



Appendix 3.11

Ecology Technical Note (July, 2022)

BARRY BIOMASS FACILITY

Technical Note: Ecology

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1.0 Introduction

This technical note is written with regard to the ecological considerations of the constructed biomass energy plant off Woodham Road, Barry, South Wales (the 'Development'). SLR has been retained by Biomass UK No.2 Limited (the Appellant in relation to a forthcoming enforcement planning appeal) to review the available information on Ecology matters in relation to the Development. The aim of this technical note is to review the available evidence and consider whether any significant effects are expected from the construction and operation of the Development with regard to ecology.

1.1 Description of Development

The Development is a renewable energy generation facility (Barry Biomass Facility) which has been designed to recover energy from pre-prepared mixed waste wood feedstocks using gasification. The gasification facility is an Advance Thermal Treatment process that produces a combustible synthesis gas, which is then used to raise steam and generate electricity through a steam cycle turbine generation.

Construction of the Development commenced in 2016 and the plant has been built but at the time of writing was not operational.

1.2 Location and Surrounding Area

The site of the Development (herein referred to as 'the Site') is located off Woodham Road, Barry Docks, Barry, approximately 9 miles southwest of Cardiff (NGR: ST 12589 67720). The Site is approximately 1.07ha in area and is entirely comprised of urban environments; developed ground with sealed surfaces and made up with plant machinery and buildings.

The Site is bounded by Ffordd y Mileniwm to the north, David Davies Road to the east, further industrial land and units off Woodham Road to the west, and Barry Docks/The Bristol Channel to the south.

The Site is shown on the aerial photograph in Figure 1-1 and includes the land outlined in red and blue.

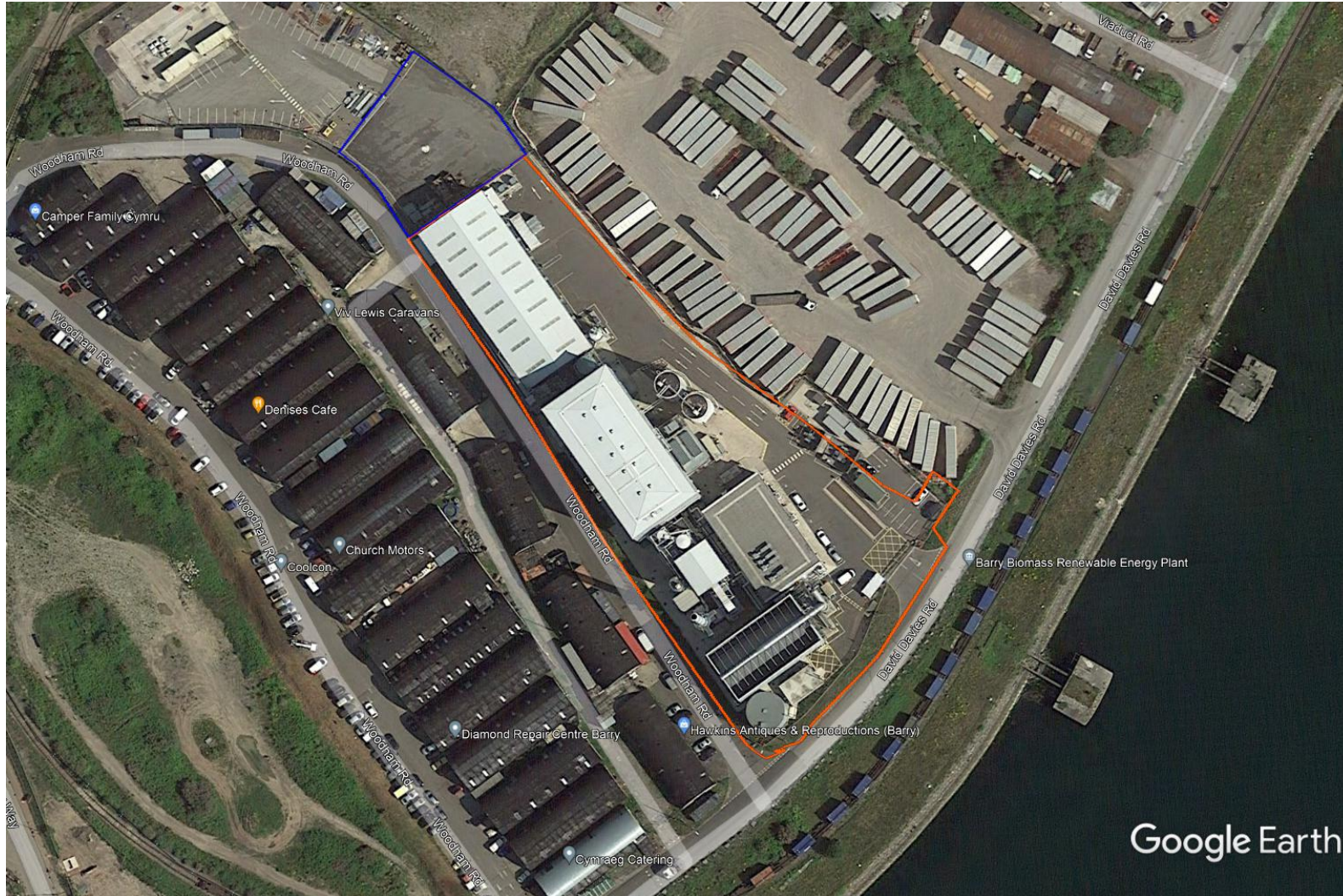


Figure 1-1: Aerial Photograph of the Site

2.0 Reports Reviewed

This note has been informed by a review of the following reports:

- Renewable Energy Plant at Woodham Rd. Barry Ecological Assessment Prepared for Sunrise Renewables (Barry) Ltd (November 2014);
- Chapter 8: Noise and Vibration and Chapter 9: Air Quality of the July 2022 ES;
- Natural Resources Wales (2018). Biomass UK No.2 Limited Barry Energy Production Facility, Environmental Permit Decision Document;
- Sol Environmental (2021). Voluntary Retrospective Environmental Statement, Volume 1 – Main Text, and;
- WSP (2019). Barry Biomass Facility, Environmental Statement Adequacy Report.

These reports have been considered in relation to Ecology, to help identify any potential ecological effects associated with construction and operation of the Development. These reports have therefore been used to inform this assessment, and solidify the conclusions made within it.

3.0 Ecology

3.1 Introduction

The ecological status of the Site and surrounding area has been ascertained, in part, by a desktop study carried out by SLR in April 2022, using data from South Wales Biodiversity Records Centre (SEWBRc). This desktop study provided information pertaining to protected species of fauna and flora, priority habitats and designated sites within a 2km radius of the Site. The SEWBRc desktop study was supplemented with a search using DEFRA's Multi-Agency Geographic Information for the Countryside (MAGIC) to identify further designated sites within a broader 15km radius of the Site.

Once identified, existing designations and ecologically important features were considered as ecological receptors for an array of environmental modelling, including; air quality, noise disturbance, hydrology (including flood risk and surface water runoff), and visual disturbance. These are deemed to be the relevant potential causes of negative impacts from the Development (beginning facility operations). Construction of the Site has already been completed, which means that disturbances to fauna and flora due to physical construction within and around the Site boundary are not a concern within this assessment. Moreover, chapter 5 of the ES provides details of the Development, including the structures which have been erected. Upon assessment, these are not deemed to have constituted significant negative effects on local ecological receptors (sites, species etc.), as prior to the Development, the Site was urban waste area with minimal ecological value.¹

Sections 3.2 and 3.3 detail the ecological baseline of the Site.

3.2 Existing Designations

Table 1-1 details all of the designated sites (statutory and non-statutory) which are present within 15km of the Site.

Table 1-1: Designated Sites Within 15km of the Site

Site Name	Statutory?	Designation	Distance From Site/km
Barry Island	YES	Site of Special Scientific Interest	1.25
Cadoxton Ponds	NO	Wildlife Trust Reserve	0.75
Cadoxton River	NO	Site of Importance for Nature Conservation	0.77
Cadoxton Wetlands	NO	Site of Importance for Nature Conservation	0.76
Cardiff Beech Woods	YES	Special Area of Conservation	14
Fields at Merthyr Dyfan	NO	Site of Importance for Nature Conservation	1.76

¹ Entran (2022). Environmental Statement. Chapter 5.

Site Name	Statutory?	Designation	Distance From Site/km
Gladstone Road Pond	NO	Site of Importance for Nature Conservation	1.10
Hayes Point to Bendrick Rock	YES	Site of Special Scientific Interest	0.75
Nells Point East	NO	Site of Importance for Nature Conservation	1.10
North of North Road	NO	Site of Importance for Nature Conservation	1.96
Severn Estuary	YES	Ramsar	3.9
Severn Estuary	YES	Special Area of Conservation	6
Severn Estuary	YES	Special Protection Area	3.9
Friar's Point	NO	Site of Importance for Nature Conservation	2.2

3.3 Ecologically Important Features

3.3.1 Priority Habitat

The SEWBReC data search identified two connected areas of restored ancient woodland approximately 1.5km southeast of the Site. There is no ancient woodland or any other priority habitat within the Site.

3.3.2 Fauna

The SEWBReC data search identified no records of protected species of fauna within the Site boundary. Six records of amphibian and reptile were identified within the broader Barry docks area; common frog (*Rana temporaria*), common lizard (*Zootoca vivipara*), common toad (*Bufo bufo*), slow worm (*Anguis fragilis*) and, smooth newt (*Lissotriton vulgaris*).

3.3.3 Flora

The SEWBReC data search identified no records of protected species of flora within the Site boundary.

Rough Marsh-mallow

The SEWBReC data search identified records of rough marsh-mallow, approximately 1km northeast of the Site, the most recent of which being from 1991. A survey to identify presence of this flower within the Site boundary was undertaken in January 2009, in order to inform the 2010 Environmental Statement for the Site². However, this survey was insufficient as January is outside of the flowering season for rough marsh-mallow, which flowers in mid-summer³. Moreover, a secondary walkover survey for rough marsh-mallow was undertaken by Power

² WSP (2019). Barry Biomass Facility. Environmental Statement Adequacy Report.

³ Rose, F. (2006) The Wild Flower Key

Consulting Midlands Ltd. on 21st November 2014. The subsequent report concluded that it was not possible to rule out the presence of rough marsh-mallow on Site, due to the time of year the survey was undertaken.⁴

Rough marsh-mallow is listed on Schedule 8 of the Wildlife and Countryside Act, which means it is an offense to pick, uproot, or destroy it. It is a rare plant, but considered a recent colonist from continental Europe, its native range is E. Central Europe to Mediterranean and Turkmenistan⁵.

The current presence of rough marsh-mallow on Site is unconfirmed. The preferred habitat of rough marsh-mallow is grassland on chalky soils, but it can also occur on waste ground. Furthermore, the seed requires disturbance for germination, which means it is possible that rough marsh-mallow could be present on Site.⁶

4.0 Likelihood of Adverse Effects from The Development

4.1 Designations & Priority Habitat

The air quality assessment which was carried out by Entran Ltd. for the 2022 ES (Chapter 9: Air Quality) concluded that predicted impacts of the Development on Nitrogen Oxides (NO_x), Sulphur Dioxide (SO₂), Ammonia (NH₃) and Hydrofluoric Acid (HF) concentrations at all designated sites (as well as priority habitat) are insignificant in accordance with the Environment Agency screening criteria⁷.

One receptor (Cadoxton River SINC) required further screening as the NO_x concentration at the daily mean level was 10.9% of the critical level (0.9% over the threshold for further screening). The SEWBReC data was used to identify species present within Cadoxton River SINC. Cross referencing these species for their nitrogen sensitivity (Using Air Pollution Information System (APIS)) showed that no species present in the designated area are at significant risk of adverse effects from the predicted daily mean concentration of NO_x. The likelihood of adverse effects on ecological receptors from the development with regard to air quality is deemed to be insignificant.

Noise and visual disturbances from the Development were considered in relation to the designated sites specifically the Severn Estuary Ramsar and SPA. The Severn Estuary Ramsar and SPA are designated due to their importance for water bird populations. The operation of the Development is not predicted to be loud enough to surpass any disturbance thresholds for species of water birds (~60-85dB) or visually disturbing, which when paired with the distance of said receptors from the Site (3.9km), means that visual and noise disturbances from the operational Development are considered likely to be insignificant. This conclusion has been corroborated by Sol Acoustics Ltd., who scoped out ecological receptors from their noise impact assessment of the Development based on the distance of the ecological receptors from the Site.⁸

With regards to flooding, the SLR Flood Risk and Drainage Technical Note (July 2022) which is appended to the ES has shown that across the 25-year lifetime of the facility (up to 2047), the Site would remain free from flooding for the 1% annual exceedance probability (AEP) tidal flood. The Development would be inundated to a depth of approximately 0.2m for the 0.1% AEP flood. However, this would not affect the wood storage hall, only the process buildings closer to the Site entrance, and therefore means that flooding and any surface runoff as a result of flooding are not considered to pose a likely significant effect to the European designated sites. There is also predicted to be no significant effects from the operation of the Development on water runoff and water quality issues in the surrounding environment, as the existing attenuation and drainage systems have been deemed adequate to deal with additional runoff.⁹

⁴ Power Consulting Midlands Ltd. (2014). Renewable Energy Plant at Woodham Rd. Barry Ecological Assessment Prepared for Sunrise Renewables (Barry) Ltd

⁵ <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:561909-1#distribution-map>

⁶ [Online Atlas of the British and Irish Flora \(brc.ac.uk\)](https://www.brc.ac.uk/) (2022).

⁷ Entran (2022). Environmental Statement. Chapter 9.

⁸ Entran, Sol Acoustics Ltd. (2022). Environmental Statement. Chapter 7.

⁹ SLR (2022). Barry Biomass Plant. Technical Note: Flood Risk and Drainage.

Further information on the screening process, including specific information pertaining to the European designated sites, can be found within a Habitats Regulations Assessment (HRA) screening report which is submitted alongside this Environmental Statement¹⁰.

4.1.1 Environmental Permit

An Environmental Permit was granted by NRW for the Development in 2018. Under the requirements of this Permit, emission limit values have been stipulated, all process plant controls will ensure that the plant operates within the consented limits at all times (i.e. will not be subject to uncontrolled emissions releases). Pollution incident prevention and control procedures will also apply to the developed Site.

Planning permission (granted in 2015) and an Environmental Permit (granted in 2018) is already in place at the Site. As part of the 2015 Permission and Permit decision processes, National Resources Wales (NRW) considered the findings of air quality assessments provided by the applicant. Specialists within NRW agreed with the assessment's conclusions, i.e. that there would be no likely significant effect on the interest feature(s) of the following protected site(s). These findings are detailed in Section 5.4 of the NRW Permit Decision Notice (February 2018).

The following European protected sites (i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar) located within 10km of the Installation:

- Severn Estuary SAC (England and Wales)
- Severn Estuary SPA / Ramsar (Wales)

The following Sites of Special Scientific Interest located within 2km of the Installation:

- Barry Island
- Hayes Point to Bendrick Rock

The following non-statutory Local Wildlife Sites (LWS), National Nature Reserves (NNR), Local Nature Reserves (LNR) and Ancient Woodlands located within 2km of the Installation:

- Cadoxton River LWS
- Cadoxton Wetlands LWS
- Fields at Merthyr Dyfan LWS
- Nell's Point East LWS
- 2 x Restored Ancient Woodlands

4.2 Fauna

The absence of historical records of protected species of fauna from within the Site boundary, paired with the lack of optimal habitat available on site significantly reduces the likelihood of protected species existing within the Site boundary. Moreover, the lack of potential disturbance associated with the operation of the Development further reduces the risk of adverse effects from the development on any protected species of fauna which may be present within the Site.

Therefore, there is not considered to be a likelihood of significant effects from the Development to surrounding fauna.

¹⁰ SLR (2022). Barry Biomass Facility. Habitats Regulations Assessment.

4.3 Flora

Rough marsh-mallow is the only significant floral species that must be considered in relation to this Development. Its presence on Site is possible, but unconfirmed. Whilst it is important to ascertain whether or not rough marsh-mallow is present, operation of the Development is unlikely to pose significant adverse effects to rough marsh-mallow – provided it's hypothetical presence can be confirmed and then measures put in place to prevent damage to or uprooting of any flowers within the site boundary.

4.3.1 Requirement for Further Survey

We recommend a walkover survey be undertaken in the appropriate season (mid-summer), to confirm whether or not rough-marshmallow is present on site.

5.0 Conclusions

In conclusion, there is minimal likelihood that the operation of the Development will have significant negative effects, with regard to designated site, flora, or fauna. This is corroborated by the evidence from the SEWBRc data search, the environmental modelling from Entran, Sol Acoustics and SLR, the context of the Site holding minimal ecological value itself, and the development causing minimal disturbance.

Provided that the walkover survey for rough marsh-mallow is undertaken in an appropriate season, and the results of said survey are considered when beginning plant operations, then the requirement for an Ecological Assessment can be scoped out of the Environmental Statement.

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