



# **Awel y Môr Offshore Wind Farm**

## **Outline Offshore Piling Noise Monitoring Plan**

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# Abbreviations and acronyms

TERM	DEFINITION
CCBC	Conwy County Borough Council
CEMP	Construction Environmental Management Plan
CMS	Construction Method Statement
CoCP	Code of Construction Practice
DCO	Development Consent Order
ECoW	Ecological Clerk of Works
NVMP	Noise and Vibration Management Plan
OPNMP	Offshore Piling Noise Monitoring Plan
NRW	Natural Resources Wales
OWF	Offshore Wind Farm
WTGs	Wind turbine generators

# 1 Introduction

## 1.1 The Application

- 1 Awel y Môr Offshore Wind Farm Limited has submitted an application to the Planning Inspectorate, on behalf of the Secretary of State, for a Development Consent Order (DCO) for the Awel y Môr Offshore Wind Farm (OWF) under the Planning Act 2008. A separate application for a Marine Licence for the works required to construct the Awel y Môr OWF has been made to Natural Resources Wales (NRW) on behalf of the Welsh Government.
- 2 The Awel y Môr OWF is a proposed extension to the operational Gwynt y Môr OWF off the north coast of Wales. The Gwynt y Môr OWF consists of 160 wind turbine generators (WTGs) and has been operational since 2015.
- 3 The Awel y Môr OWF will comprise of up to 50 WTGs. The WTGs will be situated to the west of the operational Gwynt y Môr OWF. A grid connection will be made at Bodelwyddan in Denbighshire, and two export cables of approximately 12 km in length will be installed (underground) between the landfall at Ffrith Beach to the east of Rhyl, and the grid connection at Bodelwyddan. A new onshore substation will be constructed near to the National Grid's existing substation at Bodelwyddan.

## 1.2 The Applicant

- 4 The Applicant is Awel y Môr Offshore Wind Farm Limited, owned by RWE Renewables (60%), Stadtwerke München (30%) and Siemens Financial Services (10%). RWE is leading on the development activities on the Awel y Môr OWF.
- 5 RWE is the largest renewable energy operator in Wales, generating approximately one third of all of Wales' renewable electricity. Put together, the onshore, offshore and hydro projects RWE operates produce enough electricity to meet the equivalent needs of almost half the households in Wales.

- 6 As a leading European energy company, RWE has extensive experience in developing, building and operating renewable energy projects that make a significant contribution towards Welsh Government's ambitious target to generate 70% of its electricity needs from Welsh renewable sources by 2030 and to reach "net-zero" by 2050.

### **1.3 Background and Purpose of this plan**

- 7 This outline Offshore Piling Noise Monitoring Plan (OPNMP) is provided following discussions with Conwy County Borough Council (CCBC) relating to the potential for noise from offshore piling activities undertaken at night-time during the construction of AyM. The objectives of the plan are to monitor noise generated by offshore construction works to aid the Applicant in compliance with specified limits within the DCO, and to provide noise monitoring information that can be referred to should a noise complaint be received by CCBC during construction works.
- 8 An assessment has been undertaken of noise predicted to arise from proposed offshore piling operations associated with the installation of WTGs and Offshore Substation Platforms (OSPs) and is presented within ES Volume 3, Chapter 10: Airborne noise and Vibration (APP-071). The noise impact assessment is based upon the following worst case assumption for the installation process:
  - ▲ maximum hammer energy of 5000 (KJ) for monopiles, where only a single piling operation would be undertaken at any one time; or
  - ▲ a maximum hammer energy of 3000 (KJ) for pin piles where two adjacent piling operations will be undertaken simultaneously anywhere within the Array.
- 9 Desktop noise predictions have been undertaken in conjunction with BS5228:2009+A1:2014 for both piling scenarios during daytime, evening and night-time periods. The assessment considers 'inland' receptors and 'seafront' receptors that are representative of the baseline monitoring locations used to collect background noise levels during January 2022.

- 10 The assessment considers different noise threshold limits at identified noise sensitive receptors in conjunction with measured baseline levels and the ABC Method contained in BS5228:2009+A1:2014 and for different weather conditions. The predictions have been based on worst case scenario where downwind propagation has been assumed between the source and the receiver.
- 11 The assessment concludes that, where the weather conditions were considered to be inclement, significant effects would not occur during any of the time periods. During neutral weather conditions, the assessment predicts that significant effects would not occur during daytime and evening periods, however, significant effects could occur at one of the noise sensitive receptors for the concurrent pin-piling scenario during neutral conditions at night-time.
- 12 In response to the significant effect predicted, the assessment considered that night-time piling operations would be subject to a DCO Requirement which would specify noise limits at the receptor locations in neutral weather conditions only.
- 13 Following submission of the DCO Application, CCBC requested further information be provided on any noise monitoring that would be used in conjunction with a DCO Requirement. CCBC highlighted that similar monitoring had been undertaken during construction of Gwynt y Môr, and that it would be a useful source of information for CCBC to refer to, should it receive any future complaints relating to piling noise during construction of AyM.
- 14 This outline OPNMP sets out the proposed methodology for the continuous monitoring of noise whilst piling activities associated with the offshore construction works are being undertaken at the nearest sensitive receptors to the Array in Llandudno, Penrhyn Bay and Rhôs-on-Sea.
- 15 The outline OPNMP also outlines a proposed procedure to follow if a noise complaint is raised by a local resident during the offshore piling works.
- 16 It also sets out how The Applicant will undertake communications with people living and working in the Llandudno area to raise awareness of what the piling works are, when they will start and how long they would take.

- 17 At this stage, the plan is provided in outline form to establish the principles that will be followed in developing a final OPNMP that would need to be approved by CCBC prior to the commencement of offshore piling works as secured under a Protective Provision within the draft DCO. The draft Protective Provision is as follows:

*FOR THE PROTECTION OF CONWY COUNTY BOROUGH COUNCIL*

*1. The provisions of this Part have effect unless otherwise agreed in writing between the undertaker and Conwy.*

*2. In this Part:*

*"OPNMP" means Offshore Piling Noise Monitoring Plan, being the plan prepared by the undertaker in accordance with the Outline OPNMP and approved by Conwy under this Part.*

*"Conwy" means Conwy County Borough Council, a local authority having its principal offices at [Bodlondeb, Bangor Road, Conwy LL32 8DU], and any successor in function as local authority under Part 3 of the Environmental Protection Act 1990 for area of Conwy including [the settlements of Llandudno and tbc].*

*"Outline OPNMP" means Outline Offshore Piling Noise Monitoring Plan, being the document agreed by the undertaker and Conwy as the Outline Offshore Piling Noise Monitoring Plan for the purposes of this Part dated [ ] and having document reference number [ ].*

*3. - (1) Prior to the commencement of any offshore piling, as part of the authorised development the undertaker must submit to, and have approved in writing by Conwy, a OPNMP.*

*(2). The OPNMP submitted and approved under sub-paragraph (1) must be in accordance with the Outline OPNMP.*

*4. (1)The undertaker may, at any time following approval of a OPNMP under paragraph 3, submit to Conwy for approval a revised OPNMP.*

*(2) Any revised OPNMP submitted and approved under sub-paragraph (1) must be in accordance with the Outline OPNMP.*

*(3) Any revised OPNMP will not take effect unless and until approved in writing by Conwy.*



*(4) On the date upon which a revised OPNMP is approved under this paragraph, any other OPNMP previously approved will cease to have effect.*

*5. The authorised development must be carried out in accordance with the OPNMP approved under paragraph 3 or a revised OPNMP approved under paragraph 4.*

*6. The undertaker will give Conwy not less than [7] working days' notice of the anticipated start date for offshore piling works forming part of the authorised development.*

*7. Nothing in any OPNMP may conflict with requirement 4 of schedule 2 of this Order.*

*8. Any approval required under this Part must not be unreasonably withheld or delayed.*

*9. Any difference or dispute arising between the undertaker and Conwy under this Part must, unless otherwise agreed in writing between the undertaker and Conwy, be determined by arbitration in accordance with article 44 (arbitration).*

## 2 Objectives and Policy

### 2.1 Objectives

- 18 Piling activities associated with construction of the WTGs and OSPs are a potential source of adverse noise effects to the sensitive receptors located on the coastline, albeit those effects are not necessarily significant in EIA terms.
- 19 The Applicant's objective will be to monitor daytime and night-time noise levels on a continuous basis at a location representative of the nearest sensitive receptors to the offshore works. The monitoring would be undertaken during piling activities and the information collected by the Applicant will be made available, on request, to CCBC.
- 20 The main objective of the monitoring would be to indicate whether any noise being generated by the offshore construction works is at a level where it has the potential to be in exceedance of the specified limits within the DCO.
- 21 In addition, the results of the monitoring would be referred to if a noise complaint is received from any of the residents of the nearest receptors whilst offshore construction works are being undertaken.

### 2.2 Policy

- 22 The monitoring will be undertaken with reference to the following standards:
- ✦ BS5228 -1 'Code of Practice for Noise and Vibration Control on Construction and Open Sites' - Part 1: Noise
  - ✦ BS7445-1:2003 'Description and measurement of environmental noise — Part 1: Guide to quantities and procedures'
- 23 The main objectives with regards to monitoring offshore piling noise are to:
- ✦ Comply with relevant legislation and standards relating to construction noise and the requirements of the DCO; and
  - ✦ To control and limit noise levels, so far as is reasonably practicable and to minimise disturbance to residents and sensitive receptors.

# 3 Monitoring Methodology

## 3.1 Identified Sensitive Receptors

24 The most sensitive receptors to the WTG Array are identified within Environmental Statement (ES) Volume 3, Chapter 10: Noise and Vibration (APP-071) for the AYM development, namely:

- ▲ Residential properties located on the seafront in Penrhyn Bay;
- ▲ Residential properties located on the seafront of Llandudno; and
- ▲ Residential properties located further inland within the town of Llandudno.

25 In addition to the sensitive receptor locations referenced within the Environmental Statement, the final OPNMP will include consideration of receptors in Penrhyn Bay and Rhôs-on-Sea.

## 3.2 Monitoring Location

26 The location for noise monitoring undertaken to collect baseline sound levels at an inland receptor to inform the Environmental Impact Assessment (EIA) was agreed with CCBC. This was within grounds of Ysgol Y Gogarth School approximately 200m from the coastline/beach (OS Grid Reference 279980; 381977) and provides a secure location with an electricity supply that is representative of the inland area of Llandudno.

27 This location is shown in Figure 1 below.



Figure 1: Proposed Continuous Noise Monitoring Location.

28 Initial discussions with CCBC, undertaken after the DCO application was submitted, suggests this would also be a suitable location for the proposed continuous monitoring, however, the final location would be agreed via approval of the final OPNMP.

### 3.3 Monitoring Duration

29 The noise monitoring will be undertaken for the duration of piling activities associated with the offshore construction works.

30 During Piling operations, the Applicant will maintain a log to record the timing, type and duration of offshore piling works.

### 3.4 Monitoring Equipment

31 Noise levels will be measured using a sound level meter conforming to Type 1 or better of the latest versions of British Standard EN 61672-1:2013 Electro-acoustics, Sound Level Meters, *Specifications*.

- 32 The sound level meter shall be field-calibrated before the commencement of the measurements and every three -months during the monitoring period using an acoustic calibrator conforming to the latest version of British Standard EN 60942:2003 *Electro-acoustics – Sound Calibrations*.
- 33 The sound level meter shall be calibrated to a traceable standard by a UKAS-accredited laboratory, or equivalent, within a 24-month period before the survey. All acoustic calibrators shall be calibrated to a traceable standard by a UKAS-accredited laboratory, or equivalent, within a 12-month period before the survey.
- 34 The sound level meter will be mains powered if this is available, if not the meter will be powered by a combination of solar, fuel cell and/or battery power.
- 35 The microphone will be placed at least 1.5 m above the ground in free-field conditions, i.e. at least 3.5 m from the nearest vertical, reflecting surface, and will be placed vertically.

### 3.5 Indices to be Measured

- 36 At the monitoring position, the following noise indices should be recorded:
- ▲  $L_{Aeq,T}$ : the A-weighted equivalent continuous sound level over the measurement period T<sup>i</sup>;
  - ▲  $L_{A90,T}$ : the A-weighted 90-th percentile sound level over the measurement period T;
  - ▲  $L_{A10,T}$ : the A-weighted 10-th percentile sound level over the measurement period T, and
  - ▲  $L_{Amax}$ : the maximum A-weighted sound level during the measurement period.

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<sup>i</sup> T relates to the eight hour night-time periods between 23:00 and 07:00

## 4 Complaints Procedure

- 37 The noise levels being measured at the monitoring position will be accessible to the Applicant on a continuous basis for monitoring and review.
- 38 The Applicant would provide CCBC with relevant data within 7 working days of a request, in order to assist CCBC in appraising potential complaints relating to construction noise associated with AyM. It is proposed that the following procedure would be followed:
- ▶ CCBC will inform the Applicant of the time and nature of the complaint and a brief description of the event via email.
  - ▶ The Applicant will confirm the nature of the construction activities being undertaken at the time of the complaint within three clear working days after the date CCBC notified applicant of complaint (unless the time limit is extended following agreement by CCBC). If piling activities were taking place at the time of the complaint, the Applicant will undertake further investigation.
  - ▶ The Applicant will then determine the noise levels measured at the time of the complaint and whether they were above the stipulated limits.
  - ▶ The Applicant will then respond to CCBC with the results of the investigation within **seven** clear working days after the date CCBC notified applicant of complaint, unless the time limit is extended in agreement with CCBC.
- 39 A template form that will be used for the provision of monitoring data will be agreed, alongside confirmation of the procedure above, in the final OPNMP. The final OPNMP will also include the details of individuals and/or generic e-mail addresses who would have access to the data, and who would be included in the reporting of the procedure above. The final OPNMP will also include relevant contact details for the Applicant.

# 5 Communications Plan

## 5.1 Objectives

- 40 A key aspect to the management of potential piling noise will be effective communication with local residents in the Llandudno area. Making sure that local residents are aware that piling will be taking place, when it will take place and the duration of piling works, will help to reduce the likelihood of complaints being made to CCBC through greater awareness of the AyM construction works.
- 41 The following objectives shall govern communications with the local community and interested parties during the construction of the WTGs:
- ▲ Communicate effectively with residents and businesses within and around Llandudno area that piling works will be taking place, when, where and for how long;
  - ▲ Provide a description of what the piling works will entail and how these could be perceived by people in and around Llandudno area;
  - ▲ Inform local communities, business, leisure and other organisations how the Applicant will maximise any positive impacts (e.g. contract awards) and minimise any potential disruptive impacts;
  - ▲ Provide a means of contact for people with questions about construction activities; and
  - ▲ Provide regular updates on activity via letters, newsletters, media coverage, drop-in sessions, or other relevant local channels.
- 42 The Applicant will seek to maximise the use of Welsh in the text-based visual elements of AyM through communications that are in Welsh or fully bilingual in Welsh and English. These would include but not be limited to:
- ▲ public image texts (e.g. permanent and temporary visual signs, corporate branding, stationery, business cards);
  - ▲ websites and digital services including social media;
  - ▲ advertising and marketing (e.g. broadcast advertising, print-based advertising, recruitment advertising, outdoor advertising on billboards and vehicles, printed publications, exhibition and marketing materials).

## 5.2 Communications Measures

- 43 An identified member of the Applicant's project team will be responsible for communication with local residents, businesses, and CCBC.
- 44 A Local Liaison Committee will be established comprising representatives of the local community, the selection of which will be undertaken in consultation with CCBC, and the project team. Regular meetings will discuss up-and-coming activity and arrange appropriate means and timescales to communicate information to the wider community.
- 45 Drop-in sessions will be arranged ahead of construction activity to keep local communities and businesses informed of activity. These will be repeated at intervals if required. There will be an information line with a single point-of-contact and, similarly, the Applicant will have an email address for single point-of-contact. Both the telephone number and email address will be widely communicated on newsletters, press releases and signs along the cable route both ahead of and throughout construction activity.
- 46 These measures will ensure that there is ongoing liaison with statutory and non-statutory consultees, stakeholders and the general public.
- 47 A public hotline will be made available to members of the public. The hotline number will be published using appropriate channels for the area, so that the general public can voice their queries or complaints.





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