

Environmental Monitoring Report of Formosa II

Operation Phase (July to September 2023)

Monitoring & Improvement Summary

Monitoring Item		Monitoring Site	Monitoring Result Summary	Measures & Effects
Bird Ecology	Offshore Bird	Wind farm and its Periphery	<ol style="list-style-type: none"> Species Composition: 4 orders, 6 families, and 11 species. Protected Species: Crested Tern (II), Little Tern (II), Roseate Tern (II), and Bridled Tern (II). Flying Altitude: 77% of recordings were below 25m. 	—
	Coastal Birds	<ol style="list-style-type: none"> Xihu National Wetland Periphery Coast 	<ol style="list-style-type: none"> Species Composition: A total of 9 orders, 19 families, 43 species and 2,828 individuals were recorded. Protected Species: 8 protected species were recorded, including Painted Snipe (II), Black-Winged Kite (II), Taiwan Hwamei (II), Little Tern (II), Crested Serpent Eagle (II), <i>Buteo Japonicus</i> (II), Chestnut Munia (III), and Brown Shrike (III). 	—
	Analysis of Tern Migration Routes	Weather Radar Observation Data Analysis	Based on Nantun Weather Radar observation, the number of birds passing through the wind farm was the highest on May 25, 2023. Migratory birds primarily migrate in the direction between NNW and NNE, with a few heading N and NNE. In June, the number of birds passing through the wind farm decreased significantly by 89.4. June marks the tail end of the Northward migration of spring migratory birds.	—
Cetacean Sighting		Wind farm and its Periphery	There were no cetacean sightings this quarter.	—
Fishery		3 Survey Lines in Wind Farm Area	<ol style="list-style-type: none"> Fish: 10 families, 18 species, and 86 individuals. Hammerhead shark takes the majority. Fish egg: 10 families, 11 genera, and 5,356 eggs. Moonfish was the dominant species. 	—

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		3. Fish larva: 8 families, 9 genera, and 42 individuals.	
Underwater Noise (including Cetacean Acoustic Survey)	5 stations within wind farm area	1. Whistles: No cetacean whistles were detected. 2. Clicks: No cetacean clicks were detected.	—
Marine Water Quality	10 stations within wind farm area	pH value is 8.2, water temperature is between 26.0-26.8°C, dissolved oxygen is between 6.3-6.6 mg/L, salinity is between 32.8-33.9 psu, transparency is between 19-28 cm, Coliform group is between <10-45 mg/L, Chlorophyll A is between 0.11-2.19 mg/L, BOD is between 0.8-1.0 mg/L, SS is between 2.6-3.2 mg/L, fat is between N.D.-1 mg/L.	—
Marine and Intertidal Ecology	10 stations within wind farm area and in the vicinity of submarine cable	1. Marine ecology: phytoplankton: 5 phylum, 67 genus, 139 species; Chlorophyll A is between 1.70-5.93 µg/L, Zooplankton: 12 phylum, 33 genre; Benthic organism: 14 orders, 24 families, 26 species. 2. Intertidal ecology: Benthic organism: 6 orders, 7 families, and 8 species	—
Underwater Photography	Same two wind turbine locations (D01 & D07) as in the pre-construction survey	A total of 1 order, 8 families, and 11 species were recorded at D01. A total of 1 order, 5 families, and 8 species were recorded at D07.	—
Terrestrial Ecology	Planned important wetland in Zhunan	1. Plantation: 88 families, 232 genera, and 319 species were recorded. 6 rare species were recorded, including Taiwan Incense Cedar, Lanyu Podocarp, Common Garcinia, Myoporum, Seremban, and Kandelia. All are artificially cultivated. 2. Mammal: 5 families, 12 species, and 8 individuals of mammals were recorded. 1 order, 2 families, and 7 species of bats were recorded. No protected species were recorded. 3. Amphibian: 5 families, 5 species and 32 individuals were recorded. No protected species were recorded. 4. Reptile: 6 families, 10 species, and 30 individuals were recorded. No protected species were	—

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		<p>recorded.</p> <p>5. Butterfly: 4 families, 8 subfamilies, 23 species and 158 individuals were recorded. No protected species were recorded.</p> <p>6. Bird: 18 families, 32 species, and 308 individuals were recorded. 1 protected species, including Black-Winged Kite (II) was recorded.</p>	
Aquatic Ecology	Planned important wetland in Zhunan	<p>1. Plantation: 15 families, 19 genera, and 21 species were recorded. 2 rare species were recorded, including Myoporum and Kandelia.</p> <p>2. Fish: 6 families, 7 species, and 169 individuals were recorded. No protected species were recorded.</p> <p>3. Crabs and Shrimps: 6 families, 9 species and 175 individuals were recorded. No protected species were recorded.</p> <p>4. Conch: 4 families, 4 species and 202 individuals were recorded. No protected species were recorded.</p> <p>5. Aquatic insects (including Odonata): for Odonata, 3 families, 11 species, and 78 individuals were recorded; for aquatic insects, 3 orders, 6 families, and 294 individuals/m² were recorded. No protected species were recorded.</p>	—

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Groundwater Quality	1. Substation 2. Planned Important Wetland in Zhunan	1. Substation: The survey results of this quarter are still under analysis and the complete survey results will be presented in the monitoring report of Q4. 2. Planned Important Wetland in Zhunan: pH value is 8.2; BOD is 59.2 mg/L; COD is 193 mg/L, SS is 91 mg/L, Ammonia nitrogen is 0.06 mg/L, ADMI is 35 mg/L, fat is 2.5 mg/L, water temperature is 36.5°C, NO ₃ -N is 0.17, TP is 0.072 mg/L, Dissolved oxygen is 7 mg/L. This quarter, BOD value has exceeded class IV water body quality standards. All other monitoring items comply to class IV water body quality standard.	BOD value measured in EIA and DA phases are also higher than class IV water body quality standard (referring to Protection Project of National Important Wetlands: https://wetland-tw.tcd.gov.tw/). It is inferred that the value is affected by organic pollutants in water from agriculture, water cultural, household and industry discharged into the wetland, which belongs to background value and is not caused by the construction of the Project. Monitoring will be continued to clarify the changes.
Electromagnetic Field	1. Substation 2. Residential Area near Kaiyuan Road	1. Substation: (1). Electric Field: 1.613 (V/m) (2). Magnetic Field: 0.921 (mG) 2. Residential Area near Kaiyuan Road: (1). Electric Field: 11.11 (V/m) (2). Magnetic Field: 2.304 (mG)	—