Base Load Power Hub (BLPH)

PUNCH LIST MANAGEMENT PROCEDURE

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1. PROJECT OUTLINE DESCRIPTION

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 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.

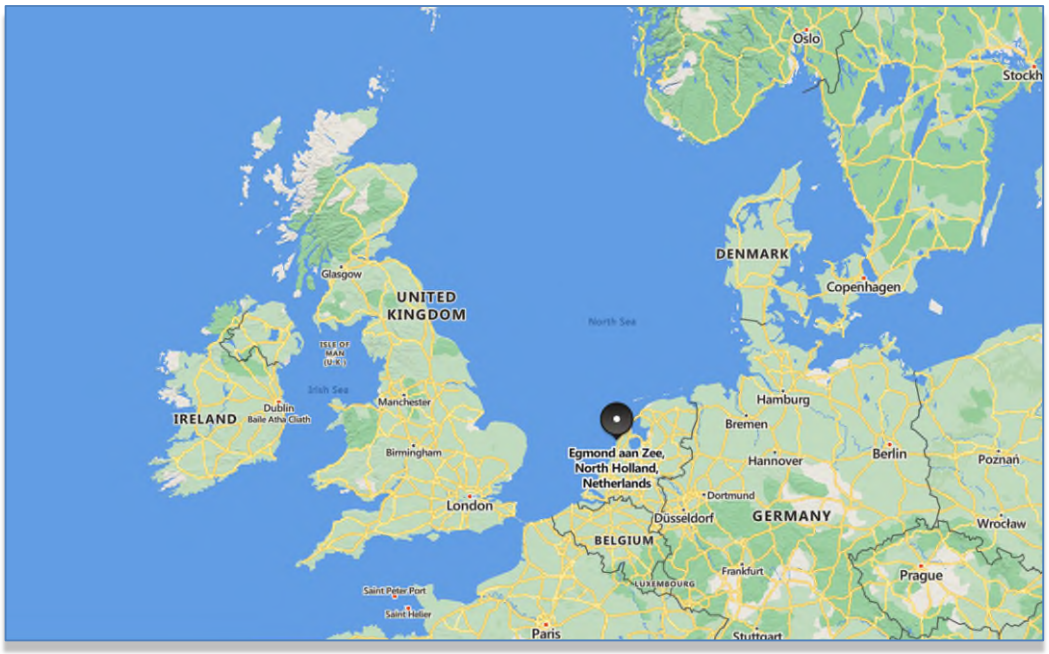


Figure 1 *- HOLLANDSE KUST NOORD WIND PARK Location Map*

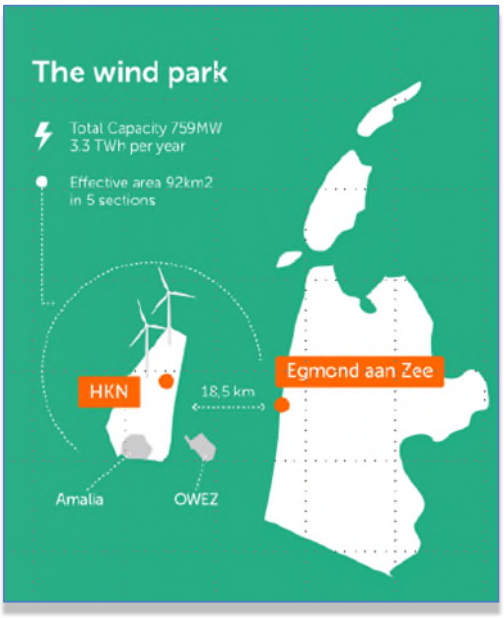


Figure 2 - Wind Park Details

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 is located on coordinates E 590719.1, N 5841602.3 and 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.

2. REFERENCE DOCUMENTS

123A90-PML-PM-LIS-01001	Master Document Register
123A90-PML-COM-PRO-03007	Commissioning Strategy
123A90-PML-COM-PL-03002	Mechanical Completion & Commissioning Execution Plan
123A90-PML-COM-LIS-03011	System/Sub-Systems List
123A90-PML-COM-LIS-03012	System/Sub-System Boundary Limit Diagrams
123A90-PML-QHSE-PRO-00120	PROVERLIS Management Procedure

3. TERMS & DEFINITIONS

Terms and definitions enlisted hereunder may be applied and used in this document:

Terms	Definitions
COMMISSIONING	Occurs after Pre-Commissioning and is the dynamic testing and adjustment of a System, which includes operational testing under real or simulated conditions to ensure that it complies with all applicable rules, regulations, codes, project standards/specifications,

	Commissioning and Start-Up Readiness criteria, and fulfils its intended design duty.
COMPANY (CPY)	Means CROSSWIND C.V., owner & developer of the offshore WIND FARM Hollandse Kust Noord Wind Park Project.
CONTRACTOR (CTR)	Means ROSETTI MARINO S.p.A., the named party with whom COMPANY will place a contract for engineering, procurement, construction, offshore installation & Commissioning of the facilities associated with the PROJECT.
Factory Acceptance Test (FAT)	A process that evaluates the equipment during and after the assembly process by verifying that it is built and operating in accordance with design specifications.
ITR A	Inspection Test Records A is used to record and verify construction scope associated with of a tagged item (component).
ITR B	Inspection Test Records B is used to record and verify energisation and function testing during pre-commissioning of a tagged item
MECHANICAL COMPLETION	Mechanical Completion is the point in the project when construction is complete, and subsystems are ready to be handed over to the commissioning team.
PRE-COMMISSIONING	Pre-Commissioning relates to the preliminary Commissioning activities to test and check the individual basic functions, systems and/or sub-systems within a logical area to ensure that the components of any given system and/or sub-system perform as designed.
PROJECT	Refers to the BASE LOAD POWER HUB (BLPH) project.
PROVERLIS	Refers to the Completion Management System that efficiently manages and tracks project completion in all of its phases
PUNCH ITEM PUNCH LIST (PL)	A Punch Item is an uncompleted, unsatisfactory or missing work, identified as being part of a scope of work, which is cleared during the course of the project at a specific technical or contractual milestone. The Punch Items are recorded in a consolidated document called Punch List (PL).
RFC (C)	The Ready For Commissioning Certificate states that the Sub-System is ready for the commencement of the associated Commissioning activities.
RFO (C)	A Ready For Operation Certificate shall be raised on completion of the commissioning procedure scope and presented to the Asset Operator for acceptance before any system (or sub-system) is placed into operation.

4. DOCUMENT SCOPE

While the Construction, Mechanical Completion, Pre-Commissioning and Commissioning activities are being performed, all discrepancies, damages or missing equipment, malfunctions, missing documents, if not corrected immediately, are called **Punch items** and are recorded in the relevant Sub-system **Punch List**.
Under no circumstances may Mechanical Completion, Pre-Commissioning or Commissioning Check and Test sheets be signed off by improperly raising corresponding Punch List Items, to cover any eventual inspection discrepancies

5. PUNCH ITEMS

A Punch Item is an uncompleted, unsatisfactory or missing work, identified as part of a scope of work, which is cleared during the course of the project at a specific technical or contractual milestone, specifically PL A must be cleared prior to RFC signature and PL B must be cleared prior to the RFO signature (unless as agreed with CPY can be carried over to the next stage and may be cleared later)
The Punch Items are recorded in a consolidated document called **Punch List**.

A Punch Item is considered as a blocking point if it leads to a potential hazard with respect to the following:

- Safety or operational aspect of the ongoing or upcoming activity in the completion process.
- Any missing requirement from project specifications.
- Any missing requirement related to particular local rules/regulations.

Are not to be considered as Punch Items:

- Items related to construction / installation work not yet completed before starting a Mechanical Completion activity.
- Items which are not exclusively part of the Scope of work such as additional works or additional requirements not covered by the Contract and specifications, or any requirement to improve the plant in whatever way not specified within project documentation.

With reference to the data entry of the Punch Items into PROVERLIS database, the following points have to be taken into account:

- It is possible to use the Punch List Entry Form to upload a punch item related to a single tag (part of a sub-system) or multiple ones for more tags, also part of different Sub-Systems
- It is possible to upload a punch item digitally, directly by raising a Punch Item (or more) in PROVERLIS
- Every punch item raised can be related to tags (or also referred to Sub-Systems), regularly notified and in status “RFI – Request For Inspection”.

At this point, it is important to note that the punch list will be a list of items, which describes how and where “completed works” are non-conforming in relation to project specifications or scope.
Such list, edited in accordance with the CONTRACTOR, shall be kept updated during the completion activities so to have a precise status of each Sub-system at the Ready for Commissioning and Ready for Operation phases.
The list is loaded and managed by PROVERLIS.
Outstanding / Incomplete works shall not be tracked on the completion Punch List; where the work relates to an PROVERLIS activity still opened or it relates to punch list items opened when equipment is released for shipment from a vendor.

In relation to a Punch List reference, a “Punch List Entry Form” will accompany the check or test sheet.
Each punch list item, within the PL Entry Form, shall contain the following information:

- Equipment Identification Number (Tag n.)
- Sub-System
- Discipline
- PL Category A, B
- Defect description, corrective action to be done
- Action by
- Duty Phase (Worksite/Site)

Each Punch Item must be approved and accepted both by CPY & CTR with the signature of the “Punch List Entry Form”, prior to the upload in PROVERLIS (no more than 24 hours delay).

In case a Punch Item is considered out of the contractual SOW, it shall be evaluated and agreed with the PM, PEM or PQM whether has to be raised or not.

6. PUNCH LIST CATEGORY

The management of the Punch Item is done by categories. The methodology to determine the Punch Item category is based on the pre-requisites to achieve a Pre-commissioning or Commissioning technical milestone (RFC or RFO). The categorisation is not based on a criticality rating or a planning priority.

For the supply of Package/Module and during Construction activity, the routine operation for Punch List priority levels should be considered:

Punch List Category A
Punch List Category B

The categories of the Punch Item are determined as follows:

6.1 PUNCH LIST CATEGORY A

Punch List item that will prevent the safe operation of the Equipment, System and Plant and may jeopardise personnel or environment. Such item, as agreed, shall be cleared before the Equipment/System/Plant can progress to the next stage of the Commissioning and Handover phase.
Punch Item considered as a blocking point for the commencement of the Commissioning activity of the Sub-system.
Category “A” Punch Items considered a blocking point for the signature of a Sub-System RFC or RFO certificate.

6.2 PUNCH LIST CATEGORY B

Punch List item that will not endanger the safe operation of the Equipment, System and Plant or personnel and/or environment. Such item, as agreed, can be carried over to the next stage and may be cleared later.

7. PUNCH LIST MANAGEMENT DESCRIPTION

All Punch items will be raised during inspection activities and during FAT.

Here are a few examples of Punch Item per different category:

Typical Category "A" Punch Items are: electrical cable defect, broken lighting fixtures, valve stuck in position, missing equipment or support, missing grounding/earthing etc.

Typical Category "B" Punch Items are: faulty transmitter, oil leakage on a transformer, wrong logic sequence, non-achievement of design criteria during operational test, excessive vibrations on an equipment, missing critical vendor documentation or certification, missing tag, wrong labelling, etc.

Each Punch Item shall be recorded in PROVERLIS, with the following information, but not limited to:

- Sub-System
- Item Identification Tag
- Defect description
- Discipline
- Party in charge of the corrective action
- Punch item category (A, B)
- Originator name (Raised By)
- Originator date
- Description of the corrective action done
- Corrective action: Cleared by and date
- Corrective action: Checked by and date
- Corrective action: Approved by and date

The Punch list needs to be kept permanently updated during the project execution, so as to have a precise status of each Sub-system at each completion milestone:

- Ready For Commissioning (RFC) status
- Ready for Operation (RFO) status

Prior to the Ready For Commissioning stage of a Sub-System, the agreed Categorized Punch List shall be issued for approval to the Commissioning Team.
The Sub-system Punch Lists already existing and outstanding, once the date of the Ready For Commissioning stage is established, will be kept up to date during the Commissioning phase by adding new Punch Items and by approving the clearance forms of the existing ones.
At the Ready for Operation stage of a Sub System, the agreed Categorized Punch Lists shall be issued for approval to CPY.

Punch List clearance means that a proper corrective action has been taken and that the correction of uncompleted, unsatisfactory or missing work is considered completed.
CPY shall be the sole entity to decide and approve the clearance of a Punch Item.

PROVERLIS will produce the "Punch List Clearance Form" for each item.

PROVERLIS Completion Management System is used to manage the completion and record of all punch list items and as such, will enable production of reports that will allow the users to see, at any defined project phase, System/Sub-System or discipline, a listing of outstanding items.

For each Punch Item that has to be considered closed, both signatures of the COMPANY and the CONTRACTOR must be on the "Punch List Clearance Form".

The Punch List clearance requirements on site shall be taken into account during the preparation phase in order to plan the correct level of resource and means (clearance team, procurement of parts, record and follow up, link with engineering and vendors, remedial actions, etc.)

8. RESPONSIBILITIES

SUPPLY QUALITY LEAD: Before equipment, package shipment, the SQL will prepare the Release Note that contains all outstanding punch items raised during FAT from vendors that will be uploaded into PROVERLIS.

QC INSPECTOR: During the Mechanical Completion activities, QC Inspector will fill up the test sheets and, in agreement with the CPY, if there is any pending activity, he will then raise a new dedicated punch item.
These punch items will be imported into PROVERLIS.

COMMISSIONING ENGINEERING: During Commissioning activities, the Commissioning engineer will fill up the functional check sheet, OTP and, in agreement with the CPY, if there is any pending activity, he will then raise a new dedicated punch item. These punch items will be imported into PROVERLIS as well.

PROVERLIS ADMIN: In addition to the main tasks of check and test sheets management and inspection notifications, he also receives from the Supply Quality Lead all Release Notes and all outstanding punch items to import into PROVERLIS.
He manages punch list items raised during Mechanical Completion and Commissioning phases via the PROVERLIS database.

MECHANICAL COMPLETION MANAGER: Manages the Mechanical Completion priorities according to the instructions provided and defined by the Commissioning team.

COMMISSIONING MANAGER: It is responsibility of the Commissioning Manager defining the priority to be given to Systems and Sub-Systems of the plant, in order to let the Construction proceed (during the Mechanical Completion phase) with the clearance of the related outstanding Punch Lists.
The same process is followed also for the clearance of the outstanding Punch Lists raised during the Commissioning activities.

CONSTRUCTION MANAGER: It is responsibility of the Construction Manager proceed completing construction and perform the action to solve all the defect found during inspection in order to clear the punch list and offer the RFC to the Commissioning.

9. ANNEXES

9.1 ANNEX 1: PUNCH LIST ENTRY FORM

ROSETTI MARINO	**Base Load Power Hub (BLPH)** **Punch List Entry Form**	CROSSWIND
Sub-system code:	Sub-system description:	Date:

Category "A" → Items to be cleared before the issuance of the RFCC (Ready for Commissioning Certificate).
Category "B" → Items to be cleared before the issuance of the RFOC (Ready For Operations Certificate).
Category "C" → Items to be cleared before Sail Away.

Item N.	Check sheet ref.	Disc.	Tag Number	Raised By	Defect Description / Corrective Action	Attachments	Cat.	Action By	Duty Phase	Deadline date
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										

Raised by Contractor / Subcontractor: _____ **Checked by** Contractor QA/QC: _____ **Accepted by** COMPANY: _____

P1/1

9.2 ANNEX 2: PUNCH LIST CLEARANCE FORM SAMPLE

ROSETTI MARINO

PUNCH ITEM ENTRY /CLEARANCE FORM

CROSSWIND

1 -ELEMENT IDENTIFICATION

1.1 Task

1.2 Item

1.3 Subsystem

2 - DEFECT DESCRIPTION	BY
	Name
	Date
	Signature

3 - DEFECT ASSESSMENT	BY
3.1 Corrective action proposal	
3.2 Material	3.2.1 Material required / 3.2.2 Material type
3.3 Priority	Name
3.4 Activity code	Date
3.5 Action by	Signature

4 - PERFORMED ACTION	BY
	Name
	Date
	Signature

5 - CLEARANCE CONFIRMATION CHECKED BY	APPROVED BY
Name	Name
Date	Date
Signature	Signature

9.3 ANNEX 3: PROVERLIS PUNCH LIST REPORT

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM 83-00 400 V Switchboard & Connection Box (SG-200N1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000100	B	SG-200N1	Missing n.15 drawers (highlighted in the GA) and all accessories. The missing drawers wil be tested during FAT, mid-september			SLinari 2024-08-02			
C30000101	B	SG-200N1	Missing PLC wago cubicle A2/02 - signals in the I/O list from row 2 to 16 cannot be tested			SLinari 2024-08-02			
C30000102	B	SG-200N1	Missing relè K86 incoming			SLinari 2024-08-02			
C30000103	B	SG-200N1	All documentation shall be re-issued and approval in final revision after mark-up during FAT			SLinari 2024-08-02			