



Date 26 June 2023
Status Final

Annex 5 - I

Scope of Work Certification Site Characterisation Studies

Wind Farm Zones Nederwiek and Doordewind

Colophon

Project name	Certification Site Characterisation Studies Nederwiek and Doordewind Wind Farm Zones
Project number	WOZ2230075
Version	Final
File name	NW_DDW_20230623_Cert_Annex 5-I – Scope of Work_V1.0_F
Projectmanager	M. Brijder
Annex(es)	
Author	M. Brijder, M. Witteveen
Reviewed	F. van Erp
Approved	M. Brijder

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1. Introduction

1.1. Scope document

This document describes the scope of the work for carrying out the certification of the site investigations for Nederwiek and Doordewind Wind Farm Zones (NWWFZ and DDWWFZ, respectively).

1.2. Background

The Ministry of Economic Affairs and Climate Policy is responsible for the legislative framework for the development of offshore wind farms in the Netherlands. Within this framework (a) (concession) permit tender(s) for construction and operation of (a) wind farm(s) will be organized under the current regulation. As part of the tender documentation, the participants will receive an information package in which detailed information on the offshore site is included. Information regarding the site conditions will be developed through site characterisation studies and desk studies to investigate the soil and wind and water conditions at the Wind Farm Zones.

The current scope of work concerns the certification of site characterisation studies for Wind Farm Zones Nederwiek and Doordewind.

1.3. Objectives

1.3.1. *Purpose of the site investigations*

The purpose of the site characterisation studies is to provide relevant site data for the design, installation and maintenance of wind turbines, inter array cables, substations and their support structures at the Wind Farm Zones.

The information package of each Wind Farm Zone is intended to be detailed and of high quality to allow wind farm developers to enhance and de-risk their designs and progress project preparations in the bid stage of the permit tender. And, it should be of sufficient quality, accuracy and detail to serve as input for the Design Basis after award of the permit tender.

1.3.2. *Objective of certification scope*

In order to provide confidence in the reliability of the information package that will be made available to the bidders in the coming permit tenders, RVO will contract an accredited third party (this Tender) to carry out quality checks on the data and reports that are collected through the site characterisations that will be carried out, resulting in statement(s) of compliance for these site characterisations.

The objectives of the site characterisation data certification process are to validate and confirm that:

- bidders are provided with accurate and detailed data about the Wind Farm Zones;
- the site characterisation studies are compliant with latest applicable norms and standards DNVGL-SE-0190:2023-03 IECRE OD-502:2018 or equivalent;
- the overall set of site characterisations studies is complete, the overall quality is assured and there is consistency between parameters found & used in the different site characterisation studies.

1.4. Project sites

The NWWFZ and DDWWFZ has been designated for the offshore wind development of the Netherlands. Both Wind Farm Zones are part of the roadmap 2030+ as presented in Figure 1. The NWWFZ is planned for a total capacity of 6 GW and DDWWFZ is planned for a total capacity of 4 GW.

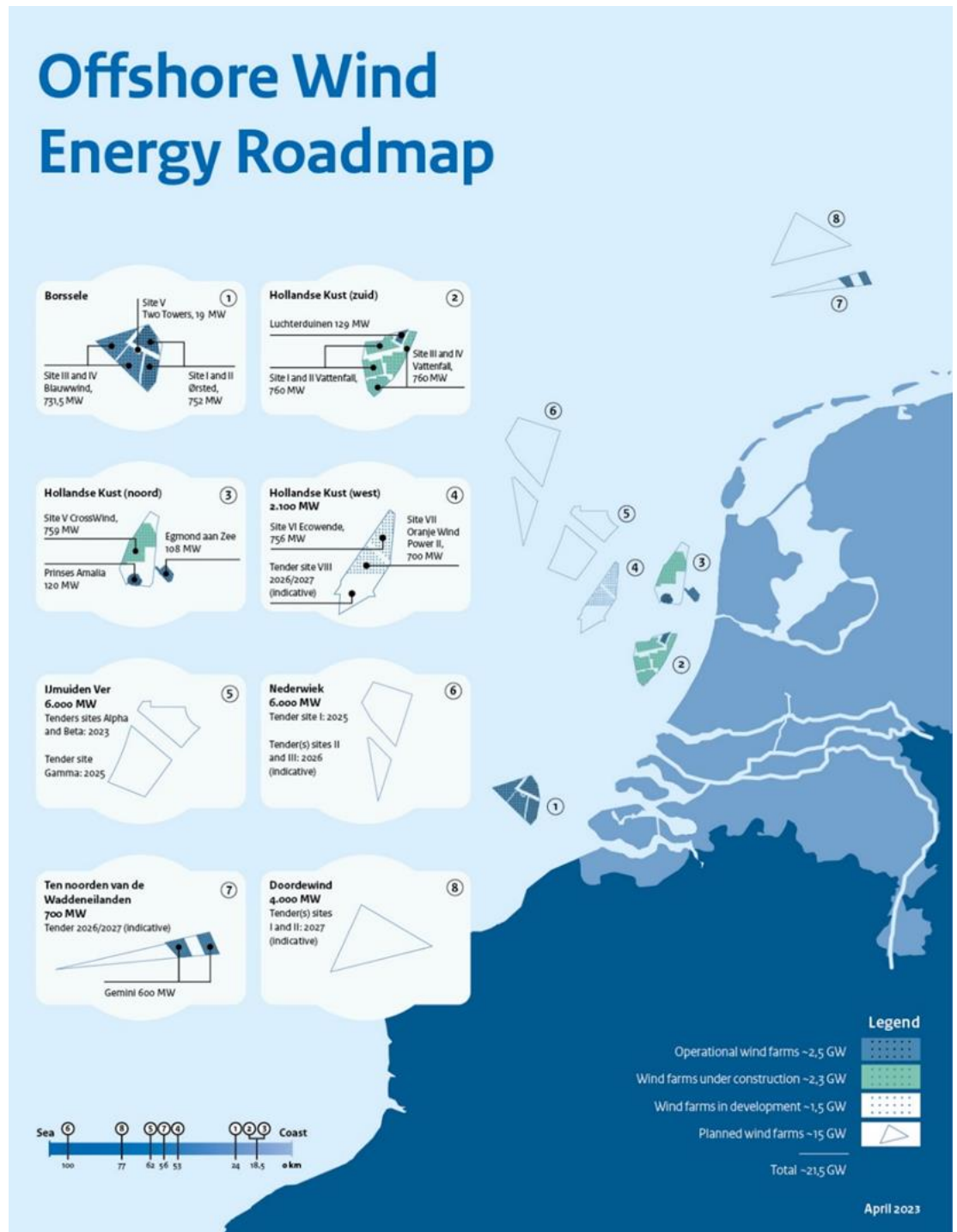


Figure 1 Dutch Offshore Wind Farm Zones (Roadmap 2030+) April 2023

1.5. Planning of the characterisations studies

An indicative time planning for the site characterisations studies for NWWFZ and DDWWFZ are provided in Table 1 and Table 2, respectively. Note that the dates mentioned may shift in a later stage.

Table 1: Indicative time schedule for site characterisations studies of NWWFZ

Topic	Wind Farm Zone	Site characterisation study	Review of results
soil	NW I	Geophysical site investigation	Q4 2023
soil	NW I	Geotechnical site investigation	Q1 2024 – Q3 2024
soil	NW I	Integrated Ground Model	Q3 2024 – Q1 2025
soil	NW	Morphodynamic and scour study	Q4 2023
Wind&water	NW	Metocean Assessment	Q4 2025
Wind&water	NW	Metocean Campaign	Q3 2024 – Q4 2024
soil	NW II and NW III	Geophysical site investigation	Q2 2024
soil	NW II and NW III	Geotechnical site investigation	Q4 2024 – Q2 2025
soil	NW II and NW III	Integrated Ground Model	Q2 2025 – Q4 2025

Table 2: Indicative time schedule for site characterisations studies of DDWWFZ

Topic	Wind Farm Zone	Site characterisation study	Review of results
soil	DDW	Geophysical site investigation	Q4 2024
soil	DDW	Geotechnical site investigations	Q4 2025 – Q2 2026
soil	DDW	Integrated Ground Model	Q1 2026 – Q3 2026
soil	DDW	Morphodynamic and scour study	Q3 2026
Wind&water	DDW1	Metocean Campaign 1	Q3 2025 – Q4 2025
Wind&water	DDW2	Metocean Campaign 1	Q3 2025 – Q4 2025
Wind&water	DDW1+2	Metocean Assessment	Q4 2026

1.6. Description of site characterisations studies

1.6.1. General procedure

The procurement process of the site characterisation studies and desk studies follows these steps:

1. Define scope
2. Organise tender and select winning contractor
3. Carry out site investigation and/or analyses
4. Summarise results in a report
5. Review and certify the report
6. Post study activities

The certification activities occur during step 5 (review and certify report) and step 6 (answer questions from the market). And, in case of discussions during the other steps, the certification body may be consulted too.

1.6.2. Deliverables to be expected

The deliverables of the site investigations to be expected are shown in Table 3. These deliverables contain an RVO executed and closed out Document Review Sheet which will be provided next to each deliverable:

*Table 3: Overview of study deliverables (for NWWFZ AND DDWWFZ each) to be expected with **approx.** expected number of pages*

Report	Pages main report	Pages appendices	Maximum Review time for certifying body per cycle.
Geophysical site investigation			
Geophysical interpretation report*	150-225	150-300	2 weeks
Geotechnical site investigation			
Cone Penetration Tests factual report*	15-45	450-750	2 weeks
Shallow Seabed Sampling report*	15-45	4000-5000	3 weeks
Borehole factual report*	15-45	7000-8000	3 weeks
Laboratory test report*	30-60	7000-8000	3 weeks
Integrated ground model**			
Geological Ground Model report*	150-225	150-300	2 weeks
Integrated Ground Model report*	45-90	300-600	2 weeks
Geotechnical Interpretative Report	50-100	300-600	2 weeks
Synthetic CPT report	50-100	100-200	2 weeks
3D GIS data viewer	-	-	2 weeks
Morphodynamic and scour study			
Morphodynamic study report	60-150	50-100	2 weeks

Scour report	100-120	15-40	2 weeks
Metocean Assessment and database			
Metocean Campaign***	100	200	2 weeks
Metocean Assessment report	240-360	240-600	2 weeks
Metocean database****	-	-	2 weeks

* Soil data will be made available for download via cloudbased fileshare. The raw data will need to be spot checked to ensure consistency with the report and interpretations.

**Given the long duration of the geotechnical laboratory tests the Geotechnical Reports and Integrated Ground Model may be split up into two phases. This needs to be covered in the review time. The 3D GIS data viewers will need to be checked based on a predefined and agreed program of spot checks to ensure that the database is consistent with the data within the report.

***It is foreseen to have a review on 1) validation report of the Metocean buoy used including wave validation, 2) one monthly report including the dataset, and 3) 24 months end report including the dataset.

****The digital metocean database also needs to be (installed and) checked based on a predefined and agreed program of spot checks to ensure that the database is consistent with the data within the report. We request Tenderers to schedule about 10 workdays for this.

It is to be noted that Contracting Authority might ask for additional reviewing and certification activities relating new market/industry developments (not relating to site characterisation studies mentioned in Table 3). Annex 4 Prices and Rates contains Section F for this reason.

1.7. Further information

For information, the results of the site characterisations studies and certification carried out for previous Wind Farm Zones HKZ, HKN, HKW, TNW and IJV WFZ are available at <https://offshorewind.rvo.nl/>. It should be noted that this scope of work deviates from those of previous investigations.

2. Scope of Work

2.1. General scope of work

The main activities that need to be carried out are the following:

- Prepare a Project Execution Plan
 - overview of guidelines
 - approach for the project
 - process agreements
- Prepare a Project Quality Plan
 - validation approach
 - risks for low data quality
 - QA QC procedures
- Perform reviews
 - results of site characterisations studies: a comment sheet with all issues closed.
 - post study support
- Summarise results
 - certification report per site characterisation study
 - overall certification report
 - overall statement of compliance

The activities are specified in more detail in the next paragraphs.

2.2. Project Execution Plan

As part of the proposal, the Contractor shall prepare a draft Project Execution Plan including time schedule. The intent of this plan is to have a clear starting basis for the remainder of the project. This report shall cover as a minimum:

- A recommendation for the technical standards proposed to be used as benchmark per site investigation. Besides standards for site investigations, a brief overview should be given of recommended standards for:
 - Wind turbines
 - Foundations
 - Cables
 - Substations
 - Vessel operations
- An overview of the recent developments with regard to standards for site data for offshore wind farms.
- Furthermore, a recommendation should be made with regard to a "process standard" to validate whether the *overall* site data package is compliant (DNVGL-SE-0190:2023-03 IECRE OD-502:2018 or equivalent). Note that these recommendations are for guidance only (will not be made public). They will mainly serve as reference for the Scope of Work of the site investigations.
- Process
 - Described approach to minimize review time, response time and delivery times without compromising quality (see 3.1.2).
 - Organisation chart
 - Communication matrix
 - Risk register
- Proposed example format for
 - Comment sheets
 - Certification reports for each study
 - Certification report for the set of studies
 - Statement of compliance for the set of studies

Upon award, this project execution plan will be updated based on comments of RVO and serve as basis for the project execution.

2.3. Project Quality Plan

As part of the proposal, the Contractor shall prepare a draft Project Quality Plan. This report shall cover as a minimum:

- Procedures for quality control and quality assurance.
- The approach for validation described separately for all site characterisations:
 - Geophysical site investigation
 - Geotechnical site investigation
 - Integrated Ground Model
 - Morphodynamic and scour study
 - Metocean Assessment and database
- Potential risks, recommendations and points of attention for all site characterisations:
 - Geophysical site investigation
 - Geotechnical site investigation
 - Integrated Ground Model
 - Morphodynamic and scour study
 - Metocean Assessment and database

Upon award, this Project Quality Plan will be updated based on comments of RVO and serve as basis to manage quality during the project execution.

2.4. Review activities

2.4.1. Review results of site characterisations

The activities include a review of the deliverables of each study and site characterisations mentioned in Table 3. As a minimum, this includes:

- Review against the standards as defined in the Project Execution Plan with the approach as defined in the Project Execution Plan;
- Summary of the performed evaluations;
- Questions, comments and suggestions for possible improvements;
- Confirmation of compliance.

The results of the site characterisations will first be reviewed thoroughly by the RVO experts. Once the comments of the RVO experts are closed, the draft reports will be submitted for certification.

2.4.2. Post study activities

After the studies are certified they will be published on <https://offshorewind.rvo.nl/>. Furthermore, a webinar will be held to share the results with potential bidders and supporting parties.

In this stage there may be questions of tenderers that need to be answered by the certification body. Also, there may be corrections needed for the studies or updates for other reasons, that need to be verified by the certification body with a re-issue of the verification documents.

Contracting Authority requests following post study activities to be budgeted in Annex 4;

1. Updates, additional requests
 - a. Rate for Project manager
 - b. Rate for Senior Expert
2. Re-issue of verification documents
 - a. Specific certification report
 - b. General certification report
 - c. Overall statement of compliance

These hours will be spent only on instruction of RVO.

2.5. Deliverables

2.5.1. *Provide comment sheet*

As part of the review of each site characterisation study mentioned in Table 3, the Contractor shall prepare a comment sheet with questions and advice with respect to each study.

The format of these documents is to be agreed beforehand.

An example should be provided with the proposal.

2.5.2. *Provide study specific certification reports*

For each site characterisation study mentioned in Table 3, the Contractor shall prepare a certification report, in which the performed evaluations, results and compliance with the standards are summarized. This will be added to the study reports after the study has been accepted by the Client and the certification Contractor.

The format of the study specific certification reports is to be agreed beforehand.

An example should be provided with the proposal.

2.5.3. *Provide general certification report*

For the set of site characterisation studies, mentioned in Table 3, the Contractor shall prepare a certification report. The general certification report will certify that the complete set of site characterisations is complete, accurate and consistent. The general certification report will refer to all performed evaluations, results and compliance with the standards are summarized.

The format of the general certification reports is to be agreed beforehand.

An example should be provided with the proposal.

2.5.4. *Provide overall statement of compliance*

At a moment to be chosen by the Client, usually when all (or the majority of) site characterisation studies have been completed, the Contractor shall issue an overall statement of compliance to verify the complete set of site characterisation studies is complete, accurate and consistent and compliant with the reference standard DNVGL-SE-0190:2023-03 IECRE OD-502:2018 or equivalent).

The format of the overall statement of compliance is to be agreed beforehand.

An example should be provided with the proposal.

2.5.5. *Language*

All written communication (e.g. emails, comments, reports, certificates) should be provided in UK English.

3. Process

3.1.1. Meetings

Several meetings will be held to coordinate the certification process. The meetings that need to be included within the budget are shown in Table 4.

Table 4: Meetings to be included in the budget

Meeting	Duration	Number of meetings	Meeting details
Kick-off meeting	4 h	1	Physical meeting at RVO office in the Netherlands.
Resolve issues regarding studies	1 h	10	Telephone conferences
Monthly progress meetings (planning)	0,5 h	30	Telephone conferences Actual number of meetings is depending on duration of the project
Overall progress meeting	1 d	2	Physical meeting at offices of the Contractor.

The time for meetings including all travel costs should be included within Annex 4.

3.1.2. Timing of review process

The Maximum Review Time is defined as the time (in calendar days / weeks) between receipt of the documents mentioned in Table 1 and Table 2 for NWWFZ and DDWWFZ, respectively and submission of the comments and questions by the certification body. The Maximum Review Time is specified per document in Table 3.

The Maximum Response Time is defined as the time between receipt of the answers to the questions and the next response by the certification Contractor.

The Maximum Delivery Time is defined as the time between approval of the answers by the certification Contractor (and/or closing the comments) and issuing the certification reports (and, if applicable the overall statement of compliance) by the certification Contractor.

The maximum response and delivery times are shown in Table 5.

Table 5: Maximum review times

Maximum review times	Duration
Maximum Review Time	Dependent on report size - see Table 3
Maximum Response Time	1 week
Maximum Delivery Time	1 week

3.1.3. Review cycles for certification Contractor

Table 6 presents the anticipated review cycles for Contractor for the review of the site characterisation study deliverables.

Table 6: Anticipated review cycles for Contractor

Review	Anticipated review cycles for Contractor	Result
Results of site characterisation study	3	Closed Comment Sheet

3.1.4. *Review cycles for deliverables produced by certification Contractor*

Table 7 presents the anticipated review cycles for the deliverables produced by the certification Contractor. Please note that Contracting Authority strives for the highest quality reasonably achievable, and that the number of review cycles depends on the quality of the first delivery and the quality in which the Contractor manages to close the issues.

Table 7: Anticipated review cycles for review of deliverables

Deliverable	Anticipated review cycles
Study specific certification report	3
General certification report	3
Overall statement of compliance	3
Update of study specific certification report	1
Update of general certification report	1
Update of overall statement of compliance	1