

NORTH SEA ENERGY ISLAND REVIEW SHEET

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General comments
Did the bat detectors detect click and just no bat clicks, or did they not detect any clicks at all? Author's response: The bat detectors did record audio files and were triggered by other sounds in the ultrasonic spectrum but no bat calls were recorded (the majority of echolocating bats do not emit clicks but vocalize with frequency modulated tonal calls of a more extended duration than a 'click').

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Comment#	Page	Section	Reviewer	Comment	Change d ¹	Authors Response	Reviewers response ²
1	1	Front page	KTO	Energy Island North Sea-> Please change to North Sea Energy Island, so the heading aligns with the other technical reports from NIRAS and DEAs scoping report (https://ens.dk/sites/ens.dk/files/Vindenergi/en_en	c	The term Energy Island North Sea appeared only on the title page and has been corrected to North Sea Energy Island.	

				<p>oe-for-113_v2_afgraensningsudtalelse_for_plan_for_progrm_energioe_nordsoeen.pdf) . Please change throughout the report (this is not commented on again).</p> <p>Please implement consistent throughout the report.</p>			
2	3	Contents	KTO	A different font type has been used for headings compared to the rest of the text. Please use the same format – please align format with the tagging report delivery.	c	Format aligned with tagging report	
3	4	List of key terms	KTO	<p>Consider deleting the list of key terms (abbreviations), since the list only contain 1 term relevant to the BAT study, i.e. PAM – PAM can easily be explained in the methodology section. Also, please align format with the tagging report delivery.</p> <p>Description of areas can be done in the introduction, where you should also show a map.</p>	c	Suggestion followed, PAM is already explained in methods section and the description of areas has been incorporated into the introduction along with a map with area definitions, analogous to the format of the tagging report.	
4	4	Verified by	MDW	Why haven't anyone from NIRAS verified the report?	c	They have indeed, as during the first round of submission. The report was verified by Rasmus Bisschop-Larsen (now added to the footer of page 2 under Verified by)	
5	5	Preface	KTO	I suggest deleting the 'Preface' chapter. The content does not describe a preface and is more relevant in the introduction chapter. Also, it is a bit much with both a preface and summary chapter.	c	<p>Agree that preface and summary are not both necessary given the limited length of the report.</p> <p>The preface chapter is now deleted and the text from here has been incorporated into the summary.</p>	
6	6	Summary	KTO	All text is missing from the summary chapter. Please revise.	c	See also response to comment #5. The preface has	

				Has the report not been quality assured as stated?		<p>been deleted and the text from here included along with the Summary section.</p> <p>Yes, the report has been quality assured by both DCE and NIRAS.</p>	
7	6	1.1	KTO	<p>You can delete the heading 'aim' to align with the tagging report delivery.</p> <p>Typos: Fall and spring are not spelled with capital letters. Please revise. Please change 'six' to '6' and 'eight' to '8' to apply consistence throughout the report.</p> <p>Your aim is only partially described, please revise. The aim of the report is to describe baseline conditions for bats within the pre-investigation area (or is it the phase 1 area?) based on existing knowledge (desk top study) and conducted bat surveys in fall 2022 and spring 2023. Baseline conditions are described in terms of the research parameters x (mention – e.g. bat migration, abundance, biodiversity?).</p>	c	<p>Aim deleted</p> <p>Fall and spring now only capitalized when used as proper nouns, e.g., Fall 2022 survey, Spring 2023 survey, as opposed to survey in fall 2022 or survey during spring 2023. Numbers changed from written out form to numerals.</p> <p>The paragraph describing aim has been partially revised to decrease redundancy and add the requested details.</p>	
8	6	1.1	MDW	'... two additional PAM stations in the 15 km buffer area surrounding the phase 1 area.' Is this 15 km buffer zone the pre investigation area or extended survey area? Please add the name	c	As suggested in comment #9, an overview figure with the area definitions has been inserted in the introduction for guidance. From this figure, it should be apparent that the 15 km buffer zone is the extended survey area. In response to comment #9, the description of number of stations and their locations has been moved to the methods. The description	

						here has been amended to clarify.	
9	6	1.2	KTO	<p>You can delete the heading 'survey area' to align with the tagging report delivery.</p> <p>Please add a figure showing the pre-investigation area in relation to the phase 1 area – please align with the tagging report delivery.</p> <p>Please do not describe the location of the sampling stations in the introduction – this is not part of a background-information chapter but belongs in a methodology chapter.</p>	c	<p>Sub-heading deleted.</p> <p>Done, see response to comment #8.</p> <p>Description of station locations moved to methods chapter.</p>	
10	6	1.2	MDW	<p>In chapter 1.1 you state that there are 6 PAM stations in the phase 1 area, in chapter 1.2 you state that there are 5 PAM stations in the phase 1 area?</p> <p>In chapter 1.2 you also state that there is in total 8 monitoring stations: 6 located within the pre investigation area, 5 of these are within the phase 1 area, and 3 additional stations located in the extended survey area. This added up to 9 stations, and not 8 as stated in the beginning of chapter 1.2. in figure 3.1 there can be seen: 6 within the pre investigation area, 5 of those within the phase 1 area, and 2 additional in the extended survey area.</p>	c	<p>We apologize for this confusion which arises from one of the three stations in the extended survey area also being in the pre-investigation area but outside of the phase 1 area.</p> <p>It is not stated anywhere that there are 9 stations but we can see how the wording could lead to this misunderstanding. The interpretation in the last part of the comment is correct and we have reviewed and edited the description of locations to clarify.</p>	
11	6-7	2	KTO	<p>This is a very short chapter on existing knowledge. Please check if it contains all relevant information needed for your discussion of survey results.</p>	c	<p>Indeed, there is very little background information available for the North Sea, in particular the area of the North Sea north of the Dutch and German coastline.</p>	

			<p>It would be helpful to add subheadings to the chapter that corresponds to the research parameters or research questions of the survey.</p> <p>E.g. (you already have much of the information included):</p> <p>1) Conservation status-> what is the conservation status of relevant bat species, and what species do you expect to find in the pre-investigation area based on existing observations? Is it possible to present data in a table?</p> <p>2) Bat migration->what is the migration strategy of bats (short, medium and long migration), and what species may be expected in the pre-investigation area based on this information? Describe suggested bat migration patterns in the North Sea in relation to the pre-investigation area. Describe migration strategy in relation to season and nocturnal patterns, and if migration is performed in large numbers or not. Is it possible to present data on a map?</p> <p>3) Observations from existing (offshore and coastal) bat surveys in the North Sea: What species have been recorded? Is it possible to present data in a table?</p> <p>OBS: The purpose is only to describe baseline occurrence of bats in the pre-investigation area (or phase 1 area?), not potential threats from offshore wind. Therefore, please remove references to offshore wind throughout this chapter (unless it is relevant for your conclusions on existing use of the area by bats).</p>		<p>Subheadings added</p> <p>Regarding 1,2 and OBS: We do not consider it of relevance to suggest migration patterns on a map based on no empirical evidence but have added in section 3.2 that the location of the pre-investigation area relative to shore does not suggest high bat activity and that recorded activity would likely be from medium to long distance migrants. Maps with 'theoretical' strictly defined migration routes in EIAs and similar for other wind turbine projects can at best be characterised as misleading of the developers.</p> <p>Table overview of conservations status added.</p> <p>Regarding 3: Observations are already described.</p> <p>It would not be appropriate to remove references to offshore wind in this chapter, as it presents a relevant and real concern to the conservation status of bats, where it is now included.</p>	
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12	7	2	MDW	<p>'... autumn. nathusius' pipistrelle is often seen following guidelines, such as tree rows, parkways, etc. during flight.'</p> <p>Change 'nathusius' to 'Nathusius'</p>	c	Done	
13	7	3	KTO	<p>Please add an initial statement in the methodology chapter stating that there are no standardized method for conducting bats surveys offshore. Therefore, buoy-based surveys (PAM surveys) are tested in the bat survey programme.</p> <p>Please introduce with an overall description of the survey design, before the description on survey equipment. E.g.:</p> <ul style="list-style-type: none"> - Survey period (argue briefly - it is robust compared to the objective) - Survey area (argue briefly- it is robust compared to the objective. Show on map) - Bat detectors were attached to the x buoy used for the PAM survey program. When and by whom was is mounted. When were they collected. When were they serviced and replaced. Show picture of the setup. (argue – is the design robust? Here you could add, that it is not technical possible to monitor bats in their expected migration height, or from the coastline) <p>The chapter could benefit from adding a few subheadings to help guide the reader.</p> <p>Please state the duration of the surveys – it is quite hard to find, as surveys are only described as 'spring' and 'fall'. Was the survey period 2 months + 2 months, as indicated by figure 4.1 and 4.2? Is the experimental setup robust relation to the objective. In chapter 5 you argue that the timing of</p>	c	<p>We have added that no standardized method exists but buoy based surveys are not a new thing to be tested, they have been used elsewhere. Rather, the type of recording device used is not consistent between surveys.</p> <p>Subheadings added to methods chapter and sections have been re-ordered slightly to follow suggested structure. Picture of the setup is already shown.</p> <p>AU conducted the fieldwork, as stated in the summary.</p> <p>More detail added to section 4.3 Survey period.</p> <p>LiDAR buoy PAM stations re-added to methods section and in results section as the inclusion of those data and results were part of the scoping report and meant to contribute to the 'robustness' of the study design.</p>	

				<p>bat activity can differ significantly between years – knowing this, is the survey period sufficient?</p> <p>Please describe the methodology for data-interpretation – how do you distinguish bat-clicks from weather triggers? What about resolution - can you identify species, or just 'presence'. Please elaborate.</p>		<p>Statement about this added in section 4.5. Data analysis plus in discussion.</p>	
14	8	3.1	MDW	<p>Doesn't it say weatherproof in the manual and not waterproof?</p>	c	<p>No, it says waterproof. An older microphone model (smm-U1) says weatherproof but that is not the one we used.</p>	
	11	4	KTO	<p>Please discuss this statement in relation to your experimental setup and knowledge on existing data: 'The PAM data collected during the two seasonal surveys did not include any recordings of bats from any of the eight monitoring stations'. Where results as expected? Or why where they different? What can you conclude from your findings?</p> <p>Please discuss this statement: 'which were consistent with periods of rough weather'. Does it mean that windy conditions may be registered as bat activity? Data interpretation methodology is not described in the methodology chapter? Please discuss this in relation to existing knowledge about (e.g. do bats fly during high winds or no wind conditions). Can we use PAM surveys for bat detection on future projects, or is the method not appropriate?</p> <p>Please show a map with number of bat recordings per buoy for all species in 2022 and 2023 – to help the reader visualize your findings.</p>	c	<p>Interpretation of results is not included in the results section, please see conclusion chapter</p> <p>Data analyses description in methodology chapter has been expanded. No, bat activity and wind is not confused, but wind may trigger recordings. This is why recordings in any survey should be verified to the species of interest, as was done here to rule out mis-identification.</p> <p>There were no bats recorded in the surveys, which is already represented in the</p>	

				Consider adding a systematical discussion of your findings in relation to : 1) Placement of the microphone – led to water intake or used op battery?, 2) Equipment configuration – everything recorded incl. wind and waves?, 3) Data processing and species identification – what frequencies recorded and use birds the same frequencies? Adding this discussion will make you conclusion more robust.		figures shown in the results section.	
	11	4.1 4.2	KTO	Please start the section describing you results, to help the reader: ‘No bats were recorded on the data files triggered during the active monitoring period in Fall 2022 (Fig. 4.1).’ Then, describe any failures in data logging 😊	c	Section reordered somewhat	
	13	5	MDW	There should be a chapter named conclusion instead.	c	The chapters discussion and conclusion are now included, status chapter removed	
	13	5	KTO	The reader would expect to find a conclusion chapter here. Please rename ‘Status’ to Conclusion’ Consider if any of the points made in chapter 6 is more appropriate and precise to bring into the conclusion chapter. E.g. : The absence of bat vocalizations on any of the eight monitoring stations during each of the two monitoring periods included in this investigation indicate that bats are not likely to occur in the pre-investigation area. Please combine your knowledge from ‘existing conditions’ and survey results in the conclusion (that is the objective of the report). Please state clearly what you can conclude about baseline conditions for bats use of the pre-investigation area (or phase 1 area). Then describe or discuss any challenges from the surveys.	c	Please see response to comment above	

	14	6	KTO	<p>This information is not relevant in the baseline study, since there are no offshore wind parks in the area at present – please delete:</p> <p>‘It is well described that bats explore onshore wind turbines, either to forage for insects around the turbines or to use the turbines as potential roost sites (Rydell et al. 2011, Voigt and Kingston 2015, Elmeros et al. 2017). There is currently no documentation to indicate whether they behave differently or the same around offshore wind turbines, which could serve as acoustic beacons (e.g., landmarks) for migrating bats, consequently posing an increased risk of attraction and collision. There is a huge knowledge gap on bat population sizes, dynamics, flyway-populations and migration routes and catchment areas for wind turbine projects. These knowledge gaps hinder realistic modelling of the effects of individual wind turbine areas and the cumulative effects of wind turbines on bat populations..</p> <p>... but without more detailed data, e.g., long-term monitoring over several consecutive seasons and from each of numerous sites, it is not possible to establish whether such information can be used on a finer scale to optimize production while minimizing the risk posed to bats by the rapidly expanding offshore wind industry.’</p> <p>The concession winners will perform the EIA’s.</p>	c	The chapter on Knowledge and Data Gaps has been removed.	
<p>¹ y = yes n = no c = comment</p> <p>² a = accepted</p>							