected number of future CCS applications and the expected decommissioning licence applications. The Tranche 3 IA used the same scenario and assumptions as for the Tranche 1 and 2 IAs, but with some changes regarding the assumptions behind each round since it was important to take account of the phases that are likely to take place during 20 year period of this IA. These were sent to the Oil and Gas Authority for approval but no response was received in time. However they will be further tested during consultation.</p>																						

The scenario summarised below calculates costs for the potential whole suite of MCZs, as the costs are not site-specific. Costs were then scaled down from to be proportion to the sites proposed in 3rd tranche (25%).

For the 26th round it is assumed that 50% of applicants for block awarded in the 26th round with discovery incur no cost as it is assumed that Phases 1, 2 and 3 would have already occurred (i.e. they are sunk costs). For the remaining 50% of these blocks, assumed that these blocks will incur an additional cost in Phases 4, 5 and 6 in 2019 (£0.004m + £0.002m + £0.021m = £0.027m per application). The estimated number of oil and gas applications in licenced 26th round blocks with discovery is 1 in 2019. Therefore for the full network of MCZs the relevant cost calculation is (£0.027m x 1 x 50%) = £0.014m in 2019. For blocks awarded in the 26th round without discovery 50% will complete phase 3 (£0.004m per application) whilst the other 50% will complete phase 3 and 4 (£0.004m x 2 = £0.008m). The estimated number of oil and gas applications in licenced 26th round block without discovery is 130 in 2019. Therefore for all regional MCZ project sites the relevant cost calculation is (£0.004m x 130 x 50%) + (£0.008m x 130 x 50%) = £0.823m in 2019. This is scaled down 2/8 = 25% to account for the 3rd tranche only, as 2 of the 8 sites which are the nearest environmentally sensitive area to blocks on offer as part of the 26th round are proposed for designation as part of the 3rd tranche. This results in costs of £0.014m + £0.823m = £0.837m x 25% = £0.209m in 2019.

For the 26th round it is assumed that 50% of applications for round blocks not awarded in the 26th round with discovery will complete phases 2 and 3 (£0.004m x 2 = £0.008m per application) and the remaining 50% will complete phases 2, 3, 4 and 5 (£0.004m x 3 + £0.021m = £0.034m per application). The estimated number of oil and gas applications in licenced 26th round blocks with discovery that are not awarded is 54 in 2028. Therefore the relevant cost calculation is (£0.008m x 54 x 50%) + (£0.034m x 54 x 50%) = £1.139m in 2028. For blocks not awarded in the 26th round without discovery it is assumed all will complete phases 1, 2 and 3 (£0.002m + £0.004m x 2 = £0.011m per application). The estimated number of oil and gas applications in licenced 26th round blocks without discovery that are awarded is 257 in 2028. Therefore the relevant cost calculation is £0.011m x 257 = £2.711m in 2028. As above this is scaled down to 2/8 = 25% to capture the cost for the 3rd tranche only. This results in costs of £1.139m + £2.711m = £3.851m x 25% = £0.963m in 2028.

For decommissioning licence applications, it is assumed that 50% of 175 fields currently in production will incur additional assessment costs in the 20 year IA period and applicants will complete phase 7 at the cost of £0.002m per application it is assumed that 175 x 50% / 4 = 22 decommissions take place every 5 years occurring in the years 2023, 2028, 2033 and 2038. This results in 22 x £0.002m = £0.045m in each of those years. This is scaled down to 25% as with the 26th round, resulting in a cost of £0.045m x 25% = £0.012m in 2023, 2028, 2033 and 2038. For carbon capture and storage, it is assumed that applicants will complete phases 1 to 8 in the 20 year period resulting in a cost of £0.002m x 3 + £0.004m x 3 + £0.021m = £0.040m per application. It is assumed that there will be 20 CCS applications over the 20 year period, with 5 in 2022, 5 in 2026, 5 in 2030 and 5 in 2034 resulting in a cost of £0.021m x 5 = £0.200m for those years. This is scaled down to 25% as with the 26th round, resulting in costs of £0.200m x 25% = £0.050m in 2022, 2026, 2030, and 2034.

In the 27th, 28th and 29th round it is assumed that applicants will complete phases 1 – 3 in the 20 year IA period resulting in costs of £0.002m + £0.004m x 2 = £0.010m per application. There are 123 27th round blocks on offer which give additional acreage compared to acreage in the 26th round, this results in a cost of £0.010m x 123 = £1.298m in 2028. This is scaled down to 13/54 = 24.1% to account only for the 3rd tranche, as 13 of the 54 sites which are the nearest environmentally sensitive area to blocks on offer as part of the 27th round are proposed for designation as part of 3rd tranche. The results in costs of £1.298m x 24.1% = £0.312m in 2028. There are 34 28th round blocks on offer which give additional acreage compared to acreage in the 26th round. However, the sites proposed for designation in the 3rd tranche are not the nearest environmental sensitive area to blocks on offer in the 28th round and so there are no attributable costs to the third tranche. There are 20 29th round blocks on offer which give additional acreage compared to acreage in the 26th round, this results in a cost of £0.010m x 20 = £0.211m in 2028. This is scaled down to 1/5 = 20% to account only for the 3rd tranche, as 1 of the 5 sites which are the nearest environmentally sensitive area to blocks on offer as part of the 29th round are proposed for designation as part of third tranche. The results in costs of £0.211m x 20% = £0.042m in 2028.

This analysis only takes into account the sites proposed as part of the regional MCZ projects, consequently the new options developed specifically for the 3rd tranche have not been included in the cost calculation. However the additional cost due to these sites are expected to be minimal, hence it was considered to be disproportionate to repeat the analysis to include these sites. These assumptions will be tested at consultation.

Oil and Gas and CCS: High Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional costs to future applications in Licensed 26th	0.313	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.373	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.686	0.084
Additional cost to decommissioning licences (£m)	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.046	0.002
Additional costs to future CCS apps. (£m)	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.200	0.010
Additional costs to future applications in Licensed 27th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.016
Additional costs to future applications in Licensed 28th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Additional costs to future applications in Licensed 29th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.002
Total Costs (£m)	0.313	0.000	0.000	0.050	0.012	0.000	0.000	0.050	0.000	1.739	0.000	0.050	0.000	0.000	0.012	0.050	0.000	0.000	0.000	0.012	2.287	0.114
Present value costs (£m)	0.313	0.000	0.000	0.045	0.010	0.000	0.000	0.039	0.000	1.276	0.000	0.034	0.000	0.000	0.007	0.030	0.000	0.000	0.000	0.006	1.761	0.088

Based on advice provided by DECC (Pers. Comm. 2012), the high cost estimate is calculated using an estimate of the total number of future licence applications in blocks in the 26th Round with a discovery that is 25% higher than that used for the best estimate. For the remaining blocks, the total number of future licence applications is assumed to be 50% higher than the number used to calculate the best estimate. Therefore:

For the 26th round it is assumed that 50% of applicants for block awarded in the 26th round with discovery incur no cost as it is assumed that Phases 1, 2 and 3 would have already occurred (i.e. they are sunk costs). For the remaining 50%, it is assumed that these blocks will incur an additional cost in Phases 4, 5 and 6 in 2019 (£0.004m + £0.002m + £0.021m = £0.027m per application). The estimated number of oil and gas applications in licenced 26th round blocks with discovery is 1.25 in 2019. Therefore the relevant calculation is (£0.027m x 1.25 x 50%) = £0.017m in 2019. For blocks awarded in the 26th round without discovery 50% will complete phase 3 (£0.004m per application) and the other 50% will complete phase 3 and 4 (£0.004m x 2 = £0.008m). The estimated number of oil and gas applications in licenced 26th round block without discovery is 195 in 2019. Therefore the relevant calculation is (£0.004m x 195 x 50%) + (£0.008m x 195 x 50%) = £1.234m in 2019. This is scaled down to 2/8 = 25% as 2 of the 8 sites which are the nearest environmentally sensitive area to blocks on offer as part of the 26th round are proposed for designation as part of the 3rd tranche. This results in costs of £0.017 + 1.234m = £1.251m x 25% = £0.313m in 2019.

For the 26th round it is assumed that 50% of Applications for round blocks not awarded in the 26th round with discovery will complete phases 2 and 3 (£0.004m x 2 = £0.008m per application) and the remaining 50% will complete phases 2, 3, 4 and 5 (£0.004m x 3 + £0.021m = £0.034m per application). The estimated number of oil and gas applications in licenced 26th round blocks with discovery that are not awarded is 68 in 2028. Therefore the relevant calculation is

$(£0.008m \times 68 \times 50\%) + (£0.011m \times 68 \times 50\%) = £1.424m$ in 2028. For blocks not awarded in the 26th round without discovery it is assumed all will complete phases 1, 2 and 3 ($£0.002m + £0.004m \times 2 = £0.011m$ per application). The estimated number of oil and gas applications in licenced 26th round blocks without discovery that are awarded is 386 in 2028. Therefore the relevant calculation is $£0.011m \times 386 = £4.067m$ in 2028. As above this is scaled down to 2/8 = 25% to account only for the 3rd tranche. This results in costs of $£1.424m + £4.067m = £5.491m \times 25\% = £1.373m$ in 2028.

Additional cost attributed to future licence applications in the 27th, 28th and 29th rounds, decommissioning and carbon capture and storage are as described in the estimate best estimate.

Oil and Gas and CCS: Low Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional costs to future applications in Licenced 26 th	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.383	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.489	0.024
Additional cost to decommissioning licences (£m)	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.012	0.046	0.002
Additional costs to future CCS apps. (£m)	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.200	0.010
Additional costs to future applications in Licenced 27 th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.312	0.016
Additional costs to future applications in Licenced 28 th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Additional costs to future applications in Licenced 29 th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.002
Total Costs (£m)	0.105	0.000	0.000	0.050	0.012	0.000	0.000	0.050	0.000	0.749	0.000	0.050	0.000	0.000	0.012	0.050	0.000	0.000	0.000	0.012	1.090	0.054
Present value cost (£m)	0.105	0.000	0.000	0.045	0.010	0.000	0.000	0.039	0.000	0.550	0.000	0.034	0.000	0.000	0.007	0.030	0.000	0.000	0.000	0.006	0.827	0.041

Based on advice provided by DECC (Pers. Comm. 2012), the low cost estimate is calculated using an estimate of the total number of future licence applications in blocks in the 26th Round with a discovery that is 25% lower than that used for the best estimate. For the remaining blocks, the total number of future licence applications is assumed to be 50% less than the number used to calculate the best estimate. Therefore:

For the 26th round it is assumed that 50% of applicants for block awarded in the 26th round with discovery incur no cost as it is assumed that Phases 1, 2 and 3 would have already occurred (i.e. they are sunk costs). For the remaining 50%, it is assumed that these blocks will incur an additional cost in Phases 4, 5 and 6 in 2019 (£0.004m + £0.002m + £0.021m = £0.027m per application), and for blocks awarded in the 26th round without discovery 50% will complete phase 3 (£0.004m per application) and the other 50% will complete phase 3 and 4 (£0.004m x 2 = £0.008m). The estimated number of oil and gas applications in licenced 26th round blocks with discovery is 0.75 in 2019. Therefore the relevant calculation is (£0.027m x 0.75 x 50%) = £0.010m in 2019. The estimated number of oil and gas applications in licenced 26th round block without discovery is 65 in 2019. Therefore the relevant calculation is (£0.004m x 65 x 50%) + (£0.008m x 65 x 50%) = £0.411m in 2019. This is scaled down to 2/8 = 25% to account only for the 3rd tranche, as 2 of the 8 sites which are the nearest environmentally sensitive area to blocks on offer as part of the 26th round are proposed for designation as part of the 3rd tranche. This results in costs of £0.010 + £0.411m = £0.422m x 25% = £0.105m in 2019.

For the 26th round it is assumed that 50% of Applications for round blocks not awarded in the 26th round with discovery will complete phases 2 and 3 (£0.004m x 2 = £0.008m per application) and the remaining 50% will complete phases 2, 3, 4 and 5 (£0.004m x 3 + £0.021m = £0.034m per application). The estimated number of oil and gas applications in licenced 26th round blocks with discovery that are not awarded is 41 in 2028. Therefore the relevant calculation is (£0.008m x 41 x 50%) + (£0.011m x 41 x 50%) = £0.855m in 2028. For blocks not awarded in the 26th round without discovery it is assumed all will complete phases 1, 2 and 3 (£0.002m + £0.004m x 2 = £0.011m per application). The estimated number of oil and gas applications in licenced 26th round blocks without discovery that are awarded is 129 in 2028. Therefore the relevant calculation is £0.011m x 129 = £0.678m in 2028. As above this is scaled down to 2/8 = 25% to account only for the 3rd tranche. This results in costs of £0.855m + £0.678m = £1.532m x 25% = £0.383m in 2028.

Additional cost attributed to future licence applications in the 27th, 28th and 29th rounds, decommissioning and carbon capture and storage are as described in the estimate best estimate.

Ports and Harbours: Best Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Cost to update assessment of environmental impact in future licence applications for navigational dredging only, incurred to ports within 5km of an MCZ that do not have a MDP.	0.061	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.430	0.021
Cost to update assessment of environmental impact incurred to ports within 5km of an MCZ that do have a MDP for navigational dredging only.	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.054	0.003
Total additional costs in future licence applications for all other port activities	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	1.802	0.090
Total (£m)	0.205	0.090	0.090	0.152	0.090	2.286	0.114															
Present value costs (£m)	0.205	0.087	0.084	0.137	0.079	0.076	0.123	0.071	0.068	0.111	0.064	0.062	0.100	0.058	0.056	0.090	0.052	0.050	0.082	0.047	1.702	0.085

Assumptions: Additional costs will be incurred for future licence applications for navigational dredging areas, disposal sites and port developments within 5km of an MCZ.

There is a one off transitional cost in 2019 for ports that have a maintenance dredge protocol (MDP) for navigational dredging of £0.054m which is based on the midpoint of Option 1A, where it is assumed that approximately 30% of ports within 5km (3 ports) have a cost of £0.009m x 3 = £0.027m with rounding, and Option B, where it is assumed that approximately 55% of ports within 5km (9 ports) have a costs of £0.009m x 9 = £0.081m with rounding. So (£0.027 + £0.081) / 2 = £0.054m in 2019. In addition, there is a cost of £0.007m per future licence application for those ports not covered by MDPs within 5km of MCZs and this applies to (70% + 45%) / 2 = 57.5% of applications for the best estimate. It is assumed that a navigational dredge licence renews every 3 years and there are 15 navigational dredge licences at MCZs proposed for designation in the 3rd tranche. Cost from all 15 licences occur every three years from 2019 onwards resulting in costs of 15 x £0.007m x 57.5% = £0.061m in those years.

For most disposal site applications that incur a cost, the unit costs was assumed to be £2,250, however every 6 years the cost will be greater, estimated at £6,750, in order to take into account that SNCBs on average produce an updated detailed baseline every 6 years. As it is not known in which year the detailed baseline will be updated for particular MCZs, the average cost of (£0.006750m + (5 x 0.002250))/6 = £0.003m (uprated to 2015 prices) is used as the unit cost for each application

The additional cost for disposal of dredged material at sea is £0.040m each year of the 20 year period if the IA, this is based on the estimated number future application for disposal sites within 5km of a MCZ (or within a MCZ). The estimate of the future number of applications is calculated on a site by site basis, based on the average number of disposal site license applications per year over the period 2006-2015 (Cefas, pers. Comm 2017). In this scenario an individual applicant will incur a maximum of one additional cost per calendar year. Additionally only one additional cost per disposal site is allowed for the total costs (irrespective of number of MCZs within 5km), consequently any duplication of costs have been removed. Therefore on average there were 12.6 applications per year within 5km of a MCZ recommended for designation for the third tranche of MCZ, equating to a cost of 12.6 x £0.003m = £0.040m

Costs for port development additional licence application costs are £0.007m per application (same unit cost as navigational dredging unit cost). It is assumed that each region will have some form of development over the 20 year IA period. The number of future port developments is based on MMO data on the number of licence applications received for port developments in each region over 2011 – 2013, for all regions the average number of applications was 56 per year. The assumption is that 50% of ports will incur this cost, this means for the full MCZ network there are 28 possible applications per year within 5km of an MCZ. Scaled down to 25% to represent the 3rd tranche of MCZs, consequently 7 proposed sites are expected to incur this costs for 1 application each years. This results in a cost of 7 x £0.007m = £0.050m. The sum of the cost for ports developments and disposal sites give a total of £0.050 + £0.040m = £0.090m per year

It is assumed that no mitigation will be required for sites proposed for designation in the 3rd tranche, this assumption will be tested at consultation.

Ports and Harbours: High Estimate (Option 2a)																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Cost to update assessment of environmental impact in future licence applications for navigational dredging only, incurred to ports within 5km of an MCZ that do not have a MDP.	0.075	0.000	0.000	0.075	0.000	0.000	0.075	0.000	0.000	0.075	0.000	0.000	0.075	0.000	0.000	0.075	0.000	0.000	0.075	0.000	0.523	0.026
Cost to update assessment of environmental impact incurred to ports within 5km of an MCZ that do have a MDP for navigational dredging only.	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.001
Total additional costs in future licence applications for all other port activities	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298	0.298
Total (£m)	0.400	0.298	0.298	0.373	0.298	6.512	0.326															
Present value costs (£m)	0.400	0.288	0.278	0.336	0.260	0.251	0.303	0.234	0.226	0.274	0.211	0.204	0.247	0.191	0.184	0.223	0.172	0.166	0.201	0.155	4.804	0.240
<p>Assumptions: Additional costs will be incurred for future licence applications for navigational dredging areas, disposal sites and port developments within 5km of an MCZ. There is a one off transitional cost in 2019 for ports that have a maintenance dredge protocol (MDP) for navigational dredging of £0.027m which is Option 2a, where it is assumed that approximately 30% of ports within 5km (3 ports) have a costs of £0.009m x 3 = £0.027m with rounding. In addition, there is a cost of £0.007m per future licence application for those ports not covered by MDPs within 5km of MCZs and this applies to 70% of applications for the low estimate. It is assumed that a navigational dredge licence renews every 3 years and there are 15 navigational dredge licences at MCZs proposed for designation in the 3rd tranche. Cost from all 15 licences occur every three years from 2019 onwards resulting in costs of 15 x £0.007m x 70% = £0.075m in those years.</p> <p>For the disposal sites within 5km of a proposed MCZ, it is assumed that every application will incur an additional cost to consider potential effects on MCZ broad scale habitats, regardless of whether they include multiple applications by the same applicant, this equates 34.8 applications and a total cost of £0.007m x 34.8 = £0.248m per year</p> <p>Port development is as described in the best estimate. The sum of the cost for ports developments and disposal sites give a total of £0.050m + £0.248m = £0.298m per year</p>																						

Ports and Harbours: Low Estimate (option 1b)																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Cost to update assessment of environmental impact in future licence applications for navigational dredging only, incurred to ports within 5km of an MCZ that do not have a MDP.	0.048	0.000	0.000	0.048	0.000	0.000	0.048	0.000	0.000	0.048	0.000	0.000	0.048	0.000	0.000	0.048	0.000	0.000	0.048	0.000	0.336	0.017
Cost to update assessment of environmental impact incurred to ports within 5km of an MCZ that do have a MDP for navigational dredging only.	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.004
Total additional costs in future licence applications for all other port activities	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	1.802	0.090
Total (£m)	0.219	0.090	0.090	0.138	0.090	2.220	0.111															
Present value costs (£m)	0.219	0.087	0.084	0.125	0.079	0.076	0.112	0.071	0.068	0.101	0.064	0.062	0.091	0.058	0.056	0.082	0.052	0.050	0.074	0.047	1.659	0.083
<p>Assumptions: Additional costs will be incurred for future licence applications for navigational dredging areas, disposal sites and port developments within 5km of an MCZ. There is a one off transitional cost in 2019 for ports that have a maintenance dredge protocol (MDP) for navigational dredging of £0.081m which is Option 1B, where it is assumed that approximately 55% of ports within 5km (9 ports) have a costs of £0.009m x 9 = £0.081m with rounding. In addition, there is a cost of £0.007m per future licence application for those ports not covered by MDPs within 5km of MCZs and this applies to 45% of applications for the low estimate. It is assumed that a navigational dredge licence renews every 3 years and there are 15 navigational dredge licences at MCZs proposed for designation in the 3rd tranche. Cost from all 15 licences occur every three years from 2019 onwards resulting in costs of 15 applications x £0.007m x 45% = £0.048m in those years.</p> <p>Disposal of dredged material at sea and Port development is as described in the best estimate</p>																						

Recreation: Best Estimate

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional cost from management scenarios	0.138	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.122	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	1.867	0.093
Total (£m)	0.138	0.089	0.122	0.089	1.867	0.093																
Present value costs (£m)	0.138	0.086	0.083	0.080	0.078	0.075	0.073	0.070	0.068	0.065	0.087	0.061	0.059	0.057	0.055	0.053	0.051	0.050	0.048	0.046	1.385	0.069

Assumptions: Costs arise when management of some recreation activities change due to the designation of an MCZ relative to baseline management. The best estimate is the mid-point between the low and high cost scenarios. (Studland Bay and Bembridge are the only MCZ proposed sites in tranche 3 bearing costs). This results in the cost of (£0.095m + £0.181m)/2 = £0.138m for the first year and (£0.007m + £0.171m)/2 = £0.089m for each of the remaining 19 years of the 20 year IA.

Recreation: High Cost Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional cost from management scenarios	0.181	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	3.434	0.172
Total Costs (£m)	0.181	0.171	3.430	0.172																		
Present value costs (£m)	0.181	0.165	0.160	0.154	0.149	0.144	0.139	0.134	0.130	0.125	0.121	0.117	0.113	0.109	0.106	0.102	0.099	0.095	0.092	0.089	2.526	0.126

Assumptions: High cost scenario is the highest potential management scenario. Management scenarios are site specific (provided in Annex A). Under this scenario there are additional costs due to the management in Bembridge and Studland bay. Management in Bembridge results in a one of cost of £0.010m in 2019, due to the resitting of moorings. Management in Studland bay results in an annual cost of £0.171m per year, due to the loss in GVA to the local economy.

Recreation: Low Cost Estimate

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Additional cost from management scenarios	0.095	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.074	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.300	0.015
Total Costs (£m)	0.095	0.007	0.074	0.007	0.300	0.015																
Present value costs (£m)	0.095	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.005	0.052	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.242	0.012
Assumptions: Low cost scenario is the lowest potential management scenario. Management scenarios are site specific (provided in Annex A). Under this scenario there are additional costs due to the management in Studland bay. The management results in costs from the installation, operational and maintenance of eco-mooring.																						

Renewables: Best Estimate (Low and High)																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
wave & tidal one-off costs	0.000	0.022	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.013	0.000	0.095	0.005
Total costs (£m)	0.000	0.022	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.013	0.000	0.095	0.005
Present value costs (£m)	0.000	0.021	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.007	0.000	0.073	0.004
Assumptions: for wind energy operators it is assumed that costs would be occur via additional application costs to consider the impacts upon broad-scale habitats. This is assumed to apply to proposed developments that spatially overlap with proposed MCZs or are 'near to' MCZs (as per MMO guidance) defined here as within 1km of an MCZ. The crown estate did not identify any wind development proposals to incur additional cost during the 20 year IA period.																						
For wave and tidal energy, the additional one-off licence cost is calculated from the estimated additional assessment costs of £0.014m per MCZ (uprated 2015 price) based on 8 developer estimates and £0.005m (uprated 2015 price) per MCZ broad scale habitat based on an estimate from Scottish Power (pers. comm. 2011). This is weighted appropriately per site to get an average cost ((£0.005m x number of broad scale habitats proposed for designation + £0.014m x 8) / 9) leading to slightly different application costs per site depending on the number of broad scale habitats designated. The number of applications during the 20 year period, was predicted for each potential wave and tidal development area by BEIS (formally DECC) (per. Comms. 2011) for those that overlap or are within 1km of a proposed MCZ. Where more than one wave or tidal development is expected to take place within the same potential development area in the same year, it is assumed that the cost is equal to the average of these costs.																						
There is expected to be a 2 applications for wave developments located within the same development during 2023, 2028 and 2033 resulting in a cost of (£0.015m + £0.013m)/2 = £0.014m for those years. For tidal developments these is expected to be 1 application in 2020 with a cost of £0.022m, 2 applications within the same potential development area in 2028 resulting in a cost of (£0.023m + £0.013m)/2 = £0.018m and 1 application in 2037 with a cost of £0.013m.																						
No developments are expected to face mitigation costs as a result of MCZs, hence there is no sensitivity analysis for wind, wave and tidal developments. This assumption will be tested at consultation.																						

Public Costs:

National Defence: Best Estimate (also low and high)																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
One-off transitional costs for adjustment of electronic tools and charts (£m)	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000
Annual Costs for maintenance of electronic tools and charts and costs to mitigate impacts of activity (£m)	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.057	0.003
Total costs (£m)	0.010	0.004	0.004	0.004	0.003	0.067	0.003															
Present value costs (£m)	0.010	0.004	0.004	0.004	0.002	0.001	0.001	0.001	0.001	0.049	0.002											
<p>Assumptions: The Ministry of Defence provided costs and assumptions for the impact of MCZs on national defence and this was updated in January 2017 (Ministry of Defence. pers. comm. 2017). As it is not known where military activities will take place costs were estimated for the 127 regional MCZ project sites then scaled down by 23.6% to represent the cost of the regional MCZ project sites in the 3rd tranche (30/127). The MoD estimate that the transitional cost of adjusting electronic tools and charts for the whole network is £0.026m based on officer time and overheads, the cost scaled down for the 3rd tranche only is £0.026m x 23.6% = £0.006m in 2019, which is a transitional cost. Annual costs are for maintenance of charts and mitigation of activities on MCZs which, based on officer time and technical inputs by UK Hydrographic Office. For all regional MCZ project sites this results in a cost of £0.017m per year for the first 4 years and £0.011m per year thereafter. Scaled down to account for the 3rd tranche only results in a cost of £0.017m x 23.6% = £0.004m per year for the first 4 years, and £0.011m x 23.6% = £0.003m per year thereafter. As the costs provided by the Mod were based only on the 127 regional project sites, the new option sites are not included in this cost calculation. Nevertheless the additional cost is expected to be minimal, hence it was seen as disproportionate repeat the original calculation to include the new option sites. These assumptions will be tested at consultation.</p>																						

Management of the sites: Best Estimate

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
IFCA implementation of commercial fisheries and recreational management measure costs <6nm	0.144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.144	0.007
MMO implementation of recreational management measures costs <12nm	0.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.003
Defra implementation of commercial fisheries management measure costs >6nm	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.001
IFCA surveillance (not enforcement) of commercial fisheries and recreational angling management measure costs <6nm	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	0.391	7.816	0.391
MMO enforcement of recreational management measure costs <12nm, and commercial fisheries >6nm	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	1.084	21.686	1.084
MMO administration costs	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	1.585	0.079
Total Costs (£m)	1.783	1.554	31.315	1.566																		
Present value costs (£m)	1.783	1.502	1.451	1.402	1.355	1.309	1.264	1.222	1.180	1.140	1.102	1.065	1.029	0.994	0.960	0.928	0.896	0.866	0.837	0.809	23.093	1.155

Assumptions: The best estimate is the mid-point between the low and high cost scenarios for management and enforcement of MCZs. See below for low and high specific assumptions.

Management of the sites: Low Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
IFCA implementation of commercial fisheries and recreational management measure costs <6nm	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.004
MMO implementation of recreational management measures costs <12nm	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.002
Defra implementation of commercial fisheries management measure costs >6nm	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.001
IFCA surveillance (not enforcement) of commercial fisheries and recreational angling management measure costs <6nm	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	0.310	6.205	0.310
MMO enforcement of recreational management measure costs <12nm, and commercial fisheries >6nm	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	0.896	17.916	0.896
MMO administration costs	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	1.585	0.079
Total Costs (£m)	1.426	1.285	25.848	1.292																		
Present value costs (£m)	1.426	1.242	1.200	1.159	1.120	1.082	1.046	1.010	0.976	0.943	0.911	0.880	0.851	0.822	0.794	0.767	0.741	0.716	0.692	0.669	19.048	0.952

Assumptions: Costs to IFCA have been supplied by IFCA in different regions or where individual IFCA have not supplied information average implementation and enforcement costs provided by MMO (Pers. Comms. 2011) have been used, which have been updated to 2015 prices. For the low cost scenario the transitional IFCA implementation costs amount to £0.070m in 2019 for all IFCA, this reflects the lowest possible management scenario for each site (detailed in annex A). Annual IFCA enforcement costs (mainly surveillance in as most sites are no additional mandatory management in the low scenario) are estimated at £0.310m over all IFCA per year.

Costs to MMO are on a site by site basis based on the management scenarios and MMO assumptions which include the assumed employee time taken and other overheads to implement, administer and enforce fisheries management measures in sites beyond 6nm and sites where recreational management is a possibility (Studland bay and Bermbrigde). The MMO supplied updated unit cost for the 3rd tranche sites (MMO, pers. comm. 2017). For the low cost scenario the transitional MMO implementation costs amount to £0.045m. With the lowest management measures (recreational management and fisheries beyond 6nm) MMO estimate enforcement costs of £0.896m per year for 18 sites identified to require management in the 3rd tranche and additional administration costs of £0.079m per year.

Defra costs to implement fisheries management for MCZs outside of 6nm where it is assumed that management of fishing activities is required are assumed to be a transitional cost in 2019 of £0.025 (updated to 2015 prices).

Management of the sites: High Estimate																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
IFCA implementation of commercial fisheries and recreational management measure costs <6nm	0.218	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.218	0.011
MMO implementation of recreational management measures costs <12nm	0.072	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.004
Defra implementation of commercial fisheries management measure costs >6nm	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.001
IFCA surveillance (not enforcement) of commercial fisheries and recreational angling management measure costs <6nm	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	0.471	9.426	0.471
MMO enforcement of recreational management measure costs <12nm, and commercial fisheries >6nm	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	1.273	25.456	1.273
MMO administration costs	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	1.585	0.079
Total Costs (£m)	2.139	1.823	36.783	1.839																		
Present value costs (£m)	2.139	1.762	1.702	1.645	1.589	1.535	1.483	1.433	1.385	1.338	1.293	1.249	1.207	1.166	1.126	1.088	1.052	1.016	0.982	0.948	27.137	1.357

Assumptions: Costs to IFCA have been supplied by IFCA in different regions or where individual IFCA have not supplied information average implementation and enforcement costs provided by MMO (Pers. Comms. 2011) have been used, which have been uprated to 2015 prices. The high cost scenario the transitional IFCA implementation costs amount to £0.218m in 2019 for all IFCA, this reflects the highest possible management scenario for each site (detailed in annex A). Annual IFCA enforcement costs are estimated at £0.471m over all IFCA per year.

Costs to MMO are on a site by site basis based on the management scenarios and MMO assumptions which include the assumed employee time taken and other overheads to implement, administer and enforce fisheries management measures in sites beyond 6nm and sites where recreational management is a possibility (Studland bay and Bermbrigde). The MMO supplied updated unit cost for the 3rd tranche sites (MMO, pers. comm. 2017). For the high cost scenario the transitional MMO implementation costs amount to £0.072m. With the highest management measures (recreational management and fisheries beyond 6nm) MMO estimate enforcement costs of £1.273m per year for 18 sites identified to require management in the 3rd tranche and additional administration costs of £0.079m per year.

Defra costs to implement fisheries management for MCZs outside of 6nm where it is assumed that management of fishing activities is required are assumed to be a transitional cost in 2020 of £0.025m (uprated to 2015 prices).

Ecological Survey: Baseline setting and monitoring. Best estimate (include low and high)																						
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total (£m)	Annual Average (£m)
Total NE one-off costs (transitional baseline setting) (£m)	1.125	1.125	1.125	1.125	1.125	1.125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.752	0.338
Total NE one-off costs (transitional baseline setting) (£m) HMS	0.041	0.041	0.041	0.041	0.041	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.246	0.012
Total JNCC one-off costs (transitional baseline setting) (£m)	1.240	1.240	1.240	1.240	1.240	1.240	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.440	0.372
Total NE one-off costs of monitoring (£m)	0.000	0.000	0.000	0.000	0.000	0.000	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131	15.829	0.791
Total NE one-off costs of monitoring (£m) HMS	0.000	0.000	0.000	0.000	0.000	0.000	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.574	0.029
Total JNCC one-off costs of monitoring (£m)	0.000	0.000	0.000	0.000	0.000	0.000	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	1.240	17.360	0.868
Total costs (£m)	2.406	2.406	2.406	2.406	2.406	2.406	2.412	48.201	2.410													
Present value costs (£m)	2.406	2.325	2.246	2.170	2.097	2.026	1.962	1.896	1.831	1.770	1.710	1.652	1.596	1.542	1.490	1.440	1.391	1.344	1.298	1.254	35.446	1.772

Assumptions: Costs to conduct ecological surveys in MCZ Sites, additional features and HMS sites located within 12nm are incurred by NE and those located beyond 12nm are incurred by JNCC. The cost for the first 6 years for both NE and JNCC are transitional as they are to establish a baseline. The sequent years are for the cost of monitoring.

Reporting cycles for MCZs are every 6 years but it is not known in which year the detailed baseline and subsequent monitoring will be undertaken. Therefore all estimates of baseline and monitoring costs are divided by 6 and baseline costs included in each of the first 6 years of the analysis.

For costs incurred by NE (uprated to 2015 prices) for features within 6nm have an estimated unit cost of £0.05m for baselining and £0.04m for monitoring, whilst for those between 6nm and 12nm have the estimated unit costs of £0.09m and £0.075m respectively. Unit costs for new option sites are estimated to be £0.07m for baselining and £0.04m for monitoring. These baseline unit costs relate to the broad scale and features of conservation interest (FOCI) only, whilst the monitoring unit cost relate to the total number of features. Cost per site or additional features added to existing sites were calculated by multiplying the number of respective number of features by the unit cost. This gives a total for NE baseline cost setting of £1.125m per year for the first 6 years and a total for monitoring costs of £1.131m per year starting from 2025. Additionally NE provided site by site costs for the baselining and monitoring of HMS sites this came to a total of 0.041 per year.

JNCC have provided costs on a site by site basis (pers. comm. 2017) based on the costs of using a boat and its crew, survey time, weather downtime and data analysis, interpretation and report production for the 3rd tranche sites. This equates to a total cost of £7.44m over 6 years for the 13 MCZ sites located beyond 12nm and the 2 existing sites located beyond 12nm where additional features are proposed. As it is not known in which year the detailed baseline and subsequent monitoring will be undertake this figure is divided by 6 to obtain a cost to JNCC of £1.24m per year.

Whilst JNCC has confirmed that the assumptions for the monitoring of the offshores sites are the same as the ones applied in tranche 2, NE has reviewed and updated the assumptions provided during tranche 2 pre-consultation and new costings have been delivered accordingly. Following its investigation of the spatial overlaps of MCZs and SACs, NE opted for the removal of the previous assumption that an overlap of designation types would incur a 50% cost saving (NE, pers. comm. 2017). Therefore, the public costs calculated for tranche 3 for the monitoring of habitats and features proposed to complete the network is higher. Sensitivity analysis behind costs savings assumptions and economies of scale have not been considered at this stage but if necessary they will be adopted for the final IA.