Base Load Power Hub (BLPH)

AUDIT PLAN

Document Number: 123A90-PM-QHSE-PL-00106

Document Class: 1

01	02/10/2023	Issue for Acceptance (IFA) Revised where indicated	R.Degli Esposti	A.Scopetti	M.Brunelli
00	04/09/2023	Issue for Approval (IFA)	R.Degli Esposti	A.Scopetti	M.Brunelli
Rev.	Date	Description	Prepared	Reviewed	Approved

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Revision / Change Log

Rev.	Description
00	Issue for Approval (IFA)
01	Issue for Acceptance (IFA) – Revised where indicated – Implemented comments as per CPY CRS

HOLDS LIST

No.	Description
1	
2	
3	
4	

Table of contents

1 INTRODUCTION 5

1.1 PROJECT OVERVIEW 5

1.1.1 Project Location 5

1.1.2 Project Concept 6

2 PURPOSE 8

3 SCOPE 8

4 REFERENCES 8

5 DEFINITIONS AND ABBREVIATIONS 8

6 AUDIT TEAM 9

6.1 ROLES AND RESPONSIBILITIES 9

6.1.1 Project Quality Manager (PQM) 9

6.1.2 QHSE Manager (Quality, Health, Safety, and Environment Manager) 9

6.1.3 Project Manager (PM) 9

6.1.4 Lead Auditor 9

6.1.5 Auditor 9

6.2 TEAM MEMBERS AND THEIR QUALIFICATIONS 10

6.2.1 Qualification Criteria 10

6.2.2 List of Qualified Auditors 10

6.2.3 Detailed Qualification and Selection Criteria 10

6.3 AUDIT METHODOLOGY 10

6.3.1 Approach. 10

6.3.2 Pre-Audit Activities 10

6.3.3 During the Audit 11

6.3.4 Reporting 11

6.3.5 Post-Audit Activities 11

6.4 AUDIT REPORT ARCHIVING AND DISTRIBUTION 11

6.4.1 Archiving. 11

6.4.2 Distribution 11

6.4.3 Final Documentation 11

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

7 AUDIT PLANNING 11

7.1 VENDOR AUDIT PLANNING 12

List of Figures

Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map 5

Figure 2 - Wind Park Details 6

Figure 3 – BLPH Concept 6

List of tables

Table 1 - Reference Documents 8

Table 2 - Definitions and Abbreviations 8

List of Attachments

ATTACHMENT 1: AUDIT SCHEDULE

1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

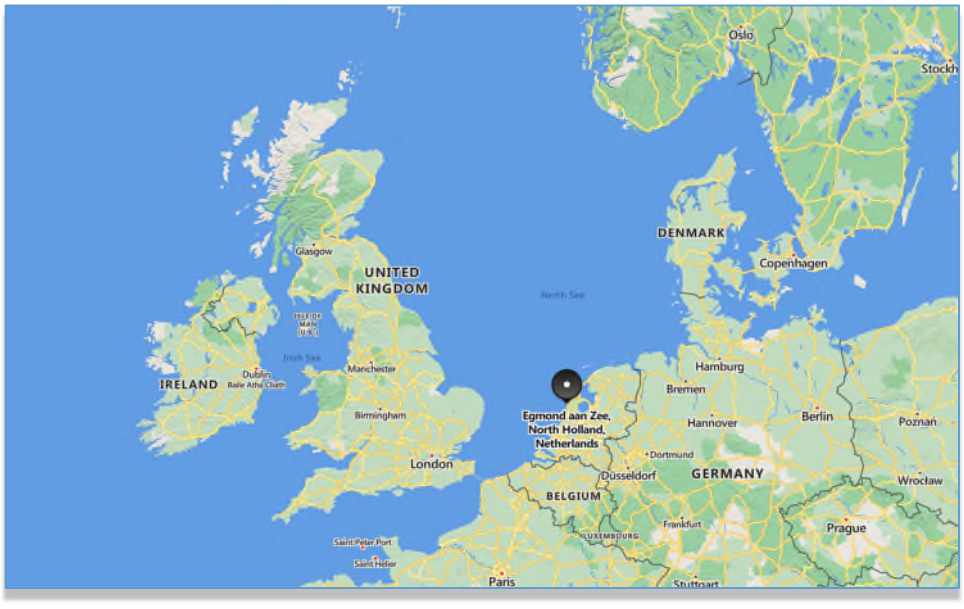


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map

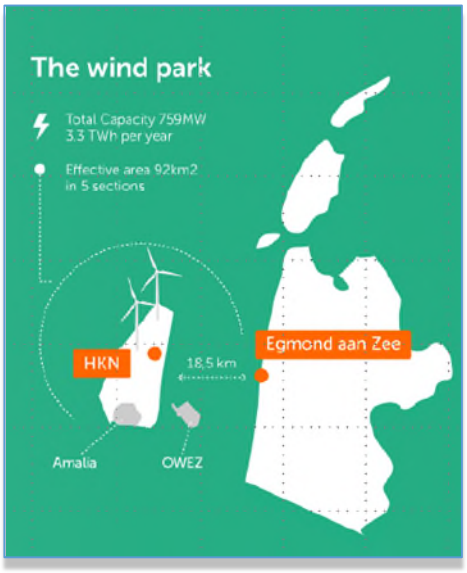


Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

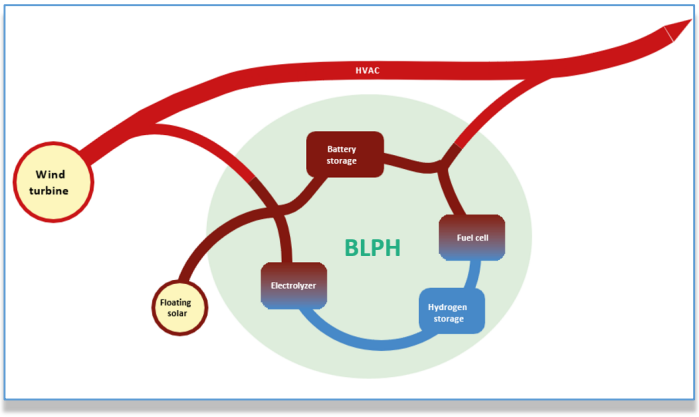


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

2 PURPOSE

The primary purpose of this document is to outline the methodology and approach for conducting audits on the BLPH Project. Furthermore, it provides a clear schedule of the planned audits, ensuring transparency and clarity for all stakeholders involved. By detailing how audits will be carried out and showcasing the audit schedule, this document aims to offer a comprehensive overview of the oversight and quality assurance processes in place for the Crosswind Project.

3 SCOPE

This document encompasses both internal and supplier audit processes for the Crosswind Project.

4 REFERENCES

Doc. No.	Description
Contract No. CW-I-WP4-2023-05	
SECTION IX	QUALITY MANAGEMENT
O-QMS-3B-002	Rosetti Corporate Procedure "Auditing Activities"
ISO 19011-2018	Guideline For Auditing Quality Management Systems

Table 1 - Reference Documents

5 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project
Internal Audits (1st Party Audit)	These audits target various disciplines within the project. Their objective is to review, assess, and ensure that each discipline is adhering to predefined standards, best practices, and project requirements. They serve as a tool to identify areas of improvement and ensure consistency and excellence throughout the project's different sectors.
Supplier Audits (2nd Party Audit):	These audits are tailored based on the criticality of the product or service provided by external suppliers. Suppliers delivering critical components or services undergo a more rigorous audit process, reflecting the importance and potential risks associated with their contributions. The main goal of these audits is to ensure that suppliers meet the project's quality, safety, and performance standards, while also adhering to contractual obligations.

Table 2 - Definitions and Abbreviations

6 AUDIT TEAM

6.1 ROLES AND RESPONSIBILITIES

6.1.1 Project Quality Manager (PQM)

- Preparation: The PQM is responsible for preparing the audit plan, ensuring alignment with the project's quality standards and objectives.
- Communication: The PQM must communicate the implementation of the audit to the personnel who will be audited. This ensures that all parties are aware of the upcoming audit process and its scope.
- Audit Report Oversight: If the PQM does not conduct the audit personally, they are responsible for reviewing and re-examining the Audit Report, ensuring its accuracy and completeness. If the PQM conducts the audit, they will prepare the Audit Report.
- Report Transmission: The PQM verifies that the Audit Report is duly transmitted to all the relevant personnel involved in the audit.
- Follow-up: Post-audit, the PQM oversees the actions stemming from the audit findings. They ensure that corrective or preventive actions are taken and properly document the closure of the audit.
- Documentation & Archival: The PQM is also in charge of filing and preserving the original audit reports related to first-party project audits. These are stored alongside other project documentation, in line with contractual requirements and Rosetti Marino procedures.
- Auditor Role: If the PQM conducts the audit, they will take on the role of the Lead Auditor.

6.1.2 QHSE Manager (Quality, Health, Safety, and Environment Manager)

- Responsibility: The QHSE Manager's main role is to review the audit plan prepared by the PQM.

6.1.3 Project Manager (PM)

- Responsibility: The PM is the final authority responsible for approving the audit plan. Their approval signifies that the plan aligns with the overall project objectives and meets the project's requirements.

6.1.4 Lead Auditor

- Appointment: The Lead Auditor is designated by the PQM and is tasked with conducting the audit.
- Responsibility: As the primary auditor, the Lead Auditor ensures that the audit is conducted systematically and thoroughly, adhering to the audit plan's stipulations. The Lead Auditor will also lead any discussions, interviews, or observations and will prepare the final audit report based on the findings.

6.1.5 Auditor

- Appointment: If deemed necessary, the Lead Auditor can be assisted by other auditors. The need for additional auditors usually arises based on the scope and complexity of the audit.

- Responsibility: Auditors support the Lead Auditor in various audit activities. Their duties might include gathering data, performing specific observations, or interviewing project members. They report their findings directly to the Lead Auditor.

6.2 TEAM MEMBERS AND THEIR QUALIFICATIONS

All individuals tasked with conducting audits must meet qualification criteria to ensure the integrity and effectiveness of the audit process.

6.2.1 Qualification Criteria

Education: Auditors must have formal education that provides foundational knowledge relevant to the areas they audit.

Training: Specific training in audit techniques, methodologies, and standards is mandatory. This training ensures that auditors are familiar with best practices in conducting systematic and thorough reviews.

Experience: Practical experience in conducting audits or working in related fields is crucial.

Personal Features: Auditors should possess qualities like attention to detail, objectivity, integrity, and strong communication skills.

6.2.2 List of Qualified Auditors

Contractors' auditors who meet these qualification criteria are listed in the "List of Qualified Auditors REG-QMS-02." This list serves as a reference to verify and ensure that only qualified individuals are tasked with the audit responsibilities.

6.2.3 Detailed Qualification and Selection Criteria

For detailed information related to the qualification criteria and auditor selection process, refer to the corporate procedure document O-QMS-3B-002, which outlines the organization's standards and methodology.

6.3 AUDIT METHODOLOGY

6.3.1 Approach.

- Planning: Define audit scope and objectives. Review relevant documents for context.
- Execution: Observe on-site processes. Conduct interviews with key personnel. Examine crucial project documents.
- Reporting: Analyze findings and draft an Audit Report, noting compliance, improvements, and non-conformities.
- Feedback and Follow-Up: Share the report with stakeholders. Set timelines for recommended changes and schedule a follow-up audit.

6.3.2 Pre-Audit Activities

- Notification: How and when the departments or teams will be informed about the upcoming audit.

- Documentation request: What documents should be ready and available for the audit team.

6.3.3 During the Audit

- Entry meeting: Initial meeting to set the stage and discuss any preliminary issues.
- Evidence gathering: Process for collecting and recording audit evidence.
- Communication protocol: How any issues or concerns will be communicated during the audit.

6.3.4 Reporting

- Draft report: Process for creating a preliminary report with findings.
- Feedback loop: How auditees can provide feedback on preliminary findings.
- Final report: Creation and dissemination of the final audit report.

6.3.5 Post-Audit Activities

- Action plans: How departments or teams should respond to the audit findings.
- Follow-up audits: How and when follow-up audits will be conducted to ensure corrective actions have been taken.
- Feedback mechanism: A process for the audited teams or departments to provide feedback on the audit process itself.

6.4 AUDIT REPORT ARCHIVING AND DISTRIBUTION

6.4.1 Archiving.

All audit reports are systematically archived and maintained by the Project Quality Manager (PQM). This ensures a centralized and consistent storage method, facilitating easy retrieval when needed.

6.4.2 Distribution

Upon completion and approval, audit reports are distributed to all relevant parties involved in the audit scope. Copy is also shared with CPY.

This ensures transparency and provides all stakeholders with insights into the audit findings.

6.4.3 Final Documentation

After distribution, the audit reports are then integrated into the final project documentation. This consolidation ensures that the audit's insights and recommendations remain a key part of the project's historical record.

7 AUDIT PLANNING

Planning provides a roadmap for the audit, ensuring systematic and timely assessment of key project areas.

A structured plan allows for smooth coordination among stakeholders, ensuring they are well-prepared and aligned in their activities and expectations.

By laying out a clear audit schedule in advance, resources, both human and material, can be effectively allocated, reducing potential downtimes and ensuring optimal productivity.

The audit plan is inherently flexible, designed to evolve in response to the project's real-time needs. It remains relevant and reflective of the project's current state, ensuring the audit process is always aligned with actual conditions.

Additionally, each discipline, area or Vendor may be audited multiple times depending on the project's progress and the activities performed.

The audit schedule is split into two parts:

Part A - Audit of the activities carried out by the Contractor throughout the project's implementation.

Part B - Audits performed on vendors and subcontractors.

If agreed upon with CPY, the audits can be grouped and conducted over an audit campaign spanning multiple days.

7.1 VENDOR AUDIT PLANNING

Supplies that fall under Criticality Rating 1, as defined by document 123A90-PML-PRT-RE-00054 titled "CRITICALITY ASSESSMENT," are subject to audit and are scheduled in accordance with the supply schedule.

While some vendors may not have a Criticality Rating of 1, they can still be audited if issues arise during the supply process. This arrangement is in agreement with CPY.

New suppliers not previously included in the project's vendor list may undergo a preliminary audit managed by the PQM, before being added to the list. This decision is made in consultation with CPY.

The Company is invited to review and provide feedback on the vendor/subcontractor audit plan and, if requested, to participate in specific audits.

ATTACHMENT 1: AUDIT SCHEDULE

Pos.	**DESCRIZIONE** ***Description***	***AUDIT REPORT***	**2023**						**2024**												**2025**												**NOTE** ***Notes***
			Jul	***Aug***	***Sept***	***Octt***	***Nov***	***Dec***	***Jan.***	***Feb.***	***Mar***	***Apr***	***May***	***Jun***	***Jul***	***Aug***	***Sept***	***Octt***	***Nov***	***Dec***	***Jan.***	***Feb.***	***Mar***	***Apr***	***May***	***Jun***	***Jul***	***Aug***	***Sept***	***Octt***	***Nov***	***Dec***	
1	PROJECT MANAGEMENT					**P**							**P**																				
2	ENGINEERING					**P**					**P**																						
3	PROCUREMENT					**P**							**P**																				
4	MATERIAL MANAGEMENT							**p**																									
5	QUALITY MANAGEMENT						**P**								**P**																		
6	PROJECT CONTROL						**P**																										
7	QUALITY CONTROL								**p**							**P**																	
8	WELDING								**p**																								
9	PAINTING										**P**																						
10	PREFABRICATION								**p**						**P**																		
11	ASSEMBLY										**P**						**P**																
12	NDE								**P**							**P**																	
13	MECHANICAL COMPLETION																	**P**															
14	COMMISSIONING																					**P**											
15	ONSHORE COMPLETION																						**P**										

LEGENDA / ***Legend:***

P	Pianificato *Planned*
R	Ripianificato *Re-scheduled*
E	Eseguito *Actual*
C	Chiuso *Closed*
M	Miglioramento *Improvement*
O	Osservazione *Observation*
NC	Non conforme *Not conforming*

Pos.	DESCRIZIONE *Description*	*AUDIT REPORT*	2023						2024												2025												NOTE *Notes*
			Jul	*Aug*	*Sept*	*Octt*	*Nov*	*Dec*	*Jan.*	*Feb.*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sept*	*Octt*	*Nov*	*Dec*	*Jan.*	*Feb.*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sept*	*Octt*	*Nov*	*Dec*	
16	*VENDOR 1*																															
17	*VENDOR 2*																															
18	*VENDOR 3*																															
19	*VENDOR 4*																															
20	*SUB-CONTRACTOR 1*																															
21	*SUB-CONTRACTOR 2*																															
22	*SUB-CONTRACTOR 3*																															
23	*SUB-CONTRACTOR 4*																															

TO BE DEFINED AFTER PO/CONTRACT PLACEMENT

LEGENDA / ***Legend:***

P	Pianificato *Planned*	**R**	Ripianificato *Re-scheduled*	**E**	Eseguito *Actual*	**C**	Chiuso *Closed*	**M**	Miglioramento *Improvement*	**O**	Osservazione *Observation*	**NC**	Non conforme *Not conforming*