

REPORT

Boston Alternative Energy Facility

The Applicant's response to the Marico Review of the
Navigation Risk Assessment

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Response to Examination Document AS-004

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1) Introduction

This study has been carried out by Anatec Ltd on behalf of the Applicant (Alternative Use Boston Projects Ltd) for the Boston Alternative Energy Facility.

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Revision Number	Date	Summary of Change
00	16/03/2022	Initial Draft
01	23/03/2022	Internal Updates
02	24/03/2022	Submission Version

1 Response to Examination Document AS-004

The following table gives a response to Additional Submission (AS-004) Cover letter and Report: Independent Review of the Boston Alternative Energy Facility Navigation Risk Assessment which was accepted into the Boston Alternative Energy Facility examination at the discretion of the Examining Authority.

The submission (AS-004) on behalf of the Boston and Fosdyke Fishing Society (BFFS) was written by Marico Marine, and was drafted as a review of the Navigation Risk Assessment (NRA) (REP6-022) produced by Anatec Ltd which considered potential impacts to fishing vessels that may arise from the Boston Alternative Energy Facility.

Table 1.1 provides a response from Anatec Ltd to the points raised in Section 4 (NRA Review) of the Marine review.

Table 1.1 Response to NRA Review undertaken by Marico Marine

Anatec NRA Narrative in REP6-022	Marico Marine Comment	Anatec Response
<p>Section One - Introduction Anatec Ltd were commissioned to undertake a Navigation Risk Assessment (NRA) for the BAEF to assess the potential impacts within the vicinity of the swing hole on existing users of the waterways associated with the Port of Boston (PoB).</p>	<p>To provide a full assessment of the potential impacts to shipping and navigation, it is our opinion that the BAEF NRA should have reviewed the extent of The Haven pilotage district.</p>	<p>The report undertaken by Anatec Ltd was a bespoke navigation risk assessment undertaken to specifically address comments from fisheries stakeholders on Chapter 18 – Navigational Issues of the Environmental Statement (ES) (APP-056).</p> <p>Chapter 18 contains a full assessment of shipping and navigation impacts within the full extent of The Haven Pilotage district as per Environmental Impact Assessment (EIA) Requirements.</p> <p>The draft Navigation Risk Assessment (NRA) (REP6-022) should be read in conjunction with APP-056 (ES Chapter 18 Navigation Issues). The draft NRA notes that <i>'relevant impacts have already been</i></p>

Anatec NRA Narrative in REP6-022	Marico Marine Comment	Anatec Response
		<p><i>assessed within the ES (BAEF, 2020), and as such this NRA is designed to support in informing the examination process, as opposed to re-assessing impacts’ (Section 1 – Introduction).</i></p> <p>It is noted that Section 1.4 Step 2 of the Navigational Management Plan (NMP) Template (REP8-011) sets out a procedure for the further development of the draft NRA in conjunction with PoB post consent to include all users of the Haven. This is secured via condition 14 of the Deemed Marine Licence, at Schedule 9 (Deemed Marine Licence) to the Draft Boston Alternative Energy Facility Development Order.</p>
<p>Section Two – Regulatory Context Regulatory Context with reference to:</p> <ul style="list-style-type: none"> ▪ Port Marine Safety Code; ▪ PoB Standing Notice to Mariners; ▪ The International Regulations for Preventing Collisions at Sea; and ▪ SOLAS V. 	<p>No comment.</p>	<p>No response required.</p>
<p>Section Three – Methodology 3.1 Impacts Assessed</p> <p>Potential Impacts have been identified and concerns</p>	<p>Additional assessment required. Whilst relevant impacts have been considered at a high level, it is our opinion that more</p>	<p>The draft NRA (REP6-022) is a technical report designed to inform the examination process on the specific issue of potential fishing vessel</p>

Anatec NRA Narrative in REP6-022	Marico Marine Comment	Anatec Response
<p>related to use of the swing hole:</p> <ul style="list-style-type: none"> • Disruption / Delay caused by use of turning circle and transit of BAEF vessels. • Increase in safety risk and subsequent commercial impacts; and • Safety impact if BAEF vessels are unable to turn due to time or tidal constraints. 	<p>detail is needed to full consider the potential impact of additional BAEF ships on The Haven, and their potential use of the swing hole. Marico Marine would expect to see a baseline assessment completed initially, followed by a second assessment addressing the same hazards but instead using the forecasted increase and change in vessel traffic and operations.</p>	<p>interactions, and should be read in conjunction with ES Chapter 18 (APP-056) which provides the full assessment of relevant impacts.</p> <p>The methodology applied within the draft NRA (REP6-022) is provided in Section 3: Methodology.</p> <p>A final NRA will be completed post-consent and will include reference to all vessels using The Haven, as set out in the NMP Template (REP8-011).</p>
<p>Section Four – Consultation <i>Consultation</i></p> <p>Undertaken with the PoB, and the BFFS.</p>	<p>No comment.</p>	<p>No response required.</p>
<p>Section Five – Data Sources <i>5.2 Visual Surveys</i></p> <p>Visual observation data has been collected via surveyors stationed alongside The Haven on:</p> <ul style="list-style-type: none"> ▪ 18 August 2020; and ▪ 21 September 2021. 	<p>BAEF visual surveys of fishing vessel transits agree with data provided by the BFFS in fishing vessel numbers and departure times. The BFFS have informed Marico Marine that the arrival times occur between 2 hours before HW and HW lining up with observations made. Marico Marine found that the numbers recorded on each visual survey were slightly lower than the IFCA data over the 6-year period prior to the Covid-19 pandemic averaging at 1 vessel per day lower.</p>	<p>Anatec agree there is correlation between the data sets considered within the draft NRA (REP6-022) and the Marico Marine review (AS-004) both in relation to vessel numbers and movement timings.</p> <p>The visual surveys undertaken in 2021 recorded a total of 36 fishing vessel movements (18 outwards and 18 inwards). The 2020 survey recorded a total of 17 inwards movements (outwards movements were not recorded).</p>

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		<p>The workings behind the long-term average value referenced are not made clear in the Marico Marine review and Anatec have been unable to verify / recreate the number indicated in this comment. However, a difference of one per day would not affect the findings of the draft NRA (REP6-022), noting that the approximate total number of fishing vessels in the fleet (26) was captured within the initial data gathering component of the NRA process and has therefore been considered throughout.</p>
<p>Section Six – Project Overview 6.2 Vessels</p> <p>Anticipated BAEF vessels to be between 90 and 100m LOA, and between 3.5m and 4m draft, with up to an extra 580 BAEF vessels visits per year.</p>	<p>Whilst the BAEF vessels will be comparable in size to the present commercial vessels, an additional 580 visits represent a considerable increase in vessel transits on The Haven. The PoB will require an effective traffic management strategy to accommodate this increase. The recommendation of a Navigation Management Plan (NMP) is a good one, but adequate consideration needs to be given to it by all relevant key stakeholders.</p>	<p>The increase in vessel numbers associated with the BAEF has been captured and considered within the draft NRA (REP6-022).</p> <p>The Marico Marine comment that “<i>PoB will require an effective management strategy</i>” agrees with the findings of the draft NRA (REP6-022). Under the Port Marine Safety Code (PMSC) responsibility for the NMP documentation would lie with PoB. As stated on the Statement of Common Ground with the PoB issued at Deadline 9 (document reference 8.4(3)) the Applicant, “<i>is committed to working with the Port of</i></p>

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		<p><i>Boston to achieve navigational safety and efficiency through the development of the NRA and NMP.” Furthermore, the approach to developing the NMP and update the NRA has also been agreed, as set out in the NMP template (REP8-011).</i></p>
<p>Section Seven – Existing Environment 7.1 Port Control</p> <p>Port Control is not manned on a 24-hr basis, only around HW. It does not have a dedicated AIS, or Radar based vessel monitoring / management system.</p>	<p>Marico agree that additional monitoring capability via dedicated AIS and radar traffic monitoring at Port Control is required in order to facilitate enhanced vessel traffic surveillance and in turn navigational safety on The Haven.</p>	<p>No comment.</p>
<p>Section Eight – Marine Traffic Analysis 8.1.2 Vessel Type</p> <p>Breakdown of vessel types, cargo vessels 66%, Other 31%, Tankers 2%, Fishing vessels < 1%.</p>	<p>Already highlighted within the BAEF NRA, fishing vessel activity is under-represented within AIS data as most fishing vessels do not carry AIS equipment. Therefore, with 26 fishing vessels operating on The Haven, this breakdown is likely inaccurate.</p>	<p>Anatec agrees, and would note this is clearly stated within this section (8.1.2) of the draft NRA (REP6-022):</p> <p><i>“the AIS data will significantly underrepresent fishing vessel activity”.</i></p> <p>On this basis the AIS data was primarily used to assess the commercial traffic baseline, with other data sources including input from BFFS and the visual observation surveys used to assess fishing vessel activity (noting the available AIS data recorded for fishing vessels was still captured and</p>

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		<p>assessed taking the known limitations into account).</p> <p>It is noted that the Eastern IFCA landings data used within the Marico Marine review (AS-004) also underrepresents fishing vessel movements. As stated within Section 3.2, the data “likely under-represents the number of vessel movements”.</p>
<p>Section Eight – Marine Traffic Analysis 8.2.1 Vessel Counts</p> <p>The estimated total number of vessels during 2019, (414), 2020 (412).</p>	<p>Between 2019 and 2020 an average 413 vessels visited the PoB which represents over 2 movements a day; therefore, with an anticipated additional 580 BAEF vessels per year this represents an increase of 140%. The PoB will require an effective traffic management strategy to accommodate this increase. The recommendation of a NMP is a good one, but adequate consideration needs to be given to it.</p>	<p>While commercial vessel numbers were approximately 400 per year during 2019/2020, vessel numbers have been significantly higher in past years based on the data studied within the draft NRA (REP6-022), including Department of Transport Statistics for Boston vessel arrivals spanning 1994 to 2017 (see Figure 8.7 of the draft NRA).</p> <p>Regardless, PoB has confirmed they are content the additional vessel movements can be safely managed and have stated as per Section 4.1 of the draft NRA that “the Harbour Authority are confident this can be managed in a safe and efficient manner with little adverse effect on the fishing fleet or other river traffic”.</p> <p>The Marico Marine comment that “PoB will require an</p>

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		<p><i>effective management strategy</i>” agrees with the findings of the draft NRA (REP6-022). As detailed within the NRA, under the PMSC responsibility for the NMP documentation would lie with PoB. The Applicant has committed to working in conjunction with PoB to produce the NMP (REP8-011) and PoB have agreed to this approach.</p>
<p>Section Eight – Marine Traffic Analysis 8.3.2.1 / 8.3.2.2 Visual Surveys</p> <p>Two visual surveys were held.</p> <p>On the 21 September 2021 – 18 fishing vessels were recorded. All fishing vessels transits occurred within a 50-minute window, beginning 40 minutes after HW.</p> <p>A preliminary survey was undertaken on the 18 August 2020, 17 fishing vessels were observed inbound all arriving an hour before HW.</p>	<p>Our data analysis agrees with the typical number of fishing vessel transits per day.</p> <p>However, we believe BFFS’s data improves the granularity of data and highlights a peak period of fishing vessel activity two hours before and after HW.</p>	<p>Anatec agree there is correlation between the data sets considered within the draft NRA (REP6-022) and the Marico Marine review (AS-004).</p> <p>The BFFS data assessed within the Marico Marine review was not provided to Anatec when requested during consultation with BFFS. The source and format of this data is not made clear within the Marico Marine review and as such cannot be directly verified by Anatec.</p>
<p>Section Eight – Marine Traffic Analysis 8.3.3 Consultation</p> <p>The peak period of fishing vessel activity is two hours before and two hours after high tide.</p>	<p>This agrees with our findings.</p>	<p>No Comment.</p>

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<p>Section Nine – Modelling 9.1 Tidal Assessment – Commercial Vessels</p> <p>The majority of overall commercial vessel transits occurred within the hour before HW.</p>	<p>This agrees with our findings.</p>	<p>No Comment.</p>
<p>Section Nine – Modelling 9.3.4 Summary of Turning Circle Use</p> <p>Three instances of use of the swing hole identified, turns all took less than 15 minutes.</p>	<p>We note that the Summary of Turning Circle Use does not give any indication of the time +/- HW in which the vessels turned in the swing hole.</p>	<p>The purpose of this section was to assess the time taken for vessels to turn. The period within which such turns would typically take place was determined in consultation with PoB.</p>
<p>Section Ten – Embedded Mitigation Embedded Mitigation</p> <p>The FSA undertaken assumes certain mitigation will be in place. It is noted that the FSA approach identifies the need for additional mitigation.</p>	<p>It is assumed that these additional mitigations would be formalised in the recommended NMP, to be produced by the PoB.</p>	<p>As per the draft NRA (REP6-022), responsibility of determining appropriate mitigations lies with PoB under the PMSC, noting that this would be formalised as part of the NMP (REP8-011).</p>
<p>Section Eleven – Impact Assessment Vessel Turns</p> <p>It is likely that one turn of a BAEF vessel will be undertaken in the swing hole per tide and this will be in the hour before HW.</p>	<p>BFFS data indicates that all fishing vessel departures will occur +/- 2 hrs HW. BFFS suggested that all arrivals occur between 2 hours before HW and HW which may result in a conflict of interest between fishing vessels and BAEF vessels.</p>	<p>Fishing vessel movements occurring +/- 2 hrs HW aligns with the findings of the draft NRA (REP6-022) including consultation input and assessment of the available data. On this basis the assessment has considered the potential for interactions with BAEF vessels to occur within this time period, with these impacts found to be tolerable.</p> <p>This aligns with ES Chapter 18 (APP-056) which contains a</p>

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		full assessment of shipping and navigation impacts within the full extent of The Haven Pilotage district as per EIA Requirements.
<p>Section Eleven – Impact Assessment</p> <p><i>11.1.3 Increased Commercial Vessels Movements Associated with BAEF</i></p> <p>Although BAEF will result in an increase of 580 vessel arrivals per year when this is considered against peak commercial vessels arrivals the actual increase would be 0.5 vessels per day from 2.2 – 2.7 vessels per day based on a peak of 800 vessels per day in 1996.</p>	<p>Whilst this suggests that the proposed increase in vessel traffic will be tolerable, there is no indication of how many of these vessels turned in the swing hole. Annex C suggests that no more than 50 vessels per year utilised the swing hole in the 1980s and 1990s including the peak of commercial traffic in 1996.</p>	<p>The draft NRA (REP6-022) has been informed by contemporary input and feedback from the PoB, and long-term vessel traffic data including DfT statistics (Figure 8.7). Given the length of time elapsed (20-30 years) since the period referenced in this comment it is assumed that written records are being referenced within Annex C, and as such it is requested that these records are shared.</p>
<p>Section Eleven – Impact Assessment</p> <p><i>11.2 Impact 2 – Increase in Safety Risk and Subsequent Commercial Impacts</i></p> <p>Increase in risk to fishing vessels transiting The Haven earlier in the tidal cycle to avoid BAEF vessels.</p> <p>Movements resulting in increased safety risks associated with water depths, grounds, and encounters (including interactions).</p>	<p>The use of the swing hole would likely take place in the hour before HW. BFFS data shows that the fishing fleet depart +/- 2 hrs HW, with the majority of sands transiting 1 hour before HW, hence increasing the likelihood of encounters. More interaction with PoB Port Control will be required.</p>	<p>The Marico Marine comment that “<i>More interaction with PoB Port Control will be required</i>” is considered as aligning with the draft NRA (REP6-022) findings, which include recommendations of procedures and resources that PoB should consider implementing as part of their responsibilities under the PMSC via the NMP (REP8-011).</p>
<p>Section Twelve – Summary</p>	<p>The approach taken to risk assessment within the</p>	<p>The methodology applied within the draft NRA (REP6-</p>

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Table 12.1: FSA Summary	<p>BAEF NRA appears ‘lite-touch’. Whilst there is very good material around impact assessment etc. We would expect to see a greater range of potential hazards identified and listed out in ranked hazard lists / risk registers. This does not appear to feature anywhere in the document. Therefore, it leads us to believe that the NRA contains insufficient detail. Where are the baseline and residual risk assessments that we would expect to see, for example? Currently, we are unable to verify their ‘workings’.</p>	<p>022) is set out within Section 3: Methodology.</p> <p>The draft NRA (REP6-022) is a technical report focusing on the specific issues around potential interactions between fishing vessels and the BAEF vessels as raised by BFFS. The hazards considered on this basis were assessed via a Formal Safety Assessment approach whereby hazard consequence and frequency are used to determine risk level via a risk matrix.</p> <p>The draft NRA (REP6-022) should be read in conjunction with ES Chapter 18 (APP-056) which contains a full assessment of shipping and navigation impacts within the full extent of The Haven Pilotage district as per EIA Requirements. ES Chapter 18 includes baseline information, a full summary of all impacts identified and assessed and the residual risk to navigation (Table 18-11: Impact Summary).</p> <p>Both the methodology and purpose of the draft NRA (REP6-022) is made clear (Section 3), it is not considered “lite touch”.</p>

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		As previously stated, the NRA set out in REP6-022, will be updated post-consent and the process for doing this is provided in the NMP template (REP8-011) and secured by the deemed Marine Licence.