Baltica-1 Offshore Wind Farm

Response to the comments from the Finnish parties presented in the framework of the Environmental impact assessment procedures in a cross-border context (Espoo)

March 2025

AUTHORS:

Response to Finnish comments

Chapter	***Key Consultants***	***Authors***
Editing and overall compilation	*Radosław Opioła – Environmental Impact Assessment Coordinator – Gdynia Maritime University* *Juliusz Gajewski – Head of Reporting Team*	*Juliusz Gajewski – Gdynia Maritime University* *Radosław Opioła – Gdynia Maritime University*
Fish and fisheries	*Tomasz Nermer – Head of Ichthyofauna Surveys at Sea – National Marine Fishery Research Institute*	*Tomasz Nermer – National Marine Fishery Research Institute* *Aleksander Drgas – National Marine Fishery Research Institute* *Tomasz Marcinkowski – Gdynia Maritime University*
Sediment transport and habitats	*Radosław Wróblewski – Head of Geological Team – Gdynia Maritime University*	*Juliusz Gajewski – Gdynia Maritime University* *Tomasz Marcinkowski – Gdynia Maritime University*
Impact on monitoring	*Radosław Opioła – Environmental Impact Assessment Coordinator – Gdynia Maritime University*	*Juliusz Gajewski – Gdynia Maritime University*

TABLE OF CONTENT

ABBREVIATIONS AND DEFINITIONS

Baltica-1 OWF	Baltica-1 Offshore Wind Farm
CMR	Centre for Fishery Monitoring
EIA Report	Environmental Impact Assessment Report within the meaning of the Act of 3 October 2008 on the provision of information on the environment and environmental protection, public participation in environmental protection and on environmental impact assessments (consolidated text: Journal of Laws of 2023, item 1094, as amended)
Espoo Report	document containing documentation of the environmental impact assessment pursuant to Article 4 of the Convention on Environmental Impact Assessment in a Transboundary Context, containing the scope of information compliant with Annex II to the aforementioned Convention
FMI	Finnish Meteorological Institute
OWF	Offshore Wind Farm
SYKE	The Finnish Environment Institute
Traficom	Finnish Transport and Communications Agency

1 INTRODUCTION

On January 21, 2025, the Baltica-1 Offshore Wind Farm received correspondence from the Regional Director for Environmental Protection in Gdańsk (RDOŚ-GD-WOO.420.59.2023.AM.21), referring to correspondence from the General Director for Environmental Protection (DOŚ-TSOOS.440.6.2023.MJ.8) requesting a response to comments presented by interested parties (Sweden and Finland) in connection with consultations under Articles 4 and 5 of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) regarding the planned offshore wind farm Baltica-1.

The Finnish Environment Institute (SYKE) is responsible for submitting and receiving notifications and fulfilling other obligations related to environmental impact assessment in a transboundary context [Espoo Convention] in Finland under the Environmental Impact Assessment Regulation (2017:966).

SYKE has received remarks from the following organisations:

- Finnish Meteorological Institute (FMI),
- Finnish Transport and Communications Agency (Traficom),
- Finnish-Swedish Transboundary River Commission,
- Regional Council of Southwest Finland,
- Fisheries Authority of Southwest Finland,
- ELY Centre for Southwest Finland,
- Government of Aland.

This document discusses the issues identified in correspondence from the above-mentioned organizations that submitted comments and provides additional information and explanations. Some of the notifications have not required response (namely – Finnish Transport and Communications Agency (Traficom), Regional Council of Southwest Finland, Regional Council of Southwest Finland, Government of Aland).

2 RESPONSES TO COMMENTS OF FINNISH PARTIES

2.1 FINNISH METEOROLOGICAL INSTITUTE

2.1.1 Monitoring

"Merentutkimuksen osalta Ilmatieteen laitos katsoo, että YVA selvitys on kattava, mutta huomauttaa että kohdassa 15 (tai muualla raportissa) ei ole huomioitu tuulipuiston vaikutuksia Itämeren monitorointiin. Ilmatieteen laitos muistuttaa, että puiston alueella ja sen lähellä tehdään mittauksia vapaasti ajelehtivilla poijuilla (https://fleetmonitoring.euro-argo.eu/dashboard?Status=Active,Inactive&Basin=BALTIC%20SEA) joiden operointi voi vaikeutua puiston rakentuessa, vaikuttaen Itämeren tilan monitorointiin. Ilmatieteen katsoo, että yhdessä kansallisten toimijoiden (esim. The Institute of Oceanology of the Polish Academy of Sciences) kanssa, hankekehittäjän tulee varmistaa, että Itämeren tilan monitorointi ei vaarannu, ja harkita esim. automaattisen mittausaseman pystyttämistä puiston alueelle"

Response:

The shape of the assessed project, i.e., Baltica-1 OWF, both in the context of the spatial distribution of individual elements and in the context of the shape of the installed foundations, makes the collision of floating Argo measurement buoys with the foundations unlikely, and even less likely is the event of an Argo floaters getting caught on the structures. However, if such an entanglement occurs, the investor declares that upon receiving information about such an event, they will retrieve such a device from the water during the planned service ships' voyage to Baltica-1 OWF and hand it over to the owner.

2.2 FINNISH-SWEDISH TRANSBOUNDARY RIVER COMMISSION

Suomalais-ruotsalainen rajajokikomissio kiittää lausuntopyynnöstä. Vaikka hankealue sijaitseekin Suomalais-ruotsalaisen rajajokisopimuksen (91/2010) maantieteellisen soveltamisalueen ulkopuolella voi hankkeella olla vaikutuksia, jotka ulottuvat Tornionjokeen vaelluskaloihin kohdistuvan vaikutuksen kautta. Tornionjoen lohi vaeltaa jopa Eteläiselle Itämerelle mahdollisesti hankealueen läpi tai merikaapeleiden yli, jotka johtavat tuotetun sähkön maalle. Komissio korostaa, että Ruotsi ja Suomi ovat YK:n merioikeusyleissopimuksen artiklan 66 tarkoittamia alkuperävaltioita Tornionjoen lohen osalta. Ruotsi ja Suomi ovat solmineet keskenään rajajokisopimuksen ja sopineet siinä, että sopimuksen yhtenä kansainvälisoikeudellisena peruspilarina on YK:n merioikeusyleissopimus. Rajajokisopimuksessa on sovittu, että erityistä huomiota on kiinnitettävä kalakantojen suojeluun ja kestävään käyttöön (art. 2.2.d). Lisäksi on sovittu, että Tornionjoen lohen poikastuotanto tulee pitää kestävän enimmäistuoton tasolla. Rajajokisopimuksen artiklassa 8 on sovittu, että rajajokikomissio toimii valtioiden välisenä yhteistyöelimenä. Edellä mainituilla perusteilla rajajokikomissio on asianosainen lausumaan Tornionjoen lohen koko elinkiertoon mahdollisesti vaikuttavien toimien osalta.

Komissio korostaa, että rajanylittäviä vaikutuksia ei voida poissulkea varsinkaan ajatellen vaelluskalakantoja. Tätä kirjoittaessa on edelleen rajallisesti tietoa mahdollisista vaikutuksista vaelluskalakantoihin merellisestä tuulivoimasta. Ottaen huomioon suuren määrän suunniteltua merellistä tuulivoimaa Itämerellä ja Pohjanlahdella komissio korostaa varovaisuusperiaatteen mukaan toimimisen tärkeyden. On tärkeä perusteellisesti selvittää mahdolliset yhteis- ja kumulatiiviset vaikutukset vaelluskalakantoihin kaikista suunnitelluista tuulivoimahankkeista koko Itämerialueelta

kokonaisuudessaan. Sama uhka koskee kaikkia Itämeren lohikantoja, jotka ovat heikentyneet huolestuttavasti vuosien 2023 ja 2024 aikana.

Response:

During the construction phase, noise exposure may cause avoidance of areas of offshore wind farms. No cumulative impact on fish migration capabilities and the formation of a specific sound barrier is expected, as the construction of offshore wind farms in the Polish Marine Areas will be distributed over longer time. Even if all planned structures are built, we do not expect migration disruptions. Observations conducted in Danish offshore wind farm areas indicate that due to the possibility of active fish movement, turbine structures do not significantly disrupt migration processes (Stenberg et al., 2011).

Regarding the connection infrastructure, the electric field strength values at which physiological reactions were observed are several orders of magnitude greater than those generated by the connection cables of the offshore wind farm. Depending on the distance from the cable buried at a depth of 1 m below the seabed, the electric field component intensity is up to $8 \cdot 10_{-4}$ $V \cdot m^{-1}$ at the seabed, $3.4 \cdot 10^{-5}$ $V \cdot m^{-1}$ in the water column 5 m above the seabed, and $1.24 \cdot 10^{-5}$ $V \cdot m^{-1}$ in the water column 10 m above the seabed. Therefore, it can be assumed that the reaction of fish to the electric field in the farm area will not be significant, especially since the electromagnetic field strength in the water observed in the water column decreases with the depth at which the cable is buried. In the environmental impact assessment conducted by Bergström et al. (2014)[1], the impact of the electromagnetic field was assessed as low. Also, in the environmental impact assessment of the Horns Rev 2 offshore wind farm, this impact was classified as small or insignificant (Spanggaard 2006)[2].

Additionally, the main feeding areas for salmon are located in the Gulf of Gdańsk, and the planned offshore wind farms in waters west of this area allow for uninterrupted salmon migration to the Tornio River.

2.3 Fisheries Authority of Southwest Finland

2.3.1 Fish

Pyydämme toimivaltaista lupaviranomaista turvaamaan turskan elinkiertoa seuraavin kei-noin:

a) kaikkien mahdollisten melun lieventämiskeinojen käyttö rakentamisen aikana ja tarvit-taessa paalutuskielto kriittisimpänä kutuaikana. Tässä tulisi ottaa myös Stolpen/Słupskin kanavan mahdollisia kutualueita huomioon, koska niillä on parempi happitilanne.

b) sedimenttipilvien kulun estäminen, esim. käyttämällä kuplaverhoja tai muuta tekniik-kaa,

c) tämän ja muiden hankkeiden rakentamisen aiheuttamien meluvaikutusten rajoittami-nen siten, että samaan kutualueeseen ei kohdistuisi melua peräkkäisinä vuosina. Turska on pitkäikäinen laji, jonka kanta ei vaarannu yhden tai kahden vuosiluokan menetykses-tä, mutta useampi peräkkäinen katovuosi voi olla Kataoka's.

[1] Bergström L., Kautsky L., Malm T., Rosenberg R., Wahlberg M., Åstrand Capetillo N. and Wilhelmsson D. 2014. Effects of offshore wind farms on marine wildlife –a generalized impact assessment, Environmental Research Letters , 9: 1–12.

[2] Spanggaard G. (ed.). 2006. EIA Report Fish Horns Rev 2 Offshore Wind Farm.

d) rajoittamalla turskan kalastusta hankealueella, mikäli on todennäköistä, että riuttavaiku-tus kerää turskia alueelle altistaen niitä tehokkaammalle kalastukselle.

e) hankealueen kalakantojen ja kalastuksen seuranta.

Response:

Noise impact

The results of numerical model of noise propagation during piling presented in Appendix No. 3 to the EIA Report indicates that behavioral impacts may occur, which, although not causing bodily injury, may in certain cases cause fish to avoid areas with increased noise levels and, consequently, disturb the spawning process. The modelling results have shown that the range of this impact may cover the Słupsk Furrow region, but it shall not reach the Bornholm Deep area. The first of the above-mentioned areas is the spawning ground for cod, however, its role is insignificant in comparison with the Bornholm Deep, which is among the major spawning grounds for the Baltic cod. For around 10 years now, a relatively important spawning ground for the Eastern Baltic cod has been the Arkona Deep, which is also beyond the range of this impact. It should be highlighted that considering the behavioural effect in terms of the avoidance reaction, which may cause fish to leave their spawning grounds, is **a very conservative approach**.

For example, the observations by van der Knaap et al. (2022)[3] have shown relatively small behavioural changes in cod populating an offshore wind farm, in the vicinity of which piling was conducted for four months at a distance of 2.7–7.1 km. The individuals inhabiting this area before the works were commenced were not found to leave the region. This may prove the phenomenon of habituation, which consists of fish getting accustomed to a level of a specific stimulus after some time of being exposed to this stimulus. The studies conducted by Mueller-Blenkle et al. (2010)[4] have shown that the directional response of cod and sole to sound ceased along with subsequent noise emissions.

The Noise Reduction System (NRS), described in Chapter 3.2.2.2.5 of the Environmental Impact Assessment Report, is foreseen to minimise an underwater noise impact.

Increased concentration of suspended solids

The modelling results indicate that the impact ranges of increased suspended solids concentrations during the works conducted in the Baltica-1 OWF area do not cover cod spawning grounds.

Regarding the increase in suspended matter concentration, the limiting factor for the threat is the relatively short duration of elevated concentrations, which, assuming the worst-case scenario, is 72 hours (simultaneous work related to excavations for foundations and preparation of the substrate for the legs (spudcan) of a jack-up installation vessel). In most cases, the duration of elevated concentrations does not exceed several hours. At the same time, concentrations of suspended matter that can cause lethal effects in adult fish stages may occur incidentally only in the immediate vicinity of the sediment discharge. Considering the possibility of fish leaving the impact area, the threat will be

[3] van der Knaap I., Slabbekoorn H., Moens T., Eynde D. and Reubens J. 2022. Effects of pile driving sound on local movement of free-ranging Atlantic cod in the Belgian North Sea Auteurs. Environmental Pollution, 300(118913): 1–12.

[4] Mueller-Blenkle C., McGregor P.K., Gill A.B., Andersson M.H., Metcalfe J., Bendall V., Sigray P., Wood D.T. and Thomsen F. 2010. Effects of Pile-driving Noise on the Behaviour of Marine Fish. Technical Report. COWRIE Ref: Fish 06–08.

minimal. In most of the impact area, suspended matter concentrations may only cause a short-term avoidance reaction. In the case of eggs and larvae, it can be assumed that the negative impact will be very limited. Literature data indicate that the inhibition of herring larvae growth occurs at suspended matter concentrations above 500 mg·dm^{-3} [5], which means values that may occur only incidentally. According to experimental studies, cod larvae are more sensitive[6] (increased mortality at a concentration of 10 mg·dm^{-3}), however, as mentioned earlier, the duration of such concentrations is relatively short. At the same time, ichthyoplankton studies presented in Annex 1 to the EIA Report did not show the presence of cod larvae in the investment area.

The predicted concentrations of suspended matter at the WSE SE boundary (100 mg·dm^{-3}) and the Natura 2000 Hoburgs Bank och Midsjöbankarna area (60 mg·dm^{-3}) may likely lead only to periodic avoidance by fish of these areas. Detailed information on this topic is presented in the chapter 10.2.1.9.3 of the Environmental Impact Assessment Report. Given the fact that the spatial extent of impact of increased suspension concentration does not include cod spawning grounds and the probability of negative impact on the larvae of this species is very low, the use of mitigation measures to limit the spread of the suspension is not necessary.

Restricting cod fishing in the project area if reef fish are likely to attract cod to the area, exposing them to more intensive fishing.

It is not necessary to introduce an additional restriction on cod fishing in the project area. Similarly to other Baltic Sea areas, the catch volume in this region is limited by the fishing quota established for a given state by the EC based on scientific advice. Any potential increase in the catch rate in the investment area will result in restrictions on fishing in other areas.

Monitoring fish stocks and fisheries in the project area

Ichthyofauna monitoring will be conducted during the OWF operation and following its decommissioning. In the operation phase, the long-term impact of the artificial reef on the abundance and taxonomic composition of fish shall be assessed, including the occurrence of early development stages, i.e. larvae and fry, and the potential settlement by invasive species.

Surveys are planned to be conducted in spring and summer after the first year and after five years following the commencement of the operation phase. After the OWF decommissioning phase is completed, the changes that would occur after destroying the artificial reef, constituting a dwelling, feeding, shelter and reproduction site for many fish species shall be assessed. The surveys should be conducted in spring and summer within one year following the end of the decommissioning phase.

[5] Messieh S.N., Wildish S.N. and Peterson R.H. 1981. Possible impact of sediment from dredging and spill disposal on the Miramichi Bay herring fishery. Canadian Technical Report of Fishery and Aquatic Science, 1008.

[6] Rönbäck P. and Westerberg H. 2001. Sedimenteffekter på pelagiska fiskägg och gulesäckslarver. Fiskeriverket, Kustlaboratoriet, Frölunda, Sweden. [in:] Engell-Sørensen K. and Skyt P.H. Evaluation of the effect of sediment spill from offshore wind farm construction on marine fish. Report to SEAS, Denmark 1996, pp. 18.

2.3.2 Fisheries

"Seuraavia asioita ei ole selvitetty tai selvityksiä ei ole toimitettu Suomeen:

1. Kalastusaktiviteettien kartoituksessa on huomioitu ilmeisesti vain Puolan alukset, vaikka kyseessä on kansainväliset vedet. Selvitysjakso on myös liian lyhyt turskan kalastuksen kartoittamiseksi, sillä turskan kannat ovat romahtaneet ennen tutkittua ajanjaksoa.

2. Hankealueen mahdollisen kalastuskiellon vaikutuksia kalastukseen ei ole arvioitu.

3. Rajoja ylittävien kalastusvaikutuksien on kerrottu olevan merkityksettömiä, mutta perusteluita ei ole esitetty eikä ilmeisesti ole tarvittavaa dataa hankittu tai analysoitu. Ko-rostamme, että myös Puolan talousvyöhykkeellä esiintyvät vaikutukset muualla kalas-tettaviin kaloihin sekä ulkomaisten alusten kalastukseen ovat rajoja ylittäviä vaikutuksia.

Kalatalousviranomainen arvioi toimitetun materiaalin perusteella, että rajoja ylittävistä kalastovaikutuksista turskaan kohdistuvat vaikutukset ovat Suomelle mahdollisesti merkittä-viä.

Suomella on turskakiintiötä sekä kalastusoikeuksia Itämeren EU-vesillä, joita ei hyödyn-netä turskakantojen heikon tilan vuoksi. Hankkeen läheiset ICES-tilastoruudut ovat olleet 2000-luvulla Suomen keskeisiä turskanpyyntialueita. Turskalla on suuri ekologinen ja kalata-loudellinen potentiaali myös Suomen vesillä. Turskakannat ovat taantuneet eteläiselle Itä-merelle ja merkittävä osa potentiaalisista kutualueista sijaitsee hankealueen lähellä. Suo-men turskakanta ja turskan kalastus ovat täysin riippuvaisia eteläisen Itämeren, mm. Puolan vesillä sijaitsevista lisääntymisalueista. Kannan ollessa heikko jo pienet ympäristövaikutuk-set voivat vahingoittaa sitä.

Erityistä huolta on rakennustoimien vaikutuksesta turskan ku-tuun sekä keinoriuttojen muodostamista ekologisista loukuista, mikäli hankealueella salli-taan kalastusta."

Response:

Non-Polish flag fishing vessels

Vessel Monitoring System (VMS) data were used to determine the involvement of non-Polish flag fishing vessels in the OWF area. VMS signals are reported by fishing vessels with a length of over 12 m with a frequency of at least two hours. Due to no access to detailed data making it possible to determine the fishing vessel's activity type (based on fishing logbooks), the analysis took account of all vessel position signals reported in the OWF area. In this approach, the number of identified fishing days of these vessels is overstated (theoretically, on a fishing day, there may be no less than 12 signals – 24h/2h) in comparison with the usual methodology. In the commonly accepted methodology, VMS signals are compared with data from fishing logbooks for more detailed identification (based on the fishing gear used on a given day) of the vessel's activity type, e.g. movement, trawling, deployment or recovery of nets). The approach applied satisfies the precautionary approach criteria.

The table below presents the data on the number of signals identified in the OWF area for foreign-flagged vessels.

Table 1. Number of VMS signals reported by foreign-flagged vessels in the OWF area in 2019–2023

Country	2019	2020	2021	2022	2023
Germany	-	-	-	1	-
Denmark	2	-	-	4	6

Country	2019	2020	2021	2022	2023
Finland	1	-	-	-	-
Lithuania	2	1	2	4	4
Sweden	-	-	-	3	2

Source: internal calculations based on CMR data

The identified number of signals in 2019–2013 was insignificant and was not higher than a total of 12 for all vessels and flags. To determine the relative significance of the OWF area for fishing vessels in individual countries, the number of VMS signals providing information about vessel presence in the OWF area was compared with the overall number of fishing days of fishing vessels from individual countries in the Baltic Sea, and, also, as narrowed down to a specific part of it only. In this specific case, it is the ICES statistical sub-area (27.3.d.25), where the OWF is to be located. The results are presented in the table below.

Table 2. Number of fishing days of foreign-flag fishing fleets in the Baltic Sea and the ICES 25 sub-area, and the proportion of VMS signals in the total number of fishing days

Country	Baltic Sea (27.3.d)	Baltic Sea 27.3.d.25	OWF	Proportion	
				Baltic Sea	Baltic Sea 27.3.d.25
Germany	5442	78	1	0.02%	1.3%
Denmark	3095	829	4	0.13%	0.5%
Finland	50959	-	-	0.00%	-
Lithuania	2972	-	4	0.13%	-
Sweden	17005	3621	3	0.02%	0.1%
Total	79473	4528	12	0.02%	0.3%

Source: internal materials based on the data from Table 1 and STECF 23-07 https://stecf.jrc.ec.europa.eu/documents/d/stecf/stecf-23-07-eu-fleet-economic-and-transversal-data

The impact of a potential fishing ban

The conducted fishing effort analysis showed that the OWF area is of negligible (incidental) importance for foreign-flag fishing vessels. Based on the precautionary approach, assuming that each VMS signal denoted fishing activity in the OWF area and was equivalent to a fishing day, the significance of the OWF area for foreign-flag fishing vessels was not higher than 0.02% (for the entire Baltic Sea) or 0.3% in the case of narrowing the reference region down to the ICES 25 statistical sub-area only.

The impact of construction activities on the cod mortality

The lethal effect of noise impact associated with piling is limited to the immediate vicinity of the sound source. The range of such an impact is restricted to at most several dozen to above 1000 m. Modelling surveys carried out for the Swedish Kriegers Flack[7] farm indicate that the extent of impact causing lethal or potentially lethal injury (SEL_{cum} 204 dB) will be 370 to 3350 m for juvenile cod. These calculations

[7] BioApp. 2018. Impact from piling noise on fish from the Kriegers flak offshore windfarm, Sweden. Note 005-2018. Ingår som Bilaga 2, utredning fisk till Miljökonsekvensbeskrivning för ansökan om ändrat tillstånd enligt lag om Sveriges ekonomiska zon och förNatura 2000 prövning enligt 7 kap 28a§ miljöbalken. Bjerking AB, Vattenfall AB.

take into account the capacity of cod to escape at a speed of 0.38 to 0.9 $m \cdot s^{-1}$. In the case of eggs and larvae, the lack of active movement results in a significant extension of this area.

It can be assumed that by applying the soft start procedure, which involves gradually increasing the force and frequency of hammer blows, adult fish will leave the endangered area.

Ichthyoplankton studies conducted in the Baltica-1 OWF area did not indicate the presence of cod larvae in this region. Therefore, no impact of noise on the early developmental stages of this species is expected.

The results of the modelling of the suspended solids propagation for the Baltica-1 OWF area presented in Appendix No. 2 to the EIA report indicate that the highest increase in suspended solids concentrations will be generated by trenching works for vessel supports (spudcans) and by the discharge of the sediment material via pipelines. The maximum momentary concentrations of suspended solids of 1500 $mg \cdot l^{-3}$ at a distance of 150 m from the work site and 850 $mg \cdot l^{-3}$ at a distance of 500 m from the work site exceed the limit values beyond which fish death may occur[8]. In the case of adult fish, it may be assumed that they are likely to escape from the impact area, but fish larvae will not be able to leave the area affected by lethal concentrations. However the spatial range of this effect is very restricted and the time of and the occurrence of such concentrations is incidental. At the same time, as mentioned above, no presence of cod larvae was found during the studies conducted in the investment area.

The ecological traps created by artificial reefs if fishing is allowed in the project area

The impact of a potential fishing ban in the project area on fisheries has been assessed in the EIA Report. As for the possibility of fishing on artificial reefs created at the bases of wind towers, such activities will not be possible due to protection zones. It should be highlighted that OWFs shall not cause increased cod mortality rates due to better fishing opportunities – fishing quotas are established for a given state by the EC based on scientific advice.

2.4 The ELY Centre of Southwest Finland

2.4.1 Habitats

Varsinais-Suomen ELY-keskus katsoo, että linnustovaikutuksia on arvioitu riittävästi ja päätyy samaan lopputulokseen linnustovaikutusten arvioinnin kanssa. Merikaapeleiden rakentaminen voi vaikuttaa meriluontotyyppeihin ja pohjaeläimistöön ja sitä kautta myös linnustoon. Merikaapeleiden asentamisen aiheuttamien vaikutusten arviointia ei ole kuitenkaan tehty suositellulla tarkkuudella tai vaikutusten kuvaus etenkin meriluontotyyppeihin on esitetty epäselvästi. Verrattaessa esimerkiksi linnustovaikutusten arviointiin, ei ole tuotu esille erilaisten meriluontotyyppien ja pohjaeläinyhteisöjen esiintymistä hankealueella, vaan vaikutukset on yleisesti arvioitu vähäisiksi. Kyseinen vaikutusten arviointi tarvitsee tarkennusta jatkovaiheissa

Response:

The actual impact of the underwater cable laying and burial operations have been assessed within the envelope of the suspended sediment-inducing operations. There has been a list of operations with such an impact potential which led to selection of 14 scenarios for sediment modelling (pages 37–38

[8] Rambøll. 2014. Sæby Offshore Wind Farm, Fish. Background Memo. Revision 3, Ref. ROGC-S-RA-000017, København.

of Appendix No. 2 to EIA Report). The Chapter 6 “Summary and Conclusions” extracts major findings from 14 models runs. This includes:

1. Suspended sediment concentration range in kilometers for different suspended sediment concentration (5, 10, 30 and 100 $mg \cdot l^{-1}$).
2. Maximum suspended sediment concentration at distance of 150 and 500 m.
3. The thickness of the newly formed sediment layer at specific distances from the underwater worksite.

The results of modelling led to general conclusions shown on pages 119–120 of the abovementioned appendix. Those results have been used to assess impact on geological and geomorphological aspects of no biotic elements of environments as well as phytobenthic and macrozoobenthic biotic elements of environments.

Due to use of envelope approach it might be concluded that actual impact should be lower than assessed and thus it is not necessary to be refined.