



ERM

ERM's London Office
2nd Floor, Exchequer Court
33 St Mary Axe
London, EC3A 8AA

erm.com

REQUEST FOR FURTHER INFORMATION - TECHNICAL NOTE

TO	Natural England and Barnsley Metropolitan Borough Council
FROM	Environmental Resources Management Limited (ERM)
DATE	08 October 2025
REFERENCE	0747884
SUBJECT	Yorkshire Water Solar Array: Wombwell Wastewater Treatment Works

Dear Ellie and Katie:

Environmental Resources Management Limited (ERM) was commissioned by Downing Energy Development Company Limited (the Applicant) to complete an Ecological Impact Assessment (EcIA) in connection with a proposed ground mounted solar photovoltaic (PV) system (the Proposed Development) within the lands of the Yorkshire Water Wombwell Wastewater Treatment Works (WWTW), Ings Road, Wombwell, near Barnsley England (the Site).

Whilst situated within existing operational land at Yorkshire Water's Wombwell WWTW, the Proposed Development is within a Natural England Site of Special Scientific Interest Impact Risk Zone. Prior to discharging their responsibilities under the Town and Country Planning (Development Management Procedure) (England) Order 2015, Barnsley Council are required to consult Natural England within the meaning of Schedule 4(w) of the Town and Country Planning (Development Management Procedure) (England) Order 2015 and Section 28I of the Wildlife and Countryside Act 1981.

The EcIA report¹ was provided in support of an application to Barnsley Council to obtain a Certificate of Lawful Development (CoLD) for the Proposed Development (Planning Ref. 2023/0952); and to provide information reasonably expected by Natural England to comment on the Proposed Development. The EcIA report considered potential impacts and effects on protected or priority ecosystems, habitats and species in the locality; in order to demonstrate compliance with relevant wildlife and nature conservation legislation.

In addition, a Construction Environment Management Plan (CEMP) was submitted to Barnsley Council to demonstrate how the Proposed Development would seek to further avoid and reduce potentially harmful effects during the construction phase. In addition, the Proposed Development identified opportunities to enhance biodiversity, demonstrating the Applicant's commitment to going above and beyond good practice to safeguard the environment whilst contributing to local ecological resilience.

In a consultation response to Development Control at Barnsley Council on 02 July 2025, Natural England Sustainable Development Officer Ellie Feary requested *further information in*

¹ ERM. (2025) *Yorkshire Water Solar Array: Wombwell WWTW Ecological Impact Assessment*. Commissioned report to Downing Energy Development Company Limited from Environmental Resources Management Limited (Version 1-0, Issued 13 June 2025).

order to determine the significance of impacts on Dearne Valley Wetlands SSSI. Please provide further information regarding water quality impacts during operation, for example in relation to washing solar panels.

This request for further information was also noted in a separate consultation response to Development Control at Barnsley Council on 07 July 2025, provided by the Barnsley Council Planning Ecologist Katie Lawrence. This included a recommendation that *the application decision is deferred until the [request for] further information is provided.*

EXISTING INFORMATION

A summary of the Proposed Development, as it is described in the Wombwell CoLD Application Supporting Statement², is presented in Section 1.2 of the EcIA report. Whilst the extent of all planned or potential maintenance activities have not been explicitly detailed for the Proposed Development, the assessment considered potential effects of any routine maintenance that is typically expected during the operational phase. The assessment focused on potential disturbance to ornithology features of the SSSI from vegetation removal as the sole source of activities that could present significant effects; and it was concluded that no lasting effects would arise as vehicle movements and human presence would be temporary in nature and limited to the Site and operational areas at Wombwell WWTW.

OPERATIONAL IMPACT ASSESSMENT

Baseline Environment

The Site crosses Bulling Dike and the underlying aquifer is classified as moderately productive³ with high vulnerability⁴. The groundwater body water quality is classified as poor under the Water Framework Directive (WFD)⁵. The Dearne Valley SSSI is located immediately to the east of the Site. Further details on the baseline environment can be found in the EcIA.

Impact Assessment

Whilst the Site crosses the Bulling Dike, cleaning activities will be limited to the PV system within proposed compound fence for the Site⁶, which is approximately 30 m from the top of the bankside to the Bulling Dike. Operational maintenance activities including associated vehicle movements and washing of the Proposed Development's PV panels could result in potential impacts to Bulling Dike, the underlying aquifer, and downstream habitats associated with the Dearne Valley SSSI.

Specific requirements for (and frequency of) cleaning the solar photovoltaic (PV) system will be informed by visual inspections undertaken by the Applicant's operational staff as part of the wider routine maintenance programme for the Site; and completed in accordance with the manufacturer's instructions. It is anticipated that:

² Arcus. (2023) *Wombwell CoLD App_Supporting Statement_20231004* [online]. Cover letter to Barnsley Metropolitan Borough Council from Arcus (an ERM Group Company). Issued 10 October 2023.

³ [GeoIndex - British Geological Survey](#)

⁴ [Groundwater vulnerability data - British Geological Survey](#)

⁵ [Don & Rother Millstone grit & Coal Measures | Catchment Data Explorer | Catchment Data Explorer](#)

⁶ 5208-REP-101 Fig02 Site Layout (Wombwell)

- Light cleaning to remove dust particles would be undertaken using either a jet hose or soft brush attached to a water-fed pole. The supply of water would be taken via a vehicle-mounted system that would be removed from the Site at the end of each working day;
- The use of pressure-washers would be discouraged to avoid damage through water ingress into the seals and wiring of the PV system;
- Clean, sediment free water will be used to remove any excess dirt or debris. Detergents will not be utilised at any stage of the cleaning process;
- As required, excess water would be removed using a squeegee or alternative non-abrasive to avoid streaking; and
- As far as practicable, no cleaning would be carried out on hot and sunny days; as water would evaporate quickly off hot panels, leaving streaks and residue that could affect panel efficiency. In addition, cleaning would not be undertaken on windy days to avoid potential spray drift, particularly where a jet hose is proposed or required.

Without the implementation of good practice measures and mitigation techniques to control surface water runoff, potential operational impacts may include:

- Disturbance resulting from vehicle movements associated with maintenance activities that could impact flora and fauna utilizing the Site and the adjacent Dearne Valley SSSI; and,
- Surface water run off from the washing of the Proposed Development's PV panels impacting water quality of the underlying aquifer, Bulling Dike, and downstream habitats associated with the Dearne Valley SSSI.

Potential operational effects from these activities would be temporary in nature, reversible and occur infrequently. Given the duration and frequency, combined with the small scale of the Proposed Development, the magnitude of any operational effects without mitigation is expected to be negligible on receptors of high sensitivity, resulting in an overall **not significant** effect.

Good Practice Measures

The following good practice measures will be implemented to further mitigate any potential effects that may occur due the Proposed Development's maintenance during operations:

- Upon arrival at the Site, vehicle parking and movements associated with cleaning activities would be restricted to the Proposed Access Road, and other accessible grassland areas within the compound fence for the Site. No access within or immediately adjoining the Bulling Dike would be required;
- The Site will employ surface water management techniques to control runoff based on Rural Sustainable Drainage Systems⁷ (RSuDS). Vegetation between and surrounding the solar panel arrays will attenuate surface water runoff associated with the washing of the PV panels, limiting possible surface water runoff that could migrate into the Bulling Dike and associated downstream habitats from solar panel arrays⁸. This vegetation would also minimise any infiltration of surface water runoff into the underlying aquifer;
- Sustainable drainage measures will also include the use of permeable materials such as Type 2 aggregate for access tracks, alongside swales with vegetated channels will be

⁷ Environment Agency: [Rural sustainable drainage systems](#).

⁸ Wombwell WWTW Solar Array: Outline Construction Environmental Management Plan.

preferred. These features are designed to intercept, filter, convey, and promote infiltration of surface water runoff. Combined with the vegetation between and surrounding the solar panel arrays, these RSuDS components will reduce sediment and pollutant loads before water re-enters the natural drainage system;

- Clean, sediment free water would be used and in minimal quantities;
- Detergents will not be utilised during maintenance activities; and
- A distance of at least 10 m will be maintained between Bulling Dike and any washing activities at all times.

Despite the high groundwater vulnerability and sensitivity of surface water receptors and their downstream habitats, the temporary nature of the panel washing and implementation of surface water management techniques, combined with the use of biodegradable and phosphate-free cleaning agents, significantly reduces the likelihood of any contaminants reaching the groundwater and surface water receptors.

Biodiversity Enhancement Measures

In the interests of securing positive net gains for biodiversity, the Proposed Development includes biodiversity enhancement measures to improve the ecological value of habitats within the Site. These measures have been designed to increase the diversity and functionality of existing habitats to benefit local biodiversity, including local pollinator species.

Ecology Context

The EcIA of the Proposed Development concluded the Site was dominated by modified grassland that were not considered to be representative of any protected or priority habitat. Loss of habitats that are common and widespread across the local area would be largely temporary, with permanent loss limited to the access track, individual footings for perimeter fencing and individual foundations for the solar array (i.e, concrete, ballast, ground screw). As such, modified grassland would be retained following post-construction reinstatement.

Management Considerations

There is potential for uncontrolled vegetation to obstruct access to operational assets, hinder visual inspections and associated repairs; and could also present trip hazards to site operatives undertaking routine maintenance at the Site. Therefore, all vegetation within a 2 m strip of solar PV modules, transformers and access track (as well as accessible areas between panels) will be maintained as *short grassland habitat*.

In addition, vegetation between PV modules and perimeter fencing along western and southern extent of the Site will be maintained as short vegetation to enable safe access/egress of requisite vehicles and equipment associated with operational activities.

Vegetation cutting in the areas described above will be undertaken by the Applicant's appointed landscaping professional using appropriate hand tools (e.g. strimmer or brush cutter). Vegetation cutting will be undertaken approximately 2–3 times per year, most likely between mid-March and mid-October inclusive. The frequency and timing of any additional vegetation cutting by the Applicant's appointed landscaping professional will be informed by routine maintenance inspections.

Rationale to Biodiversity Enhancements

The principal aim of biodiversity enhancements is to create an open grassland mosaic containing perennial *wildflower-rich habitat* supported by areas of short vegetation and (where practicable) locally bare ground to provide features that will benefit local biodiversity and pollinator species (e.g. bumblebees).

The *wildflower-rich habitat* will be formed using Emorsgate EM2F Standard General Purpose Wild Flowers (see

Table 1); and supplemented with additional yellow rattle. Wildflower only seed mixes are considered suitable as they comprise native species associated with traditional meadows and grassland habitats across a wide range of soil types, including those connected with existing habitats and neutral ground conditions within the Site. In addition, wildflower only seed mixes will seek to reduce the overall prevalence of grass species; and promote a more species-rich and diverse vegetation structure. Based on stock availability, any alternative seed mixes must be agreed with the Applicant's appointed ecology advisor who will confirm its suitability for delivering *wildflower-rich habitat*.

TABLE 1 EM2F STANDARD GENERAL PURPOSE WILD FLOWERS

Common name	Scientific name	Composition	Application Rate
Betony	<i>Betonica officinalis</i>	5.0 %	1.5 g/m ²
Common Knapweed	<i>Centurea nigra</i>	15.0 %	
Wild Carrot	<i>Daucus carota</i>	10.0 %	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	10.0 %	
Ribwort Plantain	<i>Plantago lanceolata</i>	10.0 %	
Salad Burnet	<i>Poterium sanguisorba ssp sanguisorba</i>	8.0 %	
Selfheal	<i>Prunella vulgaris</i>	8.0 %	
Yellow Rattle	<i>Rhinanthus minor</i>	2.0 %	
Meadow Buttercup	<i>Ranunculus acris</i>	8.0 %	
Red Campion	<i>Silene dioica</i>	4.0 %	
Hedge Bedstraw	<i>Galium album</i>	3.0 %	
Meadow Crane's-bill	<i>Geranium pratense</i>	3.0 %	
Cowslip	<i>Primula veris</i>	7.0 %	
Bulbous Buttercup	<i>Ranunculus bulbosus</i>	2.0 %	
Bladder Campion	<i>Silene vulgaris</i>	5.0 %	

EM2F to be supplemented with an additional 100 % cover of yellow rattle with an application rate of 0.5 g/m².

The Proposed Development includes a stand-off of approximately 4 m between PV modules and perimeter fencing. Therefore, an approximate 65 m long x 2 m wide corridor along the south-eastern extent of the Site will be created and managed as *wildflower-rich habitat*; as shown on Figure 1 – Wombwell WwTW Solar: Biodiversity Enhancement Plan.

Based on an application rate of 1.5 g/m², approximately 200 g of EM2F seed mix is required to achieve effective coverage of the *wildflower-rich habitat*. In addition, approximately 65 g of yellow rattle is required to supplement EM2F, based on an application rate of 0.5 g/m². Seed mixes will be applied concurrently by the Applicant's appointed landscaping professional and in accordance with the seed merchant's recommendations:

- Prepare the ground for sowing in late summer by cutting and/or grazing very hard and create gaps either with harrows or by raking (aiming to create around 50 % bare soil). Existing perennial weeds such as docks or thistles should be controlled in accordance with good horticultural practice;
- Seed mix will be sown in the autumn or in the spring; and bulked up with an inert carrier (e.g. sand) to make distribution easier. The seed must be surface sown and can be applied by machine or broadcast by hand. Rolling is not usually necessary; and
- 100% wild flower mixtures are best sown into existing grass or combined with a suitable grass seed mix. If they are sown without grass onto bare soil, the spaces left between the flowers will be filled by grasses and other weeds.

The ongoing management of habitats within the Site will be incorporated into the Applicant's Landscape Management Plan (LMP) in order to maintain biodiversity enhancements throughout the operational life of the Proposed Development. The *wildflower-rich habitat* will be demarcated with appropriate signage in order to avoid any incidental loss of vegetation during or after habitat creation and enhancement works.

Management of Biodiversity Enhancements

Newly created *wildflower-rich habitat* will require ongoing monitoring and/or management to prevent encroachment of coarse grass species and scrub so that biodiversity enhancements within the Site are maintained:

- Pernicious weeds will be removed from the *wildflower-rich habitat*. This will comprise two separate visits per year for the first three years after habitat creation/enhancement works are completed. It is recommended that first annual visit is completed before mid-April; followed by a second visit in June. Pernicious weeds will be hand-pulled and removed from the Site for disposal; and
- Small areas of bare ground will be maintained in the *wildflower-rich habitat* to create discrete basking habitat features. This will comprise annual scraping back of surface vegetation/material using hand tools to instigate succession from bare ground, in order to replicate natural processes typically created by grazing animals. The location of scrapes will be determined once vegetation has established (i.e. average vegetation height exceeds 150 mm). It is anticipated that scrapes will target small units (as opposed to a single block) of sparse vegetation to create a scalloped edge along the *wildflower-rich habitat*. Scrapes will not exceed more than 10 % (or 13 m²) of the *wildflower-rich habitat* within a single year and will target the reinstatement of scrapes created in previous years. No scrapes are proposed within the first year of habitat creation/enhancement work whilst vegetation establishes in the *wildflower-rich habitat*; and then every two years until otherwise advised by the Applicant's appointed ecology advisor.

Monitoring of Biodiversity Enhancements

The Applicant's appointed ecology advisor will undertake an annual inspection of *wildflower-rich habitat* to record vegetation height, pernicious weeds and prevalence of scrapes; and to advise on the frequency and timing of future management works.

CONCLUSIONS

With the implementation of the good practice and biodiversity enhancement measures outlined in this document, periodic cleaning of the PV system and vehicle movements associated with these maintenance activities presents a low risk of pollution to the water environment and/or downstream habitats within the Dearne Valley Wetlands SSSI; and any effects would be temporary, reversible of negligible magnitude and **not significant**.



Andrew Bell
Principal Biodiversity Specialist



Peter Rodgers
Partner