MOTT MACDONALD

Greater Changhua Southwest Offshore Wind Farm in Taiwan

Focused Social Impact Assessment

May 2025

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Executive summary

Greater Changhua Offshore Wind Farm SW Ltd., or the Project Company, is a special purpose vehicle established by Ørsted Wind Power TW Holdings A/S (Ørsted) to develop an offshore windfarm (OWF) in Taiwan (herein referred to as the "Project" or "Greater Changhua 2"). The Project comprises of two phases, namely:

- Phase 2a consists of 36 wind turbine generators (WTGs), each of 8MW capacity. All Phase 2a WTGs are in operational phase, having received an updated EBL for all its WTGs on 6 February 2024. The electricity bill license (EBL) expires on 9 May 2043.
- Phase 2b is currently under planning to commence the construction phase for its OWF components. The offshore construction is expected to commence in Q1 of 2025, alongside Greater Changhua 4. This phase will comprise of 24 WTGs, each of 14MW capacity.

The planned aggregated capacity for the Project is 632MW (i.e. from a total of 60 WTGs), with Phase 2a generating 294.8MW and Phase 2b aiming to generate 337.1MW. Each phase has its own grid connection point, connecting to two different OnSS then two different Taiwan Power Company (TPC) onshore substations (OnSS).

The Project is adjacent to two other OWF developments which are also owned by Ørsted:

- East of the Project – Greater Changhua South East, comprising of 75 WTGs, with a capacity of 605.2MW. This OWF development is known as "Greater Changhua 1". Greater Changhua 1 is currently operational, having obtained its electricity business license (EBL) covering all WTGs with the last batch obtained in Q3 2024.
- North of the Project – Greater Changhua North West, comprising of around 42 WTGs, with a capacity of 582.9MW. This OWF development is known as "Greater Changhua 4". Greater Changhua 4 is currently planning construction of its OWF components. The offshore construction is expected to commence in Q1 of 2025.

As part of the requirements for obtaining project financing, the Project is required to demonstrate adherence to the Equator Principles (EP). Therefore, Mott MacDonald has been commissioned by Ørsted to undertake a focused social impact assessment (FSIA) for Greater Changhua 2. This report aims to provide an identification and assessment of potential social impacts associated with the Project and its activities.

The following social aspects were discussed within this report in terms of baseline status, impact assessment, impact significance, mitigation measures and residual impact significance:

- Employment, working conditions including for the supply chain
- Economic displacement and livelihoods
- Human rights
- Community service and infrastructure impacts, including workers' influx and traffic

Baseline data and mitigation measures have been extracted from existing Project document suites. In particular, information from the Project's draft human rights impact assessment (HRIA) and draft livelihood restoration plan (LRP) are referenced, which leverage socio-economic survey data collected since Greater Changhua 1 (i.e. household surveys, conducted 2020 to 2021) as well as additional baseline from key informant interviews (KIIs) and focus group

discussions (FGDs) conducted between December 2023 to January 2024 for Greater Changhua 4.

1 Introduction

1.1 Overview

Greater Changhua Offshore Wind Farm SW Ltd. (herein referred to as “Project Company”) is a special purpose vehicle established by Ørsted Wind Power TW Holdings A/S (Ørsted) to develop an offshore windfarm (OWF) in Taiwan (herein referred to as the “Project” or “Greater Changhua 2”). The Project is located approximately 50km offshore from the coast of Changhua County, Taiwan.

The Project is planned in compliance with the “Offshore Wind Farm Site Application Regulation”, stipulated by the Energy Administration[1], Ministry of Economic Affair (EA, MoEA) on 2 July 2015. The regulation gives endorsement to offshore wind energy development for developers to promote nuclear-free homeland by the year of 2025.

In 2022, the National Development Council (NDC) published Taiwan’s Pathway to Net-Zero Emissions by 2050. The plan is to decarbonise the electrical sector and targeted 60% renewable energy come 2050[2]. As of 2023, the electricity generation comprised of 42.2% coal-fired, 39.5% liquefied natural gas (LNG)-fired, 6.3% nuclear, 9.5% renewable energy and 2.4% of other types of energy.

As part of the Project’s project financing approach, the Project may be required to demonstrate adherence to the Equator Principles (EP). Therefore, Mott MacDonald have been commissioned by Ørsted to undertake a focused social impact assessment (FSIA), alongside other environmental and social (E&S) services.

1.2 Aims and objectives

This FSIA presents on the relevant socio-economic baseline as well as an assessment of the potential social impacts associated with the Project. Through this, the FSIA identifies (and accordingly, proposes enhancements to) the Project’s existing social management and mitigation measures to ensure the needs and conditions of affected stakeholders are fully considered.

As described by IFC PS Guidance Note (GN) 1, a focused social impact assessment is limited in scope and magnitude, and focuses on particular social aspects or impacts identified as significant to the Project. Hence, a scoping is first conducted to identify significant social risks and impacts. Further detail of the objectives and reasonings of conducting this FSIA is presented in section 3.2.

1.3 Project background and location

The Project is being developed on the 14th Zone of Potential in Changhua County according to the Offshore Wind Farm Site Application Regulations announced by the EA MoEA on 2 July

[1] Formerly known as Bureau of Energy (能源署); renamed the Energy Administration in 26 September 2023.

[2] Lau, Hon Chung and Steve C. Tsai (9 July 2022). A Decarbonization Roadmap for Taiwan and Its Energy Policy Implications. *Sustainability*. Sustainability | A Decarbonization Roadmap for Taiwan and Its Energy Policy Implications (mdpi.com). Retrieved 30 July 2024.

2015[3]. The Project's offshore windfarm area will be approximately 126.3km^2 in size and located 50km offshore from Xianxi Township (線西鄉), Changhua County, on the western coast of Taiwan (see Figure 1.1).

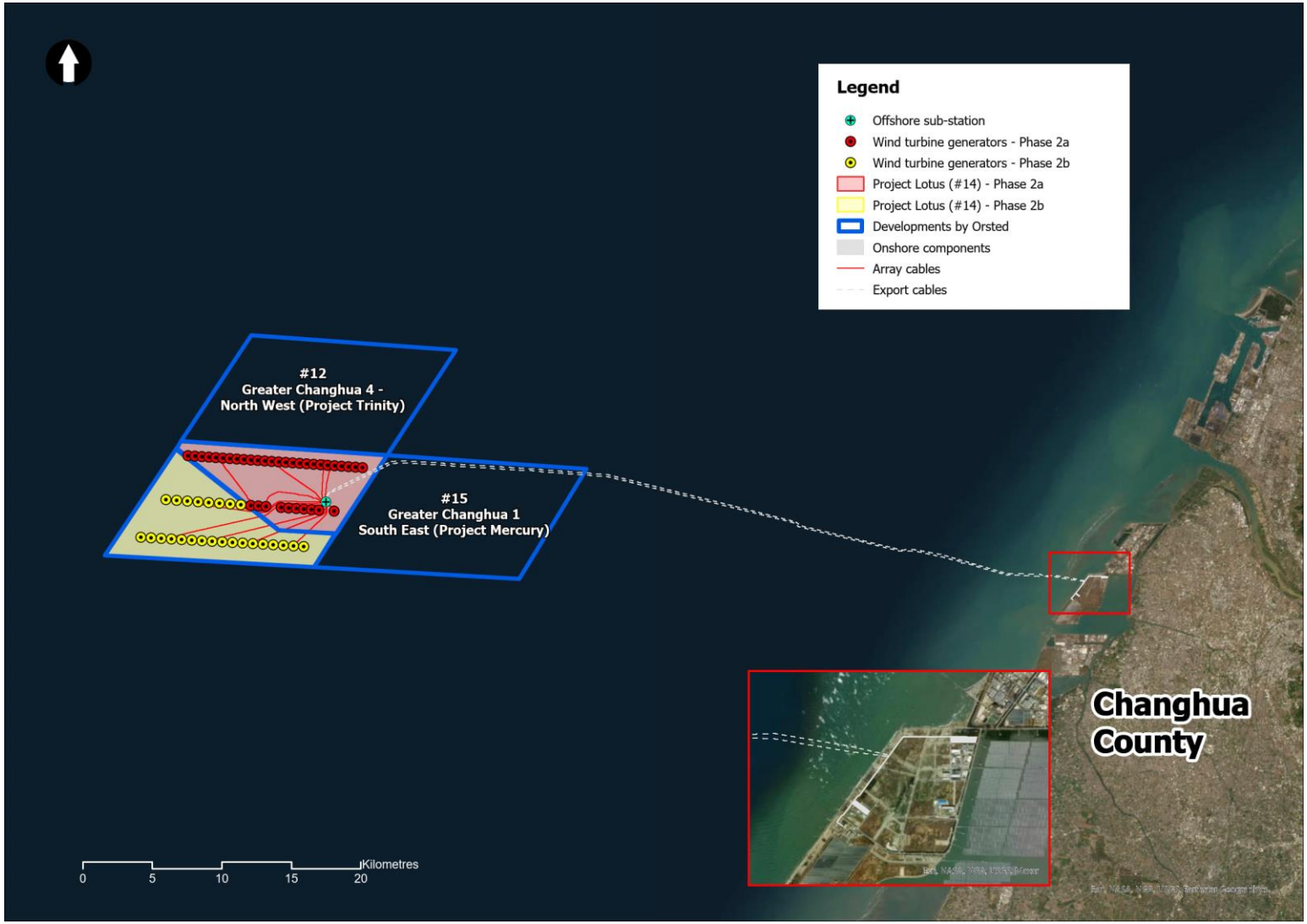
The Project is adjacent to other OWF developments which are also owned by Ørsted. These OWFs are namely:

- East of the Project – Greater Changhua South East, comprising of 75 WTGs, with a capacity of 605.2MW. This OWF development is known as "Greater Changhua 1". Greater Changhua 1 is currently operational, having obtained its electricity business license (EBL) covering all WTGs with the last batch obtained in Q3 2024.
- North of the Project – Greater Changhua North West, comprising of 42 WTGs, with a capacity of 582.9MW. This OWF development is known as "Greater Changhua 4". Greater Changhua 4 is currently planning construction of its OWF components. The offshore construction is expected to commence in Q1 of 2025.

The Project, along with Greater Changhua 1 and Greater Changhua 4, are hereinafter referred to as the "Precinct". The Project's location is illustrated in Figure 1.1 and Figure 1.2.

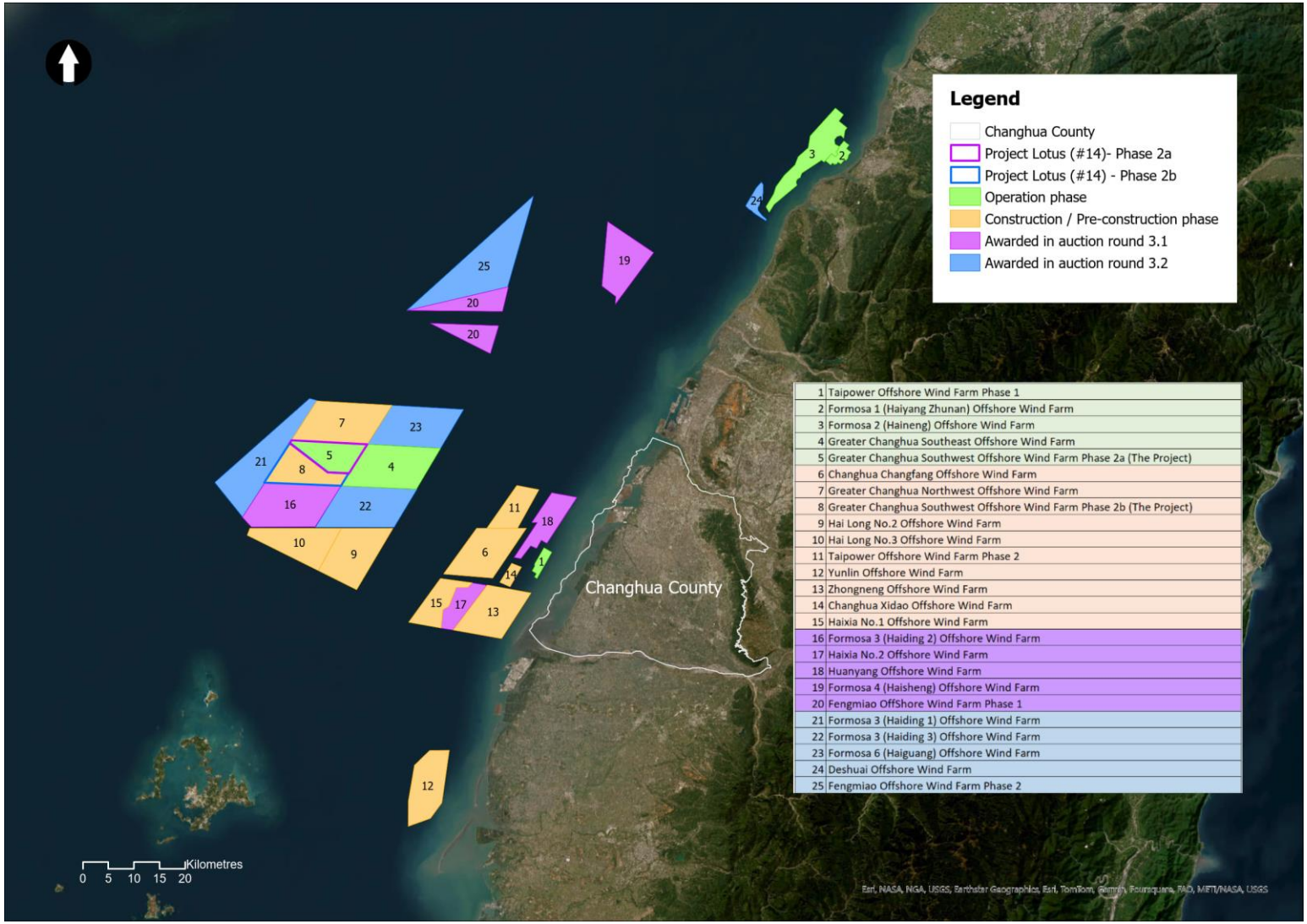
[3] Energy Administration, Ministry of Economic Affairs (2 July 2015). Offshore Wind Farm Site Application Regulations (離岸風力發電規劃場址申請作業要點). Retrieved 30 July 2024.

Figure 1.1: Location of Greater Changhua 2 and proximity to Greater Changhua 1 and Greater Changhua 4



Source: Mott MacDonald, 2024

Figure 1.2: Greater Changhua 2 and surrounding windfarms



Source: Mott MacDonald, 2024

As seen in Figure 1.1, the Project comprises of two phases, namely:

- Phase 2a consists of 36 wind turbine generators (WTGs), each of 8MW capacity. All Phase 2a WTGs are in operational phase, having received an updated EBL for all its WTGs on 6 February 2024. The EBL expires on 9 May 2043.
- Phase 2b is currently under planning to commence the construction phase for its OWF components. The offshore construction is expected to commence in Q1 of 2025, alongside Greater Changhua 4. This phase will comprise of 24 WTGs, each of 14MW capacity.

The Project had successfully obtained regulatory approval for its EIA report (i.e. covering both phases) on 23 March 2018.

The planned aggregated capacity for the Project is 632MW (i.e. from a total of 60 WTGs), with Phase 2a generating 294.8MW and Phase 2b aiming to generate 337.1MW. The WTGs will be located at water depths approximately 23.8m to 42.2m below mean sea water level (MSWL). Each phase has its own grid connection point, connecting to two different OnSS then two different Taiwan Power Company (TPC) onshore substations (OnSS).

Other project components include inter-array and export transmission cabling to connect to TPC's electrical grid, as well as various operational support vessels and ancillary facilities. The anticipated operation period is 20 to 25 years[4] following the end of construction activities in 2025.

1.4 Project components

The details of each Phase are presented in Table 1.1 below.

Table 1.1: Summary of Greater Changhua 2 Phases' components and schedule

Aspect	Greater Changhua 2 Phase	
	Phase 2a – operation phase	**Phase 2b – construction phase**
Project components		
Windfarm capacity	294.8MW	337.1MW
Number of WTGs (and capacity)	36 WTGs (8MW each)	24 WTGs (14MW each)
Offshore substation (OSS)	600MW high voltage alternating current (HVAC) offshore substation shared between the two Phases.	
Onshore substation (OnSS)	294.8MW HVAC OnSS, located in Lukang Township, Changhua County.	920MW OnSS shared with Greater Changhua 4, located in Lukang Township, Changhua County.
Transmission	66kV / 230kV / 161kV HVAC	66kV / 230kV / 345kV HVAC
Export cables	Offshore: One (1) 230kV export cable with approximate length of 57km to the landing point Onshore: One (1) 161kV subterrain export cable with	Offshore: One (1) 230kV export cable with approximate length of 57km to the landing point Onshore: One (1) 345kV subterrain export cable with approximate length of 1.85km from OnSS to grid connection point

[4] The designed operational lifetime of Greater Changhua 2 is intended to be 35 to 37 years.

Aspect	Greater Changhua 2 Phase	
	Phase 2a – operation phase	**Phase 2b – construction phase**
	approximate length of 3.5km from OnSS to grid connection point[5]	
Grid connection point	Chang One A (TPC), located in Lukang Township, Changhua County.	ChangKong (TPC), located in Lukang Township, Changhua County.
Project schedule		
Construction commencement	Onshore: Q3 2019 Offshore: Q1 2021	Onshore: Q2 2023 Offshore: Q1 2025
Construction completion	Onshore and offshore: Q2 2023	Onshore: Q2 2025 (targeted) Offshore: Q2 2025 (targeted)
Commercial operation date (COD)	13 September 2023	Targeting Q3 2025

Source: Ørsted and Mott MacDonald

1.5 Implementation schedule

The key milestones for the Project's implementation, with current assumptions for Phase 2b, are summarised in Table 1.2 below. Phase 2a's construction schedule is not shown as it has been operational since 13 September 2023.

Table 1.2: Greater Changhua 2 Phase 2b implementation schedule

Project milestone	2023			2024				2025		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Phase 2b										
Onshore construction										
Offshore construction										
COD										

Source: Ørsted and Mott MacDonald

1.6 Summary of land acquisition and access to marine areas

Phase 2a has its own onshore substations and Phase 2b shares onshore substation with Greater Changhua 4. All Greater Changhua 1, Greater Changhua 4 and Greater Changhua 2 have or will require leasing of state-owned land (i.e. reclaimed industrial land) for the construction and operation of their onshore substation. No physical or economic displacement is expected for onshore works.

In order to gain access to marine areas and commence offshore works, two separate fishery compensation agreement (FCA) for Phase 2a and Phase 2b were signed with Changhua Fisheries Association (CFA) on 7 September 2020. This FCA is noted to have covered the

[5] The Project Company has signed land lease agreements with MoEA and TPC to legally conduct construction cable burying and installation work. Thus, no right-of-way permits are not required to be obtained. Once land leases are terminated, the Project Company will recover all works done to the land before returning to the landlords.

marine access and rights as associated with Greater Changhua 1, Greater Changhua 4 and Greater Changhua 2 (i.e. this Project).

The access and activity restrictions as defined within the FCA with CFA are as follows:

Construction Phase – Phase 2a and Phase 2b:

It should be noted that Phase 2a's onshore and offshore construction has already completed since Q3 2023. The access/activity associated with Phase 2a's construction is no longer currently applicable, and only presented here for information/reference.

- Wind farm area:
  - All fishing vessels are temporarily restricted to access the wind farm areas. This is whereby Phase 2a would have access restriction on its windfarm area for two (2) years during its construction. Phase 2b is expected to be completed within a shorter construction timeline, which is expected to restrict access to its windfarm area for a duration of six (6) months (ie the planned offshore construction period). However, the vessels engaged in bottom trawling and bottom gill net fishing are permanently prohibited within the wind farm areas from construction to operation phase (i.e. permanent loss of fishing ground).
- Cable alignment:
  - Bottom trawling and bottom gill net fishing are temporarily prohibited within the full offshore cable route during construction phase.
  - Apart from the vessels engaged in bottom trawling and bottom gill net fishing, all other fishing vessels are temporarily restricted from the cable segments under construction
    - The width of the construction exclusion zone is 600m wide along the cable corridor alignments. Given the Project's Phase 2a and Phase 2b export cable routes are both approximately 57km, therefore the total construction exclusion zone for the cable laying route during each phase is 34km^2 (ie which will take place at different times, since Phase 2a's construction is already completed).
- All vessels may pass the cable laying route given they have a minimum distance of 500m from the construction vessel conducting cable laying work.

Operation and Maintenance (O&M) Phase – Phase 2a and Phase 2b:

- Wind farm area:
  - The vessels engaged in bottom trawling and bottom gill net fishing are permanently prohibited within the wind farm area during operation phase (i.e. permanent loss of fishing ground). The total area of restriction once both Phase 2a and Phase 2b are in O&M phase will be 126.3km^2, with operation phase expected to be between 20 to 25 years.
  - Apart from the vessels engaged in bottom trawling and bottom gill net fishing, all other fishing vessels are restricted by 50m radius exclusion zones around the WTGs and offshore substation. When under maintenance or an emergency, the exclusion zones extend to 500m radius.
- Cable alignment: Within the FCA, fishing is *suggested*[6] to be done only outside of a buffer/safety zone of 50m during non-maintenance. Fishing is temporarily restricted from cable segments undergoing maintenance or emergencies.

[6] The use of the term 'suggested' here is as based on the wording of the FCA whereby it is stated (and can be interpreted) as 'suggested' or 'recommended' ('建議'). The clause is based on negotiations and agreement between the Project and CFA. In terms of how this clause is to be interpreted and implemented on the

- All fishing vessels must keep a minimum safety distance of 500m in all directions from Project-related vessels during maintenance or emergencies

It is not expected that offshore access restriction will result in any physical displacement. This will cause temporary economic displacement, however, as fisher folk will be restricted from fishing in those areas.

Table 1.3 provides a summary of the land acquisition progress and access to marine areas. As mentioned above, Phase 2a is already operational and therefore, any construction phase activities applicable for Phase 2a are largely presented here for information/reference only (ie since construction is already completed).

Table 1.3: Summary of land acquisition and access to marine area

Location	Component	Phase applicability	Description/access restriction
Onshore component	Onshore cables	Phase 2a and Phase 2b	Total (permanent) area leased for cable is around 35,096m^2.
	Onshore substations	Phase 2a	The total area leased for Phase 2a's onshore substation is around 24,422m^2.
		Phase 2b	The total area leased for Phase 2b's onshore substation shared with Greater Changhua 4 will be around 29,075m^2.
Offshore component	Offshore cable during construction phase	Phase 2a and Phase 2b	• Fishing vessels conducting trawling and bottom gill net fishing will be temporarily restricted from the full offshore cable routes (i.e. 34km^2 during each phase[7]). • All other fishing vessels will be temporarily restricted from cable segments under construction. Ørsted will announce the area under construction to CFA 14 days prior to start of construction. • All fishing vessels may pass the cable laying construction area provided that they maintain a minimum distance of 500m from the working vessel
	Offshore cable during operation and maintenance (O&M) phase	Phase 2a and Phase 2b	• All fishing vessels are recommended to stay a safety distance of 50m from the cable area • All fishing vessels are restricted from the cable segment under maintenance. Ørsted will announce the area under maintenance to CFA three days prior to the start of maintenance. • All fishing vessels may cross the cable segment provided that they maintain a minimum distance of 500m from the working vessel. • Under emergencies (e.g. cable burial depth or position changes, cable exposed), vessels conducting trawling and bottom gill net fishing will need to pause fishing activities.
	Windfarm area during the construction phase	Phase 2a and Phase 2b	• All fishing vessels will be temporarily restricted from fishing or crossing the windfarm area during construction.

ground, this is likely required to be a mutual/specific discussion between the Project and CFA (and potentially, the Fishery Agency, where relevant/appropriate).

7 Calculated based on 57km of total export cable route length for each phase, and both with a width of construction exclusion zone being 600m.

Location	Component	Phase applicability	Description/access restriction
	Windfarm area during the O&M phase	Phase 2a and Phase 2b	• Long-term restricted access to the whole windfarm area is only applicable for vessels doing trawling and bottom gill net fishing during the operation phase. The total area of restriction once both Phase 2a and Phase 2b are in O&M phase will be 126.3km^2. • For all other fishing vessels, 50m radius exclusion zones are set around the WTGs, underwater foundations and offshore substations during non-maintenance or non-emergencies. • During maintenance or emergencies, the exclusion zone radius increases to 500m.

Source: Summarised from the FCA and latest project description received on 24 July 2024

In relation to the social impacts associated with the information presented above, further commentary and assessments are as elaborated in Section 4 and 5 below.

1.7 Project alternative analysis

Alternatives for this Project were proposed and reviewed in the EIA. Alternatives included the termination of the Project, site alternatives and technology alternatives.

The Project is designed to align with Taiwan's energy policy and its goal to be nuclear-free by 2025. It accelerates Taiwan's growth of offshore wind farms, promoting diverse energy sources, self-sufficiency, and environmental conservation. The Project aims to bring global insights to Taiwan's wind power industry through comprehensive exchange and collaboration. The Project also seeks to unite industry, government, and academia resources under a common goal. Once executed, it positions Taiwan to spearhead renewable energy development in the Asia-Pacific region. Thus, the termination of the Project is deemed to be disadvantageous. In conjunction, there are no site alternatives available for this Project.

In terms of technology alternatives, this Project allows for the installation of a wind turbine using either a jacket structure or a gravity seabed foundation. The latter is constructed from reinforced concrete or steel, to which the wind turbine's pillar is attached. It is further stabilised with ballast made of sand, iron ore, or rocks. This method is less disruptive to marine life as it does not require piling. However, it necessitates a solid geological seabed. The proposed wind farm site is in an area with sediment deposits from the Zhuoshui River in the Taiwan Strait. If gravity seabed foundations are used here, seismic activity could cause soil liquefaction, leading to a loss of ground shear stress and load-bearing capacity. Therefore, the Project is unable to adopt a gravity seabed foundation.

1.8 Document structure

The FSIA follows the structure as follows:

- **Section 1** (this section) outlines the aims and objectives of the FSIA and presents the Project background and key features
- **Section 2** introduces the relevant legal and institutional requirements considered within this Project
- **Section 3** presents on the methodology and area of influence (AoI) considered for the assessment for this FSIA

- **Section 4** presents the socioeconomic baseline as associated with this Project[8]
- **Section 5** covers the social impact identification, significance attribution and management measures of the Project
- **Section 6** summarises the social impacts and risks, their impact significances and the mitigation measures to reduce impact

[8] The primary data for the baseline presented in this section was collected by Greater Changhua 1 from September 2020 to January 2021 and Greater Changhua 4 from December 2023 to January 2024.

2 Legal and Institutional Framework

2.1 Overview

This section identifies the national and international legislation, standards and guidelines that are relevant to the FSIA. It concludes with a brief description of the envisaged institutional arrangements.

2.2 National regulatory framework

Taiwan's EIA Act (環境影響評估法), which was promulgated on 30 December 1994 and amended on 8 January 2009, governs the EIA process in Taiwan which requires a project proponent to undertake an EIA when it is likely to have the potential to cause potentially significant environmental and social impacts. The administration of the EIA approval and related matters are under the purview of the Taiwan's Ministry of Environment (MoEnv). Detailed MoEnv procedures and implementation guidelines include:

- Environmental Impact Assessment Enforcement Rules (環境影響評估法施行細則) (amended on 22 March 2023)
- Standards for Determining Specific Items and Scope of Environmental Impact Assessments for Development Activities (開發行為應實施環境影響評估細目及範圍認定標準) (amended on 22 March 2023)
- Guidelines for Conducting Environmental Impact Assessment for Development Activities (開發行為環境影響評估作業準則) (amended 2 February 2021)

Under the national screening criteria cited above, in terms of development type, offshore windfarm (風力發電離岸系統) is listed as an activity which requires the preparation and submission of an EIA. The Project will comply with the requirements of the laws and regulations of Taiwan and the requirements of the approved EIA. The ecological surveys and assessment within the EIA were conducted in accordance with the below listed specifications as published by the MoEnv:

- Technical Specifications for Animal Ecology Assessment (動物生態評估技術規範)
- Technical Specifications for Plant Ecology Assessment (植物生態評估技術規範)
- Technical Specifications for Marine Ecology Assessment (海洋生態評估技術規範)

In addition to the overarching EIA Act, national legislation detailed in the EIA relevant to social aspects addressed in this FSIA include the following key laws and regulations:

- Cultural Heritage Preservation Act (文化資產保存法) (amended on 29 November 2023)
  - Classifies tangible and intangible cultural heritages which are of cultural value from the point of view of history, art or science covering monuments, historic buildings, commemorative buildings, groups of buildings, archaeological sites, historic sites, cultural landscapes, antiquities, natural landscapes and natural monuments, traditional performing arts, traditional craftsmanship, folklore, and traditional knowledge and practices
- Fisheries Act (漁業法) (amended on 26 December 2018)

  - Conserves and rationally utilise aquatic resources, to increase fisheries productivity, to promote sound fisheries development, to guide and assist the recreational fishery, to maintain the orderly operation of the fisheries, and to improve the livelihood of fisher folk.

- Renewable Energy Development Act (再生能源發展條例) (amended on 21 June 2023)
  - For purposes of encouraging renewable energy use, promoting energy diversification, improving energy structure, reducing emission of greenhouse gases, improving environmental quality, assisting relevant industries, and enhancing sustainable development of Taiwan.

In conjunction to national legislation detailed in the EIA, the following key Taiwanese legislation are important for Project compliance, to be reflected in the Labour Management Plan (LMP), workers' contracts, and labour monitoring and reporting:

- Labour Standards Act (勞動基準法) (amended on 31 July 2024)
  - Enacted to provide minimum standards for working conditions, protect worker'' rights and interests, strengthen employee-employer relationships and promote social and economic development.
- Employment Service Act (就業服務法) (amended on 10 May 2023)
  - Enacted to promote employment of nationals with a view to enhance social and economic development.
- Collective Agreement Act (團體協約法) (amended on 1 July 2015)
  - To regulate the bargaining procedures and effect of collective agreement, stabilise labour relations, promote labour-management harmony, and protect rights and interests for the labour and the management.
- Gender Equality in the Employment Act (性別平等工作法) (amended 16 August 2023)
  - Prohibits gender discrimination or sexual orientation regarding recruitment and termination, and for providing training, welfare measures and wages.
- Occupational Safety and Health Act (職業安全衛生法) (amended 15 May 2019)
  - Enacted to protect workers' safety and health and to prevent occupational accidents.

2.3 Applicable international standards

To seek financing from various international finance institutes (IFIs) and commercial banks, the Project is required to meet the requirements of both the Equator Principles 4 (EP4) and IFC Performance Standards (PS). The applicable framework is a suite of documents adopted by the IFC as part of the "positive development outcomes" outlined within its policy on Social and Environmental Sustainability. These form a comprehensive set of social and environmental standards for use in project assessment, review and investment decision making processes and include:

- Equator Principles IV, July 2020
- International Finance Corporation (IFC) Performance Standards (PSs), 2012
- World Bank Group (WBG) Environmental Health and Safety (EHS) Guidelines, such as:
  - WBG EHS for wind energy, 2016
  - WBG General EHS Guidelines, 2007
  - WBG EHS Guidelines for Ports, Harbours and Terminals, 2007

2.4 Institutional arrangements

The Project will be developed by Ørsted with the involvement of Project appointed contractors, suppliers and government departments. Ørsted has developed the following core policy documents and systems for managing labour rights. These policies cover topics on reasonable working conditions, migrant workers and substantially equivalent terms, workers' organisations, non-discrimination and equal opportunity, child labour, forced labour, occupational health and safety, gender, monitoring, and labour management plans. These policy documents include:

- Ørsted Taiwan Employee Handbook ('Employee Handbook') (2023)
- Ørsted Taiwan Work Rules ('Work Rules') (2018)
- Ørsted Code of Conduct (COC) for Business Partner (2022)
- Ørsted Good Business Conduct Policy (2019)
- Ørsted Human Rights Policy (2023)
- Ørsted Global Diversity & Inclusion Policy (2018)
- Ørsted Global Bullying, Discrimination and Harassment Policy (2022)
- Ørsted Global Policy for Quality, Health, Safety and Environment (2024)
- Ørsted Global Security Policy (2024)
- Ørsted Modern Slavery Act Statement (2023)
- Ørsted Global Labour and Employment Rights Policy (2024)
- Ørsted Stakeholder Engagement Policy (2022)
- Ørsted Working Hours (2022)
- Ørsted Just Transition Policy (2022)
- Ørsted Whistleblower Hotline (2018)

In addition, the management and monitoring requirements set in the following documents are applicable to the construction and operation phase of the Project:

- Environmental and Social Management System (ESMS) (draft, August 2024)
- Labour Management Plan (draft, September 2024)
- Greater Changhua SW Offshore Windfarm EIA (March 2018)
- Greater Changhua SW Offshore Windfarm EIA 1st deviation report (February 2021)
- Greater Changhua SW Offshore Windfarm EIA 2nd deviation report (April 2022)
- Changhua and Yunlin Offshore Wind Farms Environmental Impact Survey Report 3rd and final revision (July 2020)
- Coastal Zone Management Assessment (CZMA) (Greater Changhua Offshore Wind Farm NW Ltd, 2019)

Project appointed contractors for the Project's Phase 2b construction phase will be responsible for the physical construction and installation of all of the project components wind turbines. This includes installation of the WTGs, OSS, array cables, export cables, jacket foundations, onshore cable, onshore substation, as well as the electrical infrastructure and grid connection. Contractors appointed for Phase 2a's O&M phase are responsible for the operation and maintenance of the Project's various components. Project appointed suppliers will provide the necessary materials and equipment for the project. This includes the wind turbines themselves, as well as other necessary components like towers, foundations, cables, substations and other electrical equipment.

Governmental bodies act as the Competent Authority, granting permissions and overseeing the EIA process. They are responsible for ensuring that environmental considerations are taken into account before Project approval. They also enforce compliance with EIA regulations and take necessary actions in case of violations. Governmental bodies are essential in safeguarding environmental interests while balancing the developmental needs of Taiwan.

3 Methodology

3.1 Overview

The purpose of this FSIA report is to present the main aspects of the social assessment process and define the key management, mitigation and enhancement measures for predicted impacts. The following are the steps undertaken for this FSIA:

- Referencing and presenting the currently available socio-economic baseline data and analysis as relevant to the Project. This includes establishing the Project and its associated activities to:
  - Define the Project's area of influence (AoI)
  - Identify people within the Project's AoI who may be impacted by the Project

  The approach for defining the Project's AoI and identifying receptors within the AoI is elaborated in section 3.3.1
- Screening and scoping and of relevant social impacts by identifying potential interactions between the Project and the affected parties within the AoI (see section 3.3 for details)
- Evaluating and rating the type of interaction for each impact for each social aspect
- Identifying the extent that already existing or relevant assessment and mitigation/management measures within the current documentation suite have addressed the scoped social impacts/aspects
- Recommending project-specific management plans, such as the environmental and social management system (ESMS) or other instruments to be updated (if required) to capture required management actions.

Elaboration of the abovementioned steps are further provided below.

3.2 Focused social impact assessment

As described by IFC PS Guidance Note (GN) 1, a focused social impact assessment (FSIA) is an assessment with a limited scope and magnitude and focused on particular social aspects or impacts identified as significant to the Project. A FSIA is considered appropriate for this Project the following reasons:

- Across Ørsted's offshore wind farm projects, or the Precinct, a range of socio-economic primary and secondary data has been collected to inform on the assessment, management and ongoing monitoring of social risks and impacts. This data is used to develop the FSIA by:
  - building on the knowledge and experience from across the Precinct over the last four years
  - Taking into consideration a considerable known number[9] of wind farm developments recently completed, on-going or planned off the coast of Changhua County, using primary

[9] Wind farm developments currently in progress include the Project Phase 2b, Greater Changhua 4, Hai Long No. 2 and No. 3, Changhua Changfang, Changhua Xidao, Taipower Phase 2, Zhongneng, Haixia No. 1, Yunlin offshore wind farms.
Taipower Offshore Wind Farm phase 1, Formosa 1 (Haiyang Zhunan), Formosa 2 (Haineng), the Project Phase 2a and Greater Changhua 1 are completed wind farms off the coast of Changhua.

data collected for the Precinct reduces consultation fatigue and maintains good will from stakeholders who have already participated in recent consultation for the Precinct on the same topics

  - validate and confirm social risks and impacts from the Precinct to date; and validate any foreseen, new or additional risks as a result of this Project (e.g. cumulative impacts)
- Adverse social risks and/or impacts are limited and/or could potentially be assessed and managed through the Project's existing instruments including:
  - EIA and EIA amendments[10]
  - ESMS[10]
  - IFC PS2 Gap Analysis of Greater Changhua 4[11], which is applicable to Greater Changhua 2 given the proximity of the two projects and similarity in both project's components, labour and work scope
  - Human rights impact assessment (HRIA)
  - Labour Management Plan (LMP)
  - Livelihood restoration plan (LRP)
  - Cumulative impact assessment (CIA)
- Greater Changhua 2 is a part of the wider development plans of a range of adjacent OWFs in this region, and thus not 'greenfield' in the context of surrounding development.

Table 3.1 below further summarise the aspects of a FSIA based on IFC PS GN 1, which applies to this Project.

Table 3.1: Aspects of a FSIA

Aspect	FSIA description	Stage for FSIA completion
Projects Suitable For	Specific activities with limited adverse social risks, such as modernisation, urban development, or social infrastructure projects.	Draft stage
Scope	A) Narrower in scope, focused on identified social risks, determined through initial screening. B) May include specific assessments like air quality or noise studies.	A) draft stage B) If necessary, to be completed at final FSIA stage
Process Elements	A) Defined through initial screening, with systematic review of potential risks. B) May involve modifying project plans or conducting further focused assessments based on identified risks.	A) FSIA draft stage B) If necessary, to be fully completed at final FSIA stage

Wind farm developments planned to begin include Formosa 3 (Haiding 2), Haixia No. 2, Huanyang, Formosa 4 (Haisheng), Fengmiao, Formosa 3 (Haiding 1), Formosa 3 (Haiding 3), Formosa 6 (Haiguang) offshore wind farms.

[10] See list in section 2.4

[11] The International Finance Corporation (IFC) Performance Standards (PS) 2 Gap Analysis - Project Trinity, dated 30 November 2022. The IFC PS2 Gap Analysis report has been developed by Ørsted to identify and address gaps in the Project's current procedures and plans against the requirements of local labour laws and IFC PS 2.

Aspect	FSIA description	Stage for FSIA completion
Projects Suitable For	Specific activities with limited adverse social risks, such as modernisation, urban development, or social infrastructure projects.	Draft stage
Alternatives Analysis	May involve confirmation and documentation of application of applicable standards or construction criteria.	To be fully completed at final FSIA stage
Applicability to Greenfield Developments	IFC GN 1 does not specify applicability to greenfield developments.	Not applicable
Monitoring and Implementation	IFC GN1 does not specify monitoring and implementation.	Necessary for good international industry practice and to be fully completed at final FSIA stage
Baseline data, impact analysis and mitigation plan	Limited/focused	To be fully completed at final FSIA stage

Source: IFC PS GN 1, 2021

3.3 Social impact assessment process

3.3.1 Project's area of influence

The Project's AoI is the same as Greater Changhua 1 and more specifically, Greater Changhua 4, considering these developments are nearly identical in physical scope and impacts with the Project. This is whereby:

- For offshore WTG location - These developments have comparable offshore WTG locations (i.e. adjacent to each other at a distance of 35-60km off the coast) with the Project
- For the nearshore components - The affected fishery right zone and its impact by the (nearshore portion of) export cable alignment is identical whereby all of the Precinct's export cables run through the Changhua Northern Common Corridor with the same cable landing point
- For onshore components – The Project's Phase 2b shares the same OnSS as Greater Changhua 4, and the Project's Phase 2a's OnSS is adjacent to Greater Changhua 1's OnSS

As such, the Project's AoI is defined by IFC PS GN 1 (paragraph 8) as the area likely affected by:

- A project's activities and components for which:
  - the project and the client's activities and facilities are directly owned, operated or managed (including by contractors) and are a component of the project,
  - impacts from unplanned but predictable developments caused by the project may occur later or at a different location; or
  - indirect project impacts on biodiversity or on ecosystem services upon which affected communities' livelihoods are dependent.
- Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.

- Cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

For the Project, the onshore areas that are directly affected by the Project and its physical components include the onshore cable alignment, substation sites (i.e. Phase 2a and Phase 2b) and Taichung Port assembly site. Onshore areas (i.e. as affected by Project components, cable and substation) are situated in Changhua Binhai Industrial Zone. This is reclaimed land, intended for industrial use and is managed/owned by the government. The onshore components of the Project are expected to have limited social impacts whereby:

- Land acquisition - Cable laying is primarily within roads or road alignment, while the substation is constructed on government owned land (i.e. leased)
- Land use/livelihood – As the onshore components are located within (terrestrial) reclaimed industrial areas, the local communities do not utilise these areas for livelihood.
- Community health, safety and security – The works associated with these onshore elements are considered typical construction activities for (relatively) minor construction works. These would/could be well-managed with typical construction site management measures. The location of these elements (i.e. within an industrial area) also implies that these activities are not in close proximity to community/residential areas in general.

Offshore areas that are directly affected by the Project and its physical components include the wind farm site (zone #14 located in the Taiwan Strait, as defined by the Bureau of Energy), offshore cable alignments (i.e. inter-array cables and export cables) and the offshore substation site. These areas also include access exclusion zones during the construction and operation phase, which are defined by FCA and covered in section above. No associated facilities under the IFC definition have been identified.

Affected fisher communities include villages/townships where affected fishers, their workers and households conduct fishing activity, as well as specific fishing ports with associated fish sector value chain workers. As such, these areas include:

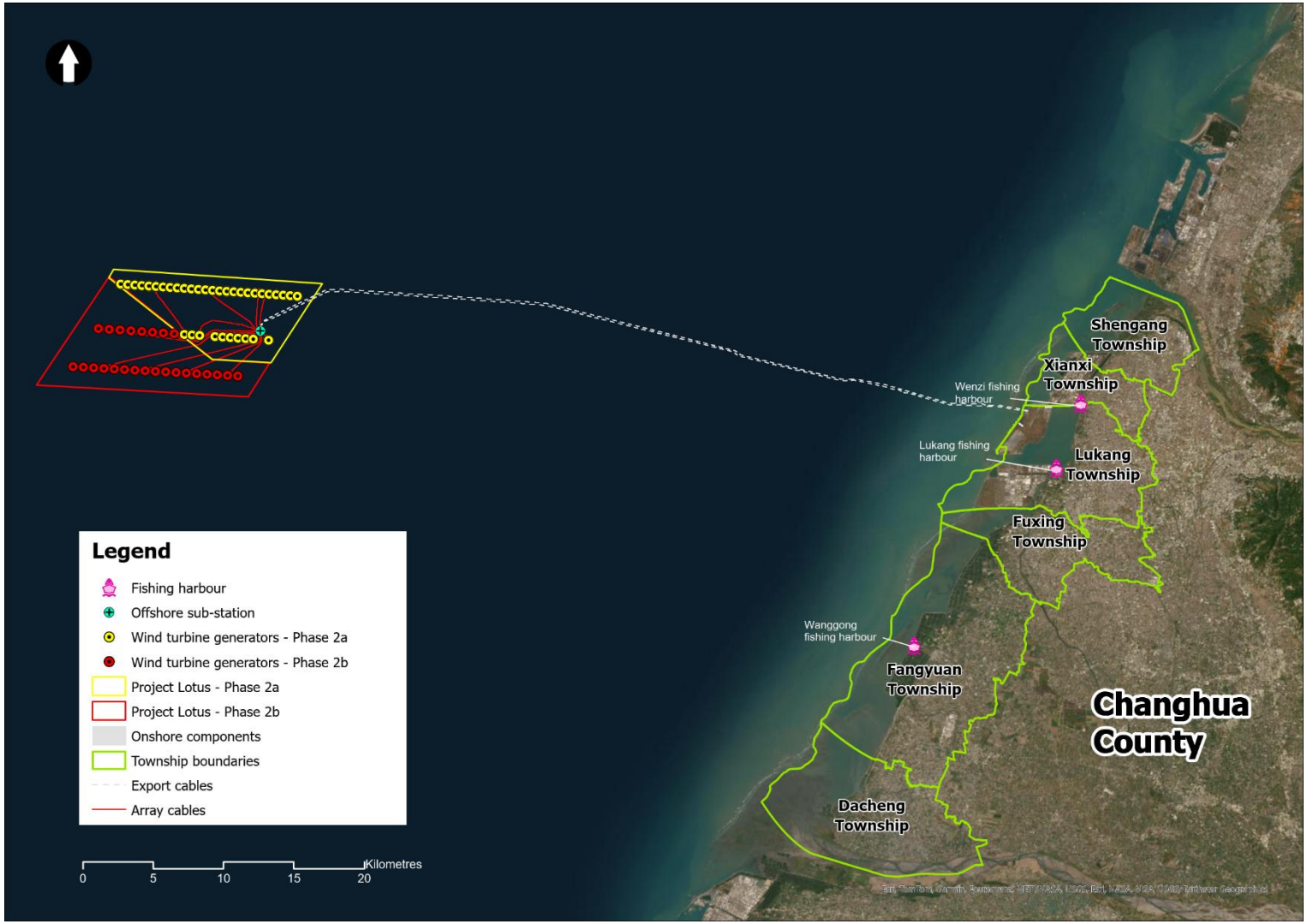
- Fishers located in general Changhua County, primarily consisting of fishers who are members of Changhua Fishermen Association (CFA). This is whereby the CFA have administrative oversight and access to the exclusive fishing rights zone along the coastline of Changhua.
- Fishers, workers and their associated household members (who participate/support in fishery business/activities), whose fishing operations are based out of the following coastal townships[12]:
  - Lukang Township (鹿港鎮) (with Lunweiwan fishing habour 崙尾灣漁港)
  - Xianxi Township (線西鄉) (with Wenzi fishing habour 塭子漁港)
  - Fangyuan Township (芳苑鄉) (with Wanggong fishing harbour 王功漁港)

[12] It is recognised that there are other coastal townships within Changhua country. As mentioned above, in terms of the Project's physical 'onshore footprint', these are limited to the three (3) townships listed. From the aspect of community and economic/livelihood impacts, these are not scoped/based geographically but rather covered through assessment of the affected fisher group(s). These are assessed as pertaining to fishers within the CFA (ie the primary fishers operating within/along Changhua) and the home ports of fishing vessels (ie within the above identified townships). Hence, the location of the physical residences of these fisher households (ie which could be located in other coastal townships or even inland and/or in Changhua city) is not considered a material/relevant aspect for assessment associated with economic/livelihood aspects.

Besides holding all of the fishing ports (ie home ports of fishing vessels), the above townships are also where the physical ‘onshore footprint’ (ie landing point, onshore substation, and onshore cables) are located.

These above areas of influence also encompass Project workers that benefit from employment opportunities, as well as general community that benefit from supply chain/manufacturing opportunities and increase of green energy supply. Supply chain and supplier companies may be both national and international. As supply chains for OWFs in Taiwan are global, these are considered only with respect to specific social and human rights risks.

Figure 3.1: Greater Changhua 2's area of influence



Source: Mott MacDonald, 2024

Figure 3.1 above presents the Project's AoI. The AoI remains open to review if further receptors, including affected communities, stakeholders or disadvantaged/vulnerable groups are identified during the baseline data collection process. Further context and baseline snapshots of the AoI are presented in section 4.

3.3.2 Screening

A screening exercise is typically first conducted to determine what social aspects and issues are applicable to a project. The screening was conducted through the review of publicly accessible environmental and social (E&S) assessments pertaining to OWF developments or conducted based in Taiwan. Social aspects were identified through Applicable Standards, including EP IV, 2020 and IFC PSs, 2012.

Screening through an environmental and social due diligence exercise by independent competent E&S professionals determined that this Project is a Category A project requiring additional E&S assessment and management documents for IFIs. IFC PS1 defines a Category A project as one for which the business activities have potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible or unprecedented.

Furthermore, Taiwan legislation requires all OWF developments to produce and undergo an EIA process as prescribed within the Environmental Impact Assessment Act (2023). The Project's EIA report covers baseline surveys for flora and fauna, a cultural heritage screening, meeting minutes of EIA's public consultations, environmental mitigation and monitoring plans and more. The Project received approval for its EIA on 23 March 2018. Further EIA amendment documents, including a bird survey report[13] and environmental deviation report[14] were later produced and approved on November 2020 and April 2022, respectively.

3.3.3 Scoping

The scoping process is typically used to identify the potentially significant risks and impacts that may arise from a project. Understanding the Project, including all project components and associated activities from all phases was the first step to establishing the overall footprint and range of impacts (see section 3.3.1 for the details on the Project's AoI).

Scoping reviewed the anticipated interactions between the Project's AoI with the identified impacted groups of people. The results which indicate whether a risk or impact is positive, unlikely or likely are presented in the scoping matrix, Table A.2 of Appendix A. Analysis or measures already in place for each aspect are also captured within the scoping matrix.

3.3.4 Baseline data

Baseline social data relevant to the social impacts and risks that were identified through screening and scoping is presented in section 4. The baseline describes the socio-economic context of the Project's defined AoI, including the existing social environment, conditions, and demographic trends. The Project's social baseline further captures information relating to community values and perceptions of the Project, particularly communities of the townships identified/defined for the Project's AoI (see section 3.3.1). The Project's baseline data is based

[13] Greater Changhua SW Offshore Windfarm environmental impact survey report (bird survey report), dated November 2020

[14] Greater Changhua SW Offshore Windfarm EIA 1st deviation report (February 2021) and Greater Changhua SW Offshore Windfarm EIA 2nd deviation report (April 2022)

on primary and secondary data captured for and reported in the Project's LRP and HRIA. Further details on the baseline data are also mentioned within section 3.4.

3.3.5 Impact identification and significance attribution

The social impacts scoped in within Table A.2 have been assessed in more detail (in section 5). This FSIA determines the significance of the impact, whether beneficial or adverse as well as direct, indirect and/or cumulative. The attribution of significance of each impact has been categorised by the degree of predicted change from a baseline condition (the magnitude of impact) and the sensitivity of the impacted group of people. The subsequent sections elaborate upon the abovementioned approach in detail.

Magnitude criteria

The magnitude of social impacts has been determined by consideration of the extent to which social receptors gain or lose access to/or control over socio-economic or cultural resources, resulting in a beneficial or adverse effect on their individual and collective wellbeing. Wellbeing is considered as the financial, physical, and emotional conditions and quality of life of people and communities.

For beneficial impacts, the extent to which local wellbeing is likely to be enhanced has been considered. This is in accordance with international trends in SIA practice towards an increased focus on enhancing long-term development benefits for a local community's sustainability, as opposed to only considering mitigation of adverse impacts. As such, the magnitude criteria include consideration of the extent to which benefits are shared with or realised by local people and communities.

The assessment of magnitude has been undertaken using professional judgment, taking into account of several factors, wherein:

- Temporal, as based on the duration (e.g. once-off, short-term, long-term, permanent) as well as frequency and potential of recurrence (i.e. rarely/hardly, occasional/sometimes, frequent/often, sustained/persistent) of the impact.
- Spatial, as based on the extent of impact, as based on geographical scale, or number of individual/household (e.g. individuals/households, village/communities/township, county, national or even international/transboundary)
- Degree of change as based on an estimation of the scale/magnitude of impact relative to the baseline/existing conditions (e.g. negligible, small/limited, medium, large) and/or compliance with legislation (e.g. whether exceeding, and/or the scale/magnitude of exceedance)
- Reversibility and/or resiliency/sensitivity of receptor, as based on the receiving social aspects ability to 'return to baseline' or assimilate the change (i.e. without adverse effects). This could range from 'no/limited impacts perceived' to 'requiring significant intervention to recover'.

Magnitude of impacts has been categorised as major, moderate, minor, or negligible, based on consideration of the above parameters.

Table 3.2 below presents the overview of the broad criteria (i.e. as based on factors above) that have been used to categorise the magnitude of social impact.

Table 3.2: Social impact magnitude criteria

Categorisation	Definition
Major	An impact that would have permanent implications for the long-term affecting the wellbeing of many people across a broad cross-section of the population and affecting various elements of the local communities' and/or workers' resilience.
Moderate	An impact that continues for the medium/non-permanent term throughout the project life and affects the wellbeing of specific groups of people and affecting specific elements of the local communities' and/or workers' resilience.
Minor	An impact that occurs periodically or over the short term throughout the life of the project affecting the wellbeing of a small number of people and with little effect on the local communities' and/or workers' resilience.
Negligible	A potential impact that is very short in duration so that the socio-economic baseline remains largely consistent and there is no detectable effect on the wellbeing of people or the local communities' and/or workers' resilience.

Source: Mott MacDonald, 2024

Sensitivity criteria

Sensitivity of social receptors – namely communities, workers and businesses – has been determined by consideration of their vulnerability to impacts. This is measured by their capacity to cope with impacts that affect their access to, or control over additional or alternative social resources of a similar nature to baseline conditions, ultimately affecting their wellbeing. Sensitive or vulnerable people are generally considered to have less means to absorb and deal with adverse changes than less sensitive or less vulnerable people. Similarly, they may not be able to maximise and build on beneficial changes to their resource bases.

When considering sensitivity to social impacts, the type of resources in question varies between different types of receptors. For example, a community's vulnerability has generally been measured in terms of its resilience to loss of community facilities, whereas an individual or household's vulnerability has been considered in relation to their resilience to deprivation and loss of livelihood assets or opportunities (such as jobs, productive land or natural resources). Impacts that increase impoverishment risks contribute to vulnerability. Impoverishment risks include landlessness, joblessness, homelessness, marginalisation, increased morbidity and mortality, food insecurity, loss of access to common property resources and social disarticulation. Other vulnerabilities have generally been measured in terms of community resilience to noise, air pollution, flood, and immigration impacts. Table 3.3 below presents the criteria that have been used to categorise the sensitivity of receptors.

Table 3.3: Receptor sensitivity criteria

Sensitivity	Definition
High	People who are already vulnerable with very little capacity and means to absorb proposed changes or with very little access to alternative similar resources, sites or services.
Medium	People who are already vulnerable with limited capacity and means to absorb proposed changes or with some access to alternative similar resources, sites or services.
Low	People who are not vulnerable with some capacity and means to absorb proposed changes and with some access to alternative similar resources, sites or services.
Negligible	People who are not vulnerable with plentiful capacity and means to absorb proposed changes and with good access to alternative similar resources, sites or services.

Source: Mott MacDonald, 2024

3.3.6 Attribution of significance to impacts

Each impact assessed has been classified as adverse or beneficial, and its impact magnitude and group sensitivity categorised. Significance attribution then combines magnitude and sensitivity criteria using the matrix presented in Table 3.4.

Table 3.4: Impact determination of significance

		Magnitude						
		Adverse				*Beneficial*		
		Major	Moderate	Minor	Negligible	Minor	Moderate	Major
Sensitivity	High	Major	Major	Moderate	Negligible	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Negligible	Minor	Moderate	Major
	Low	Moderate	Minor	Negligible	Negligible	Negligible	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Source: Mott MacDonald, 2024

3.3.7 Management measures identification and residual impact attribution

Adverse impacts that have been determined as being ‘moderate’ or ‘major’ from Table 3.4 above are significant. The expectation is that they will require more management resources or efforts and reduce their residual impact. Residual impacts are those that remain after mitigation and enhancement measures are applied. Impacts that are assessed as ‘minor’ or ‘negligible’ are considered ‘not significant’, however they may still require management measures to lessen their effect or increase their benefit. The analysis of impacts resulting from activities in the construction, operations and decommissioning phases in section 5 present the categories of magnitude criteria, sensitivity criteria and the resulting significance attribution.

3.4 Uncertainties and limitations

Conclusions and assumptions in this FSIA are based on evidence collected by this methodology. Hence, limitations may apply depending on the availability of primary and secondary data. Most secondary data is land-based, however there is fishing data from other sources.

As mentioned in section 3.2, primary data is referenced from Greater Changhua 1, Greater Changhua 4 or Greater Changhua 2, or the Precinct. This data – stakeholder engagement activities, KIIs and surveys of local communities – has been provided as samples of the wider population and can at most represent inferences of the wider affected communities or areas. The additional FGDs undertaken during Greater Changhua 4 range from a minimum of 10 participants to a maximum of 35. Most FGD participants were selected or introduced through the CFA, either being CFA members or those who engage in CFA community activities. Thus, it should be noted that results or inferences to the additional FGD may be limited in its representation of the wider affected communities. It should also be noted that these additional KIIs and FGDs conducted in 2023 to 2024 for Greater Changhua 4 presented similar qualitative results as that in Greater Changhua 1’s 2020 to 2021 socio-economic baseline surveys. It is noticeable that PAHs have gained a better understanding of offshore wind farms, awareness of accessible remedies (e.g. the grievance mechanism) and benefits/livelihood restoration

programmes available. However, participants' perception and identified impacts of the offshore wind farm (particularly Greater Changhua 4) remains broadly the same. Hence, overall, it is considered that there is no significant change in the socio-economic baseline and perceptions in 2020 to 2021, and additional household surveys are not necessary to re-establish the baseline for this Project.

The relevancy of Greater Changhua 4's KIIs and FGDs should also be considered under the context of:

- The KIIs and FGDs are conducted as recent as December 2023 till January 2024
- The stakeholders/groups as identified (and covered) for these KIIs and FGDs are based on (with the discussion factoring) Greater Changhua 4's onshore and nearshore components which are highly identical in terms of the physical footprint and construction activities (as discussed in section 3.3.1).

A key group of PAHs are defined as the fishing vessel owners who are registered to the CFA. This group is identified as both Greater Changhua 1 and Greater Changhua 4's primary and priority affected population for the household survey. This is because this group is considered the impacted stakeholders who are economically active in fishing in coastal/offshore areas. This group is also the most relevantly and directly impacted by the Project's infringement to the exclusive fishing rights (EFR) area[27] and their fishing area. This is in relative comparison to other members/groups of the community who are not physically or economically active in coastal/offshore areas. In those cases, the majority of interaction and impacts of those group (i.e. non-active in offshore areas) would be mostly limited to the construction/operation of onshore components such as the onshore substation and (buried) terrestrial cables. This supports the approach of having a priority focus on the fisher folk as an affected group. Furthermore, there is no change in the number of CFA members with registered fishing vessels from 2020 to 2024. The key PAHs surveyed for the Greater Changhua 1's socio-economic baseline survey would thus be identical for this Project. Orsted has in place a stakeholder engagement plan (SEP) to continue engaging with these affected communities and relevant stakeholders across the Precinct.

The impact assessment has, where possible, quantified impacts. Where accurate baseline data is not yet available, estimates on impact magnitude rely on professional judgement, from experience with similar projects. It should be noted that for the purpose of this FSIA report, operational risks, impacts and opportunities are only covered qualitatively at a high-level as the Project's final development and operational plans are not confirmed and subject to change.

4 Socioeconomic Baseline

4.1 Overview

This section presents the baseline social data for the Project's AoI. The Project's various document suite cover a variety of baseline information that pertain to the FSIA, and the proceeding sections present the relevant information for further clarity.

4.1.1 Population and demographics

4.1.1.1 Population by gender and age

Changhua County is located in the central region of Taiwan. As of July 2024, Changhua County has a resident population of 1,231,000, with more males than females (624,041 males, 606,959 females) [15]. The population density across the County is 1,146.9 persons per km^2[16]. Xianxi Township and Lukang Township are the townships where the Project's offshore cable connects with onshore facilities and they are host ports for local fishing boats. As of June 2024, the populations of Xianxi Township, Lukang Township, and Fangyuan Township are about 16,176, 84,187, and 30,853 respectively. In all three townships, the number of male residents (n. 8,317 in Xianxi Township, n. 42,574 in Lukang Township and n. 16,335 in Fangyuan Township) is higher than female residents (n. 7,859 in Xianxi Township, n. 41,613 in Lukang Township and n. 14,518 in Fangyuan Township)[17].

As of July 2024, Changhua County has 6,666 indigenous residents, which make up 1% of all Indigenous peoples in Taiwan[18]. None of these communities are within the Project area. There are 12,700 fishers registered with the Changhua Fishing Association (CFA) for the whole of Changhua County, a portion of which are vessel owners[19].

In terms of the age structure, the population can be divided into three groups, namely the young population aged 0-14, also known as the 'dependency young children group'; the adult population aged 15-64, or the 'production population group'; and the elderly population aged 65 and older, or the 'dependency elderly group'. As of July 2024, the young population age 0-14 in Changhua County is 12% (144,773), adult population age 15-64 is 69% (850,904), and the elderly population of age 65 or older is 19% (235,323)[20]. According to Changhua County government[21], as of July 2024, in Xianxi Township, the percentage of young population is 11% (1,802), the adult population is 71% (11,462), and the elderly population was 18% (2,917).

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15 Changhua County Government (August 2024). Monthly population reports for 2024 (chcg.gov.tw). Retrieved 22 August 2024.

16 National Statistics,R.O.C. Taiwan, Population Statistics (stat.gov.tw). Retrieved 23 July 2024 from 'Number of Villages, Neighborhoods, Households and Resident Population'

17 Changhua County Health Bureau (data from June 2024), Changhua County statistics (chphs.tw), retrieved 22 July 2024

18 National Statistics,R.O.C. Taiwan, Population Statistics (stat.gov.tw). Retrieved 4 September 2024 from 'Number of Indigenous Peoples'

19 Data from CFA, 2024

20 Department of Household Registration, M.O.I. Department of Household Registration Statistics (ris.gov.tw). Retrieved from Population by Sex and 5 Year Age Group for Counties and Cities (縣市人口按單齡) on 22 August 2024

21 Changhua County government (February 2024). Monthly Population Statistics for Changhua townships and villages (chcg.gov.tw). Retrieved 22 August 2024.

In Lukang Township, the percentage of each age group are 14% (11,402), 69% (58,029), and 17% (14,651), respectively. In Fangyuan Township, the percentages are 8% (2,620), 68% (20,823), and 24% (7,369), respectively. By the end of 2023, the overall dependency ratio in Changhua County was 44.07, indicating that Changhua County is experiencing population aging. Over the past ten years, the aging index in Taiwan has also increased from 85.70 in 2014 to 153.83 in 2023, showing a clear trend of aging in the population[22].

Table 4.1 presents the gender ratio and age groups of fisher folk household respondents surveyed in 2020 for Greater Changhua 1. Three age groups are presented with reference to the legal working age (≥15 years old) and retirement age (≥60 years old) in Taiwan. With reference to Table 4.1, members of working age (15 to 60 years old) made up the majority of the respondents' households accounting for 71.4%. About 20% of the households' members were of retirement age (≥60 years old), while youths below the age of 15 made up 8.5% of respondents. The survey conducted received fewer male household members (254) than female household members (357), with a gender ratio of 71.1[23]. It is noted that the sampled population deviated significantly from the gender ratio of Changhua County as of August 2024, which was 102.8[15].

Table 4.1: Population of surveyed households by gender and age group

Age groups	Gender				Total	
	Male		Female		Number	%
	Number	%	Number	%		
Below 15	34	13.4%	18	5.0%	52	8.5%
From 15 to 60	198	78.0%	238	66.7%	436	71.4%
Above 60	22	8.7%	101	28.3%	123	20.1%
Total	**254**	**100.0%**	**357**	**100.0%**	**611**	**100.0%**

Source: Mott MacDonald, 2020

For the FGDs conducted in January 2024, all 20 coastal and offshore fishing vessel owners interviewed are male, with seven (7) owners in the 40 to 60 years age range, and 13 being above the age of 60. All 10 local fishing crew members interviewed were also male, with four (4) members in the 40 to 60 years age range, and the remaining six (6) being above the age of 60. Lastly, all 10 migrant/foreign fishing crew members are male, with the youngest being 28 years old and the eldest being 46 years old.

4.1.1.2 Education levels

Table 4.2 presents the education levels of household members surveyed in 2020 for Greater Changhua 1. The highest proportion of respondents have attained an education level of college/university and above, accounting for 29.6% of all surveyed respondents. This is closely followed by respondents that have attained a senior high school education, accounting for 25.7% of all surveyed respondents. In terms of the gender ratio with regards to education levels, the number of female respondents who have attained a Senior High School and College/University qualification and above were slightly lower for than males, and significantly less females had attended Secondary School, as seen in Table 4.2. Much higher numbers of

[22] Department of Household Registration, M.O.I. Department of Household Registration Statistics (ris.gov.tw). Retrieved from Three-stage Age Group and Dependency Ratio (三階段人口及扶養比) on 22 August 2024

[23] Numbers of males to 100 females.

female respondents had completed schooling only up to Primary School qualifications – more than twice the male respondents.

Table 4.2: Education levels of surveyed population with age of six and above

Education levels	Male (N)	%	Female (N)	%	Total	%
College/University and above	78	30.7%	102	28.8%	180	29.6%
Senior High School	74	29.1%	82	23.2%	156	25.7%
Secondary School	55	21.7%	45	12.7%	100	16.4%
Junior High School[24]	1	0.4%	1	0.3%	2	0.3%
Primary School	28	11.0%	87	24.6%	115	18.9%
Others	18	7.1%	37	10.5%	55	9.0%
Total	**254**	**100.0%**	**354**	**100.0%**	**608[25]**	**100.0%**

Source: Mott MacDonald, 2020

4.1.1.3 Disability

As of March 2024, 1,215,021 people in Taiwan were registered with a disability, with mental functions & structures of the nervous system (n. 371,702) and neuromusculo-skeletal and movement related functions and structures (n. 334,121) as the two highest disability types[26]. As of March 2024, Changhua County's disabled population was 71,117 (6% of Taiwan's total disabled population). 20,593 of those disabled in Changhua County have disabilities relating to mental functions and structures of the nervous system. Out of the 200 households surveyed during Greater Changhua 1, five (5) interviewees identified as having a member with physical disability within the household. Of these, three (3) being the wives of the family, one (1) being the father of the family and the other being the eldest son of the family. No interviewees identified as having a household member with mental disability.

4.1.2 Economy

The labour force refers to the civilian population who are over 15 years of age, have the ability and the willingness to work, and want to obtain paid work. As of July 2024, Changhua County has a population of 1,086,227 people over the age of fifteen[20]. Among which, 642 thousand people in Changhua County are in the labour force

The employed population refers to the labour force engaged in paid work or unpaid workers working for at least 15 hours during the standard week. By the end of 2021, the employment rate was 96.2%. In the past decade, except for the Financial Crisis period from 20012 to 2021, the unemployment rate has decreased from 4.2% to 3.8% year by year, and the unemployment problem has gradually slowed down.

In terms of employment sector, for Changhua County in 2021, the agriculture, forestry, animal husbandry and fisheries employment population number was 65,000 people, accounting for 10%, the industry employment population number was 285,000 people, accounting for 46%,

[24] Please note that the education level for "Junior High School" is equivalent to "Secondary School". It is noted that "Junior High School" is the former education level classification from the previous education system in Taiwan.

[25] It is noted that some respondents did not provide detailed information on education levels of their household members

[26] Ministry of Health and Welfare (26 July 2024). Disability Statistics (mohw.gov.tw). Retrieved 16 August 2024 from '1.1.1 disability population by type and county'

while the service industry employment population was 275,000 people, accounting for 44%. The results show that the employed population of the county is mostly engaged in the industry sectors.

4.1.3 Fishing livelihoods and sense of community

Fisherfolk (mostly men) in Changhua who have fishing vessels registered under Changhua County are granted access to the Changhua County's EFR area[27]. Overall, there are under 1,000 fishing vessel owners who have access to the EFR area and are also registered members of CFA. According to the current Environmental Impact Assessment (EIA), the Project's Phase 2a and Phase 2b cable routes are situated within the EFR area. Figure 4.1 below provides an illustration of the project location and the EFR area (see 'Area 05: Changhua County').

In terms of the fishing production (i.e. tonnes caught) and fishing value (i.e. value of fish catch in NTD), the latest data from Fishery Annual Report of 2023[28] (i.e. FAR 2023) indicated that offshore fishing (近海漁業) accounted for 217 metric tonnes of the total fishing production (i.e. 12,848 metric tonnes) in Changhua County for 2023. Coastal fishing (沿岸漁業) accounted for 344 metric tonnes.

According to the FAR 2023, the total fishing production (ie in tonnes) and fishing value (ie 1000 NTD equivalent of all total fishing production) of coastal fishing in Changhua County has decreased in the last 10 years. Though, it should be noted that this trend is similar to the trend across Taiwan. For offshore fishing, it was observed that the fishing catch between 2016 and 2022 had decreased (ie similar to the national trend)[29]. In 2023, however, the catch returned to levels comparable to those in 2016 (ie over 200 metric tonnes of fishery production), again mirroring the national pattern. In addition, the total fishing value for offshore fishing in Changhua has observed yearly fluctuation. The gross fishing value of offshore fishing (ie 1000 NTD/tonnes) had seen an increase since 2016.

Due to the various factors and influences (e.g. good weather days, actual fishing days, demand and supply, fisher folk behaviour as well as market price fluctuations), the FAR 2023 values only present a statistic overview. However, it should be noted that it is not easily possible to make clear findings or conclusion in term of correlation or determination on the exact impact or effect of offshore windfarms on Changhua's fishery productive.

According to the FAR 2023, 18.8% (i.e. 2,817 people) of Changhua fishers are employed or engaged in marine culture activities (i.e. full time and part time).[30] Aquaculture activities are related to the cultivation of aquatic organisms, while fishing vessel activities mainly involve

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[27] According to the Taiwan Fisheries Agency (2015), the EFR was granted to the CFA through the Fisheries Act (1929, amended by 26 December 2018), which has a total approved area of approximately 324.9 km^2. It is noted that the EFR area granted to the CFA had expired on 4 June 2019. The current management and ownership of the rights to the EFR area now lies with the Fisheries Agency instead of the CFA. Fishing rights licenses to the EFR zone are to be applied from the Changhua County Government. It is understood that the expiry relates more specifically to the granting/allocation of ownership of the EFR to the CFA. It does not signify the cancellation of the implementation of an EFR mechanism. The mechanisms and practices associated with the EFR area are still materially in place, whereby the fishing rights and regulations associated with it are still considered valid/applicable (eg vessels without fishing rights licenses are still not allowed to operate in the EFR). Source: 行政院農業委員會專用漁業權執照審查核發作業要點(農業部漁業署.

[28] Fisheries Agency. 2023 Fishery industry statistics annual report (fa.gov.tw). Retrieved on 10 September 2024 from '7. Fisheries Production Statistics'.

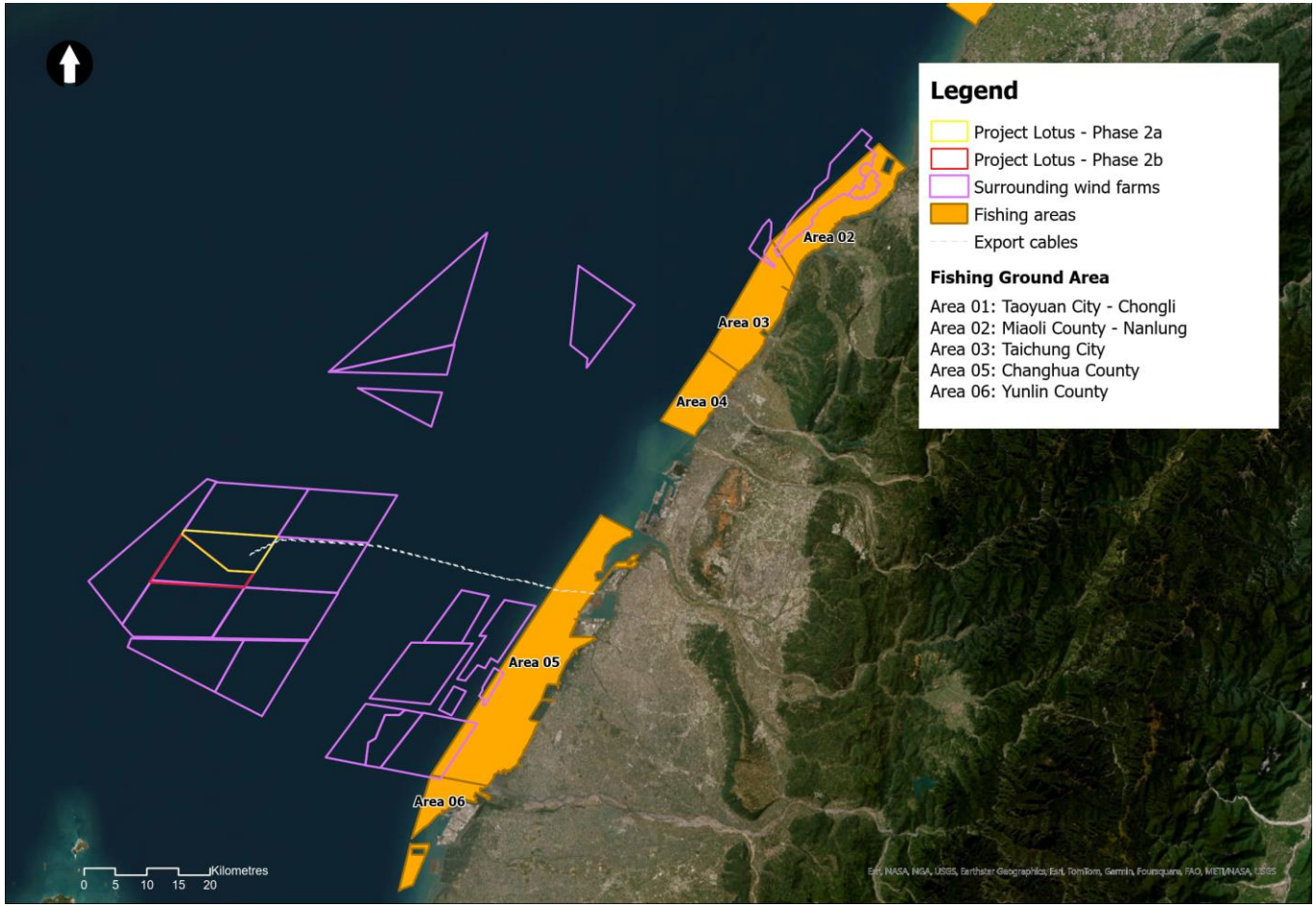
[29] Offshore fishing data is only available for Changhua County starting 2016.

[30] Fisheries Agency. 2023 Fishery industry statistics annual report (fa.gov.tw). Retrieved on 10 September 2024 from '5. Number of person activity employed in Fisheries'.

capturing wild marine life. Ørsted has addressed concerns raised by the aquaculture farmers (i.e. oyster farmers) about the underwater cable of OWFs passing through the intertidal zone during Project pre-construction stakeholder engagement activities. Ørsted had clarified that the Project's cable laying area differs from the oyster farm area. The Project plans to use the northern export cable corridor, while the oyster farms in Changhua County are situated in the southern export cable corridor (around 25km south of the northern export cable corridor).

Table 4.3 below provide more details on the different types of fishing activities.

Figure 4.1: Project overlay against designated fishing grounds



Source: Fisheries Agency (https://www.fa.gov.tw/en/FisheriesRight/index.aspx)

Table 4.3: Number of people involved in different types of fisheries in Changhua County

Year	Total people	Far sea fishing	Offshore fishing	Coastal fishing	Marine aquaculture	Inland fishing	Inland aquaculture
2013	12,133	-	-	3,596	3,246	331	4,960
2014	10,002	-	-	2,397	2,326	308	4,971
2015	13,488	-	-	3,199	3,173	384	6,533
2016	12,893	-	-	3,238	3,038	-	6,617
2017	12,714	-	60	2,949	3,155	117	6,434
2018	13,202	-	60	3,466	2,957	135	6,584
2019	13,139	-	60	3,472	2,847	137	6,623
2020	12,321	-	60	2,741	2,860	126	6,534
2021	14,527	-	20	5,259	2,856	120	6,272
2022	14,518	-	127	5,255	2,851	160	6,125
2023	15,015	-	143	5,886	2,817	154	6,015

Source: Fisheries Agency (2024)

4.1.4 Ethnicity

Han Chinese (comprising diverse subgroups with mutually unintelligible languages and different customs) makes up more than 95% of the population of Taiwan whilst indigenous Malayo-Polynesian peoples comprise approximately 2.5% (n. 603,605 people by July 2024[31]). The remaining 2.5% (over 570,000) of the population are new immigrants into the country, especially in recent years[32]. As of July 2024, Changhua County has 6,666 indigenous residents, which make up 1% of all Indigenous peoples in Taiwan[31]. None of these communities are within the Project's AoI.

There are 16 officially recognised Indigenous groups[33]: Amis, Atayal, Paiwan, Bunun, Pinuyumayan, Rukai, Cou, Saisiyat, Yami, Thao, Kavalan, Truku, Sakizaya, Sediq, Hla'alua and Kanakanavu. As of June 2024, Amis is the largest group and accounts for 37.3% of the indigenous population[34]. In addition, there are around nine (9) main Pingpu peoples groups: Kavalan, Ketagalan, Taokas, Pazeh, Papora, Babuza, Hoanya, Siraya and Makatau[35]. The Pingpu peoples groups have been petitioning to be officially recognised and categorised as Indigenous Peoples under Taiwan's legislation and Constitution so to receive the same Indigenous rights and protections. On 17 August 2017, the Executive Yuan passed a draft amendment to consider the Pingpu peoples groups as 'Pingpu indigenous persons' within the "Indigenous Peoples Status Act"[36]. However, this amendment has still not been officially done within the Act, and thus how Pingpu peoples' recognition as Indigenous Peoples is to be reflected in legislation and the Constitution is making headway within the national government but is still an ongoing issue[37]. Due to Pingpu peoples not being officially recognised by the national government until recent years, as well as not being formally recognised internationally, there is limited information on the various groups. However, to the Project's best knowledge, and through socio-economic surveys and interviews conducted during Greater Changhua 1 and Greater Changhua 4, Pingpu peoples are not within the Project area[38].

Traditionally, most of Taiwan's Indigenous Peoples originally lived in the central mountains as well as on the east coast and in the south of the country. More recently, up to half of the Indigenous population resides in urban areas of Taiwan (e.g. for employment opportunities). Key challenges for Indigenous Peoples in Taiwan include rapidly disappearing cultures and languages, encroachment on traditional domains, receiving official recognition by the government and protection of indigenous rights[39].

Amongst the households interviewed for Greater Changhua 1, 99.5% of the 200 respondents identified themselves as Minnan, a subgroup of the Han Chinese people and the main ethnic

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31 National Statistics,R.O.C. Taiwan, Population Statistics (stat.gov.tw). Retrieved 4 September 2024 from 'Number of Indigenous Peoples'

32 Taiwan.gov.tw. PEOPLE - Taiwan.gov.tw. Retrieved 25 July 2024

33 Council of Indigenous Peoples. The Tribes in Taiwan (cip.gov.tw). Retrieved 25 July 2024

34 Council of Indigenous Peoples (22 July 2024). June 2024 Indigenous Peoples population statistics (cip.gov.tw). Retrieved 25 July 2024

35 Council of Indigenous Peoples (4 June 2024). What is Pingpu Peoples? (cip.gov.tw). Retrieved 25 July 2024

36 Executive Yuan (12 September 2017). Revision of the Indigenous Peoples Status Act - Pingpu Peoples reinstated as Plains indigenous persons. Retrieved 16 August 2024

37 The News Lens (14 January 2022). The Siraya's Fight for Recognition in Taiwan - The News Lens International Edition. Retrieved 16 August 2024

38 Institute of Ethnology Academia Sinica. Pingpu peoples categorisation and distribution (sinica.edu.tw). Retrieved 19 August 2024

39 International Work Group for Indigenous Affairs (29 March 2023). The Indigenous World 2023: Taiwan. Retrieved 25 July 2024

group in Taiwan, whilst the remaining 0.5% identified as being from outside of Taiwan. None of participants interviewed or surveyed during Greater Changhua 1's socio-economic surveys or Greater Changhua 4's FGDs identified as being indigenous or minority ethnic, including self-identifying as Pingpu peoples.

Topics of Indigenous Peoples and ethnic minorities (including Pingpu peoples) were discussed during the data gathering and consultation process, and IFC PS7 is thus deemed not to be applicable. The groups or communities of IPs are not affected by the Project primarily because the main impacts to fishing and the onshore works are within an industrial zone 3km from the nearest residential areas.

4.1.5 Religion

Before the 17th century, Taiwan was inhabited by Indigenous populations, who practiced animist and natured based religious beliefs. Post arrival, European settlers introduced Christianity (i.e. Protestant and Roman Catholic) through evangelical missionaries. The large influx of Han Chinese in the second half of the 17th century brought Buddhist, Taoist and Confucian belief systems. During the Qing Dynasty in mainland China, the latter three religions became popular, leading to a visible increase of religious temples, monuments, and facilities built in Taiwan. Taiwan currently has approximately 22 religions. The main religions in Taiwan are Buddhism and Taoism, which makes up 35.3% and 33.2% of the population, accordingly[40]. As of 2022, there were 12,288 temples, 9,723 (or 79.1%) of which were for Taoism and 2,280 (or 18.6%) for Buddhism. There were also 2,877 churches[41]. No religious sites are within the Project's AoI.

4.1.6 Cultural heritage

Section 6.7 of the Project's EIA presents survey findings of tangible and intangible cultural heritage. A survey of cultural heritage sites along the route of the overland cable in the Lunwei Area found 27 tangible recorded cultural heritage sites within the area of Xianxi Township and Lukang Township. Among which, one is located at Xianxi Township and 26 are located within Lukang Township. In addition, 23 sites with archaeological relics were also identified, with six sites located in Xianxi Township and 17 sites located in Lukang Township. For intangible cultural heritage, one registered intangible cultural heritage (i.e. the traditional arts of drum making) is recorded within Xianxi Township. The remaining 21 intangible cultural heritage, which include traditional arts (e.g. gold carving and tin craft), preservation techniques (i.e. wood carving), folkway and traditional performing arts (e.g. Nanguan music) are recorded within Lukang Township. All of the cultural heritage sites and archaeological/historical relics are located at least 2km away from onshore cable which indicates that any terrestrial works is unlikely to impact them.

According to the Project's EIA (i.e. 6.7 of the EIA), there are four locations of ship wreaks or sunken boats that are registered as underwater cultural heritage sites, including wooden boats from the Qing Dynasty at Kungke Island, the British vessel S.S. Bokhara, the Kohei vessel and the SantengMaru vessel. The four boats are all located in the water territory of Penghu, which does not overlap with the Project offshore areas (i.e. submarine cable or WTG area). The EIA further notes several vessels sank in the vicinity of the Project site. Among which, "C'heng T'a" and "MV He Xin No.1" are located in the vicinity of CHW01 Wind Farm. The remaining shipwrecks are located more than 1km from the Project's offshore area or landing point of submarine cable.

[40] CIA.gov. Taiwan - The World Factbook (cia.gov). Retrieved 25 July 2024

[41] Executive Yuan (29 March 2024). Religion and faith in Taiwan (ey.gov.tw). Retrieved 25 July 2024

4.1.7 Infrastructure – water, sanitation and health

By the end of 2022, ninety-four percent of Taiwan's population has access to safe drinking water via the public supply system. Usage of public supply water is generally in rural areas where people may use private wells and incentive to connect to the paid-for public water supply system is low[42][43].

Traditionally, water has been cheap for consumers in Taiwan and as a result, consumption has been high. In an attempt to stem demand in the face of water scarcity which can impact businesses, prices have been increased in 2018 by the State's water utility company, Taiwan Water Corp, but usage remains high[44]. Although the country had experienced its worst drought in 2021 (or within 56 years to 2021), water consumption continued to rise in 2021. The upward trend in water consumption may be attributed to increased hand washing and sanitisation practices during the COVID-19 pandemic[45]. No other major drought has occurred since.

No significant difference was discovered between Greater Changhua 4's primary data and Greater Changhua 1's socio-economic baseline data. Greater Changhua 4's FGDs also indicated that most residents including fishing communities in the Changhua area along the coast have access to acceptable quality with regard to water and sanitation.

The healthcare system in Taiwan is based on a compulsory social insurance plan and a centralised system disburses healthcare funds. It is designed to provide equal access to healthcare for all citizens and reduce health disparities. In general, there is good accessibility to healthcare, comprehensive population coverage as well as short waiting times and low costs. However, quality of care can vary[46]. Taiwan Ministry of Health and Welfare annual reports for 2023 revealed that there were 33.4 physicians and 73.0 hospital beds per 10,000 of Taiwan's population (equating to 3.3 physicians and 7.3 hospital beds per 1,000 population)[47]. For Changhua County, there were 2.7 physicians and 6.5 hospital beds per 1,000 of Changhua County's population[47]. In 2023, the mean age in Taiwan was 74.96 years, with females generally having a higher mean age than their male counterparts (females 78.22; males 72.59). The crude birth rate is very low at 5.81% in 2023[48], with similar rate as Republic of Korea (5.56%) and slightly lower than Japan (6.6%)[49]. Taiwan's crude death rate stood at 8.80% in 2023[48], which is similar to other developed nations such as Republic of Korea. Like other developed countries, key health issues include heart disease, cancers and diabetes[50].

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42 Taiwan Water Corporation (9 August 2023). TAIWAN WATER CORPORATION-Message from Chairman. Retrieved 23 July 2024

43 Stantec. Connecting Rural Taiwan to the Public Drinking Water Supply, retrieved 23 July 2024

44 Chang, Yen-Ming (28 December 2018). Price hikes are not the only way to save water, Taipei Times. Retrieved 23 July 2024

45 Huang, Pei-Chung and Kayleigh Madjar (12 March 2021). Water consumption rises despite record drought: WRA. Retrieved 23 July 2024

46 Wu, Tai-Yin, Azeem Majeed and Ken N. Kuo (December 2010). An overview of the healthcare system in Taiwan, London J Prim Care. Retrieved 23 July 2024

47 Directorate-General of Budget, Accounting and Statistics (12 January 2023). National Statistics Report 國情統計通報 (dgbas.gov.tw). Retrieved 23 July 2024

48 Ministry of Interior (10 July 2024). List of Statistics 列管統計項目 (moi.gov.tw). Retrieved 23 July 2024 from 'Number of Rates of Birth, Death, Marriage and Divorce'

49 UN Data. World Population Prospects: The 2022 Revision - Crude birth rate (births per 1,000 population). Retrieved 24 July 2024

50 Ministry of Health and Welfare (22 March 2024). Health and Welfare Statistics (mohw.gov.tw) Retrieved 23 July 2024 from 'Number of medical institutions and hospital beds' and 'number of medical practitioners'

As of March 2024, 1,215,021 people in Taiwan were registered with a disability, with mental functions & structures of the nervous system (n. 371,702) and neuromusculo-skeletal and movement related functions and structures (n. 334,121) as the two highest disability types[51]. As of March 2024, Changhua County's disabled population was 71,117 (6% of Taiwan's total disabled population). 20,593 of those disabled in Changhua County have disabilities relating to mental functions and structures of the nervous system[51].

The education system in Taiwan mandates compulsory education for twelve years since 2014. Public primary education lasts for six years, junior high for three years and senior secondary education for three years. Access to the public education system is free of charge. At the end of 2023, almost all (99.24%) of the population over the age of 15 could read and write, with a slightly lower percentage for females (98.65%) than males (99.87%)[52]. For Changhua County, 98.21% of the county population over the age of 15 could read and write, with females (96.64%) lower than males (99.75%).

Amongst the households interviewed for Greater Changhua 1, on average, 6% of expenditure goes towards education and 4% is spent on healthcare.

4.1.8 Land use

Changhua County spans an area of 1,074.40km^2 and encompasses 26 townships. Er Lin Township is the largest, covering 92.85km^2, followed by Fang Yuan Township at 91.38km^2. The smallest, Xian Xi Township, comprises a mere 18.09km^2. The registered land area at the close of 2021 stood at 104,756.22 hectares, with public land making up 24,062.58 hectares (22.97%), private land accounting for 80,111.48 hectares (76.47%), and land jointly owned by the public and private sectors comprising 582.15 hectares (0.56%).

As outlined in section 3.3.1, the AoI for the project is situated in Changhua's coastal area, with onshore components located within the Changhua Binhai Industrial Zone. This reclaimed land, earmarked for industrial growth, is managed and owned by the government. The onshore Project Site will be secured, prohibiting entry to individuals without the necessary permissions.

4.1.9 Human rights

As Taiwan is not a member State of the United Nations (UN), it is not featured in indices such as the gender inequality index (GII), produced annually by the UN. The GII measures gender inequalities in three important aspects of human development – reproductive health; empowerment; and economic status[53]. In 2021, Taiwan measured itself using the same criteria and found that it would be ranked 7th in the world on the GII if it were included[54], with the number one ranking indicating the least amount of gender disparity in the country. The

[51] Ministry of Health and Welfare (26 July 2024). Disability Statistics (mohw.gov.tw). Retrieved 16 August 2024 from '1.1.1 disability population by type and county'

[52] Gender Equality Committee of the Executive Yuan (26 March 2024). National indicator - literacy rate of population over 15 years old (ey.gov.tw). Retrieved 25 July 2024

[53] Reproductive health is measured by maternal mortality ratio and adolescent birth rates; empowerment is measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status is measured by labour force participation rate of female and male populations aged 15 years and older. The higher the GII value (up to 1), the more disparities between females and males and the more loss to human development.

[54] Gender Equality Committee of the Executive Yuan (28 September 2022). Gender Inequality Index, GII (ey.gov.tw), retrieved 22 July 2024

Domestic Violence Prevention Act was promulgated in 1998 (and since updated in December 2023), stating that domestic violence is illegal and sets out steps to protect survivors[55].

Generally, the unemployment rate in Taiwan is approximately 3.39% as of June 2024[56] and the percentage of the total population living in the low-income households (i.e. population living below the poverty line) in 2022 was low, at 1.25% (n. 288,703)[57]. According to the law established by Workforce Development Agency, Ministry of Labour, at least 3% and 1% of the workforce in the public and private sectors, respectively, should be persons with disabilities[58]. In 2021, 4.2% of the public sector workforce consisted of persons with disabilities, however, the private sector continued to fall short of the mandated target as it had in previous years[59].

Vulnerability for children in the Project's area of influence manifests through their rights not to be subjected to slavery, servitude or forced labour, rights to adequate standard of living (e.g. poor healthcare and poverty) and rights to education. The legal minimum age for employment in Taiwan is 15. An exception is made to allow children younger than 15 to work, if they have completed junior high school and appropriate authorities have determined the work will not harm the child's mental and physical health. Taiwanese law prohibits children younger than 18 from carrying out heavy or hazardous work and the maximum working hours for children is eight hours per day. Children are also not allowed to work overtime or work on night shifts[60]. In the fishing households of the Project area, children may help out the family business in an unofficial capacity by replenishing and repairing fishing nets. Based on the FGDs conducted from Greater Changhua 1 and 4, no child labour was identified as present in the fishing community.

The U.S. State Department's 2024 Trafficking in Persons Report[61], acknowledged Taiwan's dedication to fighting trafficking, ranking it in "Tier 1" for the 23th consecutive year. This tier indicates that Taiwan has fully met the minimum standards outlined in the U.S. Trafficking Victims Protection Act of 2000. Taiwan's persistent efforts, such as improved inspections and the referral of suspected forced labour incidents on fishing vessels for investigation, have contributed to this recognition.

In July 2023, the government has approved an Action Plan for Fisheries and Human Rights which set out measures to improve the working and living conditions of foreign crew working on Taiwan-registered fishing vessels. The plan also included measures aimed at developing coordinated government responses to preventing human trafficking.

4.1.10 Supply chain

The sourcing of raw materials in mineral supply chains can potentially have negative impacts. The supply chain for OWFs, which primarily consists of raw materials and minerals, may lead to risk of forced labour, child labour, and occupational health and safety issues.

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55 Domestic Violence Prevention Act (6 December 2023), Domestic Violence Prevention Act - Laws & Regulations Database of The Republic of China (Taiwan) (moj.gov.tw) accessed 22 July 2024

56 Unemployment Rate (2024), National Statistics (most recent published), National Statistics, Republic of China (Taiwan)-Unemployment Rate, retrieved on 22 July 2024

57 Statistical Yearbook of the Republic of China 2022 (September 2023), yearbook2022.pdf (dgbas.gov.tw), https://ws.dgbas.gov.tw/001/Upload/464/relfile/10924/232178/y033.pdfretrieved 22 July 2024

58 People with Disabilities Rights Protection Act (20 January 2021), People with Disabilities Rights Protection Act - Laws & Regulations Database of The Republic of China (Taiwan) (moj.gov.tw), accessed 22 July 2024

59 2022 Country Reports on Human Rights Practices: Taiwan (20 March 2023). Taiwan - United States Department of State (www.state.gov), retrieved 22 July 2024

60 American Institute in Taiwan (6 June 2024). Taiwan 2023 Human Rights Report (ait.org.tw). Retrieved 31 July 2024

61 U.S Department of State. 2024 Trafficking in Persons Report. Retrieved 10 September 2024.

Forced labour may involve using local people, unskilled workers, or trafficked migrant workers to extract the raw materials for OWF components. In locations with high poverty levels, child labour may also be used for this purpose. Additionally, mining activities, including small-scale mines, can directly impact occupational health and safety. The use of hazardous chemicals, heavy equipment, and poorly designed tunnels can potentially violate the rights of workers. Furthermore, the extraction of raw materials can lead to the contamination of water sources with salt and toxic chemicals, reducing the availability of fresh water.

Ørsted has a Code of Conduct for business partner in place and also operates a Responsible Business Partner Programme (RPP) to conduct supply chain screening and due diligence. This code outlines that the Project's suppliers will adhere to OECD's due diligence requirements[62] with respect to the sourcing, extraction, and handling of minerals and metals used in the supply chain. Ørsted collaborates with significant suppliers and follows the OECD due diligence guidance on responsible mining. This collaboration aims to comprehend whether and how the suppliers develop robust management systems, evaluate supply chain risks, and devise strategies for response. Also, the suppliers are required to establish grievance mechanisms accessible to all workers, right holders, and stakeholders that may report any alleged breaches.

According to Ørsted's sustainability report (2023), the lack of supply chain transparency is a key challenge to improve the situation of responsible mining. Ørsted has been cooperating with first-tier suppliers and industry partners (ie Initiative for Responsible Mining Assurance) and exploring technological opportunities for increased traceability. Ørsted had also completed a pilot project applying block-chain technology to enhance transparency of copper usage at one of their UK wind farms. Ørsted is further joining forces with windfarm developers, industry partners, governmental stakeholders and more in promoting the international responsible business conduct (IRBC) to address impacts on workers in minerals and metals supply chain. Ørsted has ongoing commitments to evaluate their results of the blockchain pilot in 2024 and explore the reporting of origin of steel for foundations and WTGs with selected suppliers.

[62] OECD. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Retrieved 10 September 2024.

5 Impact identification, significance attribution and management measures

5.1.1 Overview

The scoping matrix in Table A.2 of Appendix A identified aspects affecting receptors that would lead to the impacts identified below. The sections below present the impact, indicate its significance using the methodology described in section 3.3.5 and 3.3.6, and then identifies management measures. Management measures include mitigation and enhance measures. The mitigation hierarchy has been used to:

- Avoid and reduce impacts through design (embedded mitigation)
- Abate impacts at source or at receptors
- Repair, restore or reinstate to address temporary construction impacts
- Compensation for loss or damage

Consideration has also been given to the identification of enhancement measures. Enhancement measures are actions and processes that go beyond the mitigation hierarchy and beyond compliance requirements to:

- Create new positive impacts or benefits
- Increase the reach or amount of positive impacts or benefits
- Distribute positive impacts or benefits more equitably

The Project's identified social impacts and risks are discussed further below.

5.1.2 Employment generation

Building an OWF farm requires a substantial workforce. These projects have the potential to create numerous jobs and stimulate economic growth. By involving local communities in the planning and development process, employment opportunities can be provided, and local businesses can thrive. Moreover, OWF projects may generate jobs not only during construction but also throughout their operational lifetime.

Impact analysis

Local employment/economic opportunities will be generated by the Project during both construction and operations phases. In terms of such opportunities at a national level, Ørsted's relevant research[63] presents that Ørsted had worked with more than 200 local suppliers and sub-suppliers for the construction of Greater Changhua 1 and Phase 2a. Nationally, this generated 1,100 direct jobs and more than 7,200 indirect jobs for Greater Changhua 1 and Phase 2a's construction phase, associated with supply chain work for the projects' main components.

During the construction phases of Project, the following are to be noted:

[63] Ørsted (April 2024). Green energy for Taiwan Powered by People. Case Study: The socio-economic value created by Ørsted's Greater Changhua 1 and 2a Offshore Wind Farms. en-chw-1-and-2a-case-study.pdf. Accessed 28 October 2024.

- Phase 2a, which included Greater Changhua 1[64] being built simultaneously, the labour workforce was approximately 1,060 workers, with 30% of the workers being from Taiwan. It should be noted that the Phase 2a's construction is already completed.
- Project Phase 2b, which includes Greater Changhua 4[65] being built simultaneously, is estimated that there will be a peak labour workforce of approximately 1,200 workers during the one-year construction period.
  - During the peak period, more than 90% of the workforce will be working offshore, while the maximum number of onshore construction workers will be 220 individuals.
  - Based on the current work scopes and intended packages, the Project Company estimates that approximately 35% of the workforce will be Taiwanese hires (ie see further elaboration in subsequent sections). It is expected that portions of Taiwanese hires will be likely from the communities from the Project's AoI.
  - The majority of workers for the construction phases are foreigners. This is due to the fact that majority of the works are offshore activities/work, which comprised of specialised working vessels carrying out specific scopes of work (eg submarine cable laying, foundation installation, and WTG installation). These activities or scopes would inherently require participation of skilled labour across specialised functions/roles, and thus would be reasonable expected to be sourced internationally.

During the onshore construction phase, which includes cable laying and the onshore substation, local contractors will be utilised. In particular, the appointed contractor would source around 80% of its employees locally for the construction of Phase 2b's onshore substation. This presents potential employment opportunities for both skilled and unskilled labour from the national and local area. In the offshore construction phase, most of the jobs will require specialised skills. However, there will also be opportunities for guard vessels, for which the Project continues to appoint local fishery community members. Furthermore, there is a possibility for preferential employment of impacted persons, provided that the guard vessels meet the necessary vessel specifications and certifications.

During the operation and maintenance (O&M) phase, there will be job opportunities available typically requiring specialised skills. Based on the Project's EIA, the maximum number of onshore workers at the substation during the O&M will be 100. This labour force is expected to be largely skilled labour and/or white-collar workers. Currently, the Project's Phase 2a (ie operation phase) has approximately 50 workers/operators, all of which are Taiwanese hires.

Impact significance

The magnitude of the positive impact of employment generation is considered **'minor'** during the construction phase and operation phase, due to:

- Temporal: Construction employment is short-term (one year), operational employment will be long term.
- Spatial: Spatial scope of impact will mostly be limited to the townships at Changhua coastal area.
- Degree of change: Many construction jobs will be created, and fewer operational jobs will be created, with some available to local people. Operational staff with specialised skills can be expected to move and reside in the area, contributing to local skilled workforce. The employment opportunities for local workers will positively impact their families' well-being and improve their quality of life. Additionally, the earnings of local workers being spent on

[64] This project is also developed by Ørsted, and it is eastly adjacent to the Project's offshore WTG area.

[65] This project is also developed by Ørsted, and it is northly adjacent to the Project's offshore WTG area.

local products and services will generate further socioeconomic advantages. Migrant workers often send money back to their families, which in turn benefits other regions.

- Reversibility of impact: Construction jobs will end within a year so the employment benefits will soon end, however there will be operational employment which will continue and contribute to the local economy.

The sensitivity of local people who are employed is considered **'high'** given that most residents may lack skills and experience to capture skilled and higher paid employment opportunities. The sensitivity of the operational workers is '**low**' because they have the required skills and a regular income, however, this is still dependent on whether there are economic/job opportunities available even for skilled workers.

Combining minor magnitude with high sensitivity leads to a positive impact of **'moderate'** significance during construction phase. Combining minor magnitude with low sensitivity leads to '**negligible'** impact for the operation phase.

Management and enhancement measures

As mentioned above, Ørsted aims to hire locally where possible, including hiring local-based contractors to source local employees for onshore work. Although construction job opportunities will be only available during the construction phase, Ørsted's LRP covers training and job opportunities that transfer beyond the lifecycle of the Project. These include guard vessel roles, which develop skills that could be deploy in other offshore windfarm projects, other than just the Project.

Ørsted has already developed a Decommissioning Cost Assumptions (dated 8 July 2019) for Greater Changhua 1 and Greater Changhua 2's Phase 2a. Ørsted is also committed to developing a decommissioning plan no later than five years prior to the end of the operation phase, whereby the plan may revisit the impacts and mitigation measures of employment and labour, if required. Furthermore, as elaborated in the Project's LRP, a Fishery Industry Transformation and Development Fund will be allocated by the Project Company to CFA, whereby the funds will support and assist fisher folk in career changes from the fishery industry as well as local community sustainable development matters.

Appropriate safeguards need to be in place for the impact of employment generation to generate as much benefit as possible. Ørsted has in place a Labour Management Plan (LMP) which sets out responsibilities and management practices associated with the management of labour during the Project's lifecycle. An Employee Handbook and Code of Conduct (COC) for Business Partners are also in place with associated procedures and requirements in line with Taiwanese labour laws to ensure human rights, non-discrimination, retrenchment and protection of child or forced labour safeguards are adhered to for employees, contractors and suppliers. Managing and maintaining workers' rights is essential during Project construction and operation. Further management measures relating to OHS are elaborated in section 5.1.5.2 below.

Residual impact significance

In addition to the information above, more details and updates on employment mitigation measures can be found in Section 7 of the HRIA. Livelihood incomes and employment are also addressed in various sections of the LRP. Therefore, with the mitigation and enhancement measures in place, the vulnerability of the workforce decreases, correct treatment creates more resiliency, and the positive impact and benefits increase such that the residual impact significance is considered **'major'** for the construction phase and **'minor'** for the operation phase.

5.1.3 Economic displacement and livelihoods

5.1.3.1 Coastal and offshore fisher folk

During the development of OWFs, it is important to consider the potential impact on users of the Project's AoI, such as fisher folk and oyster farmers, and the potential implications for the livelihoods of people working in the fisheries industry. As established in section 4.1.3, the general sense of community/identity of the fishing community is not likely impacted by the Project or offshore windfarms and hence is not further discussed in the FSIA.

Of the registered fishing vessels of Changhua County, approximately 90% are coastal fishing vessels (i.e. CTS and CTR vessels), which are active within 12 nautical miles (nm), or 22km, from the coast. The remaining vessels operate within the offshore seas (i.e. CT0, CT1, CT2 and CT3 vessels), which is from 12 to 200 nm (or 22 to 370km) from the coast. The Project's export cable route runs from the coast to the Project's wind farm area and passes through the EFR area. Fishers in Changhua with registered fishing vessels under Changhua County have access to the EFR area under the Fisheries Act 2018[27]. The EFR area extends out 3 nm (or 6km) from the coast, hence it is expected that only coastal fishing vessel owners will be active in the EFR area. The Project's wind farm area is situated in the offshore seas (50km from the coast of Changhua County) and is expected to only be reachable by offshore fishing vessels, whereby those are of considerable size (i.e. CT0 to CT3 vessels).

A total of 18.8% of Changhua fisher folk engage in aquaculture activities in the context of marine aquaculture farms (see Table 4.3). Concerns have been raised about the submarine cable of OWFs passing through the intertidal zone where oyster farms are located.

Impact analysis

The onshore infrastructure is located in an existing industrial zone, and no economic displacement is expected for onshore works. In terms of the Project's offshore area, the Project notes that aquacultural or oyster farms are not in proximity by the offshore portion of the Project, including for the cable laying. This is whereby the Project plans to utilise the northern export cable corridor (i.e. Changhua Northern Common Corridor) only for all its projects' export cables (i.e. as shown in Figure 1.1, with cable landing point located in Lukang Township), whereas the oyster farms in Changhua are solely situated in the southern export cable corridor (i.e. around 25km south of the northern export cable corridor). Furthermore, the cable routes of the Project do not intersect with any marine aquaculture areas. Therefore, the construction and operation of the Project will not pose any direct impacts to oyster farms or aquaculture farms. Since the construction to operation phase for the Project's Phase 2a (i.e. which includes Greater Changhua 1), no community grievances have been received from oyster farmers. No grievances relating to impacts on aquacultural or oyster farms were received either.

However, during the construction and operation phases of the Project, there is a possibility that the access to fishing grounds for coastal and offshore fisher folks in Changhua may be affected by the Project's cable alignment area as well as actual wind farm area. This was further expressed and confirmed by the various KIIs conducted between December 2023 to January 2024. During the FGDs with both coastal and offshore fishing vessel owners conducted in 2024, the vessel owners expressed that they had observed a decrease in fishing resources and income over the past three years. It should be noted that the income from fishing (and its associated increase/decrease) is not solely dependent on the tonnage of fish caught. The price of fish per tonne would fluctuate within and across the seasons and is also affected by market elements such as demand/supply (e.g. species caught, consumer habit, overseas import, short-term/seasonal over or under supply).

The offshore marine construction is expected to last a year (targeted to commence in 2025), while operational phases of wind farm projects typically last up to 20 years or more. Two separate FCAs were signed for Project's Phase 2a and Phase 2b, although both agreements were signed on 7 September 2020. Both FCAs identify that fishing activities will be affected during the construction and O&M phase of the Project's phases in the form of exclusion zones. These exclusion zones are identical for both phases and are summarised in section 1.6 above.

Submarine cable impacts

The installation of the submarine cables for Phase 2b will result in fishery activities located within the submarine cable route to be temporarily affected. The submarine cable route runs from the coast to the Project's wind farm area, and also runs through the Changhua Northern Common Corridor, which overlaps with the EFR area. It is expected that these limitations will mainly impact the coastal fisher folk (i.e. fishing within the 12 nm zone from the coast), who are the majority of the PAHs. Coastal fisher folk would be primarily affected due to the installation of the cables during the construction phase due to the restrictions placed on fishing within the exclusion zones as detailed above.

The construction exclusion zone for the submarine cable route, as described in the FCAs, is 600m in width, thus the cable route's construction exclusion zone which is located within the coastal fishing area (i.e. up to 12 nm or 22km from the coast) is 13.2km^2. Given that Changhua County's coastline is approximately 76km, the total coastal fishing area for Changhua fishing vessels is 1,672km^2, and thus the cable route's construction exclusion zone overlaps/takes up approximately 0.8% of the entire Changhua County coastal fishing area for the cable laying construction period. The construction of the submarine cables will also be temporary and last approximately one year. Furthermore, all vessels are still allowed to cross the cable route area during the construction phase, as long as they stay at a 500m distance from the vessels working on the cables. Once in the operation phase, all vessels are suggested to conduct fishing activities at a safety distance of 50m from the cable route and are only restricted from the cable routes during maintenance or emergency work on the cable routes during the operation phase.

The 107 PAHs/fisher folk conducting trawling and gill net fishing (which may include coastal and offshore fishers) are more impacted due to the installation of submarine cables. Whereas fishing vessels conducting other fishing methods are only temporarily restricted to segments of the cable route under construction, vessels conducting trawling or gill net fishing are restricted from accessing the entire submarine cable route during the full construction phase. Given the submarine cable's exclusion zone is 600m in width and the cable route is 38.6km long, the full cable route's exclusion zone is approximately 23km^2. As calculated above, the cable route exclusion zone up until coastal fishing grounds is approximately 0.8% of the entire coastal fishing area. For the offshore fishing area, from 12nm to 200nm in distance from the coast, and with Changhua County's coastline being 76km, Changhua County's offshore fishing area is around 26,478km^2. The cable route's exclusion zone in the offshore fishing area is 10km^2, thus the cable route's construction exclusion zone takes up 0.04% of the total coastal fishing area for fishing vessels conducting trawling and gill net fishing.

In terms of cumulative impact, other Greater Changhua projects, Hai Long No.2 and No.3 and Formosa 3 will also install submarine cables through the Changhua Northern Common Corridor. This means that spatially, there is limited cumulative impact since the cables of the various projects are within the same corridor. There could still be cumulative temporal impact whereby the overall period of construction work at the cable corridor might be extended. Potential impact of shifts in livelihood of fishery are still anticipated for coastal fisher folk during construction of cable trenches and laying of submarine cables. The impact will be expected to be short-term

and localised as the construction activities (i.e. cable laying) will be conducted in sections with the completed area being reinstated.

WTG installation impacts

During the construction phase, the entire Project's WTG area will be restricted for fishing vessels to conduct fishing activities or to pass through. As the Project's WTG area is 50km off the coast of Changhua County, the fishing vessels and thus PAHs that will be temporarily impacted are fishers who have offshore fishing vessels (i.e. CT0, CT1, CT2 and CT3). The WTG exclusion zones do not impact coastal fishers (i.e. whose vessel are not expected to be capable of operating in the WTG area), which are the majority of the PAHs.

Of the offshore fisher folk, those using trawling and bottom gill net fishing methods are primarily impacted, as these methods are not allowed within the Project windfarm area for the operation phase (i.e. in addition to the construction phase restriction). Vessels conducting other fishing methods are only faced with 50m radius exclusion zones around the WTGs and the offshore substation in the operation phase for any non-maintenance and non-emergencies. If there is maintenance or emergency work, the exclusion zone is temporarily extended to a 500m radius. Trawling and bottom gill net offshore fishers will lose 126.3km^2 of fishing area (i.e. the Project's Phase 2a plus Phase 2b wind farm area) for a long-term period from the construction phase to the end of the operation phase. Given Changhua County's coastline is approximately 76km and trawling and gill net fishing may fish within coastal waters up until offshore seas (200 nm or 370.4km), the total fishing area for the offshore fisher folk is 28,120km^2. Thus, the Project's area will take up 0.4% of the total fishing area that may be accessed by trawling and bottom gill net offshore fishers for both the construction and operation phase.

The cumulative areas excluding trawling and bottom gill net fishing vessels aggregates up to approximately 1,300km^2 when factoring the other known wind farm developments in the nearshore and outer Changhua seas[66]. Given the range of these offshore fishing vessels are up to 200nm, the corresponding area viable/possible operating range of these vessels is considered relatively large (i.e. when compared to the exclusion zone). With the total Changhua County fishing area from the coast to the offshore seas being 28,120km^2, the currently known wind farm developments will take up 4.6% of the total fishing area that can be accessed by trawling and bottom gill net fishing vessels during their construction to operation phase.

For other offshore fishers that may access the Project's wind farm area during the operation phase, the foundations of WTGs and offshore substations may potentially encourage marine benthos growth as the structures provide hard substratum for colonisation of benthic communities. Protective seabed rock berms for scour protection of the foundation of WTGs also serve as artificial reef and stimulate fish aggregation. Overall, this may have a positive effect on fishery resources within the wind farm area for offshore fishers.

[66] Wind farm developments currently in progress in the nearshore and outer Changhua seas include the Project Phase 2b, Greater Changhua 4, Hai Long No. 2 and No. 3, Changhua Changfang, Changhua Xidao, Taipower Phase 2, Zhongneng, and Haixia No. 1 offshore wind farms.
Taipower Offshore Wind Farm phase 1, the Project Phase 2a and Greater Changhua 1 are completed wind farms off the coast of Changhua.
Wind farm developments planned to begin include Formosa 3 (Haiding 2), Haixia No. 2, Huanyang, Formosa 3 (Haiding 1), Formosa 3 (Haiding 3), and Formosa 6 (Haiguang) offshore wind farms.

Impact significance

Coastal fisher

Coastal fisher – Construction phase

The magnitude of the negative impact associated with economic displacement and livelihoods for coastal fisher folk during the construction phase is considered **'minor'**, due to:

- Temporal: Restriction is short-term while cable is being laid, whereby construction is expected to last one year, and restrictions to cable areas will be segmented. Some cumulative impact (i.e. extended overall construction period at the cable corridor) is also expected as other wind farm projects are also expected to conducted cable laying work within the Changhua Northern Common Corridor
- Spatial: The area of cable laying work (up to 12 nm from the shore) is 13.2km^2, which is 0.8% of the coastal fishing area. The primary impact is expected to be on the coastal fisher folk, who make up the majority of the PAHs. It should be noted that the restriction of the entire cable laying area is only applicable to vessels practising trawling and bottom gill netting. Vessels of other fishing methods are able to fish along the cable alignment as long as the working vessels (i.e. cable laying) are avoided.
- Degree of change: Fishers practising trawling and bottom gill netting will not be able to access the full cable area alignment (i.e. 0.8% of the original fishing area) and also by fish receding from the area during construction activities.
- Reversibility of impact: The fishery resources might get affected during the construction, but the impact would be temporary.

Coastal fisher – O&M phase

The magnitude of the negative impact associated with economic displacement and livelihoods for coastal fisher folk during the operation phase is considered **'negligible'**, due to:

- Temporal: Occasional maintenance work of the cable area is expected during the operation phase.
- Spatial: A 50m safety distance from the Project's cable route is recommended to all fishers during the operation phase. Temporarily restrictions on segments of the cable route only applies when these segments are under maintenance or during emergencies.
- Degree of change: Limited to no change is likely to happen upon the coastal fisher folk
- Reversibility of impact: The coastal fishing area will mostly be accessible and be at its baseline conditions during operation phase.

The sensitivity for coastal fishers, with particular consideration for coastal fishers practicing bottom trawling and gill net fishing, is considered **'medium'** given they will have limited alternative options to access other fishing sites and are potentially smallholders.

Offshore fisher

Offshore fisher – Construction phase

The magnitude of the negative impact associated with economic displacement and livelihoods for offshore fisher folk during the construction phase is considered **'minor'**, due to:

- Temporal: Restricted access to the offshore fishing zone where the Project's wind farm area is, will be temporary (i.e. up to a year) for the construction phase.
- Spatial: Some segmented access restrictions from the Project's cable laying area and access restriction to the Project's wind farm area. The Project's wind farm area is 116.6km^2,

which is 0.4% of the offshore fishing area. Cumulative impact (up to around 1,300km^2 is expected with other wind farm being developed in the area. This will take up 4.6% of the approximate possible offshore fishing/operational area (inclusive of the Project's wind farm area). Wind farm area impact is only expected to be on offshore fisher folk. Cable laying area will mainly impact offshore fishers who conduct trawling or gill net fishing, whereby the cable route's exclusion zone is 10km^2 and 0.04% of the total coastal fishing area.

- Degree of change: There would be some change to the livelihood for the offshore fishers from not accessing areas during the construction phase. This is due to the area restriction of the Project's wind farm area and submarine cable area.
- Reversibility of impact: Once construction is complete, restriction access will be lifted for most offshore fishers (minus those conducting bottom trawling and gill net fishing).

Offshore fisher – O&M phase

The magnitude of the negative impact associated with economic displacement and livelihoods for offshore fisher folk during the construction phase is considered **'moderate'**, due to:

- Temporal: Long-term access restriction to the offshore fishing zone where the Project's wind farm area is present is only applicable to offshore fishers who conduct bottom trawling and gill net fishing. All other offshore fishers may access the wind farm area during the operation phase. Occasional temporary access restrictions may occur during maintenance or emergencies in the wind farm area or cable route.
- Spatial: Offshore fishers conducting trawling and gill net fishing will lose long-term access to The Project's wind farm area is 116.6km^2, which is 0.4% of the offshore fishing area. Over the course of the other neighbouring wind farm developments', the cumulative access area lost is approximately 1,000km^2, or 3.6% of their fishing area. All other offshore fishers face exclusion zones of 50m radius around the WTGs and offshore substation, or 500m radius during maintenance or emergencies.
- Degree of change: For offshore fishers conducting trawling and gill net fishing, there would be an expected change of their livelihood from long-term restricted access to the wind farm area. For other offshore fishers, change is expected to be minimal as they will regain access to most of the wind farm area, and the WTG structures may potentially support fish aggregation and thus fishery resources.
- Reversibility of impact: Offshore fishers conducting trawling and gill net fishing will face long-term access restrictions to the wind farm area. However, their vessels should have ability to reach other offshore areas. For other offshore fishers, although the wind farm area will not be the same as the original conditions, these fishers do gain access to most of the area and could potentially have a positive increase in fishery resources. Change is expected to be minimal as they will regain access to most of the wind farm area, and the WTG structures may potentially support fish aggregation and thus improved fishery resources.

The sensitivity for offshore fisher folk, with particular consideration for bottom trawling and gill net fishing offshore fishers, is also conservatively considered **'medium'**. Offshore fishers' operating range is far larger than coastal fishers (i.e. up to 200nm). While some could be practicing trawling and bottom gill net fishing at a considerable scale, the limited area to be restricted would not make a significant difference to the overall fishing area used. However, it is conservatively assumed that there could be smallholder fishers among this group, which would have set fishing sites and less ability to move to other locations.

Table 5.1 presents the final impact significance combining magnitude with sensitivity for coastal and offshore fisher folk.

Table 5.1: Impact significance of economic displacement and livelihood for coastal and offshore fisher folk

Affected fisher	Magnitude		Sensitivity	Significance	
	Construction	O&M		Construction	O&M
Coastal	Minor	Negligible	Medium	Minor	Negligible
Offshore	Minor	Moderate	Medium	Minor	Moderate

Management measures

The FCAs were signed in 2020 after agreements between the Project Company and CFA. The eligible fisher folks have been compensated through the scheme. Compensation amounts took into account the Offshore Wind Power Fishery Industry Compensation Guidelines[67] . The Guidelines do not provide the prescriptive amount to be used for compensation, rather, in practice, they provide a calculated amount which is used as a 'minimum base amount' or starting point of reference for negotiations between the wind farm developer and the fishing association. The final agreed compensation amount documented in the FCAs were subjected to willing negotiations (i.e. subsequent to the calculations via the guidelines) and was expected to be higher than the calculated amount. The monetary compensation from the Project Company is then disbursed by/through CFA to the registered fishing vessel owners.

In addition to the monetary compensation, an LRP has been developed for the Project, which identifies the Project Affected Persons (PAPs) who will be economically displaced. The social baselines from Greater Changhua 1 and Greater Changhua 4 have been adopted to inform the development of the LRP. A range of livelihood restoration programmes are proposed to support the restoration of fisher folk's livelihood[68]. Restoration is considered through a few facets. Some programmes aim to address economic displacement by directly providing other job opportunities through the Project. With the understanding that more windfarms are to be developed in the region as well as less young people staying within the communities to continue the fishery industry/activities, the Project also proposes programmes (i.e. trainings and funding opportunities) for PAPs to transition from the fishery industry to other businesses or skills. As such, the various livelihood restoration programmes currently being proposed or considered include vocational training, community support fund, local recruitment program, patrol/guard vessel programmes.

The Project's Stakeholder Engagement Plan (SEP), which also includes a GM[69], has been developed and is currently being implemented. The SEP outlines the ongoing engagement that will be carried out for the Project to help PAPs understand the impacts. The GM is also in place whereby entitled persons or PAPs may make claims for cash compensation, which will be assessed on a case-by-case basis. This is outlined within the LRP.

Based on EIA requirements, all wind farm developments in Taiwan are expected to have stakeholder engagements and GM processes in place. Some wind farm developments (i.e. Hai Long[70]) are also known to additionally have their own LRP and associated programmes due to project financing requirements (i.e. from Equator Principles Financial Institutes).

[67] https://law.coa.gov.tw/GLRSnewsout/LawContentSource.aspx?id=GL000773

[68] Specific proposed livelihood restoration programmes can be referenced in section 6 of the Project's LRP

[69] The Project's GM can be referred to in section 8 of the Project's SEP

[70] Hai Long Offshore Wind. 海龍離岸風電-環境與社會管理 (hailongoffshorewind.com)

Residual impact significance

With the mitigation measures in place, the sensitivity and vulnerability of the fisher folk who are economically displaced will lessen such that the sensitivity is **'low'** for all fisher folk groups. The residual impact significance for both coastal and offshore fisher folk during the construction and operation phase are summarised in Table 5.2 below.

Table 5.2: Residual Impact significance of economic displacement and livelihood for coastal and offshore fisher folk

Affected fisher	Sensitivity after mitigation measures	Residual impact significance	
		Construction	O&M
Coastal	Low	Negligible	Negligible
Offshore	Low	Negligible	Minor

5.1.3.2 Vulnerable groups

The socio-economic baseline survey undertaken in 2020 on 200 fisher households indicates that the majority of the household members are of working age (15 to 60 years old) and the majority of household members are females (58.5%).

Besides the fisher folks identified through the CFA, there are other vulnerable groups that could be impacted by economic displacement. These include:

- Crew members with income highly dependent upon the long-term success of the fishing sector such as deckhands and supporting labours, particularly foreign/migrant workers
- Fisher folk who are not registered members of the CFA but who do fish within the exclusive fishing zone (it is possible that these vulnerable fisher folk exist, however none were identified during the 2020 survey or 2024 FGDs and KIIs).
- Women (or other family members) in fishing families providing unpaid support or ancillary work which is reliant on fish supply
- Poor, elderly or disabled people (people that are vulnerable as a result of changes to their livelihoods) that are part of the fishing household or fisheries value chain within local communities (i.e. boat repairers, sellers of catches at markets)

Impact analysis

Crew members are typically only expected to be hired for fishing vessels that conduct operational fishing methods like gill net fishing or trawling. Based on Taiwan's Fishery Agency's coastal fishery management and responsibility practice[71], no trawling is to be conducted three (3) nautical miles from shore or between three (3) to 12 nm from shore for vessels over 50 tonnes. Hence, coastal fishing vessel owners are not allowed to conduct trawling and hence are not likely to hire crew members. However, coastal fishing vessel owners conducting gill net fishing may still hire crew members.

Based on the KII with a fishing community representative in December 2023, vessels using the trawling and bottom gill net fishing method may hire crew members. Crew members range from one member to five, depending on the size of the boat. As based on conservative estimate, a maximum of few hundred crew members, may be present and impacted within the Project's affected area.

[71] Fisheries Agency (4 August 2016). Coastal fishery management and practice for responsible fisheries (fa.gov.tw). Retrieved 10 September 2024.

Crew members receive a fixed salary, and thus are less influenced by the influx or reduction of catches. However, fixed salary amounts may fluctuate based on the general income of the fishing vessel owners and are also dependent on fishing bonuses/benefits. Job opportunities also decrease when trawling or bottom gill net fishing are prohibited during the construction and operation phase of the Project. Local crew members noted during the FGD conducted in January 2024 that when fishing resources are low, they pick up part-time jobs to increase their income. Both local and migrant crew members did not note of any particular concerns or thoughts regarding impacts from the Project. Overall, they are mostly content with their current working situation.

Due to the long-term nature of the impact from the WTG's exclusion zone for the construction and operation phase, the crew members that are expected to work for trawling and bottom gill net fishing vessels are considered to be impacted by the WTG development. Migrant crew members are particularly vulnerable as migrant crew members' salaries vary based on their skills and experience. Most migrant workers are responsible for 90% of their family's income. During the 2024 FGDs of vessel owners, if migrant workers were to switch jobs or roles, they would have to go back to their own country first and re-submit a work application to work in Taiwan. This is because training requirements and the title of the role would be different. Hence, the process for migrant workers to switch careers or jobs in Taiwan is not as straightforward as compared to local fisher folk or crew members. Elderly crew members are also highlighted as a vulnerable subgroup because they are limited in their ability to change their livelihoods.

Women of fisher folk households generally do not participate in fisheries activities. Various KIIs conducted in 2023 confirmed that women were less likely to work at sea unless they were at sea with their husbands or were vessel owner themselves. However, women of fisher households do undertake housework, help to sell fish, and take care of children. They also share income earning responsibilities through other means or jobs. In the FGD with the women's group in January 2024, most participants were either fishery vessel owners or wives of fishery workers.

In the FGD with the women's group, a few women expressed that job opportunities provided by the Project were few and may not be the most suitable for women. A general community representative (i.e. KII conducted January 2024) also shared that for women over the age of 40, it was more difficult for them to change careers or find new jobs unless it was a janitorial or in-house cooking/chef role. When training opportunities are mostly based in the city, the women of fishing households that were further away are less keen on attending livelihood restoration related classes or skill-based training. This indicates training opportunities may not be the most accessible.

Impact significance

Crew members

The magnitude of the negative impact associated with economic displacement and livelihoods for crew members during the construction and operation phase is considered **'moderate'**, due to:

- Temporal: Crew members, particularly considering most will work for gill net fishing or trawling vessels, are restricted from the whole cable laying area and Project wind farm area during the full year of construction. In the operation phase, these vessels will be restricted from the Project area during the entire operation phase.
- Spatial: The full area of cable laying work is 23km^2, which is restricted for gill net fishing and trawling vessels and hence their crew members. For the operation phase, these vessels are restricted from the whole Project area and other neighbouring wind farms during the

operation phase, which is approximately 1,000km^2. Although all trawling vessels are expected to fish in the offshore seas, it is not expected that all of the vessels that conduct gill net fishing are offshore vessels, and hence the impacted crew members would not be the maximum possible limit.

- Degree of change: Local crew members are able to pick up part-time jobs to increase their income. However, job switching for migrant workers is not as straightforward.
- Reversibility of impact: Due to the long-term restrictions for gill net fishing and trawling, the number of crew member job opportunities may not return to the initial amount.

Irrespective of whether the construction or operation phase, the sensitivity for crew members is considered **'medium'**, particularly considering migrant crew members who are already considered more vulnerable in a foreign country and may have less resources and require higher effort to switch jobs.

Women of fisher folk households

The magnitude of the negative impact associated with economic displacement and livelihoods for women of fisher folk households during the construction and operation phase is considered **'minor'**, due to:

- Temporal: the duration of livelihood impacts on the women's group are dependent on the economic performance of their fisher folk's household
- Spatial: No physical impacts in terms of livelihood, other than for the few women who are vessel owners themselves. In which case, the spatial impacts are presented in the 'coastal and offshore fisher folk' section above.
- Degree of change: Some women may lose or have reduced time in their supporting roles selling fish. With reduced fishery catches as a source of income, for women who also contribute to household income through other jobs, they may need to increase work hours and/or change their standards of living to accommodate changes in the household income. Although the degree of change is mostly small/limited as most women of fisher folk households are understood to take care of the family but do not participate in work. Hence, either the women will also have to seek work or the men of the household seek other means to earn income.
- Reversibility of impact: It is understood that older women of fisher folk household may have a harder time assimilating to the livelihood impacts, as it is not as easy for them to seek jobs/change careers. Many who have taken a housewife role could be due to lack of education levels or skills, making supporting a change in livelihood more difficult. Younger women or women vessel owners are more resilient and able to assimilate to the change.

The sensitivity for women of fisher folk households is also considered **'medium'**, because many, especially older women, lack opportunities or skillsets to find alternate means of supporting their families.

Combining moderate magnitude with medium sensitivity leads to a negative impact of **'moderate'** significance for crew members. Combining minor magnitude with medium sensitivity leads to a negative impact of **'minor'** significance for women of fisher folk households.

Mitigation measures

Although crew members and women of fisher folk household are not entitled to cash compensation under the provisions of the FCA, they can still be supported through the Project via livelihood restoration programmes. Programmes proposed that may provide crew members with alternative job opportunities include the vocational training programme, labour employment

and recruitment programme, patrol or guard vessel programme and the crew transfer vessel services. Possible vocational trainings were identified based on the baseline household surveys conducted in 2020 as well as FGD and KII in January 2024, thus are more likely to spark interest and attendance from the women of the Project's AoI.

Labour employment and recruitment roles from the Project are open to all affected people within affected fisher folk households, which include women of the fisher folk households. Sea-based roles like the guard vessel or patrol boat programme are also open to all affected people within affected fisher folk households. However, it is understood from the women's group FGD and various other KIIs that women are less keen on roles at sea.

For labour employment and recruitment roles offered from the Project, safeguards for appropriate labour and working conditions are in place. These are outlined in section 5.1.5.2 below.

The SEP outlines the ongoing engagement that will be carried out for the Project to help PAPs understand the impacts. The GM is also in place whereby PAPs may raise impacts or other concerns of the Project. This is outlined within the LRP.

Residual impact significance

In addition to the details above, information on employment mitigation measures can be found in Section 7 of the HRIA. Livelihood programmes are also outlined in detail in the LRP. Therefore, with the mitigation and enhancement measures in place, the sensitivity of both vulnerable groups reduces to **'low'**, and thus the residual impact significance for crew members become '**minor'** for crew members and **'negligible'** for women of fisher folk households.

5.1.4 Community service and infrastructure impacts

There are some impacts to community services and infrastructures that need mitigating, both onshore and offshore. Although impacts are not predicted to occur, it cannot be ruled out that offshore construction workers will not visit nearby towns to purchase things that cannot be obtained onboard such as snacks, alcohol or sex or to engage in sporting and recreational activities.

Impact analysis

Worker's influx – exposure to communicable diseases and infrastructure and services

The temporary influx of offshore workers may expose onshore communities to communicable diseases, including COVID-19, human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) or sexually transmitted infections (STIs). The temporary influx of offshore workers may also add pressure to the community's accommodation, infrastructure and services.

As of June 2024, the total population of Lukang Township (i.e. where the Project's onshore components are located) is 84,187 people. Thus, if the maximum expected workers for the Project are all from outside the local area (which is not to be expected), the influx represents 0.26% of the total population of the township for the construction phase and 0.11% for operation phase. No workers' accommodations/camps are expected to be built for the Project during the construction or O&M phase. For the construction phase for Phase 2b, accommodations will be provided either onboard of vessels with some hotels and designated housing onshore. For the O&M phases of the Project, mostly only onshore accommodations are expected, which would also be through hotels or designated housing. Further details of subcontractor/supplier worker

numbers and their worker's accommodation arrangements (and associated management) are updated on an on-going basis within Ørsted's future Labour Management Plan.

From a cumulative perspective, considering the Project Phase 2b's construction start date to COD is aimed to be Q1 to Q3 2025, based on spatial and temporal overlap, Hai Long No. 2 and No. 3, Greater Changhua 4 and various other Changhua nearshore OWFs are likely to cause cumulative impact of workers' influx. From Hailong's publicly disclosed social impact assessment (SIA)[72], the estimated total peak construction workforce for Hailong in 2025 is 216 persons. Conservatively considering Hailong's figure to be entirely as onshore workers, the total cumulative influx of onshore workers is 0.26% of the total population of Lukang Township (i.e. area of the Project's onshore AoI) for the construction phase. It should be noted that similar to the Project, Hailong's SIA also states that there are no dedicated onshore workers' accommodations expected. Overall, influx of onshore workers for the construction of the various offshore projects is unlikely to overwhelm the infrastructure and services. However, potential impacts and mitigation measures are still considered for this assessment.

Overall, influx of onshore workers for the construction and operation phases of the various offshore projects are unlikely to overwhelm the infrastructure and services of Lukang Township.

Increased onshore and offshore traffic

The main direct impact on health and safety for local community is likely to be the increase of traffic, both onshore and offshore. Transportation for materials and personnel for the Project's onshore and offshore components means the Project will increase traffic both on land as well as at sea, especially during the construction phase. Onshore transportation work includes transporting turbine materials to the Taichung Port for staging and assembly. Other materials to transport are for the onshore substation and cable laying work. Offshore transportation and traffic include transportation of personnel through CTV, guard boats as well as construction vessels to undertake various Project work including foundation or assembly work.

Transportation and traffic during the operation phase will mainly be from maintenance work, including the maintenance of onshore components (i.e. substation and cables) and offshore components, which are mainly the WTGs.

For onshore construction work, there will be an increase in transportation of project materials, which may lead to an increase in the risk of collision or other traffic-related incidents. The Project's EIA simulated and concluded that even with the increase in vehicles caused by the Project (i.e. 265 passenger car units), the roads were still able to maintain a relatively free flow of traffic and not impact the baseline traffic significantly. Abnormal load transportation (e.g. WTG components) will mostly be limited to Taichung Port, an access-controlled area for the Project's staging/assembly area.

For offshore construction, marine traffic may increase and create the risk of collisions with other fishing vessels. It is understood from the Project's EIA that marine density around the Project area is low (i.e. one to 25 vessels), whereas the nearshore area has a high marine vessel density (i.e. 25 to 75 vessels). The nearshore area is where most fishers conduct fishing activities, and hence are already exposed to higher levels of marine traffic. It is expected that fisher folks will likely avoid heavy traffic areas to minimise collision. The Project's EIA further stated that 31 vessels are expected to be utilised during the construction phase. Although other OWF projects are likely to increase marine traffic, it should be noted that the working vessels (with exception of cable laying works) of the Project (and other windfarm developments) are

[72] Hai Long Offshore Wind (1 August 2023). Social Impact Assessment. 0599176 Hailong SIA Rev5 (hailongoffshorewind.com). Retrieved 15 August 2024.

mainly only transiting through the coastal area en-route to their OWF area. Furthermore, most of the Project's neighbouring windfarms are likely to have staggered offshore construction periods with the Project's offshore construction phase. This is due to Taiwan's Bureau of Energy's (BOE) tiered approach of awarding licensed areas for OWF development. Hence, marine traffic is likely to increase temporarily for certain overlapped construction periods and potentially at nearshore area (i.e. since the offshore WTG areas of the windfarm are relatively far apart).

Even though no projected number of vessels are provided for the operation phase, it is expected that vessel amount will be drastically less than the construction phase and only deployed occasionally.

Impact significance

The magnitude of the negative impact associated with community services and infrastructure during the construction and operation phase is considered **'minor'**, due to:

- Temporal: Occasional influx of workers to onshore communities as well as increased onshore and offshore traffic will be temporary (i.e. up to a year) for the construction phase. Impacts of worker's influx and traffic will have rare occurrence in the operation phase.
- Spatial: Lukang Township, which is the main township that may experience influx of workers and increased traffic during construction and operation phase is approximately 72 km^2. Although the total Changhua County fishing area from the coast to the offshore seas is 28,120km^2, the main spatial impact from marine traffic will be the nearshore areas with higher marine vessel density.
- Degree of change: Limited change to the baseline is likely to occur upon the onshore communities and marine areas given the continuous OWF development already occurring in the AoI.
- Reversibility of impact: The community is expected to assimilate to the influx of workers and traffic, which both have minor to negligible impact.

The sensitivity of the local community is considered **'low'** given the community has means of absorbing and has shown adaptation to these impacts with prior OWF developments.

Combining minor magnitude with low sensitivity leads to a **'negligible'** negative impact during both the construction and operation phase.

Mitigation measures

Worker's influx – exposure to communicable diseases and infrastructure and services

As part of the goals of the Taiwanese National Development Plan (2017 to 2020) through the cooperation from people of all walks of life, the relationship between Taiwan and other countries will be improved by actively engaging in humanitarian work, medical assistance, disease prevention, anti-terrorist and combating crime etc.

Considering the potential risks, the following mitigation measures will be implemented at site:

- Regular worker health check-ups provided by the Project company, Contractor and sub-contractors/suppliers to all workers who will be working on site not only prior to commencing the work, but also at least annually during the construction phase.
- To prevent occurrence of disease and accidents, contractors and their workers will undergo a briefing on safety, sanitation measures, and emergency rescue procedures, and receive regular training and toolbox talks related to task completion.

- The OHS management plan will include the awareness building and guidelines for health, wellness, disease prevention, and impact of anti-social behaviour
- COVID-19 prevention and control measures will be implemented in line with prevailing national requirements and international guidance.
- The main contractors will adopt Ørsted's Global Policy for Quality, Heath, Safety and Environment (QHSE, dated April 2024) and labour management plan, ensuring these documents or other OHS-relevant documentations cover the following information:
  - occupational health and safety plan based on a risk assessment
  - an emergency preparedness and response plan in coordination with local emergency services
  - a construction environmental and social management plan with procedures for managing waste, dust, emission, water protection, noise, and other environmental effects as well as controls for vehicle and boat use and maintenance, security of people and Project property, and chance finds
- The abovementioned plans will be monitored and audited periodically and be updated as needed during construction and operation phase
- As based on Ørsted's COC for Business Partners, Ørsted's business partners are to supervise its contractors and subcontractors to adhere to the COC's employment and working standards, which encompass the mitigation measures above

Influx of onshore workers for the construction and operation phases of the various offshore projects are unlikely to overwhelm the infrastructure and services of Lukang Township. The Project does have in place a HSE Plan and emergency preparedness documentation for Phase 2b's construction work to reduce the stress or impacts on the local emergency response infrastructure and services.

Increased onshore and offshore traffic

Management, mitigation and monitoring measures to support a target of zero incidents have been set in place within the Project's EIA regarding the increased onshore and offshore/marine traffic. For onshore, terrestrial traffic, traffic and transportation measures include:

- Coordinating with local traffic and road authorities for having traffic signals, signs, marking removal and setting and signal time systems adjustments in place
- Setting up appropriate signage, including warning of lane narrowing and prohibition of lane changing or speed reduction near work areas
- Restricting Project or personnel's personal vehicles to be parked on Xianbei 4th road and the corner of Xiangong road for both operation and construction phase.
- Obtaining construction permits or approvals for any road excavation or road use as applicable.
- Use of qualified and trained vehicle drivers

Offshore, marine traffic management measures include:

- Deploying guard boats during construction phase
- Use of qualified and trained boat drivers
- Establishing exclusion zones (i.e. area where non-Project vessels, including fishing vessels, are not allowed to access) around the WTGs during construction and operation phase. For the operation phase, there will be a 50m radius from the WTG foundation during non-maintenance and non-emergency periods. The zone will extend to 500m in all directions

from the exterior boundaries of the turbine, foundation, and/or offshore substation when under maintenance.

- Designating marine transportation routes
- Establishing a Vessel Traffic Management System (VTMS) to control ship traffic within the windfarm. The VTMS will use radar, automatic identification system (AIS) of vessels and closed-circuit television (CCTV) to track ship movement.
- Setting up a Marine and Helicopter Coordination Centre (MHCC) to be used collaboratively with neighbouring sites to utilise the VTMS and coordinate any rescues or emergencies.
- Organising an operational management unit to establish rapid mechanisms with coast guard, port authorities and other disaster prevention units.

When the windfarm is complete, information will be reported to competent units for publication of locations, sea cable paths, emergency response measures and maintenance work for large vessels etc.

Other non-traffic and worker's influx specific measures to support community health and safety include the Project's SEP, which outlines the Project's ongoing efforts to provide Project's construction, operation and eventual decommissioning information to relevant /stakeholders. A GM is also in place to allow people and organisations to raise concerns or issues of the Project, including in relation to health or safety. The GM may be used to raise concerns relating to environmental health impacts as well as concerns of interactions with project workforce or security personnel, if applicable. A Project stakeholder manager and marine affairs officer are in place to manage these concerns and the Project has a local office within Changhua County as well.

Residual impact significance

In addition to the details above, information on employment mitigation measures can be found in Section 7 of the HRIA. Livelihood programmes are also outlined in detail in the LRP. Therefore, with the mitigation and enhancement measures in place, the sensitivity of local community remains **'low'**, and the residual impact significance remains **'negligible'.**

5.1.5 Other social impacts

In addition to the impacts above, there are also potential human rights as well as labour impacts for community members and project workers. These potential impacts are covered specifically and in more detail through dedicated studies and assessments. For completeness they have been summarised in the section below. For further detail please refer to the respective studies and management plans.

5.1.5.1 Human rights

With the growth of wind energy projects within Taiwan and reduce carbon emissions, there is also a growing potential for human rights infringements upon the Project's workforce, supply chain workforce and local community and workforce. Poor working conditions, failure to consider and respect rights of affected stakeholders are all causes that may lead to human rights impacts or infringement.

The Project workforce is deemed to be those engaged directly by the Project Company, the EPC contractor and O&M contractor (which are both the Project Company) and its sub-contracted workers working at the Taichung Port and onshore substation sites. It also includes those working at the offshore WTG and cabling sites. Supply chain workforce include those

engaged by primary suppliers which, on an ongoing basis, provide goods or materials essential for core business processes of the Project.

Some labour-related human rights aspects, which are known issues for contracted workers, were highlighted in the self-assessment questionnaires (SAQs) received in August 2024 from the Project's onshore and offshore construction suppliers and workers. Risks that materialised in the last three years include untrained worker being found working on site, foreign worker not reporting an injury caused by unsafe working environment to their supervisor due to concerns of potential negative impacts to their employment. Both incidents have already been resolved with remediation and mitigation measures put in place.

The local community include fishers, in particular registered vessel owners who have access to CFA's EFR area. The fishers' employees and family members, oyster farmers, non-registered fishers, and those engaged in the fishing supply chain such as migrant or local deck-hands are also considered as local community. These definitions are applicable for the remaining sections.

The Project has developed a draft HRIA. The HRIA identifies and assesses the Project's potential human rights impacts and assists in improving the Project's social management and mitigation measures. Measures safeguard and facilitate meaningful engagement with affected communities and workers. The current draft HRIA extracts information from secondary data as well as primary survey data collected overtime for the Project Company's various Greater Changhua developments from 2020 to 2024 (this is explained in section 3.4). The most up-to-date analysis on human rights impacts will be found and presented in the Project's HRIA. Within the Project's HRIA, potential human right impacts are assessed and given a severity score of 1 to 5, 1 being the least severe. 5 is of high severity, and impacts scoring 4 or 5 take precedent in addressing and mitigating. The following human rights impacts are expected to have severity of 4 to 5 for the construction phase (presented in priority of severity, with score of 5 listed first):

- Potential labour rights infringements: infringement could occur amongst Project workers, particularly supplier project workers, relating to contracts and working hours. There could be potential areas of discrimination, potential for workers not to be provided contracts, to be expected to work long working weeks and the potential for excessive working hours. There could also be some dissatisfaction with working conditions, and lack of understanding of the grievance mechanism
- Impact to rights to health or life: work-related accidents due to poor design, equipment failure or others may lead to loss of life for Project workers or community members in the worst-case scenario.
- Livelihood: right to an adequate standard of living not met due to failure to compensate or providing restoration programmes to those applicable. The overall impact severity was moderate.
- Impacts to access to remedy: failure to provide access to remedy (e.g. GM) for project impacts affecting human rights.
- Human rights within supply chain: it is widely acknowledged that human rights impacts exist within supply chain of wind turbines.

For the operation phase, human rights impact to health or life (as elaborated above) is also applicable and will likely be the only impact identified with high severity within the HRIA.

Management measures

Table 7.1 of the Project's HRIA summarises the existing and proposed mitigation measures for all identified impacts. Below is the summary of the measures for each high severity impact:

- Impact to rights to health or life
    - Existing labour and management documentations in place, including QHSE policy, ESMS, healthy, safety and environment (HSE) management plans for onshore and offshore and more
    - Supplier QHSE assessment is undertaken by the Project Company's supplier QHSE assessment team to ensure health and safety aspects are in place prior to construction phase.
- Livelihood:
    - The Project has developed a draft LRP in accordance with IFC PS 5. The LRP covers compensation to identified vessel owners as well as other restoration programmes for non-vessel owners or vulnerable groups.
    - Other mitigations are presented in the section 5.1.3 'economic displacement and livelihoods'
- Impacts to access to remedy:
    - The Project has a GM within its SEP, as well as a whistle-blower hotline for Project workers. The hotline is disclosed to contractors and suppliers
    - Project's COC for business partners requires contractors and suppliers to also have a GM
    - Community liaison officer of Project to develop relationship with local community and one or more human rights NGOs
- Human rights within supply chain:
    - Project company has a responsible partners programme which enables the company to collaborate with suppliers and partners to improve the social, environmental and ethical performance of its supply chain.
    - Supply chain mapping to improve transparency and conducting human rights risk identification at the mining level to ensure responsible sourcing of minerals and metals
- Through Ørsted's Responsible Partner Program, all relevant suppliers have undergone or will undergo a risk-based audit questionnaire. Particularly in the questionnaire, a section in regard to human rights and labour rights is covered, where partners are prompted to note whether policies and procedures are in place for different human rights or labour rights topics (e.g. child labour, discrimination, freedom of association, harassment, security guards, working hours etc.).

A separate section regarding supplier due diligence to cover the above topics is also within the questionnaire. Questionnaires are utilised for conducting the audit of the suppliers and a final audit report is produced at the end of the assessment.

For the operation phase's impact to rights to health or life, the documentations identified within the construction phase are to be updated for the operation phase as well.

With the mitigation measures in place, the residual impact significance is considered **'minor'**. Please refer to the HRIA for the details and updates of mitigation measures for the assessed impacts of human rights.

5.1.5.2 Labour and working conditions

Without appropriate safeguards in place, it is possible that workers' rights may be impacted during Project construction and operation. This impact extends to employees directly engaged

by the Project, contractors and subcontractors, and workers located within the Project's supply chain. Migrant workers, in particular, become vulnerable to impacts due to language barriers or lack of understanding of judicial processes in country that is not their own. Because risks associated with OHS require controls to be in place, irrespective of any assessment of their significance, hence labour and working condition issues are presented as risks instead of impacts. Management measures are also identified to show how the Project aims to prevent the risks.

As mentioned in Section 5.1.2 above, an estimated 1,060 workers will be utilised at peak labour during the one-year construction period. More than 90% of the workforce will be working offshore, while the maximum number of onshore construction workers will be 220 individuals. In the operation phases for both Phase 2a and Phase 2b, the maximum number of onshore workers at the substation will be 100, and they are expected to be skilled labour and/or white-collar workers.

Potential impacts that may arise due to lack of safeguards include terms and conditions of employment, discrimination and unequal opportunity, incorrect or withheld salary payments, occupational health and safety, child or forced labour, prevention of participation in workers associations, and/or lack of access to a GM.

Migrant or foreign workers are especially vulnerable to impacts related to labour and working conditions when they do not speak the language, do not understand their rights or terms of employment or slip through the gaps. Furthermore, migrant or foreign workers may not be entitled to the same labour rights, insurance or pensions as those recruited locally, and also require housing or have accommodation needs that a local workforce may not have to consider.

Within the Project's HRIA, the main human rights issues relating to labour identified for migrant workers are the sub-standard living conditions, lack of safety and sanitation provisions and mistreatment by employers and managers.

Appropriate safeguards need to be in place to reduce labour and working condition impacts whilst allowing for the impact of employment generation to generate as much benefit as possible. Managing and maintaining workers' rights is essential during Project construction and operation.

According to the Taiwanese Labour Standards Act 2020, all fixed[73] term and non-fixed[74] term labour contracts are required to adhere to regulations set out in this national legislation. This includes individuals in the main project and upstream and downstream supply chain. Working conditions mandated under this law include rules on wages, working hours, retirement, compensation, work rules, working females, supervision and inspection, penal and supplementary provisions, as well as rules against child labour. This is largely aligned with the International Labour Organisation's (ILO) conventions and recommendations[75].

Ørsted has developed the following core policy documents and systems for managing labour rights. These policies cover topics on reasonable working conditions, migrant workers and substantially equivalent terms, workers' organisations, non-discrimination and equal opportunity, child labour, forced labour, occupational health and safety, gender, monitoring, and labour management plans. These policy documents include:

- Ørsted Taiwan Employee Handbook

[73] A contract in nature for temporary, short-term, seasonal or specific work may be made as a fixed term contract.

[74] A contract for continuous work, should be a non-fixed term contract.

[75] List of instruments by subject and status (ilo.org)

- Ørsted Taiwan Work Rules
- Ørsted Code of Conduct (COC) for Business Partners
- Ørsted Good Business Conduct Policy
- Ørsted Human Rights Policy
- Ørsted Global Diversity & Inclusion Policy
- Ørsted Global Bullying, Discrimination and Harassment Policy
- Ørsted Global Labour and Employment Rights Policy
- Ørsted Global Security Policy

Most of the abovementioned policies are captured and organised within the Project's overarching LMP, which set out responsibilities and management practices associated with management of labour during the Project lifecycle.

In addition to these policy documents, there are other mitigation measures covering general health and safety, livelihood restoration, grievance mechanisms and access to remedy, communication and engagement, management of CSR funds, security, data security, as well as capacity and resourcing. At least one health and safety officer per 50 workers will be employed, and one human resource officer for every 250 workers of the same company will be on site.

No workers' accommodations/camps are expected to be built for the Project. Accommodations will be provided either onboard of vessels or through hotels and apartments when onshore[76]. Accommodation management requirements are covered in Ørsted's COC for Business Partners. Ørsted's Marine Inspection team also conducts audits and inspections of vessels with accommodations in accordance to international standards. For hotels or apartments provided for workers, site visits and audits will also be conducted via Orsted's RPP staff or other Orsted representatives.

The Project has specific and separate HSE management plans for both Phase 2a (i.e. Greater Changhua Wind Farm 01&02a – O&M HSE Plan) and Phase 2b (i.e. Greater Changhua CHW2204 Project HSE Plan). These are guided by Ørsted's Global Policy for QHSE and outline Ørsted's responsibility to ensure a safe workplace through reporting and management review, training development programs and effective communication protocols. Contractors and suppliers of Ørsted are also expected to develop and implement Ørsted's HSEs plans during the construction and operation phase relevant to their scope of work. Ørsted's supplier QHSE Assessment Team will further assess, audit and evaluate suppliers and contractors prior and during contracting. The Project has an Onshore Substation Health Safety & Environment Plan (dated February 2023) as well. The Plan outlines how Ørsted and its contractors are to appropriately manage all health, safety and environmental safeguards/concerns, like preventing occurrences of unforeseen incidents and raising awareness of any known hazards. All these plans are written to comply with Taiwan's Occupational Health and Safety Administration (OSHA) Guidelines for Safe Working at Sea for Offshore Windfarms (dated January 2018) and the Occupational Safety and Health Act Enforcement Rules. The plans do not replace or remove any responsibility to that or other Taiwanese legislation. Ørsted will develop an O&M HSE Plan for Phase 2b prior to the commencement of operation phase of Phase 2b.

Phase 2b will have a separate O&M HSE Plan to Phase 2a. However, the content of these O&M HSE plans will be largely similar, though with different O&M teams in charge of each

[76] Further details of subcontractor/supplier worker numbers and their worker's accommodation arrangements (and associated management) are updated on an on-going basis within Ørsted's future Labour Management Plan.

phase. The transition from construction HSE plan to O&M HSE Plan for Phase 2b will be conducted through a controlled change management process with proper hand-off between the ECP/construction team to the O&M project team for Phase 2b. The applicability of the O&M HSE Plan to be followed depends on which Phase the personnel is working on. It is not expected that a personnel can/will conduct work simultaneously for both phases. As such, there will not be an issue of overlap in plans or not knowing which plan to follow for a given individual at a given time.

Monitoring of labour rights will be ongoing, checking that, among others, contracts are in place, working hours are not excessive, workers are paid correctly and timely for hours worked, rest and fatigue management measures are in place, training is provided, labour grievances are investigated and resolved, worker representatives are engaged, and accommodation and welfare facilities are inspected. Monthly reporting will provide a variety of information including but not limited to workforce data (number, gender, origin, and skill level of workers), working hours, worker grievances (number, types, contractor, resolution timeframes, worker manifestations), accommodation use, occupational health and safety incidents (number of unsafe acts/incidents, near misses, first aid injuries, work-related illness, lost time incidents, fatalities), training activities, toolbox talks and risk assessments.

To promote fair treatment of workers in the supply chain, Ørsted's COC has included requirements for Ørsted’s business partners to apply appropriate measures for preventing direct and/or indirect involvement in human trafficking and prohibit all forms of forced, bonded or indentured labour, and involuntary prison labour. This applies to all workers, whether hired directly, by a contractor or recruited through a labour broker. The COC also states that employees will enjoy the freedom of movement during their employment. Employees will be permitted to terminate employment after reasonable notice and business partners will not retain original identification documents, deposits or financial guarantees or withhold wages outside of a legal contractual agreement.

Ørsted 2023 Modern Slavery Act Statement (dated 26 June 2024) states that their approach to business integrity is guided by the United Nations Global Compact, of which they have been a signatory for more than 13 years. The statement indicates that Ørsted has established systematic due diligence and screening procedures of their operations and supply chains. In particular, the questionnaire evaluates the risk or possibility of child or forced labour. If assessments come out high, Ørsted will further conduct site visits or on-site interviews to confirm and mitigate risks against human rights. Ørsted provides annual modern slavery act statements, and also present findings in their annual reports, both of which are disclosed on their website.

With the mitigation and enhancement measures in place, the labour and working conditions are safeguarded and the vulnerability of the workforce (from Project workforce to supply chain workforce) decreases. Hence, the negative impact decreases such that the residual impact significance is considered **‘minor’** for the construction phase and **‘negligible’** for the operation phase.

6 Conclusion

This FSIA has assessed the social impacts associated with the Project. The main impacts will occur during the construction phase and then dissipate during operations. Implementation of adaptive management and recommended mitigation measures will help to minimise the extent and significance of identified impacts. Table 6.1 below provides an overall summary of the impact assessments for the social impacts identified in section 5.

Table 6.1: Summary of social impacts and risks

Social impacts and risks	Description	Impact significance	Mitigation measures	Residual impact significance
Impacts				
Employment generation	Local employment opportunities in the AoI will be generated by the Project during both construction and operation phases.	Construction phase: Moderate (positive) Operation phase: Negligible	• Labour management plan • CoC for business Partners • SEP and GM • Measures presented within HRIA and LRP	- Operation phase: Minor (positive)
Economic displacement and livelihoods – fisher folk	Economic livelihood for offshore and coastal fisher folk will be mainly affected by the installation of the submarine cable and WTGs in the wind farm area. In particular, offshore and coastal fisher folk conducting gill net fishing or bottom trawling are impacted due to restricted access to the wind farm area from construction to operation phase, as well as restricted access to the cable route during the construction phase.	Construction phase for coastal and offshore fisher folk: Minor Operation phase for coastal fisher folk: Negligible Operation phase for offshore fisher folk: Moderate	• LRP and compensation scheme • SEP and GM	Construction phase for coastal and offshore fisher folk: Negligible Operation phase for coastal fisher folk: Negligible Operation phase for offshore fisher folk: Minor
Economic displacement and livelihoods – other vulnerable groups	Other vulnerable groups that face direct or indirect economic displacement and livelihood impacts from the Project include crew members of the fisher folk vessels and women of the fisher folk households.	Crew members for construction and operation phase: Moderate Women of fisher folk households for construction and operation phase: Minor	• LRP – vocational training and other job opportunities • SEP and GM • Measures for 'community health and safety' presented below	Crew members for construction and operation phase: Minor Women of fisher folk households for construction and operation phase: Negligible
Worker's influx – exposure to communicable diseases and infrastructure and services	Although impacts are not predicted, there are some risks to community service and infrastructure. These include worker influx leading to exposure to communicable diseases and impacts to infrastructure and services.	Community service and infrastructure impacts for construction and operation phase: Negligible	• ESMS • QHSE plan, workers' rules, code of conduct • Labour management plan • Periodic health check-ups • COVID-19 prevention measures • SEP and GM	Community service and infrastructure impacts for construction and operation phase: Negligible
Increased onshore and offshore traffic	Another community service and infrastructure impact is the increased traffic both onshore and offshore. This may lead to collisions or other traffic-related incidents.		• ESMS • QHES plan • EIA mitigation measures including appropriate signage and communication with authorities, guard boats, VTMS, MHCC • Use of qualified and trained boat and vehicle drivers • SEP and GM	
Human rights	Human right risks of high severity include livelihood, impacts to access to remedy and human rights within supply chain for the construction phase. Impact to rights to health or life are applicable to both construction and operation phase. The full impact assessment upon human rights may be found in the Project's HRIA.	N/A	• QHSE plan • Labour management plan • ESMS • HSE management plan • Supplier QHSE assessment • LRP • SEP and GM • Supply chain mapping	N/A
Labour and working conditions	Without appropriate safeguards in place, workers' rights may be impacted during Project construction and operation. This impact extends to employees directly engaged by the Project, contractors and subcontractors, and workers located within the Project's supply chain.	N/A	• Labour management plan, covering Project Company's staff handbook, work rules, CoC for business Partners, good business conduct policy, human rights policy, training and labour rights monitoring, and more • QHSE Plan • Emergency preparedness plan • SEP and GM	N/A

A. Social scoping matrix

The scoping matrix assesses the potential interactions between the various activities and components of the Project and the social receptors identified within the AoI at the different project phases (i.e. construction, operation and decommissioning phase). For the classification of potential adverse impacts, each interaction has been defined as either “Unlikely” or “Likely”. Table A.1 provides further definitions of these categories.

Table A.1: Definition of interactions

Interaction type	Description
Unlikely	● An interaction is not reasonably expected based upon the nature of the Project and identified receptors. ● In some cases, an interaction is to be expected but the impact (if any) could potentially be considered negligible. ● Where classified as unlikely, they have been eliminated from further discussion within the FSIA process unless otherwise stated in the matrix
Likely	● An interaction can reasonably be anticipated ● May lead to impacts that could range from minor and major impacts ● Requires more analysis in the FSIA process

Source: Mott MacDonald, 2024

The interactions between the Project and its activities and receptors within the AoI are presented in Table A.2.

Table A.2: Social scoping matrix

Social aspects	Receptors	Phase [1] (C/O/D)	Description of impact interaction	Interaction type	Existing assessment and existing or planned mitigation measures/plans	Scope in/out (for the FSIA)
Human rights						
Human rights	• Project workforce • Fishers and oyster farmers as well as their employees and families • Local communities • Supply chain workers	C, O, D	There may be potential for specific human rights risks for various groups associated with and affected by the Project. These could/would include groups such as the Project workforce, fishers and oyster farmers as well as their employees and families, and local communities. Impacted rights risks may include inter alia rights to participation, freedom of thought/opinion/expression, health and safety and respectful security or access to remedy, rights to non-discrimination and equal opportunities, particularly for vulnerable groups. Human rights particular to workers/working conditions are elaborated below. Potential risks may arise from employment, and also Project activities particularly for community members outside of Project's direct control. Hence, interaction of this impact to receptors is considered 'Likely'.	Likely	Detailed assessment of human rights impacts will be covered within the Project's HRIA, which assess human rights impacts as relating to affected people, communities and the Project's workforce. The Project has in place a human rights policy, a Code of Conduct (COC) for business partners and other relevant labour standard/human resource documentations to ensure human rights of receptors are respected. The Project also has a grievance mechanism (GM) for workers to raise issues/concerns and a community GM.	In
Labour and working conditions						
Employment generation	• Project workforce • Supply chain workers	C, O	Employment opportunities will be generated through the Project for the construction (i.e. Phase 2b) and operation (i.e. Phase 2a) phase, particularly for the local workforce. Onshore construction work includes cable laying and substation, which can offer more local skilled and unskilled labour opportunities. The Project has contracted a contractor for the onshore substation construction work. Offshore work will be more specialised and mostly skilled work for assembling WTGs, however, certain guard boat or marine mammal observation roles may be offered. Operation phase will also offer job opportunities for mostly skilled/specialised roles like maintenance or repair work of WTGs and cables. The Project will create employment opportunities, so this impact is 'Likely'.	Likely	Detailed assessment of the employment opportunities is included in this FSIA and the related human rights impacts of employment will be covered within the Project's HRIA.	In
Working conditions for Project workers and supply chain workers	• Project workforce • Supply chain workers	C, O	Rights of workers, both Project workers and those within the Project's supply chain, may be impacted without proper safeguards in place. Labour and working condition risks relate to terms and conditions of employment, discrimination and unequal opportunity, occupational health and safety, child or forced labour, prevention of participation in workers associations, and lack of access to a GM. Potential risks may arise from employment. Hence, interaction of this impact to receptors is considered 'Likely'.	Likely	The Project Company has in place human resource employment documentation in line with Taiwan Labour laws (which covers all substantive aspects of IFC PS 2). Documents include a COC for Business Partners, Human Rights Policy, Good Business Conduct Policy, Global Labour and Employment Rights Policy and localised human resources policies and procedures detailed in an Employee Handbook and Work Rules. This suite of documents aims to support the Project Company and its business partners (e.g. suppliers) to abide properly with local employment regulations, respect labour related	In

					human rights and provide a healthy and safe workplace as per local and global applicable standards and regulations. The Project also has a GM for workers to raise issues/concerns.	
Construction nuisance						
Air quality – dust emissions	• Local communities • Project workforce	C	Onshore construction works of the Project includes earthworks and construction activities as well as associated transportation/mobilisation for the onshore cable and substation. Earthworks and construction activities are expected to generate dust, while the vehicles may create dust suspension when travelling. Fugitive dust may lead to health impacts including respiratory issues, discomfort to the eyes and nose. The air quality impacts from the Project's onshore activities had been assessed within the Project EIA. According to the air quality assessment within the EIA, these were some exceedances of $PM_{2.5}$ levels, and TSP and PM_{10} levels exceed at the Lukang Industrial Zone. All other air quality levels at the six (6) monitoring sites were in compliance with relevant national and international air quality standards. No significant residual impacts are expected during both construction and operation phases if the EIA prescribed mitigations are accordingly implemented. The construction activities will take place in a port location where such works are allowed. Residential structures are not nearby and community members do not typically traverse the onshore site. The Project is required to implement the prescribed mitigation measures as outlined within its EIA, in order to achieve compliance and impact mitigation with regards to people's exposure. The highly localised potential of community members to any generated dust means this impact is considered 'unlikely'.	Unlikely	Prescribed mitigation measures as relating to air quality are as prescribed within the EIA. These measures had been correspondingly included within the Project's ESMS (Section 5: Management Programmes) and associated E&S management plans. The Project does have in place a stakeholder engagement plan (SEP) and commitments to communicate construction work to local communities prior to commencement. A GM is also in place for workers and communities to raise issues/concerns. Lastly, health, safety and environment (QHSE) plans and for Phase 2a and 2b as well as supplier QHSE assessment are in place for Project workers/contractors.	Out
Airborne noise	• Local communities • Project workforce	C, D	Similar to the project onshore activities as described above under 'air quality', these activities (i.e. construction and transportation) may generate elevated noise levels. Within the Project's EIA, onshore construction noise was expected to be in compliance with national[77] and international[78] noise standards. The Project is required to implement the prescribed mitigation measures as outlined within its EIA, in order to achieve compliance and impact mitigation. Offshore fishing vessels produce their own noise, which will be heard by fish life and by fishing crews of other vessels when within proximity. Construction work is expected to meet local regulatory noise standards. The	Unlikely	The Project's EIA confirmed the Project's onshore noise and vibration are mostly in compliance with relevant noise standards. Prescribed mitigation measures are presented in the EIA. These measures had been correspondingly included within the Project's ESMS (Section 5: Management Programmes) and associated E&S management plans. The Project does have in place a SEP and commitments to communicate construction work to local communities prior to commencement. A GM is also in place for workers and communities to raise issues/concerns. Lastly, health, safety and	Out

[77] Taiwan Environmental Noise Standard
[78] IFC WBG Environmental, Health, and Safety (EHS) guidelines: Noise management

			Project has mitigation measures in place as outlined within its EIA, as well as health and safety measures for the Project workforce. The highly localised potential of community members to any generated noise means the impact is considered 'Unlikely'.		environment (HSE) plans for Phase 2a and 2b as well as a supplier QHSE assessment are in place for Project workers/contractors.	
Surface water and sea water quality	• Local communities • Project workforce	C, O, D	Onshore construction works of the Project may lead to surface runoff or additional sewage and wastewater. Polluted waters could impact water sources for local communities and workforce. The Project's EIA stated that the Project is not expected to have significant residual impacts upon surface water, groundwater and domestic wastewater for both the construction and operation phases. The EIA prescribes measures requiring the Project to treat all discharged surface waters are treated and not pollute nearby water bodies. For offshore works, the cable laying works and foundation works would cause sediment suspension. Within the EIA, sediment dispersion modelling was conducted for the possible scenarios. No significant residual impacts are expected during both construction and operation phases if the EIA prescribed mitigations are accordingly implemented. Given the above, community members and workers and not anticipated to be directly impacted and hence this impact is considered 'Unlikely'.	Unlikely	The Project's EIA found the Project to not have any impacts upon surface water, groundwater and domestic wastewater for both the construction and operation phase. Prescribed mitigation measures are presented in the EIA. These measures had been correspondingly included within the Project's ESMS (Section 5: Management Programmes) and associated E&S management plans. If any accidents/pollution to sea occur, Project is to follow the protocols of the Marine Pollution Act. The Project does have in place a SEP and commitments to communicate construction work to local communities prior to commencement. A GM is also in place for workers and communities to raise issues/concerns. Lastly, health, safety and environment (HSE) plans for Phase 2a and 2b as well as a supplier QHSE assessment are in place for Project workers/contractors.	Out
Shadow flicker and operational noise	Local community	O	The operational WTGs will be approximately 50km away from the coastline. At such distances, shadow flicker and operational noise effects are 'unlikely' to impact the (onshore) local communities during the operational phase.	Unlikely	The Project does have in place a SEP and commitments to communicate project information to local communities. A GM is also in place for communities to raise issues/concerns.	Out
Visual impacts	Direct and indirect impact on local communities	C, O	During the construction phrase, visual impacts (i.e. as visible to onshore receptors) are largely limited to construction works for the cable laying and onshore substation construction. These are localised and temporary, while noting that these are taking place within Changhua Coastal Industrial Park (i.e. no or limited visual amenity/sensitivity). No impact is expected. During the operational phrase, the Project's large installation of WTGs is likely to influence the visual landscape of communities. The lighting sources on the WTGs could also cause light spills that influence nearby communities. However, since the windfarm is located 50km offshore, the impacts are expected to be minor to negligible. People on fishing vessels in the area have been exposed to other OWFs and are not anticipated to have any major concerns about the visual changes. The Project's EIA had analysed the visual impacts of the turbines to neighbouring coastal landscapes during and after construction. The EIA had concluded that the	Unlikely	The Project does have in place a SEP and commitments to communicate project information to local communities. A GM is also in place for communities to raise issues/concerns.	Out

			background experiences the greatest degree of change at each observation point, ranging from 0.012% to 0.018% change after construction of the WTGs. Therefore, all landscape points assessed yielded slight to no effect on overall landscape aesthetics. Given the above, the interaction of this impact to receptors is considered 'Unlikely'.			
Community health and safety						
Exposure to communicable diseases	• Local community	C,O	Communicable diseases may increase with the influx of workers into the area, particularly those not from the local area. Communicable diseases can cause temporary to long-term impacts on health and well-being. However, for this Project most of the workers will be on offshore sites, being accommodated within the vessel's onboard accommodations which will minimise interactions with community members. No accommodation facilities onshore are planned, meaning local workers will stay residing with their families/own accommodations which should help minimise project-related exposure to communicable diseases. For any construction activities creating habitats for disease vectors (such as pooling of water), there will be management measures in place. Hence, the interaction with this impact is considered 'unlikely'.	Unlikely	The Project has in a place QHSE plan which includes the Project's Emergency Response Plan for Taiwan. The Project also has an onshore substation health, safety and environment plan. A labour management plan (LMP) is also in place to set out responsibilities and management practices associated with management of labour during the Project lifecycle. Lastly, a Supplier QHSE assessment is undertaken by the Project Company's supplier QHSE assessment team to ensure health and safety aspects are in place prior to construction phase. The Project does have in place a SEP and commitments to communicate construction work to local communities prior to commencement. A grievance mechanism is also in place for workers and communities to raise issues/concerns.	In
Worker's influx - Infrastructure and services	Direct and indirect impact on local communities	C, O, D	The Project aims to hire local workforce. The majority of construction workers will be conducting offshore work, and offshore accommodations will be aboard vessels with some onshore accommodations via hotels or apartments. With majority of workforce being offshore, and majority of onshore workforce being local, it is expected that impact on accommodations, infrastructure, and services will be low. As of June 2024, the total population of Lukang Township (i.e. where the Project's onshore components are located) is 84,187 people. Thus, if the maximum expected workers for the Project are all from outside the local area (which is not to be expected), the influx of approximately 220 construction workers represents 0.26% of the total population of the township for the construction phase. The Project has approximately 50 operation phase workers, which represent 0.06% of the total Lukang Township population. Overall, influx of onshore workers for the construction and operation phase are also unlikely to pose as an impact, especially for the operation phase. The port areas (i.e. Changhua Coastal Industrial Park where substation is located and Taichung Port where the Project's assembly site is) are well-serviced (e.g. health facilities). There are other OWFs that have been built nearby and the communities and emergency services are familiar with them.	Unlikely	The Project has in a place HSE plans and Emergency Response Plans for both Phase 2a and Phase 2b. The Project also has an onshore substation health, safety and environment plan. A LMP is also in place to set out responsibilities and management practices associated with management of labour during the Project lifecycle. The Project is expected to finalise a decommissioning plan at least five years prior to the decommissioning phase. The Project does have in place a SEP and commitments to communicate construction work to local communities prior to commencement. A GM is also in place for workers and communities to raise issues/concerns.	In

			The Project will have in place proper health and safety and emergency preparedness documentations upon construction work. Hence, interaction of this impact is considered 'Unlikely'.			
Increased onshore and offshore traffic	• Local community and workforce	C, O, D	Direct impacts to surrounding communities and workforce include increased vehicular traffic both onshore and boat traffic offshore, which may lead to collisions or other traffic-related incidents resulting in minor to severe injuries. These impacts may further become cumulative when multiple windfarms overlap in their construction work phases. Impacts are not expected for operation phase as vehicles or vessels use during this phase is likely to be much less than the construction phase. For onshore traffic, the Project's EIA projects that main traffic impact will be within the Industrial Park, with at most four (4) vehicles on the road per hour. This is unlikely to influence the overall traffic of the surrounding community, and the EIA outlines that construction signage and communications with authorities will be conducted to reduce impact of traffic risks onto communities. For offshore traffic, the Project and other neighbouring windfarm projects are known to set up an exclusion zone during construction as well as operation phase to reduce potential collisions or other risks for offshore vessels. Furthermore, designated marine transportation routes are in place to ensure no collision occur. Although some management measures for preventing and responding to onshore and offshore related traffic accidents are presented in the Project's EIA, possible incidents still may occur and hence the impact is listed as 'Likely'.	Likely	The Project's EIA presents mitigation measures for onshore traffic and transportation as well as offshore, marine traffic. These measures had been correspondingly included within the Project's ESMS (Section 5: Management Programmes) and associated E&S management plans. The ESMS states that a navigation safety plan is being developed to address the management of Project vessels during construction phase. The Project is to adhere to the local traffic and navigation and marine regulations. The Project also has in place a SEP and commitments to communicate construction work to local communities prior to commencement. A grievance mechanism is also in place for workers and communities to raise issues/concerns.	In
Cultural heritage						
Cultural heritage	Direct impact on local community	C	Cultural heritage items (e.g. archaeological site or relics), may be destroyed, unearthed or interfered with during construction work. Onshore works include cable laying and substation development, while offshore construction include submarine cable laying and WTG foundation work. Within the EIA, it is concluded that no tangible cultural heritage or relics were found onshore within the Project area, taking into account that the onshore activities are within a port area designated for industrial projects like this one. Registered intangible cultural heritage including traditional arts (e.g. drum making, gold carving) or performing arts were also not found to be impacted by the Project. For underwater cultural heritage, the Project EIA conducted a literature review, and identified potential relic/cultural heritage sites in proximity to the Project area. However, no sites were directly within the Project area. Within the EIA, it is stated that a sonar scan detected one object on the seabed and five buried magnetic anomalies.	Unlikely	The Project's EIA proposes to commission certified archaeologists or experts to conduct cultural heritage analysis prior to construction. The experts will be asked to interpret borehole results. For onshore cultural heritage impact measures, the same process will be conducted as above, but with geological drilling photos. An expert will also be hired to monitor the excavation construction process. The Project is to adhere to Cultural Heritage Preservation Act and its chance find regulations. The Project has also conducted interviews and surveys with local communities regarding the Project's impact on any cultural heritage sites or intangible cultural heritage. This is reflected within the Project's HRIA. Finally, a GM is in place for communities to raise issues/concerns as relating to cultural heritage impacts or findings.	Out

			However, marine archaeology experts concluded these objects were most likely to be modern relics rather than of historical value. This impact on people's cultural priorities is considered 'unlikely'.			
Land acquisition, displacement and livelihoods						
Economic displacement and livelihoods	Direct impact on local community and workforce	C, O	The Project's offshore construction work and eventual permanent WTG infrastructure may displace fishers from their fishing grounds, causing economic displacement. Although, as based on the LRP's baseline information, most CFA fishers do not fish far sea in the area where the Project's WTGs are located. The Project's cable laying work will pass through the Changhua County's exclusive fishing rights (EFR) area, which will temporarily displace fishers from their fishing grounds. This may also have cumulative impact if various windfarms conduct cable laying work around the same time. Aquaculture farmers (i.e. oyster farmers) have raised concerns about the cable laying work impacting their farms in the intertidal zones. To which, Ørsted has addressed these concerns during Project pre-construction stakeholder engagement activities by clarifying the Project plans to use the northern export cable corridor, while the oyster farms in Changhua County are situated in the southern export cable corridor. Due to this understanding, impact to the aquaculture/oyster farmers is unlikely to occur and hence scoped out. During the operation phase, exclusion zones around WTGs will be set up to prevent collision. Hence, these areas may also become permanently lost as fishing grounds for fishers. But as mentioned above, most fishers in the area do not conduct far sea fishing, and those who do should have vessel capacity to reach other fishing grounds. Although the Project's CIA does identify that the foundations of WTGs can serve as artificial reefs, creating a beneficial impact on fisheries resources during the operational phase, impacts on livelihoods for those within the local fishing industry is expected. The Project thus has a compensation mechanism in place to directly compensate vessel owners who are members of the CFA. The assessment of impact on specific vulnerable vessel owners or vulnerable vessel workers are further elaborated in the Project's LRP. The impact is considered 'Likely'.	Likely	A detailed livelihood impact assessment with livelihood restoration measures are covered within the Project's LRP. Livelihood restoration activities and programmes include employment opportunities, cash compensation and more. Training programmes can provide people with new skillsets to partake in Project jobs. These skillsets may allow them to find employment beyond the project's lifecycle. A GM is also in place for any affected fishers to raise issues/concerns.	In
Land acquisition and physical displacement	Direct impact on local community	C, O	The Project is planned in compliance with the "Offshore Wind Farm Site Application Regulation", stipulated by the Bureau of Energy, Ministry of Economic Affair in July 2015. Onshore project components requiring land acquisition are limited to onshore substations and onshore cables. The	Unlikely	To date, no known physical displacement impacts have been identified nor is any future physical displacement anticipated. The Project has already obtained all land use permits (e.g. windfarm site, submarine cable sites, Cable Laying Permits, wharf	Out

			onshore land use permits are to be obtained by the Project Company (including land use permits, construction permits etc) prior to commencement of construction. There is no physical displacement expected, as the land for onshore activities is situated in the Changhua Coastal Industrial Park, which is a government-identified industrial zone specific for project work and development. The Park area is access-controlled and few residential housings are in the area to be affected by the Project's onshore footprint. Other onshore activities (pre-assembly work and logistics support base for offshore construction) are within Taichung Port, a commercial port operated by Taiwan International Port Corporation (TIPC, state-owned port management company). Wharf leases have been obtained by the Project Company for both the construction and operation phase, whereby for the operation phase they will set up an operation and maintenance (O&M) base at the port. Lastly, the onshore cables (i.e. landing cable points) are expected to be laid within roads of the Changhua Coastal Industrial Park, specifically Ji'an West Road and Lugong Road of the Lukang area and Anxi road in the Lunwei area. The road reserve would be around 2 meters. As all the cable routes will be within the industrial development zone, onshore cable laying is unlikely to cause displacement. All cable laying permits have also been obtained by the Project Company. Hence, physical displacement is 'Unlikely' to occur.		leases and preliminary land use permit) and construction-related permits (e.g. construction permit and horizontal directional drilling permit). The Project is to follow local regulations relating to land acquisition and development of renewable facilities.	

Note: [1] Phase where the associated impact have potential to occur and/or materialise. C = Construction; O = Operations; D = Decommissioning

B. Summary of KIIs and FGDs