



SUPPLEMENTARY ECOLOGY NOTE – USKMOUTH POWER STATION CONVERSION PROJECT

This file note has been prepared to respond to ecological comments in the NRW consultation letter dated 9 July 2020 (reference: CAS-123618-F8L7) which relate to the Uskmouth Power Station B Conversion Project; Planning application reference: 20/0748. The letter has been structured to respond to each of the specific comments made by NRW, focussing in particular on the location and nature of the main construction activity within the site. Clarifications are provided in turn in relation to; otter habitats, water voles, wintering birds, breeding birds and fish. An Outline Water Vole Conservation Strategy has also been prepared for the Uskmouth Conversion Project which is provided alongside this letter.

NRW Requirement 1: Air Quality

The comments on air quality are being addressed under permitting Schedule 5 process related to the permit variation application as set out in the correspondence from Dafydd Williams (RPS) on 12th October. That information is not repeated in this separate response covering each of the other issues raised by NRW.

NRW Requirement 2: Otters

The areas of sensitivity for otters are described below with their context in terms of the development proposal. All habitats with the potential to have high sensitivity for otter are located a significant distance from the construction activities and piling, which are primarily focussed on the construction of the storage silos, as set out below.

Review of Potential Use of Habitats by Otter

Julian's Pill / Julian's Reen

The otter surveys undertaken in 2019 confirmed the use of Julian's Pill as an important corridor for movement of otters between the River Usk and Julian's Reen with an otter path crossing the railway line on the eastern boundary of the power station.

The otter path leads into dense scrub on a steep bank above the reen; orientated towards the channel, where it heads off-site. The main channel of Julian's Reen, which runs east-west beyond the northern boundary of the sewage treatment works, is bounded by extensive areas of undisturbed dense scrub and woodland within the designated Alpha Site SINC to the north. This area has very high potential as a location for a breeding holt and for daytime resting places. The crossing point is over 250m from the red line development boundary and over 500m from the closest areas of construction and piling.

Eastern Boundary Reen

A smaller channel (the eastern boundary ditch) connects to Julian's Reen close to the otter crossing point. This ditch runs broadly southwards on the boundary between the power station and sewage treatment works. This channel is lined by a narrower strip of mature scrub with extensive dense bramble thicket and buddleia which has developed on ground that was formerly maintained as grassland.

The dense bramble prevented detailed surveys of this area for signs of otter. It is possible that a breeding holt and/or daytime resting places could be present on the bank of the ditch or below the dense bramble thicket. This section of ditch and bramble thicket is located over 300m from the nearest construction activities.

Julian's Gout Land SINC and Northern Boundary Woodland

The broadleaved woodland block (Julian's Gout Land SINC) adjoining Julian's Pill was systematically surveyed for signs of otter activity during the 2019 surveys. Most of the woodland has a sparse ground flora

and lacks dense cover. Badgers are resident in the woodland with a series of setts in the large mound created from PFA on the northern boundary. No mammal paths lead into the woodland from the Pill. The findings of the 2019 survey strongly indicate the absence of any otter holts or frequently used resting places in this block of woodland. The footage from the camera traps shows the animals moving up the bank of the Pill (where the culvert is meshed) forcing the otters to move across open ground for a short distance.

A smaller linear block of woodland lies between the northern boundary of the power station and sailing club on the edge of the intertidal land. The woodland was surveyed for badger, otter and dormouse in 2018/2019 with no signs of otter activity recorded. The boundary of the site will be regularly walked by security further reducing its potential to be used by otter. The findings strongly indicate that this habitat does not support a holt and is not used in the daytime by otter. The edge of the woodland is located over 250m from the closest construction and piling activities.

Laydown Area and Sewage Treatment Works

The eastern section of the boundary ditch extends along the south-eastern boundary of the laydown area and former construction car park. This is a corridor along which otters could move between the Newport Wetlands Nature Reserve, Sewage Treatment Works and Julian's Pill. At its widest this green corridor is 45m across and comprises a mix of bramble, buddleia and scrub alongside the heavily shaded ditch channel. More extensive scrub habitat is present in the sewage works. There is a continuous chain link fence on the boundary between the two ownerships but this is unlikely to be a barrier for otter movement.

It is possible that a breeding holt and/or daytime resting places could be present on the bank of the ditch or below the dense bramble thicket. This section of ditch and bramble thicket is located over 300m from the nearest construction activities.

The narrower sections of scrub (5-10m wide) have low potential to be used by otter during the daytime being located close to operational areas and having less cover.

The wider section between has sufficient cover to be used by otter. It has low potential to support a breeding holt being bounded by the open developed land and the access road into the sewage treatment works and being located over 400m from the otter path at Julian's Pill with no easy access route between the two. This area lies 130m from the red line development boundary and 300m from the closest areas of construction and piling.

Western Boundary Ditch / Newport Wetlands / Reservoir

The western boundary ditch runs from the site entrance along the southern boundary of the power station with the Newport Wetlands directly to the south. The boundary ditch and Lamby's Lake are on the edge of a broad wildlife corridor encompassing the wetlands, sewage treatment works and south-western / western boundary of the power station. There is very extensive potential habitat for otter across the wetlands reserve.

There is a surfaced footpath within the wetlands reserve close to the boundary ditch which is subject to a high level of use by visitors to the reserve, including dog walkers. The path runs parallel to the boundary of the power station, set back from it by between 20 and 25m. The strip of ground between the footpath and the boundary ditch is bramble thicket, tall herb and scrub. To the south of the footpath the habitats are a mix of mature scrub and reedbed.

Use of this area by otter during the daytime as an undisturbed place of shelter is considered very unlikely due to the levels of recreational use. No mammal paths have been seen on either side of the western boundary ditch or on either side of the footpath in the wetlands.

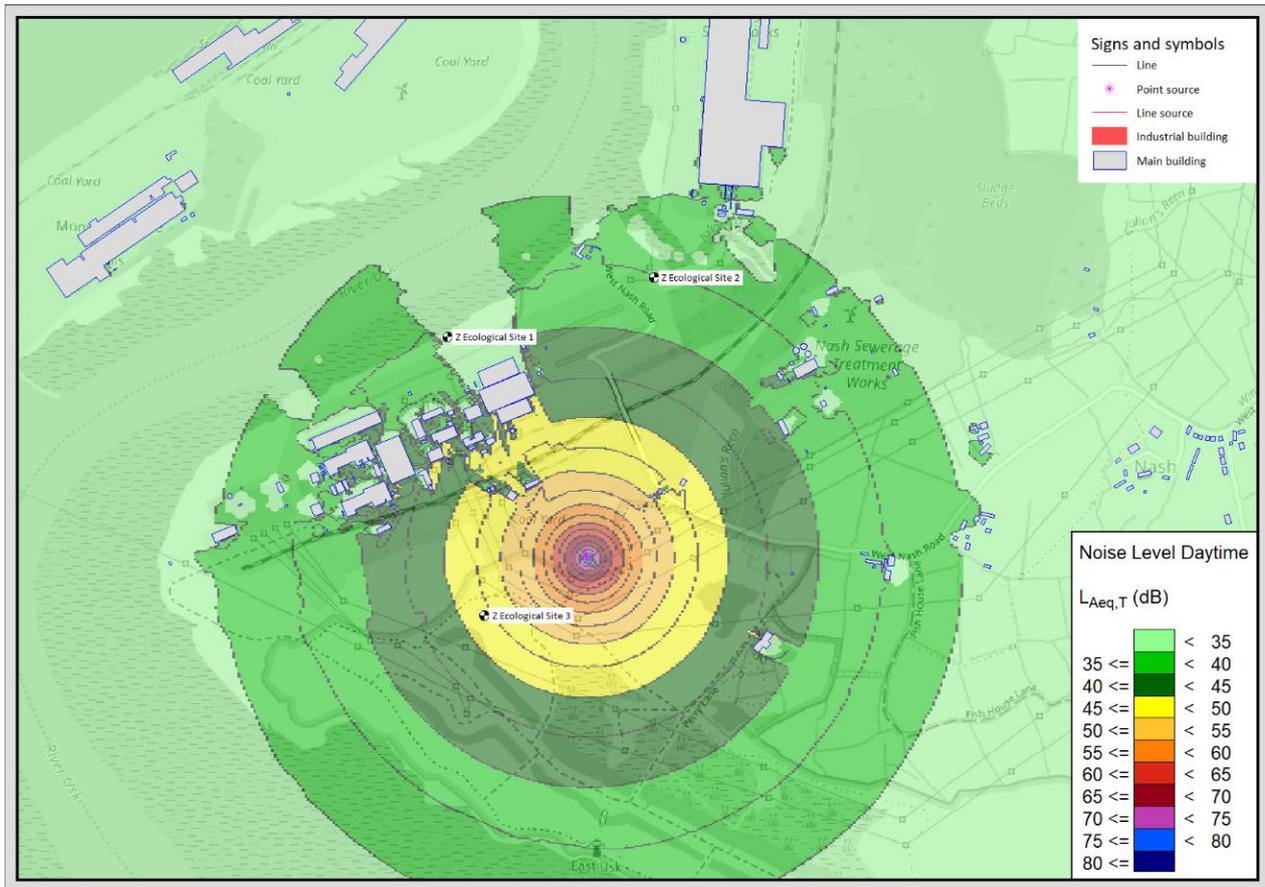
Construction and Operation

Unless otherwise agreed, an augered method of piling will be adopted for the development. Noise contour modelling has been undertaken for this method to understand the potential for noise to impact different species.

The modelling for the southernmost silo in the coal stockyard is shown in Figure 1. This location is closest to the wetlands and illustrates the maximum potential effect. Adopting an environmentally sensitive approach

to piling will mean that the levels of construction noise outside of the power station site will be minor. The decibel levels in each of the otter habitat areas listed above is given in Table 1 below.

Figure 1: Piling noise modelling – southernmost silo



During operation, activities close to the western boundary ditch will be limited to security and maintenance operations. Activity around the silos in the hours of darkness at times when otters could be using the western boundary ditch are expected to be very limited. Three of the silos are set back from the ditch (c50m) with no potential for impacts on otter activity.

The boundary ditch will fall within a dark corridor with the lighting specifications designed to prevent light spill onto the ditch or banks. Task lighting would be required on the occasions when operation and maintenance activities associated with silos are required during the hours of darkness. The layout specifically includes a 15-20m stand off between the top of the ditch bank and southernmost silo once constructed to maintain separation. During construction a 7-10m stand off will be employed from the top of bank with exclusion fencing to remain in place for the full duration of construction activities in the coal stockyard. The full 10m stand off will be maintained with the exception of any pinch-points.

Otters - Conclusion

A summary of distances between potential otter habitats and construction activities are tabulated below. The decibel levels referenced have been derived from the modelling of an auger piling methodology. For context 60dB is equivalent to a normal conversation or moderate wind in trees and 70dB is equivalent to a shower of rainfall.

Table 1 – Summary of distances and conclusions

Otter Habitats	Closest distance to red line boundary	Closest area of construction activities	Closest piling (modelled noise levels)	Conclusion
<i>Julian's Pill / Julian's Reen</i>	250m	500m	500m (<40dB)	No potential for impacts on use by otter
<i>Julian's Gout Land SINC and Northern Boundary Woodland</i>	Adjoining	240m	240m (<45dB)	No potential for impacts on use by otter
<i>Eastern Boundary Ditch and Sewage Treatment Works</i>	125m	280m	300m (<45dB)	No potential for impacts on use by otter
<i>Reservoir</i>	Within	10m	60m (<55dB)	No potential for use as a resting place No potential impact on use by otter.
<i>Western Boundary Ditch</i>	On perimeter	20m	30m (55dB – 65dB for a short section)	Habitat unsuitable for holts, no evidence of otter activity or use as a resting place daytime located close to frequently used footpath. No potential for impacts on use by otter
<i>North-western boundary of the Newport Wetlands</i>	Adjoining	25m	35m (small area of boundary habitats adjacent to coal stockyard 55dB – 60dB. Waterbodies below 50db)	Habitat within 50m of the development area crossed by public footpath No potential for impact on use by otter

Based on the orientation of the otter path leading from Julian's Pill, the breeding holt is most likely to be located to the north of the sewage treatment works within the designated Alpha Site SINC to the north.

It is expected that the otters will use daytime resting places and possibly other holts in the wider area including within the wildlife corridor comprising the south-eastern boundary of the power station, sewage treatment works and Newport Wetlands reserve. There is significant separation between the proposed development and the majority of this wildlife corridor.

The likelihood of otters using the zone of vegetation between the boundary ditch and footpath within the wetlands in daytime is negligible given that it is trafficked by pedestrians and dog walkers. The coal stockyard has also been subject to much higher levels of vehicular traffic and human activity in the recent past.

The closest areas of extensive dense scrub cover with the potential to support a holt or frequently used resting place are located over c300m from construction areas and piling. There is no potential for disturbance of breeding/natal holt or daytime resting places.

During operation, management of the boundary ditch habitat would cause very infrequent disturbance during the daytime. Maintenance activities for the silos may be infrequently required during the night and would be

conducted using task specific lighting. A minimum 15m stand off will be created between the top of the bank and southernmost silo to separate the operational working area from the ditch corridor along which otters could move.

There is negligible potential for the development to cause a detrimental effect on the local otter population or adversely affect its favourable conservation status.

NRW Requirement 3: Water vole - Avoidance of unacceptable effects

An engineering, procurement and construction ('EPC') contractor will be engaged during the detailed design stage to provide a comprehensive specification for the piling programme, along with a detailed construction method statement. Therefore, at this stage a high-level Outline Water Vole Conservation Strategy has been prepared setting out the measures that would be adopted as part of the detailed design and the deliverability of the proposals. This document includes; information on the potential effects on water voles and ditch habitats, defines the precautionary measures that would be put in place, and outlines the deliverability of the mitigation and long-term habitat management on land in the ownership of the developer.

Mitigation measures are only proposed for land within the boundary of the power station and within the control of the applicant. The strategy demonstrates how species protection would be delivered alongside permanent enhancement of sub-optimal ditch habitats to help maintain the population during construction. The strategy includes a commitment to ditch habitat management for water vole and monitoring of the population to document outcomes and ensure the value of the boundary ditch for water vole is enhanced and promoted over the lifetime of the development. Currently this ditch is only accessible from the power station due to the continuous dense bramble thicket on the southern bank.

The EPC contractor will be required to comply with the outline water vole mitigation plan which will be further developed and confirmed at the detailed design stage. Detailed specifications and a programme will be defined covering all the protection measures and enhancements designed around duration and type of piling and construction. These will be informed by an up to date water vole population survey along the whole of the eastern section of the boundary ditch. All commitments in the outline strategy will be fully adopted in the detailed mitigation plan.

The delivery of the strategy will help maintain the conservation status of the water vole population during construction and provide permanent enhancement of the ditch habitat over the operational life of the power station thus providing an overall net gain.

Other Points Raised by NRW

Lighting

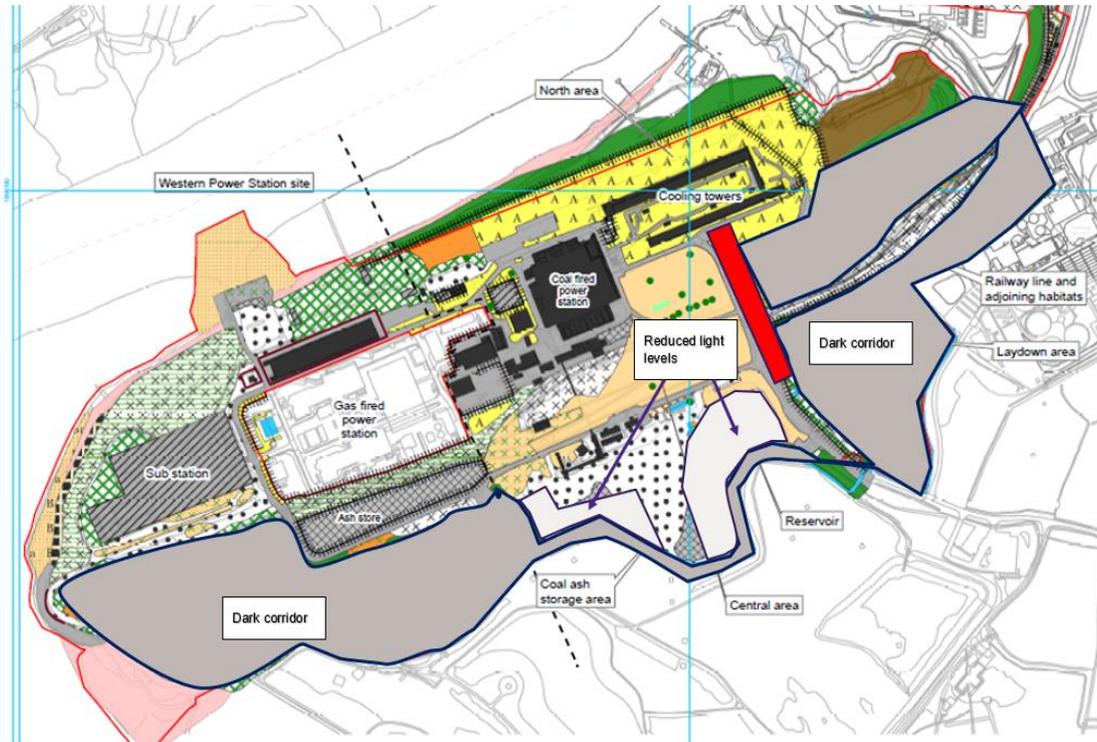
RPS has recently prepared a Lighting Statement for the development site. The statement outlines the broad lighting requirements for both construction and operation and sets out the environmentally sensitive parameters that will be achieved by the detailed lighting plan (which is assumed to be covered by condition, but will otherwise be specified in the EPC contract). The siting and detailed external lighting specifications will be presented in this detailed plan along with the respective lux contour plans.

The existing lighting lux levels have been assessed to define the current lighting background. During the construction of the storage silos some activities such as concrete pouring would require continuous 24hr working for a limited period of time. Supplementary lighting will be required for construction to facilitate the safe movement of traffic and personnel. These will maintain the boundary ditch as dark corridor providing a wide corridor with negligible light spill in the southern part of the power station adjoining the Newport Wetlands.

The dark corridor plan for the development area and land adjoining the railway line is provided as Figure 2. This shows the extent of the dark corridors around the proposed development area and along the green

corridor connections to Julian's Pill. Figure 3 shows the dark corridors around the power station in their wider landscape context.

Figure 2: Illustrative Dark Corridors - Development Area and Railway Line



The dark corridor will also be maintained during operations. There are three existing 10m floodlights positioned on the southern boundary of the coal stockyard adjacent to the western boundary ditch. Although currently not working, historically the boundary ditch would have been subject to significant light spill from these floodlights. The commitment to ensuring the southern boundary is a dark corridor will make a permanent improvement in comparison to the former lighting strategy at the site.

The existing lighting will be subject to full review prior to the development of the detailed lighting design. Where required existing units will be updated with the use of modern lighting specifications including LEDs, which will minimise light spill within and around the lit parts of the development and ensure that the dark context of boundary green infrastructure and adjoining designated sites is protected. The existing railway line will continue to be used for deliveries to the power station and lighting of the tracks will need to be re-established for operational reasons. Modern lighting specifications will be adopted with LED lighting units to be installed focusing light into the operational line with negligible back lighting and sharp cut off.

Figure 3: Wider Context of Dark Corridors



Full inclusion of the commitments to environmentally sensitive lighting in the detailed design will remove the potential for impacts on designated sites, boundary habitats and wildlife.

River Usk - No change to context of the river and intertidal habitats with no additional lighting required in the vicinity of the designation.

Julian's Pill/Julian's Reen – The reinstatement of lighting along the railway line will exclude lighting units at the crossing point between Julian's Pill and Julian's Reen on the eastern boundary of the power station. This short section of the railway line will remain dark with no artificial lighting.

Western Boundary Ditch – Located in close proximity to the southernmost silo, the lighting statement defines how the detailed lighting scheme will retain the whole of the western boundary ditch as a dark corridor with lux levels at a maximum of 0.5 lux at the ditch.

The lighting scheme design specifically avoids additional light spillage on to key sensitive areas. The western boundary ditch and adjoining vegetation and boundary of the Newport Wetlands is a key dark corridor on the southern boundary of the development. Adjoining land within the power station will also be designed to have reduced light levels below 1 lux to provide a substantial buffer to the dark corridor around the silos in the coal stockyard.

Bats

The lighting scheme demonstrates how the sensitive areas will be kept 'dark' during construction and operation using best practice lighting design for new infrastructure alongside the modernisation of the existing lighting arrangements. The dark context of the flyover bridge will be protected. The detailed lighting design will ensure that the undersides of the bridge remain dark (with no light spill) and that the dark corridors on the eastern side of the bridge are protected with flight line connections to the mature tree line, the scrub on the sides of the railway line and Julian's Gout Land SINC.

A minimum of six additional tree mounted bat boxes will be installed within the development; two 1FF Schwegler bat boxes or equivalent; two 2FN Schwegler bat boxes or equivalent and two 1FW Bat

hibernation boxes. The bat boxes will be located on boundary trees in the Julian's Gout Land SINC woodland and on larger trees in woodland in the south-western part of the power station.

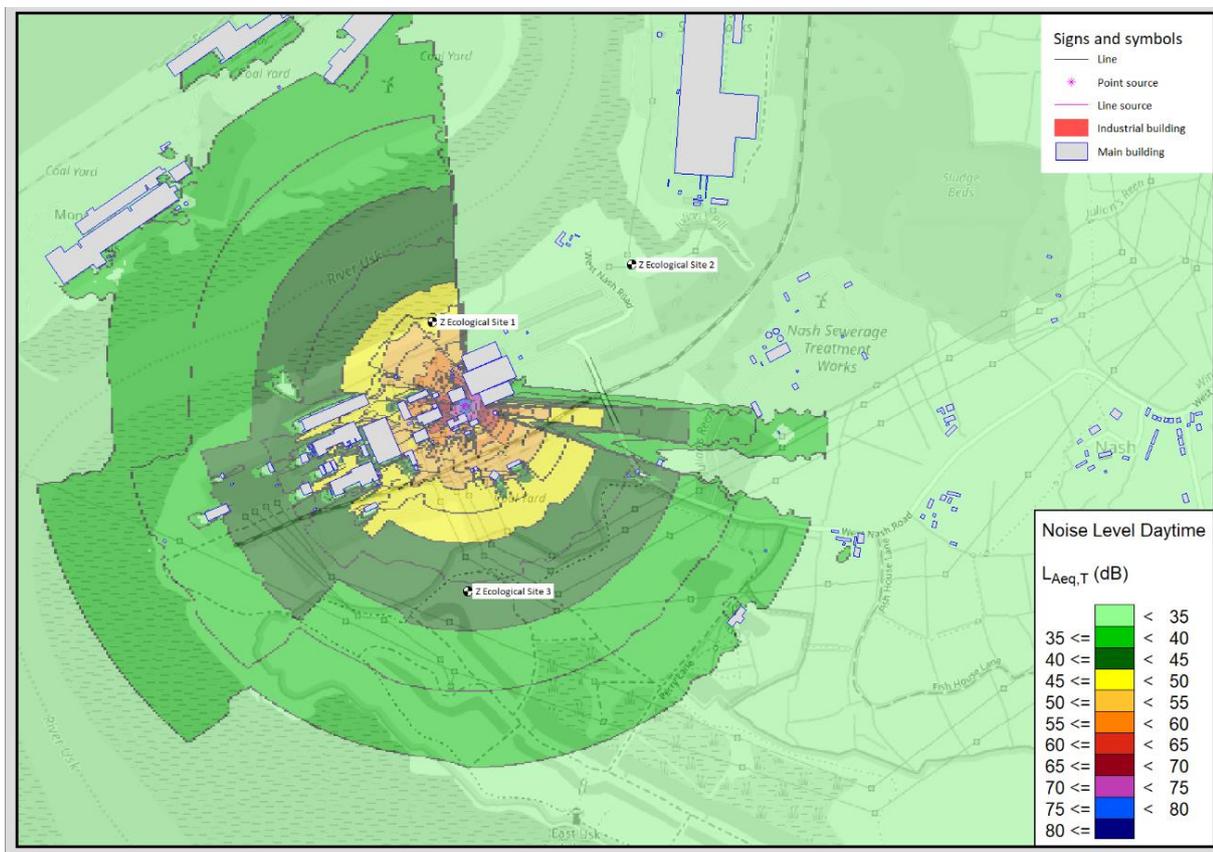
Statutory Designated Sites – Impacts of Piling

Severn Estuary Special Protection Area (SPA) and River Usk SAC

The noise modelling for the auger piling confirms that elevated noise above 55dB is very localised around the point of piling activity as illustrated on Figure 2. At this piling location closest to the River Usk, areas subject to 55dB and higher are located entirely within the site, around the main power station buildings and infrastructure, with a very small proportion of the intertidal habitat located within the 40dB to 50dB zones.

Noise levels below 55dB would not alter the behaviour of wildfowl using waterbodies in the Newport Wetlands. At these low levels of noise there would be no impact on wintering bird species utilising intertidal habitat during the periods of piling.

Figure 2- Noise modelling – Boiler House Silo



Otter

The previous section has addressed impacts on otter. No habitats with the potential to support a breeding holt or resting up place will be affected by noise generated from piling. There is negligible potential for the development to cause a detrimental effect on the local otter population or adversely affect its favourable conservation status.

Migratory Fish

Although the boundary of the power station landholding extends up to the intertidal zone the actual locations of the construction activity have a very significant separation from the River Usk. Noise modelling at the closest piling location to the estuary (Figure 2) graphically demonstrates the limited levels of noise travelling through air on the boundary of the River Usk. There is no piling or other noise generating activity in the river

and the potential for transfer of noise from air to water is very low. Piling in terrestrial areas over 160m from the closest intertidal habitat will result in a negligible level of noise within the main channel of the River Usk with no potential for any impact on migratory fish.

Conclusion

The type and nature of construction described above is an avoidance measure that ensures that there would be no likely significant effect on features of the Severn Estuary SPA (birds) and features of the River Usk SAC (otter and migratory fish). Consequently, no seasonal restrictions on the timing of works are being proposed.

Newport Wetlands SSSI/NNR

As discussed in relation to otter only a very small part of the Newport Wetlands (scrub, grassland and reedbed) will be subject to noise levels above 55dB during the piling of the southernmost silo closest to the reserve. The piling for each silo is likely to last approximately six weeks during construction hours between 8am and 6pm. Noise levels beyond 100m from the coal stockyard boundary will be below 55dB. The habitats within this zone comprise scrub, bramble thicket and grassland along with the edges of extensive reedbeds where they adjoin mature scrub. Bearing in mind that this level of noise (60dB) is equivalent to a moderate wind in trees, it is considered very unlikely that this will disturb otter if present in this habitat.

There is a negligible likelihood of significant adverse effects on bird behaviour at noise levels below 55dB. The levels of development related noise across the majority of the western part of the reserve will be below 45dB including over 90-95% of the open water and reedbed habitat and therefore below the level that could disturb birds.

Conclusion

There is no predicted impact on local populations on breeding or wintering birds using habitats in the Newport Wetlands as a result of the proposed construction including piling because of the commitment to use of techniques that are sensitive to the environment.

While the EPC contractor's working methods will not be prescribed prior to procurement, achieving noise levels and methods consistent with the objectives of no disturbance to otter, water vole and bats in particular, will be prescribed. This will ensure no wider impact on birds. No control measures are required to protect migratory fish populations.