

2024 年環境社會管理年度摘要報告

2024 Environmental and Social Management Annual Summary Report

雲林離岸風場

Yunlin Offshore Windfarm

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1 簡介 / Introduction

本年度摘要報告旨為展現雲林離岸風場專案 (下稱本專案) 於2024年之環境社會管理成果。

本專案於2024年之工程活動包括：

This annual summary report presents the environmental and social management outcomes of the Yunlin Offshore Wind Farm Project (hereinafter referred to as the Project) for the year 2024:

陸域工程 / Onshore construction campaign

本專案於2019年1月開始進行陸域施工，工程項目包含兩座陸域變電所及陸纜相關工程。四湖變電所於2020年6月完成建築工程，並於2020年7月取得建築使用執照，2023年底已完成移交工作，目前由運維廠商(德唯特臺灣；Deutsche Windtechnik)執行四湖變電所的運維工作；台西變電所於2020年6月完成建築工程，並於2022年11月取得建築使用執照。截至2024年底，仍在持續進行資料採集與監控(SCADA)系統之測試。

The project commenced onshore construction in January 2019, including the construction of two onshore substations and related onshore cable works. The Sihu substation completed construction in June 2020 and obtained the usage license in July 2020. The handover has been completed in 2023, and the substation is currently operated and maintained by Deutsche Windtechnik Taiwan. The Taixi substation completed construction in June 2020 and obtained the building occupancy permit in November 2022. As of the end of 2024, the handover is still proceeding.

離岸工程 / Offshore construction campaign

本專案離岸工程之零組件 (含海底電纜、水下基礎、風機組件等) 均按照計畫，於2019年開始製造並依規劃執行與交件。本專案總共有80個水下基礎，其中的40個由台塑製造，另外的40個則進口自德國。截至2024年底，80座水下基礎皆已安裝完成。本專案總共有80個轉接段，皆已全數製造完畢，其中的40個由俊鼎製造，另外的40個則進口自比利時。截至2024年底，80座轉接段皆已安裝完成。本專案海纜皆已全數製造完畢。截至2024年底，12條輸出海纜均已安裝完成，並已完成10條海纜的測試。截止2024年底，共計73座風機完成安裝並開始運轉。

The Project components, including subsea cables, foundations, and wind turbine components, were manufactured as planned to start in 2019, with continued execution and deliveries in 2021. The Project has a total of 80 foundations, 40 of which were manufactured by Formosa Heavy Industries, while the remaining 40 were imported from Germany. In 2024, all the 80 foundations were installed completely. The Project also has a total of 80 transition pieces, all of which have been manufactured. Of these, 40 were produced by CTCI Machinery Corporation, while the other 40 were imported from Belgium. In 2024, all the 80 transition pieces were installed completely. All export cables for the Project have been fully manufactured. In 2024, all the 12 export cables were installed completely, with testing completed for 10 of them. As of the end of 2024, a total of 73 turbines are in operation.

2 一般性合規 / General Compliance

本專案於報告年度期間(2024年)發生一項不合規事件：

- 於 2024 年，第 21 號、第 62 號、第 12 號、第 70 號、第 69 號、第 66 號、第 32 號、第 65 號、第 58 號、第 30 號、第 28 號、第 27 號、第 06 號、第 34 號及第 35 號機組水下基礎打樁期間，水下噪音聲曝值受量測設備背景噪音等外在因素干擾，致距離打樁中心 750 公尺之 SEL_{30s,05} 測值大於 160 分貝，違反環評承諾，遭環保主管機關裁罰。

上述違反環評承諾之事項，已經環保署依相關法規裁罰，並依要求擬定改善計畫，提交予環保署。其餘專案相關活動，如環境監測均按照法令以及環評承諾執行。

During the reporting year (2024), the Project has one (1) non-compliance event:

- Underwater Piling Noise Non-Compliance:**
According to the commitments in the Environmental Impact Assessment (EIA) report, during the installation of underwater foundations, the piling noise should not exceed 160 dB SEL_{30s,05} at a radius of 750 meters from the piling center. However, due to background noise and other measurement interferences, a total of 15 foundations (YUN21, YUN62, YUN12, YUN70, YUN69, YUN66, YUN32, YUN65, YUN58, YUN30, YUN28, YUN27, YUN06, YUN35, YUN34) exceeded this limit.

All non-compliance incidents have been reported to the Ministry of Environment with improvement plans.

3 環境社會管理計畫 / Environmental and Social management plan

本專案之環境社會管理計畫於2024年執行情形說明如下：

- 環境影響說明書：**本案所有環境影響減輕措施及監測計畫於 2019 年通過環保署審核，環境影響說明書環境影響調查報告書於 2020 年 11 月通過環保署審核。2024 年活動皆按規劃進行。
- 海岸利用管理說明書：**海岸利用管理說明書許可內容檢查紀錄已於 2024 年 3 月 29 日提送內政部營建署。
- 水下文資管理計畫：**一切事項皆依計畫執行。
- 環安衛計畫：**本專案環安衛計畫第九版於 2023 年 6 月發布，本專案 2024 年活動皆依規範執行，並依據專案最新進展進行檢討更新。
- 陸域交通管理計畫：**已按照陸域交通管理計畫執行。
- 行為準則：**本公司於 2020 年舉辦了三場行為準則內部訓練，並於 2020 年 7 月公告此行為準則於專案網站。2024 年所有活動均依此行為準則進行，沒有發生違反事項。

- **環境社會政策聲明**：本公司於 2020 年 7 月正式將本專案環境社會政策聲明發布於專案網站，所有活動均持續依此政策聲明進行。

The implementation of the Environmental and Social Management Plan for the Project in 2024 is outlined as follows:

- **Environmental Impact Assessment (EIA) Report**: All environmental impact mitigation measures and monitoring plans were approved by the Ministry of Environment in 2019, and the Environmental Impact Survey Report was approved in Nov-2020. The commitments in the EIA report continued to be implemented throughout 2024.
- **Coastal Zone Management Plan (CZMP)**: The fourth inspection record of the Coastal Zone Management Plan was submitted to the Construction and Planning Agency of the Ministry of the Interior on 29-Mar-2024.
- **Underwater Cultural Heritage Management Plan** : All activities were carried out in accordance with the plan.
- **HSE Plan** : The ninth version of the project's HSE Plan was released in June 2023. All project activities in 2024 were executed in compliance with the regulations and reviewed/updated based on the latest project developments.
- **Onshore Traffic Management Plan** : During the execution of onshore works, all activities were conducted in accordance with the Onshore Traffic Management Plan.
- **Code of Conduct** : The project held three internal Code of Conduct training sessions in 2020 and officially published the Code of Conduct on the project website in July 2020. All activities in 2024 were carried out in accordance with this Code of Conduct.
- **Environmental and Social Policy Statement** : **The project's Environmental and Social Policy Statement was officially published on the project website in July 2020, and all activities continue to be conducted in accordance with this policy statement.**

3.1 環境影響減輕與監測計畫摘要 / Summary of Environmental mitigation measures and Monitoring plans

本專案所有環境影響減輕措施和監測計畫均按環評承諾執行。

陸域工程方面，本專案的主要陸域工程包括陸域電纜安裝及台西及四湖變電所新建工程。工程於2019年開始並同時執行相應之環境監測，以了解陸域施工是否對周圍環境有負面影響。陸纜已於2022年全數完工，四湖及台西升壓站之工程以及復舊分別於2023年6月及2024年3月完成。故環境監測計畫亦分別於2023年第三季及2024第一季後執行完成。本計畫於2023年第三季取得首批的發電業執照，故隨即開始營運期間之環境監測工作。

總結而論，陸域施工期間排除因環境背景值影響之數據後，均符合相關法規標準，並未對環境產生重大影響。

離岸工程方面，本公司亦遵循環評承諾，海域監測均依照計畫進行。除了海域水質氨氮於2024 年第一季及第二季有超過海域水質標準外(經調查後推測應為雲林上游畜牧業及生活廢水

造成的影響)，其餘監測結果均可符合環保署公告之法規標準，生態監測結果經與施工前環境背景調查結果比對，並無明顯變化情形。

本專案每季監測報告可於專案網站下載：<https://owf-yunlin.tw/environmental-investigation/>。

All environmental mitigation measures and monitoring plans for the Project have been implemented in accordance with the Environmental Impact Assessment (EIA) commitments.

For onshore works, the Project's main onshore construction activities, including the construction of the Taixi, Sihu substations and onshore cable, the onshore construction campaign commenced from 2019. The corresponding environmental monitoring were conducted in parallel. The onshore cable was completed in 2022. The construction and reinstatement of the Sihu and Taixi substations were completed in June 2023 and March 2024, respectively. As a result, environmental monitoring during the onshore construction phase in Sihu was carried out until Q3 2023 and Taixi was carried out until Q1 2024. Additionally, since the nine (9) turbines that obtained the Electricity Business License (EBL) were integrated into the Sihu substation in Q3 2023, environmental monitoring for the operational phase commenced from Q3 2023.

In summary, after excluding data influenced by background environmental factors, all onshore monitoring results complied with relevant regulatory standards, with no significant environmental impact observed.

For offshore works, Regarding the offshore environmental monitoring. The marine water quality, ammonia nitrogen levels exceeded the standard twice in Q1 and Q2 of 2024. These exceedances are suspected to have been caused by upstream agricultural runoff and domestic wastewater. Overall, most monitoring results complied with relevant regulatory standards, with no significant environmental impact observed. In addition, ecological monitoring results, when compared to pre-construction baseline data, showed no significant changes.

The Project's quarterly monitoring reports can be downloaded from the project website : https://www.yunlin-offshore.com/tw/responsibility__download

3.2 社會管理計畫 / Social Management Plan

3.2.1 利害關係人經營 / Stakeholder Engagement

本公司於2024年與本專案利害關係人依議題的性質持續進行相關會議溝通及活動參與，其中本公司與各級相關中央及地方主管機關、地方意見領袖、其餘受專案影響團體、環評監督小組、非營利/政府組織、媒體、一般大眾、承包商、貸方及內部員工等均保持順暢良好之溝通（「綠燈」等級），包含分別於2024年1月17日以及2024年12月25日所辦理的第12及13次環境部查核會議，以及分別於2024年5月15日以及2024年11月11日所辦理的環境保護監督小組會議。然而，本公司與地方意見領袖在2024年曾因沿海居民對3月至5月間夜間打樁噪音擾民的投訴，而被列為「黃燈」警示狀態。這些噪音被居民反映影響其睡眠。作為回應，本公司舉辦了在地工程說明會，說明相關環評規定。並隨著水下打樁工程於2024年7月17日完成，沿岸地區的空气傳播打樁噪音也隨之停止。因此，與地方意見領袖的關係狀態已恢復為「綠燈」等級且未再收到任何關於夜間打樁噪音的居民投訴。而本公司與特定漁民之間的溝通與互動被評為黃燈的原因在於，儘管YWPC已於2020年10月16日與11月6日與該些漁民簽署協議，並針對工程建設及

超過 20 年的營運期提供補償，然而，由於離岸工程尚未完成，因此持續密切關注施工進度與狀態，以能即時應對突發事件，仍為當前的重點。

The project has maintained ongoing meetings, communications, and engagement activities with stakeholders based on the nature of each issue. All related activities in 2024 proceeded as planned. The project maintained smooth and effective communication ("Green Light" status) with central and local authorities, local opinion leaders, other affected groups, the EIA supervisory committee, NGOs, media, the general public, contractors, lenders, and internal employees. Key activities included the 9th and 10th Environmental Supervision Committee meeting on 17-Jan-2024 and 25-Dec-2025, and the 12th and 13th audits by the Ministry of Environment on 15-May-2024 and 11-Nov-2024.

However, YWPC and local opinion leaders was once shifted to a yellow alert status in 2024 due to complaints from coastal residents about noise disturbances during nighttime pile driving from March to May in 2024, affecting their sleep, and YWPC conducted local engineering briefings to explain environmental assessment regulations. The airborne piling noise in coastal areas ceased following the completion of foundation installation by YWPC on 17-Jul-2024. Consequently, the status with local opinion leaders has shifted to green, as there have been no complaints from coastal residents regarding noise disturbances during nighttime pile driving since installation work was completed.

The reason why the engagement and communication rating between YWPC and specific fishermen is marked as yellow is that, although YWPC signed agreements with the fishermen on 16 October and 6 November 2020, and the fishermen have already been compensated for both the construction and over 20 years of operation, the offshore construction is still ongoing. Therefore, it remains a priority to closely monitor construction progress and status in order to respond promptly to any unexpected events or incidents.

3.2.2 申訴機制 / Grievance Mechanism

本專案申訴機制於 2020 年 7 月正式公告於專案網站 (https://www.yunlin-offshore.com/tw/compliance__article/daCB55976800)，並將訊息提供給相關供應商和承包商；本公司也於 2020 年 8 月，將此申訴機制之訓練及解說教材，發送予所有本公司離岸工程團隊人員，以確保團隊人員能夠妥善處理申訴。2024 年所有申訴相關事件均持續依此機制進行。

本計畫於 2024 年共計收到 3 件申訴，並均已完成受理。第一次的申訴為 2024 年 4 月 29 日，係四湖鄉長表達對於夜間噪音的不滿，本計畫增派漁業聯絡員並積極向投訴村民以及鄉長進行溝通。第二次及第三次申訴分別為 2024 年 11 月 10 日以及 2024 年 12 月 1 日，均為本計畫工作船隻於航行時穿越漁網，因而造成纏繞並損壞漁網的事件，均已和漁民達成和解。

The grievance mechanism for this project was officially announced on the project website (https://www.yunlin-offshore.com/tw/compliance__article/daCB55976800) in July 2020, and the information was also shared with relevant suppliers and contractors. In August 2020, the Company distributed training and explanatory materials regarding the grievance mechanism to all offshore project team members to ensure they are equipped to handle grievances appropriately. All grievance-related matters in 2024 have continued to be handled in accordance with this mechanism.

There were three (3) grievances which were received by YWPC in 2024. It was solved appropriately. Worker's grievance is handled by this Grievance Mechanism as well. The first grievance report received on 29-Apr-2025, which is the Sihou Township head expressed anger via Line and phone regarding the disturbance by nighttime piling noise. It affects residents' lives with vibrations and

noise. They asked for the piling campaign should no start earlier than 5:30. YWPC added Andy Fung as a fishery liaison and had proactive communication with residents and township head.

The second and third grievance were received on 10-Nov-2024 and 01-Dec-2024, respectively. Both are related to fishing net entanglement caused by the Project's working vessels. All the grievances have been reached settlement with all the fishermen involved.

3.3 事故報告 / Summary of incident records in 2024

於2024年1月至2024年11月間，本專案共紀錄有157次事故事件，包含工傷事件16件；急救處理事件31件；虛驚事件45件；財損事件50件；環境事故15件。

In 2025, a total of 157 incident records were reported, comprising 16 recordable injuries, 31 first aid cases, 45 near-miss incidents involving potential damage, and 15 environmental incidents.

4 承包商管理 / Summary of Contractor Management

本專案承包商除了須依照合約內容執行外，亦須遵守台灣與國際相關的法律及規範，並善盡環境社會責任，而本專案之主要承包商亦有自己的環境社會責任準則。

除了合約條文外，本公司也提供本公司之行為準則予承包商，所有承包商均接受並將遵守本公司行為準則，並皆依照合約要求定期提交相關進度報告。

The Project's Environmental and Social Management System (ESMS) stipulates that contractors have to comply with international, national and local laws, as well as their contractual obligations under respective contract(s) with YWPC.

The project also provides the Code of Conduct for all contractors. All the contractors must adhere to YWPC's Code of Conduct and provide progress reports regularly.