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The Tees Combined Cycle Power Plant Project
Land at the Wilton International Site, Teesside

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Annex G2

Preliminary Ecological Appraisal

Report ID: INCA 201721

**Preliminary Ecological Appraisal
TPL2, Wilton**

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May 2017**



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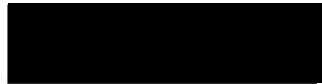
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1. Introduction

INCA was commissioned by Sembcorp to carry out a Preliminary Ecological Appraisal (PEA) on the site of the former GDF/TPL Power Plant on the Wilton Industrial Complex (the Project site). It is proposed to redevelop the site to accommodate a new gas turbine based power station.

This report describes the results of surveys undertaken to determine the current ecological value of the Project site and to identify any valued ecological receptors that are present or which might potentially be present. These include, in particular, any species to which legislation applies, such as protected species or invasive non-native plants and Priority Habitats and Species. Priority Habitats and Species are those listed under Section 41 of the Natural Environment and Rural Communities Act (2006) as being of principal importance for the conservation of biodiversity in England and can be a material planning consideration.

The surveys also included an examination of the vegetation on the Project site to assess whether it had any substantive nature conservation value, other than as a Priority Habitat.

Having identified the ecological receptors that were present or have the potential to be present on the Project site, this report then assesses how each might be affected by the proposed development, firstly in the absence of mitigation and then subject to recommended mitigation.

2. Site description

The Project site is situated on the south west corner of the Wilton Industrial Complex, close to the A1053 Greystones Road. It is located within the National Grid Reference 1 km square, NZ5620. It is shown, outlined in red, in its wider context in Figure 1; the numbers refer to discrete elements of the Project site, which are described in Section 5. The total site area is around 14.5 ha in extent. The majority of the site consists of the site of the deconstructed GDF/ TPL power plant, which is bounded on the southern side by a high, solid fence. To the south of that fence are a tarmac surfaced car park and an area of grass, with a further car park on the western boundary. Within the former power plant site there are two remaining operational plants. A detailed description of the current site in terms of its vegetation and habitats is given in the results section of this report. Photographs showing the various components of the site in Appendix 1.

The immediately surrounding areas to the north and east are operational or former operational industrial sites. Immediately to the west is the Kettle Beck and beyond that an area of scrub and a further operational industrial site. To the south there is around 25ha of arable land which separates the site from the village of Lazenby.



Figure 1. The application site in its wider context

3. Desk Study

This desk study considers previously recorded information on species in relation to the site. INCA has carried out ecological surveys across much of the industrial land on South Tees over more than a 20 year period, including on the wider Wilton site and has been the main ecological organisation collecting ecological data in this location, accumulating a large number of species records relevant to this area. The Environmental Records Information Centre North East was also consulted for any protected or priority species records that they held which were additional to the INCA data.

The following protected or priority species have been recorded within approximately a 2km radius of the Wilton Industrial Complex.

Protected species

Great Crested Newts, *Triturus cristatus* (GCN)

The closest recent records of GCN to the site are at Lovell Hill Ponds and Errington Woods, approximately 2km and 3km away respectively. GCN has been recorded on the large pond at Wilton HQ in the 1980s, approximately 1.2km to the south east of the proposal site but no GCN have been recorded on the Wilton Industrial Complex itself. There is only a single pond on the Wilton Industrial Complex and this was surveyed for GCN by INCA in 2014 with negative results. Ten ponds were surveyed for GCN between Marske and the Wilton Industrial Complex for the Forewind Dogger Bank wind turbine proposal, all of which proved negative for GCN (Peak Ecology, 2013).

Bats

INCA has carried out bat surveys at various parts of the Wilton Industrial Complex in recent years. A single Common Pipistrelle, *Pipistrellus pipistrellus*, was found to be foraging along the Kettle Beck on the western boundary in 2010 and again a single Common Pipistrelle was found to be foraging briefly in the centre of the Wilton Industrial Complex, in 2011. Surveys of bridges along Dabholme to the north of the A66 in 2014 found Common Pipistrelle to be regularly foraging in that area although there was no evidence of roosting. The same survey recorded a single Soprano Pipistrelle,

Pipistrellus pygmaeus, on one occasion and a single Noctule, *Nyctalus noctula*, which was commuting over the site. Common Pipistrelle is the only bat species that has been recorded as resident in urban areas on Teesside (Jackson, 2012); it is more of a generalist in its habitat use than other UK bat species and is less affected by artificial light than most UK bat species.

Soprano Pipistrelle, *Pipistrellus pygmaeus*, has been recorded as roosting in Kirkleatham. All bats are protected under UK legislation however Soprano Pipistrelle is also a UK priority species and, although widespread nationally, is a rarely encountered species in Cleveland. The record from Kirkleatham is, to date, the only known roosting location for the species in Cleveland.

Reptiles

Common Lizard, *Zootoca vivipara*, has been recorded from the dune areas at South Gare and Slow Worm, *Anguis fragilis*, has been recorded from Wilton Woods, approximately 5km and 2km away from the Project site respectively. INCA has carried out reptile survey on parts of the Wilton Industrial Complex in 2012 with negative results.

Otter, *Lutra lutra*

Otter has been recorded on Dabholme Gut and along most of the River Tees and at Coatham Marsh. The number of records of otter along the lower reaches of the Tees has increased significantly in recent years.

Badger, *Meles meles*

Badgers have been recorded in Wilton Woods though there are no recent records. In 1995, three rescued badgers were released at an artificial sett on the eastern boundary of the Wilton Industrial Complex but surveys by INCA in 2014 established that they are no longer present.

Water Vole, *Arvicola terrestris*

There is a record of Water Vole from Kettle Beck approximately 500m north of the Project site from 1998 and a possible record of the species from the same water course and around 300m north of the Project site from 2010.

Priority species

Brown Hare, *Lepus europaeus*

Brown Hares are common across the Wilton Industrial Complex, where they are thought to occur at their highest density in Cleveland.

European Hedgehog, *Erinaceus europaeus*

Hedgehogs are frequently encountered as road casualties on the A174 to the south of the Wilton complex and are likely to occur in areas of suitable habitat within the Wilton Industrial Complex.

Harvest Mouse, *Micromys minutus*

Harvest Mouse has been found at Kirkleatham Business Park, immediately to the east of the Wilton Industrial Complex.

Common Toad, *Bufo*

Common Toad is widely distributed in the Tees Valley and could be present anywhere, where there is suitable breeding habitat. The closest record is from Lazenby Mound Pond, which is approximately 500m to the south east of the Project site. INCA has found small numbers of Common Toads at the ICI Ecology Pond in the north east corner of the Wilton Industrial Complex, approximately 2.5km away.

Birds

Some 40 bird species are listed as priority species, though in some cases this is merely to highlight the need for further research into the species. Of these 40 species the Wilton Industrial Complex as a whole supports notable numbers of; Skylark, *Alauda arvensis*, Curlew, *Numenius arquata*, and Herring Gull, *Larus argentatus*. However a range of other priority bird species has also been recorded on the Wilton Industrial Complex and these are likely to occur in locations where suitable habitat is present.

Invertebrates

Several priority species of Lepidoptera (butterflies and moths) such as Dingy Skipper, *Erynnis tages*, Grayling, *Hipparchia semele*, and Cinnabar, *Tyria jacobaeae*, have been recorded on various parts of the Wilton Industrial Complex.

4. Field Survey Methodology

Dates and weather conditions

The site was surveyed on 17th October 2016. Weather conditions at the time of the survey were dry, with a moderate breeze and temperature around 14°C.

Survey methodology

The entire Project site was walked and the vegetation components of each discrete area of vegetation were recorded. For each part of the Project site the nature of the vegetation was assessed and the main plant species in each part of the site were also recorded.

The Project site was also surveyed for signs of any protected, priority or otherwise notable species; where these were not recorded the potential for their presence on the Project site was also assessed. Notable species is not a strictly defined concept but could include for example, those species that are locally uncommon or species that are unusual for the site.

The site was also checked for non-native invasive plant species. These are species that are listed under Schedule 9 of the Wildlife & Countryside Act (1981), as amended, as species whereby it would be an offence to plant or otherwise cause them to grow in the wild. This list includes such well-known species such as Japanese Knotweed, *Fallopia japonica* and Giant Hogweed, *Heracleum mantegazzianum* but includes a range of other species that are not uncommon in cultivation.

Survey context and constraints

Weather conditions at the time of the survey were not a constraint on the findings of the survey. It was possible to inspect all parts of the site. The surveys took place outside of the flight periods of most species of Lepidoptera however it is considered that there were no constraints on the accuracy of the results of the survey in assessing the potential for such species to use the Project site in terms of the habitats present. The survey took place outside of the optimal period for vegetation surveys however given the very limited diversity of habitats on the Project site this is not considered to have affected the conclusions.

Surveyor details

The survey was carried out by Ian Bond CEnv MCIEEM who is an experienced ecological surveyor for all groups of terrestrial vertebrates and vascular plants.

5. Field survey results

Habitats

The site can be divided into several different components. These are numbered on Figure 1 and each is described below.

1. The area of the former GDF/TPL power station comprises around 9ha of hard standing. This area is shown outlined in blue in Figure 1 and a view looking west-east across this area can be seen in Photograph 1. Where there have been former roads and other connecting areas these are still present as intact concrete. Where the former structures have been removed those areas have been filled with crushed concrete. Both of these types of hard standing are effectively un-vegetated. In some places there are areas of gravel, which are assumed to have been used to fill the areas between the structures and the roads when this plot was operational. A typical example of a gravel area is shown in Photograph 2. These have a few ruderal plant species, particularly Oxford Ragwort, *Senecio squalidus*. In places where the ground is slightly depressed several small pools of water had collected. These were temporary in nature, without vegetation and from 1 to 5cm in depth.

There is a strip of vegetation around three sides of the perimeter of the main site, which for the most part would be classed as Ephemeral/ short perennial. On the southern boundary of the former power plant, this is around 10m wide with a thin layer of vegetation which covered around 75% of the ground. The vegetation in this area is principally the grasses Red Fescue, *Festuca rubra* and Creeping Bent, *Agrostis stolonifera*. Other plant species are ruderals of low diversity, principally being Creeping Cinquefoil, *Potentilla reptans*, Field Horsetail, *Equisetum vulgare*, Willowherb, *Epilobium sp* and Vetch, *Vicia sp*. This strip of vegetation is shown in Photograph 3.

On the eastern and northern boundaries the vegetated strip was narrower (2-5m) but slightly more established as it was completely vegetated with a variety of grasses including Yorkshire Fog, *Holcus lanatus*, False Oat Grass, *Arrhenatherum elatius*, Red Fescue and Creeping Bent and would be classed as a mixture of Tall ruderal and Ephemeral/ short perennial. Herb species were mainly Creeping Thistle, *Cirsium arvense*, with some Creeping Cinquefoil. Bramble, *Rubus fruticosus ag.*, was invading these borders but was too low in height for birds to nest in, except for the far north east corner where the Bramble and *Berberis thunbergii* shrubs were of sufficient height and density to potentially support a bird's nest. The strip of vegetation on the eastern boundary is shown in Photograph 4. Immediately outside the northern boundary the habitat is Improved grassland managed as short-mown amenity grassland. At the time of the survey the amenity grassland outside the northern boundary had some shallow, standing water, < 5cm deep, where rain water has collected but this appears to be temporary as there was no aquatic vegetation associated with it.

2. The two operational plants are constructed from a combination of brick and metal sheets. They are well sealed and do not appear to provide any opportunities for roosting bats or nesting birds. They are within secured, fenced areas and sit on concrete hard standing so do not provide any opportunity for any other ecological receptors. One of these operational plants can be seen in the background in Photograph 5.

3. There is small area of Improved grassland of around 0.1ha near to the entrance. This is mainly Red Fescue with very little in the way of herb species. It is assumed that this was formerly amenity grassland. This area can be seen in Photograph 5. This area is too small and lacking in diversity to support any ecological receptors of significance although it is possible that some small mammals, such as Field Voles, *Microtis agrestis*, may be present.

4. There are two, tarmac car park areas, shown as 4 on Figure 1. The car park on the western boundary has a few young trees, mostly Whitebeams, *Sorbus sp.* These are around 3m in height and set in beds of bare gravel. The car park on the southern boundary is entirely tarmac. The car park on the western boundary is shown in Photograph 6. The car park areas are unlikely to support any ecological receptors except for some potential for birds to nest in the young trees. The car park on the southern boundary is completely without vegetation although there is an area of approximately 0.1ha of rank, species-poor mesotrophic grassland on its western site.

5. Along the southern boundary of the proposal site, immediately east of the car park, there is an area of hard standing made from crushed iron slag, which is partially vegetated. This area would also be classed as Ephemeral/ short perennial. The vegetation is sparse and consists of various shorter grass species and a low diversity of herb species, with the latter mainly being White Clover, *Trifolium repens*, with some Melilot, *Melilotus sp* and Yellow Wort, *Blackstonia perfoliata*. The relatively homogenous nature of the vegetation that is present means that this area would not be classified as the Priority Habitat, "Open Mosaic Habitat on Previously Developed Land". This area can be seen in Photograph 7.

Species

No protected species were observed on the Project site.

The only priority species which were observed were a single Brown Hare, *Lepus europaeus*, which was disturbed from the vegetated area on the eastern perimeter and a flock of approximately 150 Herring Gulls, *Larus argentatus*, which were resting on the concrete areas or bathing in the shallow pools of water.

No Schedule 9 plant species were recorded.

No other notable species were recorded.

6. Assessment of Field Survey results

The Project site is of negligible ecological value with no priority habitats and, in fact, very little vegetation.

There is no suitable habitat on the Project site for any of the protected species that are listed in the Desk Study section of this report other than nesting birds.

With regards to nesting birds, there is a slight potential for nesting birds in trees in the car park and in the bramble scrub in the far north east corner of the site. Any works in those areas would need to avoid harm to any nesting birds or destroying or damaging their nests.

There is also some potential for Ringed Plover, *Charadrius hiaticula* or Little Ringed Plover, *Charadrius dubius*, to nest on the gravel or crushed concrete areas on the former power plant site. In addition to the protection afforded to all nesting birds through the Wildlife & Countryside Act

(1981), as amended, Little Ringed Plover receive additional protection through being listed under that Act as a Schedule 1 species. This means that it would also be an offence to disturb them while they were nesting.

Of the priority species that are listed in the Desk Study only Herring Gull and Brown Hare were found during the survey. Only a single hare was found. Hares have large ranges and there is insufficient vegetation to support even one hare on the Project site therefore the likelihood is that the hare largely uses the site as a resting place. The area of hard standing is likely to be used by Herring Gulls as a resting place as it is secure and being flat and bare provides clear lines of sight for the birds, for the avoidance of predators. However there are several alternative areas on or around the Wilton Industrial Complex that could perform a similar function for Herring Gulls, therefore this site is not considered to be of any significance in that respect.

Of the other priority species, there is negligible suitable habitat on the Project site for any of European Hedgehog, Harvest Mouse, or other bird species. There is a very small amount of terrestrial habitat that might support small numbers of Common Toad. The nearest suitable breeding habitat for Common Toad is approximately 500m to the south and separated from the Project site but arable land which provides poor connecting habitat. Common Toads generally select terrestrial habitat close to their breeding ponds (Salazar et al, 2016) therefore it is likely that the Project site is of negligible importance for that species.

The survey was outside of the flight season for most priority species of Lepidoptera however the grassland in area 5 appeared to have some suitability to support very limited numbers of Grayling butterflies and potentially some grassland moth species such as Shaded Broad Bar, *Scotopteryx chenopodiata*. As there are good populations of both species elsewhere on the Wilton Industrial Estate then it is likely that they will turn up on this site but given the very limited amount of suitable habitat then the Project site is considered to be of negligible importance for both species.

7. Impacts

This section considers the potential ecological impacts with respect to habitats, protected, priority or otherwise notable species. In this report, assessment at the local scale refers to impacts across the wider Wilton Industrial Complex and immediately surrounding area. The assessment initially considers the potential ecological impacts without mitigation. It then lists a series of appropriate mitigation measures and re-assesses the impacts on the basis of that mitigation being implemented.

Construction

Construction activities on the Project site could result in the following potential ecological impacts:

i) The loss of a small area of ruderal vegetation.

This vegetation is of negligible ecological value being essentially a range of the typical “weed” species that would be expected to colonise any area of bare ground. Therefore this impact is assessed as being negligible.

ii) The loss of a resting area for a single Brown Hare.

As the site is considered to only form part of the range of one individual, this impact is assessed as being negligible, including at a local scale.

iii) The loss of a roosting area for Herring Gulls.

As Herring Gulls are highly mobile and there are several other roosting opportunities in the surrounding area, eg large water bodies, roofs, etc, this impact is assessed as being negligible.

iv) The loss of a small area of open, grassland habitat for priority Lepidoteran species.

Both Grayling butterfly and Shaded Broad Bar moth are widely distributed across the Wilton Industrial Complex therefore the loss of this relatively small area of potentially suitable habitat would be of negligible significance at a local scale.

iv) Potential harm to nesting birds.

The likelihood of birds nesting on the site is considered to be low. However should they breed on the site then the potential for an impact is high, particularly with regards to the Schedule 1 species, Little Ringed Plover, without mitigation. Mitigation may therefore be required to ensure compliance with legal requirements.

Operation

It is considered that there would be no potential ecological impacts during operation of the new power plant.

Mitigation

i) There is a low but substantive risk of nesting birds on the gravel areas on the former power station and in the trees and bramble on site. Any works to clear or develop those areas should therefore take place outside of the bird nesting season, which is taken to be March-August inclusive. Alternatively those areas should be first checked by a suitably qualified ecologist within 48 hours of works commencing, with works commencing only if the ecologist confirms in writing that no nesting birds were found to be present. Subject to this mitigation the risk of harm to nesting birds is assessed as being negligible.

ii) No other mitigation is required for works on the Project site.

8. Conclusion

The Project site negligible ecological value.

There is some limited potential for nesting birds on the site however harm to nesting birds could be avoided through the use of the mitigation described above.

Notwithstanding the potential requirement for nesting bird surveys if works are scheduled to take place during the bird nesting season, no further, specialist ecological surveys are recommended.

9. References

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Peak Ecology (2013) Ecological Impact Assessment: Technical Report Dogger Bank Teesside A & B

Salazar RD, Montgomery RA, Thresher SE, Macdonald DW (2016) Mapping the Relative Probability of Common Toad Occurrence in Terrestrial Lowland Farm Habitat in the United Kingdom. PLoS ONE 11(2): e0148269. doi:10.1371/journal.pone.0148269

Appendix 1. Photographs



Photograph 1. View looking west- east across the former power station site



Photograph 2. A typical gravelled area



Photograph 3. The partially vegetated southern boundary of the former power station site



Photograph 4. The vegetated eastern boundary of the former power station site



Photograph 5. The area of grass near the entrance with operation plant in the background



Photograph 6. The car park on the western boundary (the larger trees in the background are outside the site boundary)



Photograph 7. Partially vegetated land on the southern perimeter