RWE Pembroke Marine Conservation Zone Screening Assessment

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RWE Generation UK Plc

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1. Introduction

1.1 The Marine Conservation Zone assessment process

Section 126 of the Marine and Coastal Access Act (MCAA) (2009) places specific duties on public authorities with respect to the authorisation of an act that is capable of affecting (other than insignificantly):

> (i) the protected features of a Marine Conservation Zone (MCZ);
>
> (ii) any ecological or geomorphological process on which the conservation of any protected feature of a MCZ is (wholly or in part) dependent.

Natural Resources Wales are the statutory authority responsible for the authorisation of the water abstraction licence renewal for Pembroke Power Station (the "Project") however for the purposes of this assessment the two-stage MCZ assessment process introduced by the Marine Management Organisation (MMO) will be used (MMO, 2013). A MCZ assessment needs only progress to Stage 1 Assessment if it is deemed that a proposed activity might significantly affect a MCZ feature, or a supporting process (wholly or in part), acting either alone or in-combination with other plans or projects. If an effect may be significant, or is not known, it would trigger the need for Stage 1 Assessment.

This MCZ Screening assessment serves to identify whether abstraction of water from Pennar Gut for use as cooling water by RWE Pembroke has the potential (alone or in-combination) to cause effects on a MCZ site feature. If the potential for effects is identified, a Stage 1 assessment will further consider the extent of the potential impact of the Project on the MCZ.

In the development of this report, reference has been made to the MMO's guidance on the assessment process and furtherance of the conservation objectives of MCZs - Marine conservation zones and marine licensing (MMO, 2013).

1.2 Project description

1.2.1 Background

In 2012, RWE Generation UK plc (RWE) completed construction of a combined cycle gas turbine (CCGT) power station in West Pennar, Pembroke. The direct cooling system for the power station abstracts cooling water (CW) from Pennar Gut and returns it via an outlet across Pwllcrochan Flats on the southern shore of the Haven. RWE Pembroke Power Station (referred to hereafter as the station) is equipped with four, double-entry drum screens which are housed at the seawater intake at the east end of the site. The screens offer filter protection to ten cooling water pumps by preventing the ingress of debris and are equipped with a fish return system to ensure that impinged marine biota are returned to the Estuary as required by the current Environmental Permit and Abstraction Licence for the station.

1.2.2 Location of RWE Pembroke Power Station water intake

The location of the station is illustrated in Figure 1. The water intake channel for the station are situated on Pennar Gut at NGR: SM 93651 02625.

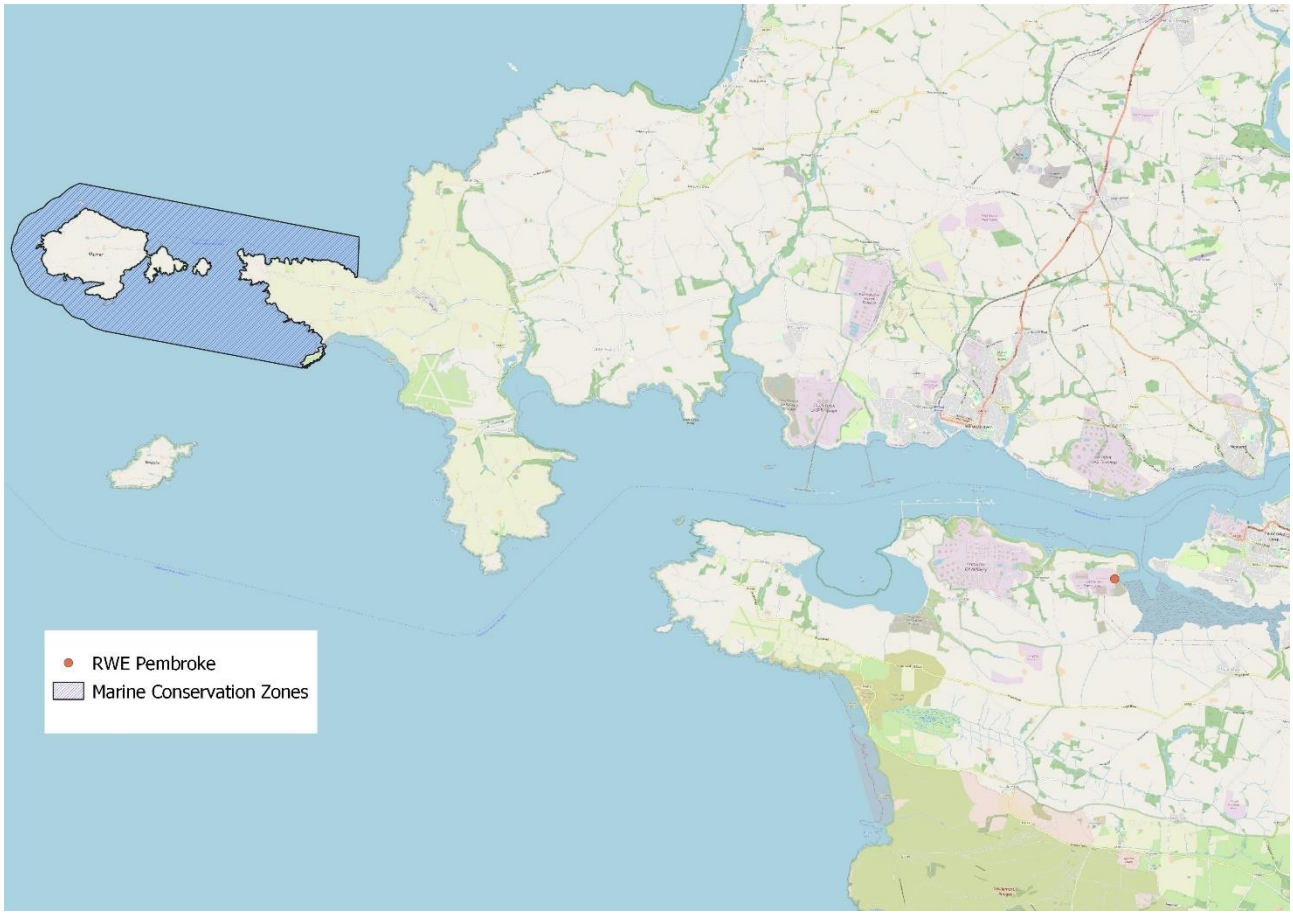

Figure 1. Location of Pembroke Power Station and marine conservation zones. Pembroke Power Station depicted by the red circle.

2. Screening Assessment

2.1 Identification of relevant MCZs

To identify the relevant MCZs the following steps were taken:

1. Identification of sensitive receptor groups.
2. Identification of potential pressures of the Project on the receptors and a likely zone of influence for each receptor group, i.e. the spatial extent over which effects could extend.
3. Determination of which MCZs and features are relevant to the assessment based on those falling within the zone of influence.

2.1.1 Identification of sensitive receptors

MCZs are designated to protect broad scale habitats; threatened, rare or declining species and habitats; and/or features of geological and geomorphological interest. MCZs form part of the Marine Protected Area network together with Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Potential effects on features of SACs and SPAs are considered separately in a Habitats Regulations Assessment which has been produced for the Project.

The sensitive receptors relevant to this MCZ assessment which are within the area of influence of the Project fall within the following receptor groups:

- Fish and shellfish.
- Seabirds.
- Marine mammals.
- Habitats.

2.1.2 Identification of pressures and zone of influence

The Marine Pressures-Activities Database (PAD) v1.5 (JNCC, 2022) was used to identify pressures associated with the most commonly occurring marine activities and provides a detailed assessment of the feature/sub-feature or supporting habitat sensitivity to these pressures.

The relevant activities are 'Outfalls/Intake pipes (maintenance/construction/usage)' and 'Water abstraction'. The database sets out a risk profile of pressures which lists pressures for each activity and describes the sensitivity of the feature to that pressure. The following pressures are relevant to the Project considering the receptor groups above:

- Removal of non-target species;
- Above water noise; and
- Habitat structure changes - removal of substratum (extraction).

Where pressures have been identified as low risk these have not been included in the assessment (or the list above). This is in line with guidance which states that 'unless there are evidence-based case or site-specific factors that increase the risk, or uncertainty on the level of pressure on a receptor, this pressure generally does not occur at a level of concern and should not require consideration as part of an assessment' (Robson *et al.*, 2018).

Table 1. Zone of influence for receptors

Potential pressure	Source	Receptors	Zone of influence (ZoI)	Justification
Removal of non-target species	Intake of water from Pennar Gut.	Fish, seabirds, marine mammals	8.2km	The ZoI from loss of prey species is defined as the tidal excursion of Milford Haven, approximately 8.2km. This encompasses the maximum area considered at risk to larval fish entrainment and

Potential pressure	Source	Receptors	Zone of influence (ZoI)	Justification
				impingement of juvenile fish species unable to escape coarse screen approach velocities.
Above water noise	The use of machinery, vessels, and people to maintain the water intake as required.	Seabirds, marine mammals	~100m	It is unlikely that existing maintenance activities could potentially cause disturbance except within the immediate locality of the intake.
Habitat structure changes - removal of substratum	Intake water flow	Habitat, shellfish	~100m	Intake water flow is likely to increase sediment suspension and reduce sediment settlement (particularly at low water). This will only occur in the immediate environs of the intake.

2.1.3 Relevant MCZs and features

The maximum zone of influence for most identified receptors (fish, seabirds, marine mammals) has been defined as 8.2 km. This represents a precautionary distance based upon existing studies. No MCZs were found to be within the maximum zone of influence for the Project, the nearest being Skomer MCZ at approximately 17km.

2.2 In-combination effects

To identify potential in-combination impacts a review of marine licence applications in the vicinity of Pembroke Power station water intake was carried out using 'Wales Marine Planning Portal' using a search distance of 8.2 km (HM Government, 2023).

There were no other marine licence applications under consultation or granted for marine works within, or capable of affecting, this area of coastline.

There are no significant risks of the proposal significantly affecting a MCZ feature acting in-combination with other reasonably foreseeable projects.

3. Assessment conclusions

The MCZ screening assessment has considered all possible pathways to impacts on MCZ features. The findings of the assessment are that the water intake at Pembroke Power Station will not significantly impact:

1. Any features of a MCZ; nor
2. the geomorphological processes on which the conservation of the features of the MCZ are dependent.

It is therefore concluded that a Stage 1 MCZ assessment is not required for this Project.

4. References

JNCC (2022). *Marine Pressures-Activities Database (PAD) v1.5.* Available from: https://hub.jncc.gov.uk/assets/97447f16-9f38-49ff-a3af-56d437fd1951 [Accessed July 2023].

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