Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

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SEAMARCO
F.a.o.: Dr. ir. R. A. Kastelein (owner and director, SEAMARCO) +
Mr. Roelant Snoek MSc (Director Acoustics & Marine Services,
WaterProof Marine Consultancy & Services BV)
Julianalaan 46
3843 CC Harderwijk
Nederland

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Datum
Datum digitale handtekening

Ons kenmerk
'23.10.23_Additional questions SEAMARCO consortium'

Bijlage(n)
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Datum	Datum digitale ondertekening
Onderwerp	Additional questions to the SEAMARCO consortium regarding 'Gedrag van bruinvis gerelateerd aan vibro piling' met referenties '4703/Doedijns' en 'TN 425016'

Dear Mr Kastelein and Mr Snoek,
Beste Ron en Roelant,

Thank you for your interest in consultation from Wozep to perform research on the effects of alternative foundation techniques, in particular vibropiling, on harbour porpoises.
We have held meetings with all interested parties for this research. These meetings helped us a lot and we thank you for the useful discussions.
For a proper evaluation of this process we still have some remaining questions to the interested consortia. These questions directly relate to the research question we formulated (see below). We hope you can give us more insight on your proposition.

As you know one of the major obstacles is the availability of a trained harbour porpoise for the experiments.

- Can you indicate what you intend to do to make a harbour porpoise available for the research? Are you dependent on external parties to solve this problem and how do you think to obtain their collaboration?
- When a porpoise is available how much time would be required for the animal to be ready for the research?
- If no animal will be available on short notice, what are your plans to answer the research questions?

We are looking forward to your response.

Best regards, on behalf of the Wozep research team,

SD

Stefan Doedijns
Adviseur Kennisinkoop

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Research question from the consultation (July 2023):

Questions
Research should be directed towards answering the questions listed below. Where particular research needs to be conducted in a particular order because of interdependencies, this should also be indicated. The sound signal required for this research will be provided if needed.

- What effects on porpoise hearing (TTS, PTS and masking, see Southall et al., 2021) and fitness in the evolutionary sense (death, disturbance and also TTS, PTS and masking, see Southall et al., 2021) are most likely and what is the range in which they occur?
- What is the duration of these effects and at what level are effects on so-called vital rates (Fig 2) likely?
- How can the magnitude of these effects on the individual be measured?
- How can the effects on the individual be calculated that they form the input for the model used by the Dutch government to calculate the effects of Wind at Sea on the population of the harbor porpoise?

Form of consultation
Parties wishing to express interest in this research must have the following facilities, experience and qualifications:

- Parties are asked to indicate their ability to conduct this research to answer the government's questions.
- Parties must have suitable facilities to conduct such a study under controlled conditions; for example, a research facility in which acoustic and behavioural studies can take place that is quiet enough so that influences of outside noise on the results can be excluded, and whose acoustic properties are known.
- Parties must be able to provide the necessary specifics on these facilities.
- In the case of research with live animals, parties must have one or more porpoises with normal representative hearing as evidenced by an audiogram (Kastelein et al., 2017) and behaviour. These porpoises must be trained to participate in hearing and behavioural studies.
- Parties must have the technical means for generating low frequencies of sound corresponding to vibration noise.
- Furthermore, knowledge and experience in acoustic and behavioural research on porpoises is preferred, for example by reports and publications on similar research conducted by researchers still associated with the company.
- Parties can enter into a collaboration to be able to supplement parts of these requirements that they do not have with facilities or expertise from other parties.
- The research must be completed by the end of 2024.