The Planning Inspectorate
Yr Arolygiaeth Gynllunio

Adroddiad

Gwrandawiadau a gynhaliwyd ar 23-26/03/21 a 29/06/21

Ymweliad â safle a wnaed ar 24/06/21

gan Alwyn B Nixon BSc MRTPI

Arolygydd a benodir gan Weinidogion Cymru

Dyddiad: 18.08.2021

Report

Hearings held on 23-26/03/21 & 29/06/21

Site visit made on 24/06/21

by Alwyn B Nixon BSc MRTPI

an Inspector appointed by the Welsh Ministers

Date: 18.08.2021

TOWN AND COUNTRY PLANNING ACT 1990

SECTION 62D

The Developments of National Significance (Wales) Regulations 2016

Application by Môr Hafren Bio Power Limited

Land off Newlands Road, Cardiff CF3 2EU

Cyf ffeil/File ref: DNS/3236340

Abbreviations used in this report:

AA	Appropriate Assessment
AQA	Air Quality Assessment
BAT	Best Available Techniques
BPM	Best Practical Means
CC	Cardiff Council
CEMP	Construction Environmental Management Plan
DAM	Development Advice Map
DNS	Development of National Significance
EfW	Energy from Waste
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
ERF	Energy Recovery Facility
ES	Environmental Statement
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
LDP	Local Development Plan
LEMP	Landscape Ecological Management Plan
LPA	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment
NOX	Nitrogen Oxide
NRW	Natural Resources Wales
PC	Process Contribution
PEC	Predicted Environmental Concentration
PPW	Planning Policy Wales
RAMSAR	The RAMSAR Convention on Wetlands
SAB	SuDS Approval Body
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

SuDS	Sustainable Drainage Scheme
S106	Section 106 undertaking
TAN	Technical Advice Note
'The 1990 Act'	The Town and Country Planning Act 1990 (as amended)
"The CIM Sector Plan"	The Collections, Infrastructure and Markets Sector Plan (2012)
'The 2015 Act'	The Planning (Wales) Act 2015
'The DNS Regulations'	The Developments of National Significance (Wales) Regulations 2016
'The EIA Regulations'	The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017
'The Habitats Regulations'	The Conservation of Habitats and Species Regulations 2010
"The Strategic Assessment"	Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales (Welsh Government, March 2021)
'The Procedure Order'	The Developments of National Significance (Procedure) (Wales) Order 2016
'The Secondary Consents Regulations'	The Developments of National Significance (Specified Criteria and Secondary Consents (Wales) Regulations 2016
WFGA	Well-being of Future Generations Act (Wales) 2015
WG	Welsh Government
WMs	Welsh Ministers

Contents

DNS Application Ref: DNS/3236340

Site address: Land off Newlands Road, Cardiff CF3 2EU

- The application, dated 4 September 2020, is made under section 62D of the Town and Country Planning Act 1990 (as amended by the Planning (Wales) Act 2015).
- The applicant is Môr Hafren Bio Power Limited.
- The application was confirmed as valid on 16 October 2021.
- Hearings were held on 23, 24, 25 7 26 March 2021 and on 29 June 2021.
- An unaccompanied inspection of the site and the surrounding area was carried out on 24 June 2021.
- The development proposed is the construction and operation of an Energy Recovery Facility (ERF), including the formation of a new access onto Newlands Road and ancillary infrastructure.
- No secondary consent applications are made with the application.

Summary of Recommendation: That planning permission be refused.

Procedural Matters

1. The proposal is Environmental Impact Assessment (EIA) development within the meaning of Schedule 1 to the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 ("the EIA Regulations"). Before submitting the application, the Applicant submitted an EIA Scoping Report. In response the Planning Inspectorate issuedan EIA Scoping Direction dated 25 October 2019 setting out, amongst other things, the scope and level of information on the various environmental topics to be provided in the Applicant's Environmental Statement (ES).

2. The application includes the ES, based on the submitted development details. The Planning Inspectorate's letter of 16 October 2020 confirmed that the ES was considered to meet the minimum requirements of the EIA Regulations.

3. On confirmation of the validity of the application, PINS Wales undertook the specified consultation and publicity measures as required by the relevant procedure order. Approximately 250 representations were received by the 27 November 2020 deadline. Cardiff Council (CC) submitted its Local Impact Report (LIR) on 4 December 2020.

4. On scrutiny of the application, consultation responses and representations I decided that further information was required for the application's implications to be fully assessed. Some of these matters involved further assessment of material contained in the ES. The Planning Inspectorate's letter in December 2020 notified the Applicant that further information was required under Regulation 24 of the EIA Regulations and Regulation 15(2) of the Developments of National Significance (Wales) Regulations 2016 ("the DNS Regulations"). To allow the Applicant to produce the information required and for the additional information to be publicised and opportunity given for representations on the new material the examination process was suspended for a period of 12 weeks. Three further representations were received concerning the further information submitted by the Applicant.

5. The letter also gave notice that hearings would be held to examine certain aspects of the proposal. Hearing sessions were held on 23, 24, 25 and 26 March 2021, covering the following topic areas: Strategic/policy considerations (including justification/need for the proposal); Effects on sensitive human receptor locations (including emissions to air, noise/vibration, landscape and visual impact); Ecological issues; Conditions and associated matters should the development proceed.

6. On 2 March 2021 the Welsh Government published "Beyond Recycling *A strategy to make the circular economy in Wales a reality*". This was followed on 24 March 2021 by the publication of "Strategic assessment for the future need for energy from waste capacity inthe three economic regions of Wales" ("the Strategic Assessment"). The Strategic Assessment confirms the Welsh Government's announcement of a moratorium on any future large scale (+10MW) energy from waste developments. It also updates and replaces the residual waste arisings estimates and forecast scenarios in the 2012 CIM Sector Plan, which TAN(Technical Advice Note)21 *Waste* advises should be used in assessing the level of need for energy from waste facilities and the extent of any capacitygap.

7. In the light of the above a revised Waste Planning Assessment was required from the Applicant. Following scrutiny of ecological matters at hearing session 3, further information was also required concerning dormouse habitat and the bat roosting potential of trees proposed for removal. This information was provided in the form of a further addendum to the ES. The examination process was suspended for a further 9 weeks to enable the further information to be provided and publicised. Five further responses were received concerning the additional information.

8. A final hearing session was held on 29 June 2021, at which the revised Waste Planning Assessment and the additional ecological information were scrutinised.

9. Due to the site's proximity to European designated sites the need for Habitats Regulations Assessment (HRA) has been considered and is addressed later in this report.

10. I carried out an unaccompanied inspection of the site, its surroundings and the wider locality, including locations and features referred to in the written and oral submissions, on 24 June 2021.

The Proposed Development

11. The proposed development comprises an Energy Recovery Facility (ERF), fuelled mainlyby commercial and industrial residual waste (i.e. non-inert waste remaining post- treatment and destined for landfill). The proposed ERF would process up to 200,000 tonnes of waste per annum, generating around 15MW of electricity (equivalent to the requirement of around 30,000 houses) that would be exported to the local electricity network. The ERF would be a recovery operation under the Waste Framework Directive[1]and is designed to achieve R1 Recovery Status with the ability to export heat as well aselectricity.

12. The proposed ERF would use a moving grate technology with a steam raising heat recovery boiler. Steam would drive a condensing steam turbine generator set with turbinepass out steam capable of being used to provide heat to the site and a wider heat network. The proposed ERF would have an output rating of 15MW electrical. The facility would operate continuously, 24 hours per day, with an approximate average of 8,000 hours of operation per year, being offline for approximately 10% of the year for maintenance purposes. Feedstock deliveries would take place within the hours of 07:00-18:00 Monday – Friday and 07:00-13:00 Saturday. The construction phase of the facility would last for about 36 months, following which the lifespan of the operational plant is expected to be approximately 25 years.

[1] Directive 2008/98/EC on waste

13. The proposed site layout is shown on Drawing PL101 Revision A, Site Layout (Document12). The principal components of the ERF comprise:

    - The waste reception hall;
    - The tipping bunker;
    - Ash offloading area;
    - Boiler house;
    - Turbine hall;
    - Air-cooled condensers;
    - Stack;
    - Flue gas treatment plant;
    - Residue silos;
    - Firewater tanks;
    - Pump house;
    - Fuel oil tanks;
    - Administration building.

14. The heights of the key components of the built development would be:

    - Turbine: 20m
    - Air-cooled Condensers: 20.74m
    - Waste Bunker: 37.5m
    - Boiler Parapet: 46.45m
    - Stack: 70m

15. From surrounding vantage points the built form of the ERF would appear as a large building composed primarily of integrated externally-clad rectangular blocks of varying dimensions. The largest parts of the building would be the boiler house (46.45m in height) and adjacent waste storage bunker (37.5m). The emissions stack would be a slender stack 70m in height, positioned adjacent to the boiler house. The cladding designwould incorporate a palette of colours and fractured panels, taking an angular form, to break up the overall massing of the building and blend with the predominant colour palette of its surroundings[2].

16. A new access is proposed onto Newlands Road, an adopted local access road within an existing area of mixed employment uses, from the southern corner of the site. All HGVs will access the site from this proposed new access. The existing access, which connects toNewlands Road via a short length of service road, will also remain in use. 14 car parking spaces (including 2 accessible spaces) and 10 cycle stands (20 spaces), would be provided within the site. 2.4m palisade security fencing would be erected around the site boundaries.

[2] See Document 8 Design and Access Statement

17. The footprint of the proposed ERF and its associated hard surfaced areas would take upmost of the available land, with peripheral landscaping/habitat/tree retention.

18. Construction is expected to take around 36 months (maximum). The constructionprogramme is anticipated to comprise the following key phases:

    - Phase 1 – Ground preparation/earthworks
    - Phase 2 – Site drainage installation
    - Phase 3 - Road surfacing
    - Phase 4 – Concreting / foundations and piling
    - Phase 5 - Steel erection
    - Phase 6 – Roof and building sheeting

    Construction would take place wholly in accordance with a Construction and Environmental Management Plan (CEMP). Construction activities would take place 07:00 – 18:00 hours Mondays to Friday and 07:00-13:00 hours on Saturdays. No external construction would take place on Sundays and Bank Holidays.

The Site, Surroundings and Planning History

19. The site lies about 6 km to the north-east of Cardiff city centre, on the outskirts of the urban area and on the edge of the Gwent levels. The residential area of Trowbridge lies approximately 0.5 km to the north of the site; the suburb of Rumney lies about 1.5 km tothe west. The Shirenewton residential caravan park lies around 0.4 km south-east of the site, off the B4239 Wentloog Avenue; a single residential dwelling, Newlands Farm, is located around 120m south-east of the site boundary.

20. The development site is a roughly rectangular 1.67 ha brownfield plot, located within an area of employment uses. The site is broadly flat, with low bunding to its eastern and southern perimeters and a tree/scrub-lined ditch along the western boundary. The main body of the site comprises semi-improved grassland degraded by intensive horse grazing,with areas of bramble and scrub towards its margins.

21. Planning permission was granted in November 2009 for the construction of an integrated waste management facility on the site incorporating autoclave technology, materials recycling, thermal treatment and combined heat and power generation, ancillary offices and weighbridge office, and associated roads, car parking and landscaping (reference 09/00246/E). The facility had a permitted throughput of 200,000 tonnes per annum; the thermal treatment and combined heat and power element had a feedstock capacity of around 110,000 tonnes.

22. An application to vary Condition 1 of the above consent, to allow the time period for commencement to be extended, was approved on 30 April 2015 (reference 14/02521/MJR). However, this permission, together with the parent permission for a waste management facility, expired on 30 April 2020.

23. The site is bounded to the north by the South Wales – London mainline railway. North ofthe railway, undeveloped land separates the site from the residential neighbourhoods tothe north and west. To the west the site is adjoined by Seren Stiwdios Wales (formerly Pinewood Studios Wales); to the south and east are other premises within the WentloogCorporate Park industrial/employment area

24. The site is located within Flood Zone C1 on the NRW Development Advice Maps (i.e.

within an area served by significant infrastructure, including flood defences). The site andthe surrounding area lies within the Gwent Levels (Rumney & Peterstone) Site of Special Scientific Interest (SSSI) and is close to the European Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar ecological designations associated withthe Severn Estuary. The site also lies within an Archaeologically Sensitive Area and is on the edge of the Gwent levels Landscape of Historic Interest. The Hendre Road Site of Importance for Nature Conservation (SINC) lies immediately north of the application site beyond the railway line; other SINCs are also present within the surrounding locality.

Local Planning Policy

Cardiff Local Development Plan

25. The Cardiff Local Development Plan 2006-2026 (LDP) was adopted in January 2016. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning applications must be determined in accordance with the Development Plan unless material considerations indicate otherwise.

26. The site is located within an allocated employment area (EC1.4). Under LDP policy EC1 employment area EC1.4 is protected for Use Class B1, B2 and B8 employment generating uses. The LDP also has two relevant waste-related policies, Policy KP12 and Policy W1. Policy KP12 is a strategic level policy which states:

    Waste arisings from Cardiff will be managed by:
    i. Promoting and supporting additional sustainable waste management facilities, measures and strategies in accordance with the Collections, Infrastructure and Markets Sector Plan (2012) and TAN 21 (2014) in a manner that follows the waste hierarchy and the principles of an integrated and adequate network of waste installations; nearest appropriate installation; self-sufficiency and protection of human health and the environment;
    ii. Encouraging the provision of in-building treatment facilities on existing and allocated areas of general industry;
    iii. Supporting the provision and maintenance of sustainable waste management storage and collection arrangements in all appropriate new developments; and
    iv. Supporting waste prevention and reuse and the provision of facilities that use recycled or composted products.

    Parts i and ii are relevant to the proposed ERF.

27. Policy W1 (Sites for Waste Management Facilities) permits proposals for the development of waste management facilities, subject to compliance with the following provisos:

    i. There is a demonstrable need assessed against regional requirements;
    ii. They conform with the waste hierarchy and the principles contained in the Waste Framework Directive of An Integrated and Adequate Network; Nearest Appropriate Installation; Self Sufficiency and Protection of Human Health and the Environment;
    iii. They would not cause unacceptable harm to the environment, built heritage or to human health;
    iv. They include acceptable proposals for restoration, aftercare, and after-use, including the beneficial after-use of by-products;
    v.They would not endanger aviation safety;
    vi. They include acceptable proposals for the protection of adjoining and nearby land from landfill gas and leachate migration or contamination;
    vii. They are not located within an area at risk from flooding;
    viii. They would not cause unacceptable air, noise or light pollution, dust, vibration, or odours, or attract excessive vermin;
    ix. They provide safe means of access to the highway and adequate on-site parking

and turning facilities; and
x. They are accompanied by a Waste Planning Assessment containing sufficient information to enable an assessment of the proposal.

28. The LDP also contains a range of other strategic policies relevant to the consideration of the application. Policy KP5 (Good Quality and Sustainable Design) requires all new development to be of a high quality, sustainable design and make a positive contribution to the creation of distinctive communities, places and spaces, setting out a range of waysin which this will be judged. Policy KP6 (New Infrastructure) requires new development tomake appropriate provision for/contribution towards all essential, enabling and necessaryinfrastructure required as a consequence of the development. Policy KP8 (Sustainable Transport) seeks to ensure that development in Cardiff integrates with transport infrastructure and services, to reduce dependence on car journeys and maximise use of sustainable and active modes of transport. Policy KP15 (Climate Change) seeks development that mitigates against the effects of climate change. It states that development proposals should take into account the following factors:
    i. Reducing carbon emissions;
    ii. Protecting and increasing carbon sinks;
    iii. Adapting to the implications of climate change at both a strategic and detailed design level;
    iv. Promoting energy efficiency and increasing the supply of renewable energy;
    v. Avoiding areas susceptible to flood risk in the first instance in accordance with the sequential approach set out in national guidance; and
    vi. Preventing development that increases flood risk.
    Policy KP16 (Green Infrastructure) aims to ensure that Cardiff's green infrastructure assets are strategically planned and delivered through a green infrastructure network. KP18 (Natural Resources) seeks to ensure that development proposals take full account of the need to minimise impacts on the city's natural resources and to minimise pollution.

29. At the detailed policy level, the LDP contains various other policies which bear on the consideration and assessment of the proposal. These are LDP policies EN3 (Landscape Protection); EN5 (Designated Sites); EN6 (Ecological Networks and Features of Importance for Biodiversity); EN7 (Priority Habitats and Species); EN8 (Trees, Woodlandsand Hedgerows); EN9 (Conservation of the Historic Environment); EN10 (Water SensitiveDesign); EN11 (Protection of Water Resources); EN13 (Air, Noise, Light Pollution and Land Contamination); EN14 (Flood Risk); T1 (Walking and Cycling); T5 (Managing Transport Impacts); T6 (Impact on Transport Networks and Services); C3 (Community Safety/Creating Safe Environments).

Supplementary Planning Guidance (SPG)

30. The Council has also produced supplementary planning guidance (SPG) on a range of topics. SPG does not have the same status as the adopted development plan, but may bea material consideration in the determination of planning applications. The Council considers that the following SPG documents are relevant to the proposal: *Locating WasteManagement Facilities* (January 2017); *Archaeology and Archaeologically Sensitive Areas*(July 2018); *Green Infrastructure (including Ecology & Biodiversity and Trees and Development Technical Advice Notes)* (November 2017); *Managing Transportation Impacts* (July 2018); *Tall Buildings* (January 2017).

National Planning and Waste Policy

Overview

31. National planning policy on waste is set out in Planning Policy Wales Edition 11 (PPW) (February 2021) and Technical Advice Note (TAN) 21 Waste (last updated February 2017). PPW sets out the land use planning policies of the Welsh Government. The primaryobjective of PPW is to ensure that the planning system contributes towards the delivery ofsustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 (WGFA) and other key legislation.

32. PPW, TAN 21, Future Wales and Local Development Plans, Towards Zero Waste and Sector Plans (including the Collections, Infrastructure and Markets Sector Plan), taken as a whole, comprise the overall waste management plan for Wales as required under European law, particularly Articles 1, 4, 13, 16, and 28 of the Waste Framework Directive.

Future Wales: the national plan 2040 (Future Wales)

33. Future Wales was published in February 2021. It comprises part of the development plan(in conjunction with the local development plan for the area concerned). It provides a spatial expression of national planning policy and sets the guiding framework for where large-scale change and nationally important developments will be focussed over the next20 years. It identifies the South East Wales Region (Cardiff, Newport and the Valleys) as a major focus for sustainable growth and the associated locating of essential services andfacilities.

34. Future Wales Policy 19 refers to the intention to develop Strategic Development Plans and the role of these in providing a co-ordinated framework for, amongst other things, the circular economy, including waste treatment and disposal. Policy 9 Resilient Ecological Networks and Green Infrastructure reflects the statutory duty on public authorities in Section 6 of the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity and promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.

Planning Policy Wales Edition 11 (PPW)

35. PPW lays out the planning system's role in facilitating sustainable waste management. It provides a framework for decision making which recognises the social, economic and environmental benefits which can be realised from the management of waste as a resource to meet the needs of society and businesses, whilst at the same time minimising adverse environmental impacts and avoiding risks to human health, protecting areas of designated landscape and nature conservation from inappropriate development, and protecting the amenity of residents, of other land uses and users affected by existing or proposed waste management facilities.

36. Section 5.13 of PPW addresses Sustainable Waste Management Facilities:

> *5.13.1 The planning system has an important role to play in facilitating sustainable waste management by providing a framework for decision making which recognises the social, economic and environmental benefits that can be realised from the management of waste as a resource to meet the needs of society and businesses, whilst at the same time:*
>
> • *minimising adverse environmental impacts and avoiding risks to human health;*
>
> • *protecting areas of designated landscape and nature conservation from inappropriate*

development; and

• protecting the amenity of residents, of other land uses and users affected by existing or proposed waste management facilities.

5.13.2 The benefits which can be derived from proposals for waste management facilities as well as the impact of proposals on the amenity of local people and the natural and built environment must be adequately assessed to determine whether a planning application is acceptable. If adverse impacts on amenity or the environment cannot be mitigated, planning permission should be refused.

37. At paragraphs 5.13.4/5.13.5, PPW states:

5.13.4 The Welsh Government's policy for waste management is contained in Towards Zero Waste and associated sector plans. Planning authorities should, in principle, be supportive of facilities which fit with the aspirations of these documents and in doing so reflect the priority order of the waste hierarchy as far as possible.

5.13.5 The waste hierarchy provides the key starting point for all types of waste management proposals. However, consideration of the hierarchy should be set against the wider social, economic, environmental and cultural factors which are relevant in any given case. Waste prevention and approaches towards encouraging reuse and recycling should be considered at an early stage as part of materials choices and design.

38. PPW affirms at paragraph 5.13.7 that *The Collections, Infrastructure and Markets (CIM) Sector Plan describes the waste management framework to provide the best solutions to meet social, economic and environmental needs to 2050. It indicates a move towards thereduction of disposal and recovery options for treating waste in favour of high-volume source segregated collection followed by reprocessing as well as preparation for re-use and prevention.*

39. In respect of new facilities to manage waste, PPW paragraph 5.13.10 requires planning authorities to: *support the provision and suitable location of a wide ranging and diverse waste infrastructure which includes facilities for the recovery of mixed municipal waste and may include disposal facilities for any residual waste which cannot be dealt with higher up the waste hierarchy. The extent to which a proposal demonstrates a contribution to the waste management objectives, policy, targets and assessments contained in national waste policy will be a material planning consideration.*

TAN 21 Waste

40. Decisions on applications for planning permission for waste facilities must take into account planning guidance TAN 21: Waste. Moving towards the aim of self-sufficiency in waste recovery and disposal through the provision of an integrated and adequate network is a key principle in TAN 21. TAN 21 recognises in order to reach the goal of zero waste, there is a difficult balance to be struck between ensuring sufficient capacity to deal with waste arisings in the short term (to avoid environmental impacts) and doing so in a way which does not impede the achievement of longer term goals post 2024/25 (which include zero waste and net zero carbon for 2050).

41. TAN 21 requires applicants to clearly justify why a proposal is necessary. Where it cannot be clearly demonstrated there is a need for the proposal it may be appropriate for the planning authority to consider refusing planning permission. This is likely to be the case where the level of provision exceeds the upper range identified in the CIM Sector Plan for any given region. Overprovision will only be justified on the basis that the proposal represents a sustainably located facility, demonstrating social, economic and

environmental benefits.

42. In accordance with Article 13 of the Waste Framework Directive (Protection of Human Health and the Environment), TAN 21 advises at paragraph 2.11 that planning authoritiesshould ensure that all types of waste facilities are located where a high level of protectionfor the environment and public health can be ensured. In particular, waste management should be undertaken:

    - without risk to water, air, soil, plants, or animals;
    - without causing a nuisance through noise or odour; and
    - without adversely affecting the countryside or places of special interest.

43. In relation to energy from waste, TAN 21 notes that ŧechnologies such as energy recovering waste incinerators can offer a suitable technique for maximising the social, environmental and economic benefits from the management of residual wastes (that waste remaining after reuse, preparation for reuse and recycling actions has been undertaken). Proposals that incorporate combined heat and power could contribute toward district heating schemes for industry, for commercial developments or for largepublic sector developments such as schools or hospitals, providing these are environmentally acceptable. This makes the recovery of energy more efficient and it would potentially reduce the impact of using primary fuels.

44. TAN 21 notes further that the recovery of energy from waste should be carried out at a high level of energy efficiency. In the case of energy from waste facilities using mixed municipal wastes and residual waste as a feedstock, in order to be classed as a 'recovery operation' these need to meet (as a minimum) the energy recovery efficiencies as definedunder the 'R1 formula' (detailed in Annex 1 to the Waste Framework Directive). The Collections, Infrastructure and Markets Sector Plan provides details on the way in which the efficiency of energy from waste facilities is calculated using the R1 formula. Energy from waste facilities are categorised as recovery installations when their efficiency, as expressed using the R1 formula, is equal to or greater than:

    - 0.60 for installations in operation and permitted in accordance with applicable Community legislation before 1 January 2009 or
    - 0.65 for installations permitted after 31 December 2008.

    Where facilities using municipal waste, or mixed municipal and industrial wastes as a feedstock operate at an R1 efficiency level of <0.6, the operation is classed as a disposal operation for the purpose of the waste hierarchy.

45. TAN 21 indicates that account should be taken of the energy efficiency of any energy from waste proposal, ensuring that any such facility operates, or is capable of operating, at high efficiencies that minimise the environmental impacts and maximise the benefits ofrecovering energy from waste. This will involve consideration of the way in which heat is recovered from the installation. Support is indicated for the development of appropriate energy recovery options for the optimal recovery of energy from residual waste in Wales, including the development of markets for heat output and processed combustion residues, as well as electricity. Combined heat and power, and heat only options, should be considered favourably where they meet high energy efficiencies.

Other Technical Advice Notes

46. Other TANs (including TAN 5 Nature Conservation and Planning; TAN 12 Design; TAN 15 Development and Flood Risk; TAN 18 Transport) contain national policy guidance

relevant to various aspects of the proposal.

Towards Zero Waste (TZW) (June 2010)

47. TZW is an overarching waste strategy document. It sets out a long-term framework forresource efficiency and waste management through to 2050. The strategy incorporatesthe waste hierarchy. It explains that sector plans are the implementation plans for the strategy to be developed on a priority basis.

48. TZW contains two milestones:

    - 2025: Towards zero waste – seen as an intermediate step where waste will have been significantly reduced through actions on sustainable consumption and production and any waste produced will be managed in a way that makes the most of valuable resources. This will mean that recycling is maximised and residual waste is minimised with landfill eliminated as far as possible.
    - 2050: Achieving zero waste – seen as a minimum of producing 65% less waste than 2010 and aiming to phase out residual waste through actions on waste prevention and sustainable consumption and production so that the only waste produced is reused or recycled.

49. TZW also sets aspirational targets to prevent and reduce commercial and industrial waste with proposed consultation on annual waste prevention targets of 1.2% for commercial and industrial waste and 1.4% of industrial waste over the 2006/07 baseline. Targets for commercial and industrial waste recycling are set with levels of 67% at 2019/20 and 70% at 2024/25.

The Collections, Infrastructure and Markets (CIM) Sector Plan (2012)

50. The CIM Sector Plan supports TZW by detailing outcomes, policies and delivery actions that contribute to the delivery of the Welsh Government's commitments, including targets, set under relevant EU Directives. In particular, the plan focuses on the requirements of the Waste Framework Directive.

51. The CIM Sector Plan sets out a waste management framework designed to provide the best solutions to meet social, economic, and environmental needs to 2050. It indicates a move towards the reduction of disposal and recovery options for treating waste in favour of high-volume source segregated collection followed by reprocessing as well as preparation for re-use and prevention.

52. Sub-section 2.3.4 of the Plan focuses on the residual fraction of waste arisings that is not dealt with higher up the waste hierarchy and remains to be dealt with by way of "other recovery" or disposal (landfill). The Plan recognises that the level of predicted future residual waste will depend upon a combination of factors. For this reason, four scenarios were modelled for 2024-25 to identify a range of future residual mixed waste quantities. The four scenarios were:

    - Business as usual - no additional recycling and no additional effort on prevention.
    - Only local authority municipal waste (LAMW) recycling targets met, other recycling rates remain as baseline, no additional waste prevention measures undertaken. (This can be regarded as a "fully funded and interventions secured" option).
    - All recycling targets met; no additional waste prevention measures undertaken. (This requires additional funding and/or additional interventions that are yet to be secured).
    - All recycling targets met and additional prevention measures undertaken to meet waste prevention targets. (This requires additional funding and/or additional

interventions that are yet to be secured).

53. For 2049-50 a fifth scenario was modelled with the Zero waste 100% recycling targethaving been met.

54. The Plan expressed confidence in scenario 2 (LAMW recycling targets met, no additionalprevention) as it had been funded and no additional intervention was required, whereasother more optimistic scenarios required intervention. It was considered that the most reasonable basis upon which to plan up to 2025 were scenarios 2 and 4 and the rangesfor scenarios 2 and 5 beyond 2025.

55. The CIM Sector Plan predicted that the range of the capacity gap for other recovery facilities in South East Wales, at 2024-2025 would be in the range of 411-861 thousandtonnes per annum. These figures were derived from permitted capacity and did not takesites with planning permission and not built into account.

56. After the publication of the CIM Sector Plan a further survey of industrial and commercialwaste was carried out, providing data of arisings for 2012. This was reported in the Interim Progress Report, Waste Planning Monitoring South East Wales 2013/14. Actual arisings of residual waste in South East Wales were lower than the baseline year used in the CIM Sector Plan but they were slightly higher than levels predicted for 2012/13 and 2013/2014 for all the scenarios other than 'business as usual'.

57. The Report advised on the additional recovery capacity that had been granted planningpermission since the CIM Sector Plan. This included reference to:

    • 09/00246/E and 14/02521/MJR - the approved 200,000 tpa autoclave facility on the site of the proposed ERF, and

    • 10/00149/E – the 350,000 tpa Trident Park EfW facility.

58. Waste Planning Monitoring Report, South East Wales, April 2016 further updated the position, making clear that the 2012 and baseline relied upon in CIM Sector Plan were notdirectly comparable due to changes in the definition of some wastes.

59. In terms of arisings of industrial and commercial waste, the Report advised on the waste prevention targets, as referenced previously as a 1.4% reduction per annum from the 2006/07 baseline for industrial waste and a 1.2% reduction per annum from the 2006/07baseline for commercial waste.

60. No further recovery capacity had been granted planning permission in Cardiff, although Trident Park had become operational in 2015.

Beyond Recycling, the Circular Economy Strategy for Wales (March 2021)

61. Whilst retaining the core waste policies, targets and goals in TZW , *Beyond Recycling* outlines in more detail the approaches to be taken beyond the key 2025 milestone laid out in TZW. It reinforces the need to continue the trajectory on recycling from 2025 (with a 70% target) to the ultimate goal of zero non-recycled residual waste by 2050. This trajectory leads to a recycling level of around 80% within the mid-2030s. The waste prevention targets to 2050 laid out in Annex 1 of Towards Zero Waste and in the Sector Plans remain in place.

62. The *Beyond Recycling* Strategy is an integrated plan. The themes and actions support the delivery of commitments under Prosperity for All: our national strategy, in particular ''*for*

a more resource efficient economy building on our success in recycling and reducing the environmental impacts of production and consumption". It is also key to the delivery of obligations under the Well-being of Future Generations Act and the United Nations Sustainable Development Goals. It is integrated with key strategies and plans, including the Low Carbon Delivery Plan, the Wales Transport Strategy and the recently-published Economic Resilience and Reconstruction Mission. It is designed to deliver against key areas of the Environment (Wales) Act and in particular the priorities set out in the statutory Natural Resources Policy. The circular economy is also an important element of the Covid-19 Reconstruction: Challenges and Priorities Strategy, making a major contribution to a green recovery.

63. *Beyond Recycling* records that Wales' municipal waste recycling rate had increased to over 65% by 2019-20 and that the recycling rate for industrial and commercial waste increased by 9 percentage points from 58% to 67% between 2012 and 2018. It sets out a range of measures which will be introduced in order to achieve the trajectory to zero non-recycled residual waste by 2050. In addition, the document notes that to move to a circular, low carbon economy there is a need to reduce the amount of waste produced byhouseholds, businesses and the public sector. The strategy sets ambitious targets to deliver a circular economy and states that waste prevention will be at its core.

64. *Beyond Recycling* signals that as repair, re-use and recycling continue to expand, WG wants to ensure the capacity Wales has for generating energy from waste is in line with the capacity needed during Wales' transition to a circular economy, with the long-term solution being to move away from incineration. Pursuant to this, *Beyond Recycling* announced WG's intention to place a moratorium on any future large scale energy from waste developments, since WG considers that "*the increase in recycling and reduction in waste already seen means we will not need any new large scale energy from waste infrastructure to deal with the residual waste generated in Wales*".

65. Whilst announcing the intention to place a moratorium on any future large scale energy from waste developments, *Beyond Recycling* did not give any indication of when such a moratorium might be announced or take effect; nor did it state how "large-scale" would be defined. However, on 24 March 2021 WG announced a moratorium on new energy from waste plants with capacity of 10MW of more with immediate effect. The announcement also stated that the moratorium will also mean that small-scale plants, ofless than 10MW, will only be allowed if applicants can show there is a need for such facilities in the regions in which they are planned. Small plants would also need to supplyheat, and – where possible – be carbon-capture and storage enabled, or ready.

Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales (24 March 2021)

66. This strategic assessment provides information to be used by developers, Local Planning Authorities and the Planning Inspectorate Wales when considering need for new, or variations of, planning permissions for energy from waste facilities and energy facilities using waste as a fuel. It replaces the strategic assessment for the need for new energy from waste capacity provided in sub-section 2.3.4 of the CIM Sector Plan 2012. As before,the need assessment is intended to support the aim of establishing enough facilities to ensure an integrated and adequate network (which must also take account of spatial needs) whilst at the same time avoiding over- provision (which has the potential to undermine the waste hierarchy, which is driving a move away from landfill and other recovery, and more towards prevention, preparation for reuse and recycling).

67. The Strategic Assessment notes that PPW applies, as key decision-making principles, the waste hierarchy, proximity (nearest appropriate installation) and self-sufficiency in termsof developing integrated and adequate network facilities for the management of mixed residual municipal waste. It requires planning authorities to support the provision and suitable location of a wide ranging and diverse waste infrastructure, which includes facilities for the recovery of mixed municipal waste. It confirms that the extent to which aproposal demonstrates a contribution to the waste management objectives, policy, targets and assessments contained in national waste policy will be a material planning consideration.

68. Tables 22, 23, 25, 26, and 31-33 covering the treatment of residual municipal waste relyon waste data available for the production of the CIM Sector Plan and rely on policies, targets and assumptions relevant at the time. They also provide information for the threewaste planning regions for Wales existing in 2012, which do not exactly match the current economic regions for Wales.

69. The Assessment notes that there have been a number of significant changes since the publication of the CIM Sector Plan 2012. These include the publication of *Beyond Recycling*, the Circular Economy Strategy for Wales in March 2021 and new data for LocalAuthority collected waste (2019/20), industrial and commercial waste (2018) and construction and demolition waste (2012). As noted above, *Beyond Recycling* reinforces the need to continue the trajectory on recycling from 2025 (with a 70% target) to the ultimate goal of zero non-recycled residual waste by 2050. This trajectory leads to a recycling level of around 80% in the mid-2030s. The waste prevention targets to 2050 laid out in Annex 1 of TZW and in the Sector Plans remain in place.

70. The Strategic Assessment records that since 2012, 15 of the 22 Local Authorities in Waleshave entered into long term contracts for the management of the residual municipal wastes they collect. As a result, there are now two energy from waste plants operating in Wales, one in Deeside and one in Cardiff. These have additional capacity to manage otherresidual wastes generated by businesses and the public sector that are not collected by Local Authorities. The Assessment notes the WG announcement of the moratorium on anyfuture large-scale energy from waste developments, and states that the moratorium means the Welsh Government does not consider there to be a need for any new large- scale energy from waste plants of 10MW or greater. It goes on to state that small-scale energy from waste plants of less than 10MW will only be allowable if the applicant can demonstrate need for such a facility for the non-recyclable wastes produced in the region.Any new small-scale facilities must also supply heat, and where feasible, be carbon capture and storage enabled or ready. This would therefore mean a small-scale plant would not be allowable if waste is to be imported from outside of the proposed region (unless in close proximity to a region), in order to also avoid locking in transport emissions and associated pollution.

71. The new Strategic Assessment updates and replaces Tables 22, 23, 25, 26, and 31-33 inthe CIM Sector Plan. This information should be used by both applicants and the local planning authority when making the case for and assessing the need for a new small scale (<10MW) energy from waste facility. The information will be a material consideration in the wholly exceptional circumstances where large scale energy from waste proposals of 10MW or greater have, or may, come forward.

72. A Waste Flow Model has been developed for the three economic regions of Wales for two future scenarios using the latest Local Authority, industrial and commercial and construction and demolition waste data available. Both scenarios include the 70% recycling target set in TZW and the commitment made in *Beyond Recycling* that recycling

levels will need to increase beyond 2025 on a trajectory consistent with meeting the zero waste goal set for 2050. Scenario 1 – 'Recycling and Waste Minimisation Targets Met' uses the annual waste arising prevention targets contained within Annex 1 of TZW. For Scenario 2 - 'Recycling Targets Met, No Waste Reduction' waste reduction has been set to zero. In future years, both scenarios assume waste has been diverted from landfill into energy from waste to ensure that landfill caps set in TZW are not breached.

73. The need for new EfW capacity according to the two scenarios is presented in tables within the assessment. Quantities of residual waste suitable for energy recovery are identified for 2019/20 using the most up-to-date data available. Forecasts of quantities ofresidual wastes suitable for energy recovery are then made for the two scenarios for 2024/25 and 2034/35 for the three economic regions of Wales and Wales as a whole. Existing energy from waste facility capacity and any likely shortfall or excess capacity areidentified for each region and for Wales as a whole.

74. The two modelling scenarios for Wales as a whole predict a clear downward trend in the quantity of residual waste suitable for energy recovery from 1,140 thousand tonnes in 2019/20 to 825-915 thousand tonnes in 2024/25 to 585-790 thousand tonnes in 2034/25. The two modelling scenarios for the South East Wales economic region show thefollowing ranges for the projected quantities of residual waste suitable for energy recovery:

    - 2024/25: 415 to 465 thousand tonnes per annum
    - 2034/35: 270 to 370 thousand tonnes per annum

75. The modelling scenarios identify projected capacity gaps within the South East Wales region for energy recovery of residual mixed waste, based on the two scenarios, as follows:

    - 2024/25: 40 thousand tonnes per annum of under-capacity to 10 thousand tonnes of over-capacity
    - 2034/35: 55 to 155 thousand tonnes per annum of over-capacity.

    In the analysis, only existing operational capacity is taken into account, as this is a known guarantee.

76. The capacity gap figures provided in the Strategic Assessment reflect the current status of operational capacity of energy from waste plants in Wales. The figures will change if any sites with existing planning permission translate into on-the-ground operational capacity. As TAN 21 makes clear, the capacity assessments in the CIM Sector Plan (which the Strategic Assessment replaces for energy from waste capacity) represent the starting point for the determination of need for future capacity. Where planning permissions already exist in an area (region) they should also be taken into account in determining the level of need.

Waste Planning Assessment

77. A Waste Planning Assessment (WPA) is required to accompany applications for waste management classified as disposal, recovery or recycling. Its purpose is to ensure that all of the information necessary to make a decision is provided when the application is submitted. The submitted WPA follows the guidance set out in Annex B of TAN 21.

78. When initially submitted, the assessment of need for the proposed ERF was based on relevant data in the CIM Sector Plan (2012). However, on 24 March 2021 WG published its *Strategic assessment for the future need for energy from waste capacity in the three*

economic regions of Wales, which replaces the strategic assessment for the need for new energy from waste capacity provided in section 2.3.4 of the CIM Sector Plan. It also confirms that Tables 22, 23, 25, 26 and 31-33 in the CIM Sector Plan are updated/replaced by the new strategic assessment. The strategic assessment states that the new information will be a material consideration in the wholly exceptional circumstances where large scale energy from waste proposals of 10MW or greater have, or may, come forward. In response to this the Applicant has produced a revised WPA, dated 20 May 2021[3].

79. The proposed ERF would process up to 200,000 tonnes of residual commercial and industrial waste (material remaining after recovery and recycling) per annum. The European Waste Catalogue (EWC) waste codes permitted to be processed at the ERF will be determined by the regulator NRW within the Environmental Permit required to operatethe ERF. Waste would be sourced predominantly from within a 30-mile catchment area ofCardiff. Process residues would include bottom ash and Air Pollution Control (APC) residues. Contracts would be put in place to ensure that bottom ash is put to a productiveuse (e.g., use as a lightweight aggregate concrete); APC residues would be taken to the nearest appropriate installation for recovery or disposal.

80. The revised WFD (Directive 2008/98/EC) prioritises waste prevention followed by preparing for reuse, recycling, recovery and disposal as a last resort. It specifies that incineration facilities dedicated to the processing of municipal solid waste can be classifiedas R1 only where their energy efficiency is equal to or above 0.65, in respect of installations permitted after 2008. The R1 calculation provided at Appendix 1 to the WPA demonstrates that the plant comfortably achieves recovery status under the WFD with anenergy efficiency of 0.785.

81. Appendix 2 to the WPA comprises a WRATE[4] Life Cycle Assessment Report which identifies the carbon impacts of the proposed ERF. The WRATE results shows that, if compared to landfill of the same waste feedstock (which has substantial detrimental carbon impacts, primarily through the emission of methane), the ERF is modelled to achieve a comparative saving of at least 46,307 tonnes of CO_2 equivalent per annum (equivalent in emission terms to taking 15,913 cars off the road), as a result of the energy generated and offsetting energy generated by fossil fuels of -390,396 kg CO_2 eq(saved) when compared against the landfill comparator of 45,917,696 kg CO_2 eq (impact).

82. The WPA notes that The Strategic Assessment is based on a Waste Flow Model that has been developed for the three economic regions of Wales for two future scenarios using the latest waste data available. Both scenarios include the 70% recycling target set in TZW; and the commitment made in Beyond Recycling that recycling levels will need to increase beyond 2025, on a trajectory consistent with meeting the zero waste goal set for2050. Scenario 1 – 'Recycling and Waste Minimisation Targets Met' uses the annual wastearising prevention targets contained within Annex 1 of TZW. For Scenario 2 - 'Recycling Targets Met, No Waste Reduction' waste reduction has been set to zero. In future years, both scenarios assume waste has been diverted from landfill into energy from waste to ensure that landfill caps set in TZW are not breached.

83. The need for new energy from waste capacity according to the two scenarios is presentedin Tables 2 – 5 of the Strategic Assessment. Quantities of residual waste suitable energy recovery are identified for 2019/20 using the most up-to-date data available. Forecasts of

[3] Document 10 revision 4, 20 May 2021.
[4] Waste & Resources Assessment Tool for the Environment

quantities of residual wastes suitable for energy recovery are then made for the two scenarios for 2024/25 and 2034/35, for the three economic regions of Wales (Tables 2 and 4) and Wales as a whole (Tables 3 and 5). Existing energy from waste facility capacity and any likely shortfall or excess capacity are identified for each region and for Wales as a whole.

84. The WPA uses Scenario 2 and the consequent projections are contained within Table 4 ofthe Strategic Assessment. The above scenario for the South East region of Wales shows the following estimates and predictions concerning quantities of residual waste suitable for energy recovery and currently available operating capacity to deal with this:

2019/20

- Total non-inert residual waste: 550,000 tonnes
- Available operating capacity: 425,000 tonnes
- Capacity gap against operational: -125,000 tonnes

2024/25

- Total non-inert residual waste: 465,000 tonnes
- Available operating capacity: 425,000 tonnes
- Capacity gap against operational: -40,000 tonnes

2034/35

- Total non-inert residual waste: 370,000 tonnes
- Available operating capacity: 425,000 tonnes
- Capacity gap against operational: 55,000 tonnes

85. The equivalent Scenario 1 projection figures for 2024/25 and 2034/35 for SE Wales[5] areas follows:

2024/25

- Total non-inert residual waste: 415,000 tonnes
- Available operating capacity: 425,000 tonnes
- Capacity gap against operational: 10,000 tonnes

2034/35

- Total non-inert residual waste: 270,000 tonnes
- Available operating capacity: 425,000 tonnes

Capacity gap against operational: 155,000 tonnes

86. The capacity gap figures provided reflect the current status of operational capacity of EfW plants in Wales. The figures will naturally change if any of the sites with existing planning permission translate this into on the ground operational capacity. TAN 21 makes it clear

[5] Table 2 in the Strategic Assessment

the capacity assessments in the CIM Sector Plan (which the Strategic Assessment replaces for energy from waste capacity) represents the starting point for the determination of need for future capacity. It also states where planning permissions already exist in an area (region) they should be taken into account in determining the level of need. The significance which can be attached to proposed (planned) capacity in determining the level of need will vary depending on the likelihood of facilities being built. Evidence to consider will include whether there are contracts in place to manage residual waste, whether facilities are in the process of being built, whether they have been commissioned, whether pre-commencement conditions have been discharged and whether an environmental permit is in place.

87. The WPA states that, in tailoring the Strategic Assessment to the ERF proposal, thefollowing factors should be taken into account:

- The plant will accept predominantly commercial and industrial waste;
- The waste will be sourced predominantly from within a 30 mile catchment;
- The proposed ERF will be able to provide commercial opportunities alongside other existing facilities within the geographical area ensuring healthy competition within the marketplace;
- The proposed annual throughput for the Môr Hafren ERF will be up to 200,000 tonnes per annum, although current waste composition suggests a likely throughput of around 180,000 tonnes per annum.

Predicting future needs

88. The starting point for predicting future needs is the data summarised above. The 2019/20 capacity gap against operational capacity for South East Wales is minus 125,000 tonnes. However, only the commercial and industrial waste figures are relevant as they represent the proposed Mr Hafren feedstock. The trident Park facility is contracted to accept up to 300,000 tonnes of municipal waste per annum. Therefore, in theory there is capacity for up to 125,000 tonnes of commercial and industrial waste to be processed.

89. Moreover, it is unlikely that the Trident Park plant would ever operate at full capacity; total annual waste throughputs range from 364-380,000 tonnes. The most

90. recent waste inputs show that around 100,000 tonnes of commercial and industrial waste have been incinerated at the plant each year. Therefore, the capacity gap for commercial and industrial waste within SE Wales was in the order of 100,000 tonnes in 2019/20.

91. Accordingly, taking into account that the Trident facility only has capacity to treat 100,000 tpa of commercial and industrial waste and the Môr Hafren plant would only be accepting such waste, the relevant adjusted figures are as follows:

	2019/20	2024/25	2034/35
Total commercial and industrial residual	230,000	200,000	190,000
Available operating capacity (Trident Park)	100,000	100,000	100,000
Capacity gap against operational	130,000	100,000	90,000

92. On the basis that the Môr Hafren ERF would normally be operating at around 180,000 tpa, the WPA states that there is sufficient residual waste available within the marketplace to "feed" the Môr Hafren plant in all 3 projected timelines.

93. Whilst on the face of it the proposed ERF would take in more waste than the predictedcapacity gaps, there are several factors which should be taken into account:

    - It is not best commercial practice to rely solely on one plant to fulfil the needs of the region. The plant could close either temporarily or even permanently (although the latter may be unlikely).
    - The Trident Park plant may reduce its commercial and industrial waste input in favour of the more commercially lucrative municipal solid waste feedstock.
    - If the Môr Hafren ERF were allowed then there would be inevitable commercial "competition" in terms of sourcing commercial and industrial waste from the local area. It is not unreasonable to assume that the Môr Hafren facility could pick up at least 20% of the Trident Park commercial and industrial feedstock, given the closeness of the two plants geographically.

94. If the likelihood of the Môr Hafren plant taking at least 20% of Trident Park's current commercial and industrial feedstock is also taken into account, this would further alter the resulting commercial and industrial residual waste capacity gap estimates, as follows:

	2019/20	2024/25	2034/35
Capacity gap against operational:	150,000	120,000	110,000

95. It would be imprudent for WG to rely just on one plant to recover commercial and industrial waste when this is an important element of diverting that waste from landfill and meeting this key objective. Also, if the predicted residual figures are wrong (it is accepted that this could go both ways) then the capacity gap could be more than predicted in 2024/25 and 2034/45. The over reliance on just one facility to treat commercial and industrial waste puts the landfill diversion targets at risk.

96. The overarching aim of PPW is to establish enough facilities to ensure an integrated and adequate network, taking account of spatial needs across Wales, whilst avoiding over provision of capacity and ensuring healthy competition in the market for the waste which would support local business. As well as addressing the treatment facility capacity gap as identified by WG's own figures the Môr Hafren facility would contribute to the supply of energy into the local grid, which has been demonstrated at other facilities to promote inward investment in businesses.

97. Predicted future residual waste will depend on a number of factors including:

    - The success of the Welsh Government initiatives to promote and secure waste prevention and reuse/recycling.
    - The degree to which the Landfill Tax, resource constraints, and supply chain pressures drive businesses to reduce residual waste.
    - The nature of future business and wider macro-economic circumstances.
    - Wider macro resource availability and cost circumstances.
    - The future change in population and household numbers.

98. Predicted future growth of households and population was not used in the Strategic Assessment forecast modelling. This presumably led to the assumption that there would be no growth in industrial and commercial waste. This is surprising given that SE Wales, and Cardiff in particular, is a growth area in the National Plan 2040 (Policy 33 refers).

99. The latest population projections released in August 2020 by the Welsh Government, shows that for all the south east local authority areas there will be an increase in population between 2018 and 2028. The predicted residual waste totals for 2034/35 couldtherefore be significantly underestimated.

100. The only projected WG commercial and industrial waste figures are in TZW, published in 2010. TZW has a projected total all-Wales commercial and industrial waste arisings figure of 1,566,557 tonnes in 2049-50. However, this is based on the premise that the waste stream will continue to reduce as planned. The TZW target is a yearly reduction onthe 2007 baseline of 1.4% for industrial waste and 1.2% for commercial waste until 2050. There is no guarantee that the reduction will continue at these constant rates yearby year. Also, 2050 is a long way off and there would be a large degree of guesswork in predicting so far ahead. The predicted 2035 figures may not be that accurate because they do not take into account population growth. It should also be noted that Appendix 2of TZW sets out the impact of the waste prevention targets for specific waste streams. Separate tables are supplied for commercial and industrial waste applying a 1.2 % and 1.4% reduction respectively. However, the combined commercial and industrial waste table applies a 1.6% reduction overall which gives rise to a lesser amount of arising at 2050 than that achieved by adding the separate table totals together. This casts further doubt on the robustness of the data. The impact of the waste prevention targets for commercial and industrial waste is therefore over-inflated.

101. There have been commercial and industrial waste surveys in 2007, 2012 and 2018. It is highly likely that further surveys would be carried out at appropriate intervals in the future. Given that we are only in 2021, it would be reasonable to assume that at least one survey would be carried out before 2035 and another before 2050. The results of such surveys would give more accurate picture of the C&I waste situation at the time of the survey and in terms of the potential amount in 2050. This will enable WG to assess if the recycling/reduction targets are being met, and to adjust its strategy accordingly.

The Moratorium

102. Beyond Recycling contains an action for Welsh Ministers to put in place a moratorium on any future large-scale energy from waste developments. This was announced in a Ministerial Written Statement issued on 24th March 2021. This statement means WG does not consider there to be a need for any new large-scale energy from waste plants of 10MW or greater.

103. The Applicant does not currently believe that this policy intent has been formally or legally ratified within the Senedd. The Statement was announced, without warning or backed by a decision document, in the middle of the Hearings for this Môr Hafren application, hence the necessity to update this Waste Planning Assessment.

104. However, despite the timing of the Ministerial Statement, the accompanying Strategic Assessment is helpful in updating the waste data from 2007 and 2012. The baseline data issued by WG should therefore be accepted by all parties. That said, the modelling used for the future residual waste arisings does not take account increased population growth in the region.

105. The WPA analysis using WG's own data demonstrates that there is still a need for another EfW facility in the South East Wales region. The only question should be on the size of such a facility, but it would certainly need to be above the 10MW threshold. The crucial issue, however, is the overreliance on Trident Park as the sole facility to treat commercial and industrial waste for the foreseeable future. This is not sustainable and should not be considered a commercially acceptable option within the marketplace.

106. The first paragraph at the top of page 6 of the Strategic Assessment lacks clarity. It says: *"The following new assessment updates and replaces Tables 22, 23, 25, 26, and*
31- 33 in the CIM Sector Plan. This information should be used by both applicants and the local planning authority when making the case for and assessing the need for a new small scale (<10MW) energy from waste facility. The information will be a material consideration in the wholly exceptional circumstances where large scale energy from waste proposals of 10MW or greater have, or may, come forward." Whilst it is agreed that the waste information is a material consideration the wording seems to suggest that an application itself would be a wholly exceptional circumstance. But that makes no sense in respect of this Môr Hafren ERF application, which is already within the formal DNS process and at Hearing stage before an Inspector. Furthermore, it is noted that a further large scale EfW application has recently been formally validated since the announcement and is anticipated to continue through to determination in the DNS process.

107. The Moratorium is flawed in its logic and based on oversimplistic scenarios, which are aimed at proving that there is no need for any new large scale EfWs in Wales. The aboveanalysis of WG's own data would suggest otherwise. Also, the 2 scenarios presented do not take into account population and business growth in the region, which is predicted tocontinue. It also ignores (in the case of SE Wales) the over-reliance on one EfW plant handling all of the residual commercial and industrial waste at least until 2034/35.

108. The Applicant considers, therefore, that this application must be determined on its merits in an open and transparent manner based on the evidence already presented and this updated WPA. The moratorium should not be applied.

The Future Role of Landfilling

109. Wales will reach the limits of its landfill capacity in the next decade as indicated in TZW. 899,000 tonnes of waste were sent to landfill in Wales in 2016, of which 340,000 tonnes were from mechanical treatment. TZW has aspirational targets for landfilling of waste to be as close to zero at 2025 as possible.

110. The proposed ERF would divert material away from landfill as well as recovering value from the waste. A key principle of TZW is application of the waste hierarchy, meaning that landfill is a disposal route of last resort and a priority is to phase out landfill and move residual waste up the waste management hierarchy to high efficiency energy recovery as the country's waste management infrastructure moves towards the 2050 zero waste objective. TZW identifies a particular focus on reducing the amount of biodegradable waste landfilled in order to reduce emissions of methane, a greenhouse gas 23 time more potent than carbon dioxide.

111. The CIM Sector Plan states: *Until we reach our 2050 goal of a zero waste society, we will need to continue collecting some wastes that cannot be effectively recycled. For these wastes, efficient energy recovery that produces heat and electricity in properly controlled and regulated facilities is preferable to continued landfilling. Here, we recognise there is a difficult balance to be struck to ensure we have sufficient capacity to deal with our waste arisings in the short term without impeding the achievement of our long-term goals. Our proposed measures to increase recycling and limit other forms of disposal or recovery such as landfill or EfW, will ensure that we achieve this.*

112. The proposed ERF will make a major contribution to the waste hierarchy by diverting up to 200,000 tonnes of residual waste away from landfill per annum and will recover value from this in the form of electrical and potentially heat energy and will improve the status of this material in accordance with the Waste Framework Directive Recovery R1

and its place in the Waste Hierarchy. The main residue (inert bottom ash) is often treated and used as a secondary aggregate and this is the intent for the Môr Hafren facility.

Applying the Waste Hierarchy

113. The CIM Sector Plan recognises that in accordance with the hierarchy waste that cannot be prevented, reused, prepared for reuse or recycled should be subjected to another form of recovery rather than being landfilled and that such diversion from landfill significantly reduces greenhouse gases, as evidenced in the WRATE Report at Appendix 2 of the WPA. The CIM Sector Plan identifies that the treatment method most likely to deliver best the sustainable development outcomes identified in One Wales, One Planet and in TZW for residual waste is use of the residual municipal waste left after recycling as a fuel in energy recovery plants with high energy efficiency[6].

114. Treatment of residual waste in high efficiency energy from waste facilities yields significant reductions in greenhouse gas emissions as compared to other treatment options that include an element of landfilling, as verified by life cycle assessment studies. The Wrate calculation included within the application demonstrates that the facility would produce an annual emissions saving of some 46,307 tonnes of CO_2 over landfilling, equivalent to taking 15,913 vehicles off the road.

115. The R1 calculation at Appendix 1 demonstrates that the proposed ERF is designed to be highly efficient and would improve the status of the waste handled from disposal to recovery under the Waste Framework Directive.

WPA Conclusions

116. In summary:

- 'Need' for the facility needs to be considered in its widest sense, including its contribution towards Welsh Government policy drivers for a reduction in CO2 (evidenced by the equivalent 15,913 vehicle savings in the WRATE assessment) and towards achieving sustainable places and greener transport through electricity provision.
- There is sufficient residual waste to "feed" the Môr Hafren plant in all 3 years projected (2019/20, 2024/25 and 2034/35, as set out and evidenced by Welsh Government in its Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales. This is based on WG's own data.
- The Môr Hafren facility would offer an alternative EFW option for businesses preventing existing residual waste capacity having a "monopoly" on C&I waste recovery in the region.
- From the WG perspective, it would be imprudent to rely just on one plant to recover commercial and industrial when this is an important element of meeting the targets for the diversion of that waste from landfill.
- The 2 scenarios presented in the Strategic Assessment do not take into account population and business growth in the region, which is predicted to continue.
- The moratorium should not apply to the Môr Hafren ERF and the application should be determined on its merits without the moratorium being a material consideration.

[6] CIM Sector Plan 2012 paragraph 3.6.2.2

- The proposed ERF will make a major contribution to the waste hierarchy by diverting up to 200,000 tonnes of residual waste away from landfill.
- The Wrate calculation demonstrates that the facility saves some 46,307 tonnes per annum of CO2 equivalent saved over the landfilling of waste from the environment, equivalent to taking 15,913 vehicles off the road.
- The R1 calculation demonstrates that the proposed ERF is designed to be highly efficient and improves the status of the proposed development to Waste Recovery.

Statement of Compliance

117. The Statement of Compliance addresses compliance with policy on need and location.

118. Adopted waste policies in the Cardiff LDP (namely policies KP12 'Waste' and W1 'Sites for Waste Management Infrastructure') are addressed in detail in the Planning Statement submitted with the application. The Council's SPG *Locating Waste Management Facilities* provides further guidance on the assessment of proposals against the LDP policies.

119. The proposed ERF satisfies the following underlying principles:

- Waste Hierarchy – the proposed ERF conforms to the waste hierarchy by only seeking to process residual waste, i.e., that waste that remains after material that can be removed has been removed through methods further up the hierarchy. Furthermore, the proposed Môr Hafren ERF is a recovery facility, meeting R1 status as defined by the Waste Framework Directive, and will divert significant quantities of residual waste from landfill, a disposal operation sitting firmly at the bottom of the waste management hierarchy.
- An integrated and adequate network – it is recognised that there is a clear role for energy from waste facilities in the achievement of sustainable waste management through an integrated and adequate network of facilities that will enable the waste hierarchy to be delivered.
- Nearest appropriate installation – waste should be disposed of or recovered in one of the nearest appropriate installations whilst ensuring that environment and public health are protected. The residual waste for the proposed ERF will be sourced predominantly from within a 30-mile radius catchment area and there is a realistic prospect of circa 50,000 tonnes of that residual waste being sourced from a facility in very close proximity to the site. A full EIA has been carried out which demonstrates that the environment and human health are protected and not significantly impacted.
- Self-sufficiency – the proposed ERF would assist in the aim of self-sufficiency in waste management in this part of Wales.

120. There is a need for a facility, such as the ERF, in this location to provide the necessary capacity to ensure that residual waste is diverted from landfill.

121. Planning permission has previously been granted for a 200,000 tonnes per annum waste treatment and energy recovery facility on the site of the proposed Môr Hafren ERF. This capacity figure has already been added to the calculations for capacity with planning so the proposed ERF will not result in the potential for over-provision of facilities, it will merely replace the previously permitted capacity. The planning permission for that facility only expired recently in April 2020.

122. The SPG confirms that the most appropriate locations for waste management facilities will be those with least adverse impacts upon human health and the local environment and are directed towards existing or allocated areas. The proposed site is allocated in the LDP for B1, B2 and B8 uses. Planning permission has previously been granted for a waste management facility of the same throughput at this site. The principle of such a use and scale is therefore established. The site would generate fewer HGV movements than the previously consented proposals and is well connected to the primary road network. The environmental considerations associated with the proposed ERF have been subject to EIA and recorded in the ES. Compliance with policy and detailed consideration of the location of the proposed ERF is addressed in both the ES and the Planning Statement.

Environmental Impact Assessment (EIA) and Environmental Statement (ES)

123. The proposed development falls under Schedule 1 (10) of the EIA Regulations; EIA is therefore mandatory. The ES has been prepared following a scoping direction from the Planning Inspectorate which determined the environmental matters to be considered. The subsequent EIA process in respect of each of the environmental matters included the following key stages: baseline studies; assessment of effects and their significance; mitigation; residual effects after mitigation.

124. The resulting ES[7] sets out the results of the EIA process. After preliminary chapters the ES considers the following matters on a topic basis:

- Chapter 6 - Air Quality
- Chapter 7 – Air Quality and Transport
- Chapter 8 – Health
- Chapter 9 - Noise
- Chapter 10 - Ecology
- Chapter 11 - Landscape and Visual Impact
- Chapter 12 - Transport
- Chapter 13 - Cultural Heritage
- Chapter 14 – Water Resources
- Chapter 15 – Flood Consequences and Drainage
- Chapter 16 – Cumulative Effects
- Chapter 17 – Socio-economic Context

125. The specific methodologies for the assessment of the individual environmental topics are presented separately in the technical appendices to the ES; these are summarised in the individual topic chapters. The technical assessments have been conducted in accordance with relevant professional practice guidelines and have considered the environmental impacts resulting from the maximum development parameters and most unfavourable conditions; in effect the "worst-case" scenario.

[7] Application Doc 30

126. The sections below set out the conclusions of the ES in respect of each environmental topic chapter, as drawn by the chapter author from the detailed assessments undertaken and reported on.

127. During the consideration of the application further information was requested from the Applicant in respect of certain matters considered by the ES[8]. The additional information was subsequently provided by the Applicant as Addenda to the ES (Documents 85, 89 and 117).

ES Chapter 6 – Air Quality (as revised by ES Addendum 2 – Doc 89)

128. Detailed atmospheric dispersion modelling has been undertaken of emissions to atmosphere from the proposed ERF. Modelling of emissions from the ERF was undertaken for a scenario that represents normal operating conditions while operating at maximum output and discharging emissions to atmosphere via a 70 metre high chimney.

129. The modelling was undertaken using ADMS Version 5.2 and included data on building downwash, local terrain and land-use features and five-years' worth of meteorological data sets to provide a comprehensive set of predictions. Details of the local wind turbine were also included, to incorporate the impact of the turbine's operation on the dispersion of emissions. However, a sensitivity analysis of coastal effects determined that these could be discounted from the model.

130. The model predicted that Process Contributions (PCs), for all pollutants prescribed for control by the Industrial Emissions Directive (IED) and based on the recently updated Achievable Emission Limit Values specified in the BREF Note for Waste Incineration, would be well below objective limits defined within the Air Quality Regulations or relevant Environmental Assessment Levels (EALs) recommended by NRW.

131. The inclusion of the wind turbine data in all model runs resulted in higher overall concentrations than previously reported, as predicted by the earlier sensitivity analysis. As this latest modelling incorporated the wind turbine into each run, the results may appear to have increased, because the worst-case assessment is reported at every stage.

132. Modelling predicted that under normal operating conditions the maximum annual average PC for NO_2 would be about 2.0 µg m-3, or about 5% of the 40 µg m-3 annual objective value. The location of the maximum PC is predicted to be about 390 metres to the north-east of the ERF chimney, with values considerably lower farther afield. The PCs for the other IED pollutants indicated that there would be no exceedance of their respective AQS objective values and relevant environmental assessment levels.

133. The results from a cumulative impact assessment with other developments proposed locally concluded that there is no significant difference between the model predictions for Môr Hafren site in isolation and the combined emissions scenario at the location of the maximum PC across the 4km x 4km modelled grid, or nearby residential properties, and the overall impacts continue to be screened as insignificant at either the initial or secondary assessment stage.

[8] Letters from Planning Inspectorate to Applicant dated 1 October 2020, 11 December 2020 and 31 March 2021.

134. Cumulative contributions to levels of nutrient Nitrogen deposition are screened as insignificant when assessed against the specified Critical Loads for most sensitive ecological receptors, although eight sites, including locations within the Gwent Levels and one modelled area of the Severn Estuary and various SINCs cannot be screened. Furthermore, cumulative contributions of acid deposition at four sites could not be screened as insignificant. Exceedance of a Critical Load is not a quantitative estimate of damage to a particular habitat, but instead represents the point at which significant harmful effects do not occur according to present knowledge. As such, and as the cumulative PC do not result in an exceedance of the nutrient Nitrogen Critical Load at any site where one currently does not exist, it is considered that the potential for the development of the Môr Hafren facility to have a significant negative impact on nutrient Nitrogen or acid deposition levels at local ecological sites is limited.

135. Consideration of the operational odour management procedures to be implemented by Môr Hafren Bio Power Ltd when the ERF is operational, indicate that odour control will be effective. Any fugitive emissions from the process buildings should not be a cause for reasonable complaint from nearby residential and commercial properties. Detailed modelling of odour release from a 50 metre high odour vent showed that the maximum hourly average PC would be about two thirds of the 3.0 OUE m-3 EAL for moderately offensive odour. The corresponding values at nearby residential properties were shown to be about 0.6 OUE m-3 or less, and unlikely to be perceptible to members of the public with "typical" sense of smell.

136. The overall conclusion from detailed modelling of emissions from the proposed ERF is that the potential impact on local air quality is likely to be small and unlikely to result in a significant threat to the health of people living and working nearby.

ES Chapter 7 – Air Quality and Traffic

137. An air quality assessment has been undertaken to consider the potential impact on local air quality of pollutant emissions associated with the operational fuel deliveries, waste removal and staffing requirements of the proposed ERF. The assessment has applied the ADMS Roads model to determine the likely impact of the proposed development along road linkages and at local sensitive receptors, when compared to current air quality levels.

138. Air quality in the vicinity of the proposed development is fairly good; although there are some Air Quality Management Areas (AQMAs) in place within Cardiff, there is no AQMA in the vicinity of the Wentloog industrial area, nor along any of the road networks modelled. The nearest AQMA is located approximately 4.8 km distant from the proposed development site. Air quality monitoring is however undertaken on Newport Road, and this location has been included in the modelling exercise as a sensitive receptor.

139. The results from the ADMS Roads air quality assessment show that the impact of emissions from vehicle movements associated with the proposed development will have an insignificant effect on local air quality during the operation of the plant. On the two occasions where the gridded PCs cannot immediately be screened as insignificant, they are screened as such at the second assessment stage.

140. PCs of Oxides of Nitrogen (NOx as NOx) cannot be screened as insignificant at all locations across the Gwent Levels due to the high existing background concentration of 21.51 µg m-3, equating to 72 % of the EAL for ecological receptors. However, with contributions of NOx from traffic equating to less than 2% of the EAL, the impact on the Gwent Levels can be considered negligible. When PCs from the ERF are also added

at the locations considered, the overall PC ranges from 1.6% to 1.7% of the EAL and can be described as negligible.

141. Although not able to be directly assessed against AQSs, the maximum hourly contribution of pollutants from the peak hourly traffic movements associated with the development, remain within the short-term AQS for the protection of human health, and the 99.79th percentile hourly average contribution to Nitrogen Dioxide remains within 10% of the AQS.

142. It is therefore concluded that the impact of transport emissions from the operation of the proposed ERF will be insignificant in their effect on air quality in the local area.

ES Chapter 8 – Health

143. A health impact assessment has been undertaken to assess the risk to the health of people living and working in the vicinity of the proposed ERF. Gaseous emissions will pass through a dedicated flue gas treatment plant and will discharge to atmosphere via a 70 metre high chimney. The results from a D1 calculation indicated that a 52 metre high chimney would provide effective dispersion of emissions from the proposed ERF. However, Môr Hafren Bio Power Ltd propose to install a 70 metre high chimney to provide additional confidence that there will be no significant impact on local air quality. Compared to the D1-calculated value of 52 metres, increasing the height of the chimney to 70 metres results in a more than four-fold reduction in maximum annual average PCs.

144. Detailed atmospheric dispersion modelling of emissions from the 70 metre high chimney was undertaken using the ADMS Version 5.2 model to predict increases in pollutant concentrations at nearby sensitive receptors such as residential properties, schools, playing fields and locations where people may congregate for significant periods of time. The assessment involved a comparison of model-predicted PCs against health-based air quality standards and relevant EALs.

145. Short term acute effects for pollutants such as NO_2, SO_2, PM_{10}, HCl, HF and CO showed that increases in background pollutant concentrations at nearby residential properties were low and would not have a significant impact on the health of people living and working nearby. PCs for pollutants such as VOCs and heavy metals were very low and their potential health effects screened out as insignificant in relation to health-based air quality standards and relevant EALs recommended by NRW.

146. The US EPA Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities was used to assess the potential risk to health of people living and working in the locality of the facility due to emissions of Dioxins and Furans, and Dioxin-like PCBs. The assessment considered the potential health risks associated with the intake of Dioxins from the consumption of potentially contaminated foodstuffs due to emissions to atmosphere from the chimney of the ERF. The assumptions used within the assessment are conservative and therefore the study was undertaken on a worst-case basis.

147. The assessment indicates that the risk to health of the local population due to exposure to Dioxins in emissions from the facility is likely to be low, typically about 3% or less of the Tolerable Daily Intake (TDI) of 2 pg/kg. When the combined emissions of Dioxins and Dioxin-like PCBs was considered in relation to the European Food Standard Agency's recommended Tolerable Weekly Intake (TWI) value of 2 pg/kg/week, the results showed that Process Contributions due to the operation of the ERF were likely to be a small percentage of the TWI.

148. The assessment for health risks associated with exposure to emissions of Polynuclear Aromatic Hydrocarbons (PAH), expressed as Benzo[a]Pyrene, demonstrated that PCs would be less than 1% of the health-based air quality objective value of 0.25 ng m-3, and could be screened out as insignificant in relation to NRW guidance.

149. In conclusion, the results from the health impact assessment confirm that there is no significant health risk associated with potential exposure to emissions of pollutants from the proposed ERF.

ES Chapter 9 – Noise (and Vibration)

150. The pre-existing environmental noise climate has been directly determined by measurement at the identified sensitive receptors, as during typical weekday and weekend daytime and night-time periods.

151. Using this benchmark environmental noise measurement data, it has been possible to set appropriate daytime and night-time criteria for the construction and operational phases of the development, all in accordance with applicable current Standards and other relevant, generic acoustic guidance.

152. The noise assessment concludes that the total, aggregate environmental noise impact as arising from the operational phase of the Development, with a duly implemented Noise Mitigation Plan (NMP), is expected to result in a negligible impact at the worst affected residential receptors, during both daytime and night time periods. Furthermore, a minor impact is also expected to occur at the nearest identified noise sensitive commercial receptor.

153. Similarly, the construction phase noise impact as expected at the worst affected residential and noise-sensitive commercial receptors is expected to be negligible. The expected construction phase vibration impact is typically up to minor (but moderate worse case) as during the proposed percussive piling. However, the Applicant will fully engage with the future occupier of Pinewood Studios and the residents of the Newlands Farm dwelling regarding the means of mitigating any impact from construction activities, including prospective piling. This will include a dialogue on the likely timeframe and duration of such activities.

154. In terms of noise impacts on ecological receptors, the assessment confirms that the specified noise level of 55dB LAeq,T is expected to be achieved at a setback distance of about 40m from the development site boundary during the operational phase, and about 170m from the development site boundary during the worst case stage of the construction phase. The assessment quantifies an outline, provisional, itemised Noise Mitigation Plan (NMP), based on adopting Best Available Techniques (BAT).

ES Chapter 10 - Ecology

155. The site is dominated by large areas of grazed/heavily poached grassland which are considered to be of low biodiversity value, punctuated with some areas of elevated value including scrub, tree-lined drain and scattered trees. Without mitigation the potential effects have been assessed as up to Moderate Adverse. Habitats of Local value within the site include the tree-lined drain which is to be retained as part of the scheme design.

156. Non-statutory sites include Hendre Road SINC immediately to the north of the site assessed as up to County importance with three other SINC's within 1 km of the site. Statutory designated sites for nature conservation include three internationally

designated (SPA, SAC, RAMSAR) sites within 10 km and two nationally designated sites within 2 km. These sites haves been subject to detailed air quality and noise assessments to ensure no significant indirect impacts are likely. A separate HRA Stage-1 Assessment has been prepared with regard to potential effects on the three internationally designated sites.

157. Due to the current conditions and use of the site, potential for protected and notable species was limited to a small number of restricted species including potential bat foraging corridor (the retained tree-lined drain) and low potential for individual great crested newt and reptiles in the locality only. No evidence of water vole, otter, badger, dormouse or notable bird assemblages were recorded to date or anticipated, based on local records and site condition.

158. The development proposals include designs that retain the important features present within the site with the features incorporated into the landscaping designs for the scheme. These areas maintain habitats of values and continue to connect into adjacent habitats.

159. The proposed mitigation and enhancement include habitat retention and protection, appointment of an Ecological Clerk of Works, and implementation of Reasonable Avoidance Measures for key species group with all details to be included within a supporting CEMP.

160. New habitat areas are proposed with enhancement of retained features and creation of specific wildlife features such as hibernacula and installation of bat and bird boxes. Further enhancements and habitat management proposals would be set out in a supporting LEMP including long-term maintenance and monitoring commitments for species and habitats as required.

161. After consideration of ecology matters at the hearing sessions I asked for further assessment concerning the possible presence of dormice on the site and the bat roosting potential of trees proposed for removal. Further assessment of these matters has now been included in ES Addendum 3, which provides a revised ES Chapter 10. The additional assessment work concerning dormice and bat roosting potential is summarised at paragraphs 234-242 of this report.

ES Chapter 11 – Landscape and Visual Impact

162. The proposed ERF should not cause unacceptable landscape and visual impacts, especially in the wider landscape. The peri-urban background the site sits within contains industrial pockets and large areas of built form within the natural landcover. Planning permission has previously been granted on the site for a waste management use. This peri-urban area already hosts buildings, a business park, large sheds, moving machinery and fencing that that are comparable to the proposed ERF.

163. It was apparent when undertaking the site survey that the landform, landcover and landscape elements significantly altered and, in some cases, blocked views to the site that were thought to be evident within the desk study assessment. This is especially the case beyond the 3km distance with topography, wooded areas, shelter belts, tall hedgerows and buildings forming visual barriers in views towards the site.

164. It is anticipated that that the significance of the majority of visual effects will be minor/moderate adverse. However, from viewpoints 9, 11, 12, 14 and 19 the significance of visual effects is anticipated to be moderate/major adverse. From viewpoint 13 the significance of visual effects is anticipated to be major adverse during

construction. However, during the operational phase the significance will reduce to moderate/major adverse.

165. From viewpoints 1, 2, 3, 4, 5, 6, 7, 8, 10, 15, 16, 17 and 18 the visual impacts are anticipated to be moderate or moderate/minor. During the construction phase the majority of visual impacts will be moderate.

166. The landscape effects which would arise from the proposed development are anticipated to be primarily focused in the area immediately surrounding the application site where the low sensitivity of the landscape results in acceptable significance of landscape effects. Within the context of the wider landscape the anticipated residual significance of landscape effects will be low.

167. Inherent mitigation within the design of the proposed development has been undertaken to minimise impacts. The design uses fractured and coloured panels that take an angular form. Different variations of green colour and along with the angular pattern of the design seek to break up the mass of the building and is designed to blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker more akin with the industrial units a local vegetation. Lighting will be used only where and when necessary and measures have been taken to ensure that the proposed development will not be lit 24 hours a day to reduce the impacts of night-time lighting.

168. When considered in an increasingly broad context of the peri-urban landscape, the proposed development is anticipated to be assimilated into the existing landscape and views. The existing industrial landscape is considered to have the capacity to absorb the introduced characteristic elements without overarching change to the landscape character of the area and the loss of low sensitivity and uncharacteristic elements is considered acceptable. Where the visual impacts of the proposed development have been assessed to be the highest, the impacts are considered sufficiently localised and contained that the impacts are acceptable. In most cases where views of the proposed development are possible, it would generally be seen against a backdrop of similar elements. Therefore, the introduction of the proposal into these views will not appear as uncharacteristic.

ES Chapter 12 - Transport

169. The Transport chapter of the ES is underpinned by a Transport Assessment (TA) which is attached as a Technical Appendix. The TA considers the impact of the scheme in terms of transport accessibility, highway capacity, safety, parking and traffic routeing.

170. Annual average daily traffic flows between the junctions of the A4232/Lamby Way/Rover Way and the A4232/A4161 have been taken into account to examine the impact of the development traffic on the principal highway network. In addition, peak hour traffic volume and queue length surveys were carried out at the Wentloog Avenue/Lamby Way junction, the Lamby Way/Mardy Road junction, the Wentloog Avenue/Mardy Road junction and the Mardy Road/New Road junctions. The scope of the surveys was agreed with the Local Authority.

171. The TA results show that two way flows on Wentloog Avenue east of Mardy Road were 1,148 vehicles in the AM peak hour (0745-0845) and 811 vehicles in the PM peak hour (1600-1700). The queue length surveys show that there are average queues of 22 vehicles in the AM peak hour and 47 vehicles in the PM peak hour on the Wentloog

Avenue arm of the Lamby Way Roundabout. Significant queueing also occurred in the PM peak hour on the Mardy Road arm of the Mardy Road/New Road junction with average queues of 43 vehicles. However, the queuing would not block the downstream junction. The other arms of the Mardy Road/New Road junction experience significantly less queuing.

172. The daily HGV movements associated with the application site would amount to only 2.9% of the total daily HGV two-way movements on this section of the A4232. As the HGV movements are spread out over an 11 hour day, it can be considered that the additional movements from the energy recovery facility would be negligible when compared to the general traffic on this section of the A4232. The increase of 2.9% HGV movements is significantly less than 10% which, according to the Guidelines for the Environmental Assessment of Road Traffic, will have no discernible environmental impact.

173. The change in traffic flow on the approaches to the Lamby Way/Wentloog Avenue roundabout junction and the Lamby Way/Wentloog Avenue staggered junction junction is less than 2% on the major arms, and less than 3.5% on all approaches to the junctions in both peak periods. The environmental impact of the additional traffic can therefore be considered negligible. Although parts of the network are congested in the existing situation, given the very limited increase in vehicle movements, especially during the peak hours, the impact in terms of driver delay is minimal.

174. Newlands Road, Wentloog Avenue and Lamby Way are industrial estate roads, and all have footway widths of approximately 2m along the entire stretch and adjacent to both sides of the road, with street lighting also present. Newlands Road and Wentloog Avenue are subject to 30mph speed limits whereas Lamby Way has a speed limit of 40mph. The general carriageway width of Newlands Road is approximately 8.9m while Wentloog Avenue is approximately 8.4m wide in the vicinity of the site. The 7 HGV movements (two-way) per hour generated by the proposed development is minimal and cannot be classified under the category of a hazard. Given the provision of footways, pedestrian crossings, streetlights and the absence of hazardous conditions, the impact in terms of fear and intimidation is therefore considered none or negligible. Analysis of the collision data has demonstrated that there are no clusters or patterns of collisions within the study area that will require remedial actions on the road network.

175. Cumulative traffic impacts with other potential schemes in the area have been considered; such schemes are unlikely to have a detrimental cumulative impact on the operation of the highway network in the vicinity of the development site.

176. The effect of the traffic generated by the proposed development has been assessed in terms of all potential environmental effects as either being none or negligible. Based on this conclusion, mitigation measures are not required. Nonetheless, mitigation measures are proposed to further reduce the impact of development traffic. A vehicle routeing strategy has been developed, which will ensure that HGVs associated with the ERF will use the route westwards to the A4232, A48 and M4, avoiding residential areas. A Traffic Management Plan is also proposed, which will restrict the majority of deliveries, where practicable, to times outside of the network peak hours. There is also a prospect that some feedstock will be derived from the local area, limiting the impact on the highway network.

177. Taking into account the routeing strategy and Traffic Management Plan, the residual effects from the development are considered Negligible on all receptors.

ES Chapter 13 – Cultural Heritage

178. The Cultural Heritage chapter of the ES assesses the effects of the project on all aspects of the historic environment, including buried archaeological remains, historic buildings and historic landscapes.

179. The assessment has found that the only potential significant adverse effect with regard to the historic environment would occur as a result of physical impact during construction on a discrete and rare type of structure or artefact (for example a waterlogged timber structure or vessel), although no such structures or artefacts are currently known to be present within the project site. There is also the potential for minor adverse effects on buried archaeological remains of all periods from prehistoric through to modern.

180. If considered appropriate, a programme of archaeological investigation would be agreed with the archaeological advisers to the planning authority. This would enable a better understanding of the presence, nature and date of any archaeological remains within those parts of the project site where construction activities are planned, and allow for the development of an appropriate strategy to avoid, reduce or offset any impacts that could occur as a result of construction.

181. During the operational phase of the project, there would be minor adverse effects on the Church of St Mellon, and a negligible adverse effect on the Grade II listed Ty-Du. In each case this is caused by a (reversible) change within their setting.

ES Chapter 14 – Water Resources

182. The Water Resources chapter of the ES assesses the effects of the proposed development on the water environment, including water quality, water resource and hydrology (the quantitative aspects), hydrology and flood risk. Specifically, the Water Resources topic area identifies the sources of impacts, their potential pathways and the receptors at risk.

183. There is an ordinary watercourse (ditch) that runs along the site's south-western boundary. Ordinary watercourses are under the jurisdiction of the Lead Local Flood Authority (LLFA), which in this case is CC. This is culverted underneath Newlands Road to the south-east into a watercourse known as Rhosog Fawr Reen. This drains eastward before connecting into the Tarwick Reen and eventually into the Broadway Reen, before discharging into the Severn Estuary.

184. The site is within the Gwent Levels – Rumney and Peterstone SSSI, which is one of six SSSI's covering the wider 5700ha Gwent Levels. It is protected for its reen and ditch habitat, insects and other invertebrates, including the shrill carder bee.

185. The ditch adjacent to the site is currently unmanaged. The Applicant proposes to manage it for the duration of the life of the ERF.

186. Construction activities on site will include the excavation of materials and a high volume of construction vehicular traffic movements; both these factors have the potential to adversely impact the water environment. Excavation will expose the topsoil, making it vulnerable to compaction from workers and vehicles. Compaction could increase the impermeable area of the site and increase surface water runoff. Potential risks to water quality include pollution arising from accidental spillage due to traffic, contamination and increased suspended solids and sedimentation arising from surface water runoff on exposed topsoil. All potential effects will be managed through the implementation of a CEMP.

187. Operational activities at the site may also have the potential to impact the water environment adversely. However, the operation of the facility will be subject to conditions on an Environmental Permit, issued by NRW. This will mandate protection measures and standards of operational performance to mitigate potential effects.

188. To ensure that the proposed development does not cause any adverse impacts to the water environment, several potential mitigation measures are proposed, over and above those anticipated to be required in an Environmental Permit, which would be included in the CEMP. An important measure to mitigate the impact from surface runoff would be the development and implementation of a suitable Drainage Strategy in line with national policy and best-practice guidance. This strategy would apply both during site construction and operation.

189. The assessed residual effects on water resources, following the mitigation measures identified, are in all cases considered of negligible magnitude and significance.

ES Chapter 15 – Flood Consequences and Drainage

190. The site is within Zone C1 and is served by significant infrastructure including flood defences which lowers the potential flood risk at the site. There is still a residual risk of flooding in the event of defence failure or breach, but this is likely to be a low risk scenario.

191. Review of mapping produced by NRW for surface water flood risk indicates there is an isolated area inside the south-western boundary at low risk of surface water flooding and solely contained within the drainage ditch channel itself. This is less than 300mm in depth and has a low risk or negligible hazard risk.

192. The site is currently defended along the River Severn and the associated tidal frontage. Only the section at Peterstone Gout has a standard of protection against tidal flooding of less than 1 in 1000 years. Consideration is being given to improvements in flood risk management measures in the Wentloog levels as part of the Environment Agency's Severn Estuary Flood Risk Management Strategy.

193. The site is located within the Coast at the Wentlooge Levels in the Cardiff Area Flood Warning Area.

194. The finished floor levels of the buildings will be flood free with a freeboard of 300mm in 2119 for the 1 in 200-year tidal event (with defences) in the event that defence improvements are not undertaken.

195. Whist the extent of Zone C1 is extensive and surrounds the site, the entire extent of Wentloog Corporate Park is protected from tidal flooding for at least the 1 in 200-year event by existing defences. In the event of a flood there is potential for access to buildings to be restricted for a period of time; however, warning of a flood event is also likely to be given well in advance given the tidal nature of the risk and as such safe access and egress can be arranged as necessary. In the event of unexpected flood or personnel being unable to evacuate, safe refuge will be provided by the upper floor administration building. All site owners, tenants and employees will need to be made aware of the Flood Management Plan for the building.

196. Surface water flows will be managed by a below ground attenuation tank with rates restricted to greenfield runoff rates up to and including the 1 in 100 year +40% climate change event. All drainage systems on site will be sized to have capacity for these flows without flooding.

197. As infiltration is expected to be unfeasible due to the proximity to the water table, interception storage provision is unlikely to be possible although rainwater harvesting will be used to provide non-potable water for the staff onsite and where possible permeable surfacing will be used.

198. All flows which may be subject to contamination from HGV movements etc. will be passed through a Class 1 Full Retention separator prior to attenuation and catch pit manholes and trapped gullies will be used to help mitigate the risks of silts and debris entering the drainage system. Exceedence flows will be directed to hardstanding areas for safe collecting and reacceptance without posing a risk to onsite and offsite receptors.

199. The site is not served by an existing foul water sewer. Foul flows will be discharged via a private pumping station and rising main to the existing Welsh Water sewer located to the south east (reference ST23792002). Foul water generated onsite will be from the domestic loading of up to 25 staff (total 12 present at one time), HGV drivers and trade effluent in the form of boiler blow down with an anticipated loading of 5m3/hr (1.4l/s).

200. Turning to the TAN 15 justification test, the site is a 'Brownfield' development site and is located within Flood Zone C1. As the site is part of a regeneration strategy the site is very likely to provide the wider sustainability benefits also set out in the strategic policy SP1 of the Local Development Plan, January 2015. Land at Newlands Road, as well as other local areas within the Wentloog Corporate Park have been allocated in the LDP for housing and urban regeneration.

201. The Flood Consequence Assessment demonstrates that with the proposed mitigation in place, the site will be made safe and will be flood free for 1 in 200-year tidal event both now and for at least the next 75 years. The effects of climate change over the next 100 years will result in a potential inundation of less than 300mm at the site for the 1 in 200-year event.

202. Mitigation of the risk of tidal breach through reinforcement of the coastal defences would extend the flood-free scenario for the proposals. As stated previously, this would most likely be undertaken as part of a broader effort to facilitate development of the Wentloog Levels, consistent with the proposals described in the Environment Agency's Severn Estuary Flood Risk Management Strategy.

203. It is possible that if strategic reinforcement of the coastal defences does not take place, improvements to future flood risk could be made through localised raising of ground levels and/or the incorporation of flood resistance and resilience measures to operational facilities. Given that the inundation is from tidal sources the loss of potential flood storage is not considered to be detrimental to adjacent areas and therefore it is not anticipated that a requirement for compensatory storage should be provided. A flood management plan (including flood warning and emergency evacuation procedures) would need to be developed to consider the viability of managing the risk to the access route.

204. The potential consequences of a flooding event for the development have therefore been considered and found to be acceptable. The proposed development is deemed to have passed all 4 parts of the justification test.

ES Chapter 16 – Cumulative Effects

205. In accordance with the EIA (Wales) Regulations 2017 and Development Plan Policy, an assessment of the potential cumulative environmental effects has been carried out to support the planning application for the prosed ERF. The approach to assessment has followed the guidance in PINS Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects. Five other projects were identified as requiring consideration; two proposed solar farm/wind turbine developments within the Gwent levels, the existing G24 Innovations wind turbine in the vicinity of the proposed ERF, the Viridor energy from waste facility at Trident Park and the allocated strategic employment site south of St Mellons Business Park.

206. The assessment has concluded that no unacceptable successive or simultaneous effects are likely to occur as a result of the application proposal in combination with other projects in the general vicinity.

207. No further mitigation measures, over and above those summarised in the relevant chapters of the ES, are identified as required to specifically reduce cumulative effects, and as such the residual cumulative effects are concluded to remain not significant.

ES Chapter 17 – Socio-Economic Context

208. The socio-economic assessment has considered the socio-economic effects associated with the proposed ERF during construction and operation of the facility.

209. During construction, the proposed ERF will give rise to direct employment at full time equivalent levels of around 356 jobs annually over the three-year construction phase.

210. As well as direct employment, the proposed ERF will create indirect and induced employment opportunities through supply chain effects. Indirect and induced employment levels are calculated to provide an additional 461 full time equivalent jobs per year of construction.

211. The total direct, indirect and induced employment equates to 772 full time equivalent jobs per annum.

212. The proposed ERF will also generate additional Gross Value Added (GVA) through wider economic activity. Over the three-year construction phase, this is calculated to be worth £74.7m.

213. During its operational phase, the ERF would provide 25 full time, skilled jobs. Indirect and induced employment levels are calculated to be around 32.5 in the local area and a further 36 full time equivalent jobs in the wider area.

214. The proposed ERF will also generate additional Gross Value Added (GVA) during its operational life. This is calculated to be worth up to £15.7m in the local impact area and up to £43.73m in the wider impact area.

215. As well as employment and economic opportunities, the proposed ERF will:

- provide 15MW of electricity to the local grid, via the District Network Operator, and will support local businesses, housing and infrastructure as well as providing opportunities for private wire transmission to support local businesses and investment into the area;
- provide opportunities to provide heat to local businesses; and

- contribute to sustainable waste management and the Welsh Government's zero waste at 2050 ambitions by providing a solution that assists the transition by diverting residual waste from landfill, energy recovery and moving the means of management up the waste hierarchy.

216. In summary, the assessment demonstrates that there will be major socio-economic benefits for the local community, business community and the economy. The assessment also demonstrates significant, wider socio-economic benefits associated with sustainable waste management. The creation of temporary construction jobs and full-time jobs during the operation of the facility contributes significant levels of GVA to the local economy through direct, indirect and induced employment.

217. Overall, the proposed ERF would contribute significantly to the socio-economic standing of the study area and wider economy.

Environmental Statement Addendum (Doc 85)

218. This Addendum was prepared in response to a request, dated 1 October 2020, from the Planning Inspectorate for further information. The letter from the Planning Inspectorate requested further information on the following matters:

- Construction Environmental Management Plan (CEMP) and Landscape and Ecological Management Plan (LEMP) (with reference to Chapters 10 and 14 of the Environmental Statement);
- Further detail of chosen technology (with reference to Chapter 5 of the Environmental Statement);
- Duration of construction phases (with reference to Chapter 4 of the Environmental Statement);
- Transport movements during operation, and
- Other clarification/corrections.

219. Section 2 and Appendices 1 and 2[9] to the Addendum provide descriptions of the objectives that the CEMP and LEMP would seek to achieve, together with details of the specific measures that would be employed to meet these objectives. The CEMP and LEMP are provided as draft documents.

220. The Draft CEMP is for the construction phase of the development and sets out the intended methods of effectively managing potential environmental impacts arising from the construction of the facility. It sets out the measures which the Applicant will require its contractors to adopt and implement in the construction of the Project, to maintain satisfactory levels of environmental protection and limit disturbance from construction activities as far as reasonably practicable. The CEMP sets out details for the practical execution of construction works and the associated environmental management measures. It includes the site-specific mitigation measures in the submitted application, ES and those referred to in the ES Addendum (Doc 85). The specific measures apply to control of noise and vibration, ecological mitigation and measures to protect the water environment. The three key ecological areas addressed in the Draft CEMP are habitat protection, drainage and lighting.

[9] Submitted as Doc 86 (Draft CEMP) and Doc 87 (Draft LEMP), but subsequently updated and superseded by Doc 86 version 2 and Doc 87 version 2

221. The Draft LEMP sets out its purpose as follows:

- To set appropriate and agreed aims and objectives for the management of the green infrastructure at the site;
- To maximise biodiversity enhancements for the habitats and species present on the site, focussing on key local priority species and habitats;
- To provide detail on the habitat management requirements of key areas;
- To assist in the development of management and maintenance; and
- To set out a programme of monitoring and measurements to assess progress against the aims and objectives and provide strategies for the implementation of remedial measures, if required.

222. The LEMP will set out a strategy for the first five years, post construction. The LEMP will include provision for review at the end of the five-year period at which time the aims and objectives will be reviewed to ensure that the objectives are achieved for the long-term.

223. The CEMP and LEMP are presented in draft form and will be added to at the detailed design stage and as the contractors are appointed, in advance of construction. A final CEMP and LEMP will be submitted for approval of the Local Planning Authority in consultation with the relevant statutory bodies such as NRW and Environmental Protection Officers.

224. The other sections of the ES Addendum (Doc 85) provide a detailed description of the technology employed by the proposed ERF; a breakdown of the anticipated duration of the various stages of the overall three year construction phase of the development; breakdown of the vehicle movements associated with the operation of the ERF; and clarification/corrections to various individual references in the original ES.

Environmental Statement Addendum 2 (Doc 89)

225. ES Addendum 2 was submitted in response to a second request from the Planning Inspectorate for further information on 11 December 2020. The request was for further information on the following matters:

- Impact of aerial emissions - A revised air quality assessment, in accordance with the advice provided by NRW in their letter dated 26 November 2020;
- Water quality and pollution prevention - Further site layout and site management information concerning provision of an appropriate buffer zone in relation to the watercourse along the western site boundary, in line with the NRW advice in their letter dated 26 November 2020;
- Further assessment of the impact on existing trees on the site, together with information demonstrating the practicability and appropriateness of proposals for new planting and ongoing vegetation management and maintenance;
- A revised CEMP and LEMP[10], reflecting items 1-3 above;
- Landscape and Visual Impact Assessment Information: Photomontages illustrating the development proposals as seen from Viewpoints 9; 11; 14 and 19.

[10] Doc 86 version 2 and Doc 87 version 2

226. The main changes to the original ES arise from the updated Air Quality Assessment, which impacts on the wording of that Chapter. For ease of reference, and transparency, the Air Quality Chapter of the ES (Chapter 6) has been replaced in its entirety. It is set out as Chapter 6 of ES Addendum 2. A new Trees Chapter and Technical Appendices is also introduced.

Revised Air Quality Assessment (ES Addendum 2 Chapter 6)

227. The conclusions of the revised Air Quality Assessment are as set out at paragraphs 128 – 136 above.

Water Quality and Pollution Prevention (ES Addendum 2 Chapter 2)

228. Chapter 2 confirms that a buffer zone for maintenance access will be provided along the edge of the ditch. Although the internal access road and perimeter and acoustic fencing would be within 7m (the dedicated buffer width advised by NRW) of the ditch edge within, the buffer arrangement is considered to be sufficient for ditch maintenance purposes (vegetation management and placement of silt along the ditch edge, involving use of mini-machinery and manual work only). A corrected cross-sectional drawing (Doc 20 Revision B Drawing PL201 Proposed Site Sections) is provided, which confirms that the existing ditch will not be re-profiled as part of the development.

229. The Applicant reiterates a commitment to manage and maintain the currently unmanaged ditch for the lifetime of the development, a period of more than 25 years. Version 2 of the draft LEMP and draft CEMP incorporate the provision of ditch maintenance and vegetation management arrangements (including vegetation management during the construction phase), with the engagement of an Ecological Clerk of Works and an Arboricultural Clerk of Works to oversee these matters. Furthermore, the improvements gained by selected tree and vegetation removal, maintenance and management will improve the condition of the ditch and promote wider biodiversity opportunities.

Tree Assessment (ES Addendum 2 Chapter 3)

230. This addition to the original ES assesses the impact of the proposed development on the existing tree resource on the site. The arboricultural baseline survey records 13 individual trees and 2 groups, all along or in the vicinity of the south-westerly ditch line. 2 trees (early-mature pedunculate oaks) are assessed as category B in quality and potential longevity terms; 6 are assessed as category C; and 5 are assessed as category U (poor structural form with major defects restricting future site longevity). The two groups (on either side of the ditch line) are assessed as category C mixed species groups mainly comprising self-set regeneration and of low arboricultural merit.

231. Due to the size and scale of building requirement there is conflict with the trees that cannot be avoided. The tree assessment confirms that 6 of the 13 trees on the site assessed as individual specimens (2 category B trees and 4 category C trees) and part of Group G1 would be removed in order to accommodate the proposals, while a further 5 category U trees are assessed as requiring to be removed from a site management perspective.

232. Notwithstanding the number of trees to be removed, the environmental effect of their removal is assessed as minor adverse, due to their low overall quality. Mitigation through new tree planting is assessed as altering the overall residual effect to moderate beneficial.

Revised LEMP and CEMP

233. The Draft CEMP and LEMP submitted as Doc 86 and Doc 87 are replaced by updated Draft versions (Doc 86 version 2 and Doc 87 version 2).

Additional Landscape and Visual Impact Photomontages

234. Photomontages for LVIA Viewpoints 9, 11, 14 and 19 are provided (Docs 90, 91, 92, 93).

Environmental Statement Addendum 3 (Doc 117)

235. ES Addendum 3 was submitted in response to a further request from the Planning Inspectorate for further information on 31 March 2021, following examination of ecology matters at Hearing Session 3. The request was for (i) further assessment concerning the development's implications for suitable dormouse habitat and the possible presence of dormice on the site, and (ii) further assessment of the tree loss proposed in terms of roosting potential for bats. ES Addendum 3 is presented in the form of a revised Chapter 10 on Ecology, incorporating the results of the additional assessment work on these two matters. The two supporting technical reports have also been submitted[11].

Dormice and Dormouse Habitat

236. Both the earlier 2019 and 2020 ecological assessments carried out in connection with the application considered the Site to be sub-optimal for hazel dormouse *Muscardinus avellanarius* due to lack of on-site habitat and also limited connectivity to adjacent suitable habitats. No local records within 1 km of the Site have been identified. Due to CC ecologist evidence at the hearing of local dormouse populations in the immediate locality, dormouse presence/absence surveys are now being carried out to provide further information on the presence/distribution of dormouse at the Site, for as long as necessary during the period April – November 2021. In the interim dormouse are presumed present and appropriate mitigation is included accordingly.

237. A further dormouse habitat suitability assessment has been conducted in April/May 2021[12]. This identifies small areas of the Site providing some suitability for dormouse, associated with the western boundary area and the bramble scrub along the peripheries of the Site. Overall, the dormouse habitat resource at the Site is considered of up to Local Value only, contributing to other larger habitat resources within the locality.

238. The dormouse habitat assessment identifies approximately 0.6ha of potential dormouse habitat to be lost. Approximately 0.1ha of suitable dormouse habitat will be retained along the south-western ditch feature. The average dormouse population density is around 2.2 dormouse per ha (English Nature, 2006). Therefore, given the small size of the area impacted upon, the site is suitable for supporting less than one individual dormouse. It is therefore assessed that the site is unlikely to support a self-sustaining population of dormouse, however dormouse may use the area for passage/foraging. It is recognised that the site provides some additional habitat

[11] Doc 118 Môr Hafren ERF Technical Appendix 10 Appendix 1.7, Potential Bat Roosting Features Inspection Report (May 2021); Doc 119 Môr Hafren ERF Technical Appendix 10 Appendix 1.8, Dormouse Conservation Plan (May 2012).

[12] Doc 119

resource to larger areas of habitat in the locality that are known to support dormouse (population sizes are unknown).

239. Without mitigation, the loss of small areas of suitable habitat is likely to be a permanent, minor adverse effect. It is considered possible that these actions (in the absence of mitigation) would also be a breach of legislation. Individual offences would also be likely as regards killing and injury of individual dormouse that could be present. The habitat loss would result in both permanent and temporary adverse effects of significance at a Local level.

240. The retained habitats and created habitats with appropriate consideration for dormouse will continue to provide additional habitat areas to the local populations in the locality. As such, no significant residual effect on dormouse is predicted in the short term with long-term minor beneficial effects anticipated as new habitats establish and existing habitats improve through targeted management.

241. Based on the small area of suitable habitat to be lost and the likelihood of the site not supporting sustainable populations, mitigation includes for the provision of a similar resource for dormouse as an outcome of the development with additional enhancements. Based on the current landscape scheme, through new hedgerow planting and dense planting areas 0.3ha of higher quality habitat will be created in compensation for the loss of existing trees/scrub and bramble patches. New hedgerow planting will increase connectivity and will also provide thicker habitat and a more varied species mix, increasing dormouse food diversity on the Site. In addition, seven dormouse boxes will be installed on the Site in suitable locations.

Bat Roosting Potential

242. A detailed tree inspection of the proposed tree removals was undertaken in April/May 2022[13] to assess any potential bat roost features and undertake more detailed inspections of such features to ensure no roosting bats were present. The survey concluded that of the trees to be removed two were found to have low suitability for roosting bats and one tree was found to have moderate suitability for roosting bats. These features were subject to an appropriate level of inspection and no conclusive evidence of roosting bats was recorded.

243. As such, the overall roosting resource within the Site is considered of Site value only due to the presence of a limited number of potential roost features associated with three trees. Although no roost loss has been identified at this stage, the removal of trees with potential roosting features reduces opportunities for bat roosting on Site. To compensate for the reduction of such features, at construction stage three bat boxes will be installed on retained tree features at the Site.

Habitats Regulations Assessment (Docs 76 Version 2, 77)

244. The project has been subject to a HRA screening process with regard to the following European sites:

- Severn Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar.
- The River Usk/Afon Wysg SAC.

[13] Confirmed to be corrected to April/May 2021 at Hearing Session 5

- Cardiff Beech Woods SAC.

245. The application site lies within 1.2km of the Severn Estuary Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar which form the Severn Estuary European Marine Site (EMS). The River Usk/Afon Wysg SAC lies approximately 9km to the east of the application site and Cardiff Beech Woods SAC lies approximately 9.8km to the north west of the application site. All these are statutorily designated sites of European importance.

246. The Habitats Regulations afford a high level of protection to sites classified as SPAs as areas that hold significant populations of certain bird species (SPAs). They also afford the same level of high protection to tracts of land supporting habitats or rare species (other than birds) considered scarce or vulnerable at a European level (SACs). SPAs, SACs and Ramsar sites form part of a network of nature protection areas with the UK known as the National Site Network (NSN). Ramsar sites are designated as wetlands of international importance that are afforded similar legislative protection to SPAs and SACs.

247. Under Regulation 63 of the Habitats Regulations the competent authority is responsible for assessing whether land use plans or proposed developments could adversely affect a site(s) within the NSN. This requires a process known as a Habitat Regulations Assessment (HRA) encompassing two tests required under Regulation 63(1) of the Habitats Regulations.

248. Test 1: having ascertained that the plan is not directly connected to, or necessary for site management for nature conservation, the first test of the HRA, commonly referred to as a screening test, considers whether or not a plan or project is likely to have a significant effect on a site within the NSN, either alone or in combination with other plans or projects. A significant effect is any effect that would undermine the conservation objectives for the respective NSN site and may include physical loss and/or damage of a habitat, disturbance effects, and changes to water availability, deposition of contaminants through changes in air quality and so on.

249. Test 2: The second test of the HRA is relevant to those plans or projects that are screened as likely to have a significant effect, alone or in combination with other plans or projects, and requires an appropriate assessment. The role of the appropriate assessment is to consider the implications of the plan or project for the conservation objectives of the NSN sites in question and determine whether they would have an adverse effect on the integrity of the site.

Severn Estuary SPA

250. The Severn Estuary SPA covers an area of 24487.91ha. It qualifies under Article 4.1 of the Habitats Directive by regularly supporting an internationally important wintering population of Bewick's swan *Cygnus columbianus bewickii*, an Annex 1 species. During the period 1988/89 to 1992/93 a mean peak of 289 birds (1.7% of the northwest European population, 4.1 % of the British wintering population) used the estuary. The SPA boundary lies 1.2km to the south of the application site.

251. The Severn Estuary qualifies under Article 4.2 of the Directive as a wetland of international importance by regularly supporting over 20,000 waterfowl in winter. In the five-year period 1988/89 to 1992/93 the average peak count was 68,026 waterfowl comprising 17,502 wildfowl and 50,524 waders.

252. The Severn Estuary also qualifies under Article 4.2 by regularly supporting internationally important numbers of the following five species of migratory waterfowl in winter (average peak means for the period 1988/89 to 1992/93): 3,002 European white-fronted goose *Anser albifrons albifrons* (1.0% NW European, 50.0% British population), 2,892 common shelduck *Tadorna tadorna* (1.2% NW European, 3.9% British population), 330 gadwall *Anas strepera* (2.8% NW European, 5.5% British population), 41,683 dunlin *Calidris alpina* (2.9% East Atlantic flyway (EAF), 9.6% British population) and 2,013 common redshank *Tringa totanus* (1.3% EAF, 2.6% British population).

253. The Severn Estuary also supports nationally important wintering populations of a further 10 species: 3,977 wigeon *Anas penelope* (1.6% British population), 1,998 teal *Anas crecca* (2.0% British population), 523 pintail *Anas acuta* (2.1 % British population), 1,686 pochard *Athya ferina* (3.8% British population), 913 tufted duck *Aythya fuliglla* (1.5% British population), 227 ringed plover *Charadrius hiaticula* (1.0% British population), 781 grey plover *Pluvialis squatarola* (3.7% British population), 3,096 curlew *Numenius arquata* (3.4% British population), 246 whimbrel *Numenius phaeopus* (4.9% British population) and 3 spotted redshank *Tringa erythropus* (1.5% British population).

254. In addition, during passage periods, the estuary supports nationally important numbers of ringed plover (spring migration: 442 birds (1.4% British passage), autumn migration: 1,573 birds (5.2% British passage)) dunlin (spring: 3,510 birds (1.7% British passage), autumn: 5,500 birds (2.7% British passage)) whimbrel (spring: 246 birds (4.9% British passage), autumn: 66 birds (1.3% British passage)) and common redshank (autumn: 2,456 birds (2% British passage)).

255. The Severn Estuary also supports a nationally important breeding population of a migratory species. In 1993 2040 pairs of lesser black-backed gulls *Larus fuscus* bred on the islands of Steep Holm and Flat Holm within the estuary. This represents 2.5% of the British total.

256. The conservation objectives for the Severn Estuary SPA are:

- to maintain the Bewick's swan population and its supporting habitats in favourable condition;
- to maintain the European white-fronted goose population and its supporting habitats in favourable condition;
- to maintain the dunlin, common redshank and shelduck populations and their supporting habitats in favourable condition;
- to maintain the wintering gadwall population and its supporting habitats in favourable condition;
- to maintain the internationally important assemblage of waterfowl and its supporting habitats in favourable condition.

For each of the above objectives a series of specific conditions are set relating to the interest feature concerned.

Severn Estuary Ramsar

257. The Severn Estuary Ramsar was designated in 1995. The site covers an area of 24662.98ha. Its boundary is 1.2km to the south of the application site. The estuary qualifies as a Ramsar site under criterion 1, 3, 4, 5, 6 and 8:

- Under criterion 1 the Ramsar supports the following Annex 1 habitats: Sandbanks which are slightly covered by sea water all the time, estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) and the immense tidal ranges which affects both the physical environment and biological communities;
- The estuary qualifies under criterion 3 due to unusual estuarine communities, reduced diversity and high productivity.
- The estuary qualifies under criterion 4 due to its importance as a run for migratory fish including Atlantic salmon *Salmo salar*, sea trout *Salmo trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *Alosa fallax* and eel *Anguilla anguilla*. The estuary is also of particular importance for migratory birds during spring and autumn.
- The estuary qualifies under criterion 5 for supporting internationally importance assemblages of wintering waterfowl (70919 birds – 5-year peak mean 1998/99 – 2002/03).
- The estuary qualifies under criterion 6 for supporting a wintering population of international importance of the following species:
    - Bewick's swan of international importance (229 individuals – 5-year peak mean 1998/99 – 2002/03)
    - European white-fronted goose (2076 individuals – 5-year peak mean 1996/97 - 2000/01)
    - Common shelduck (3223 individuals – 5-year peak mean 1998/99 – 2002/03)
    - Gadwall (241 individuals – 5-year peak mean 1998/99 – 2002/03)
    - Dunlin (25082 individuals – 5-year peak mean 1998/99 – 2002/03)
    - Common redshank (2616 individuals – 5-year peak mean 1998/99 – 2002/03
- The site also contains species/populations identified subsequent to designation for possible future consideration under criterion 6 including breeding lesser black-backed gull, passage ringed plover and wintering populations of teal and pintail.
- The site qualifies under criterion 8 for the diverse fish communities supported by the whole estuarine and river system. It is one of the most diverse in Britain with over 110 species recorded. The Severn Estuary is a key migration route to spawning grounds for many migratory species. The site is also an important feeding and nursery ground for many fish species, particularly allis and twaite shad.

258. The Ramsar site supports twelve nationally important plant species: bulbous foxtail *Alopecurus bulbosus*, sea barley *Hordeum marinum*, goldilocks aster *Aster linosyris*, marsh mallow *Althaea officinalis*, slender hare's-ear *Bupleurum tenuissimum*, dittander *Lepidium latifolium*, corn parsley *Petroselinum segetum*, still saltmarsh-grass *Puccinellia rupestris*, sea clover *Trifolium squamosum, Zostera marina/angustifolia* and *Zostera noltei*.

259. A nationally important breeding population of herring gull *Larus argentatus argentatus* and nationally important passage populations of little egret *Egretta garzetta*, ruff *Philomachus pugnax*, whimbrel, curlew and greenshank *Tringa nebularia* occur within the Ramsar site. Wintering populations of national importance of wigeon, shoveler *Anas clypeata*, pochard, water rail *Rallus aquaticus* and spotted redshank also occur.

260. Three nationally important invertebrate species have also been recorded within the Ramsar site: *Tenellia adspera*, *Corophium lacustre* and *Gammarus insensibilis*.

261. The conservation objective for the Severn Estuary Ramsar site is to maintain the estuary features in favourable condition as set out the in the conservation objectives for the SAC (see below), in so far as these objectives are applicable to the area designated as Ramsar.

262. The notable estuarine species assemblage included allis shad, sea trout and eel. It also covers migratory, estuarine, marine and freshwater fish species. The conservation objectives for migratory fish are the same as those laid out for Annex II fish species within the SAC.

263. The conservation objectives for the bird populations cover those within the SPA and populations of wigeon, teal, pintail, pochard, tufted duck, ringed plover, grey plover, curlew, whimbrel, spotted redshank and lesser black-backed gull. The conservation objectives for these species are the same as those for the overall assemblage within the SPA.

Severn Estuary SAC

264. The Severn Estuary SAC supports the following Annex 1 habitats that are a primary reason for the selection of the site: Estuaries, sandbanks which are slightly covered by seawater all the time, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows *Glauco puccinellietalia maritimae* and reefs. It also supports populations of the following Annex II species that a primary reason for the selection of this site: river lamprey, sea lamprey and twaite shad. The SAC boundary is 1.2km to the south of the application site.

265. The Severn Estuary is important for its immense tidal range, which affects both the physical environment and the diversity and productivity of the biological communities. The tidal range is the second largest in the world, reaching in excess of 13 m at Avonmouth. There are several major rivers, including the Taff, Usk, Wye, Severn, Avon and Parrett which feed into the estuary, and influence the salinity regime. Together these rivers tend to produce a marked east-west salinity gradient and a range of conditions varying from brackish to fully saline, depending on the season and rainfall, which in turn influences the occurrence and distribution of habitats and species throughout the estuary and its fringes.

266. The intertidal zone of mudflats, sandbanks, rocky platforms and saltmarsh is one of the largest and most important in Britain and this range of habitats provides an ecosystem of great importance for a wide range of fish and bird species for feeding, breeding, resting and migration.

267. The intertidal mudflats and sandflats feature in the Severn Estuary covers an area of approximately 20,300ha. The intertidal mudflats and sandflats are distributed throughout the Severn Estuary with extensive mudflats fronting the Welsh shore and

Bridgwater Bay, and large banks of clean sands in the more central parts of the estuary at Middle and Welsh Grounds.

268. The high biomass of invertebrates in the mudflats of the Severn provide an important food source for a diverse range and large number of fish and benthic predators. These intertidal areas are therefore important in supporting the fish assemblages of the SAC.

269. The Severn Estuary is fringed by saltmarsh. The huge tidal range in the Severn Estuary has led to extensive saltmarsh community development with an expanded zonation. The saltmarshes of the Severn Estuary have four principal zones corresponding to the four main sub-features that have been identified for this feature. Two of these zones (the lower to mid marsh communities and the mid to upper marsh communities) contain the principle saltmarsh types which are defined as Atlantic salt meadow as per the Annex 1 habitat description. However, these occur in an intimate mosaic and in transition with the communities of the other two zones (in the pioneer saltmarsh and transitional high marsh communities) which are therefore a part of the feature. The habitats within the "pills" provide important shelter and feeding habitats for both fish and bird species.

270. These habitats provide a wide range of services for estuarine species. They are important components of the SAC Estuary feature, important supporting habitats for the wintering and passage bird features of the SPA and Ramsar Site and also important supporting habitats for the fish assemblage of the SAC and Ramsar designations.

271. Defined conservation objectives are set for each of the estuaries, subtidal sandbanks, mudflats and sandflats, Atlantic salt meadow, reefs, river and sea lamprey, and twaite shad features of the Severn Estuary SAC, directed at maintaining each of these features in favourable condition.

Cardiff Beech Woods SAC

272. Cardiff Beech Woods SAC covers 114.45ha and lies 9.8km to the north-west of the application site. The SAC supports the following Annex 1 habitat that is the primary reason for the selection of this site: *Asperulo-Fagetum* beech forests. The Cardiff Beech Woods contain one of the largest concentrations of this woodland type in Wales and represent the habitat close to the western limit of its past native range in both the UK and Europe. The priority Annex 1 habitat *Tilio-Acerion* forest of slopes, screes and ravines is also present as a qualifying feature but is not the primary reason for the selection of the site.

273. Both Annex 1 habitat types are found within Garth Wood and Fforestganol a Chwm Nofydd SSSI, but only Asperulo-Fagetum beech forests occurs in Castell Coch Woodlands and Road Section SSSI. The SAC management plan prepared for the site notes that the location of the woodland in industrialised South Wales together with the presence of nearby quarrying and associated activities mean that there is the potential for localised atmospheric pollution. It also notes that to date there is no evidence that atmospheric pollution has had an adverse impact on the European features of interest.

274. The conservation objectives for *Asperulo-Fagetum* beech forest and for *Tilio-Acerion* forest of slopes, screes and ravines is to maintain the features in favourable conservation status, assessed against defined criteria for each feature.

River Usk/Afon Wysg SAC

275. The River Usk/Afon Wysg SAC covers an area of 967.97ha and lies 9km to the east of the application site. The SAC is designated for supporting populations of the following Annex II species that are the primary reason for the selection of this site: sea lamprey brook lamprey, river lamprey *Lampetra fluviatilis*, twaite shad, Atlantic salmon, bullhead *Cottus gobio* and otter *Lutra lutra*. The Annex II species allis shad is also present as a qualifying feature but is not a primary reason for the site selection. The Annex 1 habitat water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation is also present as a qualifying feature but is not the primary reason for the selection of the site.

276. Defined conservation objectives are in place for each of the watercourse, fish species and otter features of the River Usk/Afon Wysg SAC, directed at maintaining each of these features in favourable condition.

Air Quality Impacts

277. An assessment has been carried out of the predicted worst-case air-quality impacts of the proposed development on each of the NSN sites. The baseline critical levels (concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge) and critical loads (a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge) for the NSN sites were determined with reference to APIS and the relevant conservation objectives for the site. The citations for the component SSSIs which form the NSN sites were also assessed. If no critical level or load was given for a relevant habitat or species within NSN sites on APIS the SSSI citations were searched for additional information to determine relevant critical loads or levels that may be appropriate.

278. Following a request from NRW for amendments to the initial air quality assessment, a revised report has been prepared[14] (Environmental Visage, January 2021). The revised air quality assessment includes an in-combination assessment of other plans and projects to confirm the absence of likely significant effects on the SAC/SPA/Ramsar. The revised air quality report confirms that relevant critical levels and loads set for the protection of interest features for the site are not exceeded and no significant in-combination effects are likely to occur.

279. The air quality modelling undertaken by Environmental Visage shows that the annual mean NOx PC is below 1% of the critical level for NOx at all three European sites except at one of the receptor points within the Severn Estuary (1.2%).

280. The APIS website gives a maximum critical level for NOx at Peterstone Great Wharf (325569,179043) of 16.51 µg/m3. Even with the increase in NOx predicted on this part of the Severn Estuary SAC/SPA/Ramsar, the critical level for NOx will still be well below the level in the atmosphere above which direct adverse effects on receptors, such as plants and ecosystems, may occur according to present knowledge. Therefore, in this part of the SAC the overall critical level set for all vegetation types of 30µg/m3 is not exceeded at this location.

281. The daily NOx PC is below 10% of the critical level for NOx on the River Usk/Afon Wysg SAC and the Cardiff Beech Woods SAC. The daily NOx PC on the two receptor points within the Severn Estuary is below 10% of the relevant short-term critical level

[14] Doc 35 Version 2

threshold of 75 µg/m3 (2.69% and 2.8% at the respective receptor points). The NOx daily (24 hour) PEC, which combines the PC plus background levels, is below 70% of the daily mean critical levels of 75 µg/m3 for the protection of vegetation and ecosystems at the same points.

282. APIS shows that annual baseline levels of ammonia within the River Usk/Afon Wysg SAC average 1.29 µg/m3 (maximum 2.05 µg/m3). For the Cardiff Beech Woods SAC the average and maximum critical level is the same 1.36 µg/m3. It should be noted that the *Asperulo-Fagetum* beech forest Annex 1 habitat type contains sensitive lichens and bryophytes. For the Severn Estuary SAC APIS shows that annual baseline levels of ammonia average 1.24 µg/m3 (maximum 2.71 µg/m3).

283. The baseline critical level for the protection of vegetation set for ammonia is an annual mean of 3µg/m3. For sites with sensitive lichen and bryophytes it is set at an annual mean of 1µg/m3. At none of the receptor points modelled does the PC exceed 1% of the relevant critical level for ammonia in any of the three European sites. This allows for the lower annual critical level applied to the Cardiff Beech Woods SAC.

284. The PC of sulphur dioxide (annual) and hydrogen fluoride (daily and annual) on all three European sites is far below 1% (10% for short-term impacts) of the relevant critical level and therefore no impacts on the interest features of these sites are predicted.

285. The air quality modelling used a critical load of 20-30kg/N/ha/yr. as the baseline to assess impacts on habitats within the Severn Estuary SAC/SPA/Ramsar. This applies to the most sensitive habitat type identified on APIS: Annex 1 habitat estuaries (pioneer, low-mid and mid-upper saltmarshes). The same figures are used for the habitats within the River Usk/Afon Wysg SAC where no critical load is given on APIS for the Annex 1 habitat: water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. APIS notes that for rivers and streams in most lowland rivers, nitrogen inputs from catchment land-use, not deposition from the atmosphere, are likely to be much more significant.

286. These meso/eutrophic systems are often phosphorus limited (or nitrogen/phosphorus co-limited). As atmospheric deposition is unlikely to be a significant contributor to the river system and that the availability of phosphorus is likely to be a limiting factor on aquatic plant growth the critical load selected is considered appropriate for initial screening. A lower baseline figure of 10-20kg/N/ha/yr. was used for the Cardiff Beech Woods SAC. The baseline critical loads were informed by a review of the site-specific critical loads for habitats/interest features within each site likely to be impacted by the proposals.

287. The air quality modelling has shown that for all three European sites the PC is less than 1% of the lower end of the critical load range assessed. For the Severn Estuary the total nitrogen deposition remains below the lower end of the critical load range given for the most sensitive habitat within the site. For the River Usk/Afon Wysg SAC and the Cardiff Beech Woods SAC, although the PC is below 1% of the lower end of the critical load range given for the most sensitive habitats within the sites, the PEC exceeds the lower end of the critical load for the most sensitive habitat. In both cases, this occurs with or without the proposed development.

288. APIS shows that there are no habitat types within the Severn Estuary SAC that are sensitive to acid deposition. APIS does show that the habitat type standing open water and canals used by Bewick's swan and gadwall is sensitive to acidity with the Severn Estuary SPA. The Annex 1 habitats within the Cardiff Beech Woods SAC are considered

sensitive to acid deposition. The habitats and species within the River Usk/ Afon Wysg SAC are considered sensitive to acidity although no critical loads are given for either the Annex 1 habitat or Annex II species.

289. Annual average acid deposition rates (keq/ha/yr PC of total acid) across Cardiff Beech Woods SAC and River Usk/ Afon Wysg SAC are insignificant with background levels barely changed by the proposed development.

Noise Impacts

290. An assessment has been undertaken of the impacts of noise on ecological receptors around the site. The assessment covered noise generated by construction activities and operational activities. The acoustic assessment assessed impacts on two ecological receptors Gwent Levels - Rumney and Peterstone Site of Special Scientific Interest (SSSI) and the Severn Estuary SAC/SPA/Ramsar. The noise assessment identified that the loudest potential activities during construction would be lorries tipping material, asphalt compacting and percussive piling.

291. The only ecological receptor where noise impacts have been identified is the Gwent Levels - Rumney and Peterstone SSSI. This site does not fall within the boundary of the Severn Estuary SPA/SAC/Ramsar. However, there is the possibility that the fields within the SSSI could provide supporting habitat for SPA birds.

292. The acoustic assessment found that noise levels exceeding 55dB LAeq,T are expected to occur within 40m of the boundary during the operation of the facility. Levels exceeding 55dB LAeq,T are expected to occur within 170m of the site boundary during parts of the construction phase. The acoustic assessment is based on the installation of a 2m high acoustic fence around the perimeter of the site during construction. This acoustic fence is proposed to mitigate impacts on commercial and residential receptors.

293. The noise modelling confirms that no noise impacts are predicted on birds within the NSN site.

Likely Significant Effects Test

294. The air quality assessment did not identify any significant increase in acid deposition within the Severn Estuary SPA. The habitats within the SPA closest to the site comprise intertidal mudflats and saltmarsh, habitats that are not considered sensitive to acid deposition when considering use by birds. No adverse impacts on waders and wildfowl using these habitats is predicted. The APIS website does show that the habitat types standing open water and canals used by Bewick's swan and gadwall is sensitive to acidity.

295. The wintering herd of Bewick's swan using the SPA are concentrated around Slimbridge and do not regularly occur in this part of the SPA. The habitat type standing open water and canals is not present in the part of the SPA. Gadwall are typically associated with freshwater habitats mainly at Slimbridge and Bridgewater Bay but notable concentrations also occur on the estuary around Avonmouth, between the two Severn Bridges and at Woodspring and Weston Bays. No likely significant effects on either interest feature of the SPA are anticipated.

296. The air quality assessment shows that the annual mean NOx process contribution (PC) at one of the receptor points within the Severn Estuary is 1.2%. However, in this part of the SAC the overall critical level set for all vegetation types of 30µg/m3 is not

exceeded. No likely significant effects on the interest features of the SAC are anticipated.

297. The only ecological receptor where noise impacts have been identified is the Gwent levels - Rumney and Peterstone SSSI. This site does not fall within the boundary of the Severn Estuary SPA/Ramsar. However, there is the possibility that the fields within the SSSI could provide supporting habitat for SPA birds. The SSSI citation does not mention wintering or passage birds as being an interest feature of the site. The fields near the site are small and the reens lined with trees and shrubs meaning the extensive sightlines favoured by many wildfowl and waders on feeding and roosting grounds are not present which limits the suitably of this area for feeding and roosting SPA/Ramsar species.

298. The maximum extent of noise levels above 55dB LAeq,T from the site boundary is 170m during construction and 40m during operation. These zones only impact on a small part of the SSSI and on habitat considered to be sub-optimal for many wintering and passage birds. Large areas of similar habitat are present within the SSSI to the east of the development site (and in contiguous SSSIs further east). It is considered that noise associated with the proposed development will not have a likely significant effect on birds from the SPA that may be using the SSSI as supporting habitat for roosting or feeding.

299. The APIs website shows that baseline ammonia levels within the Cardiff Beech Woods SAC are above 1 µg/m3 although the air quality modelling shows the PC is below 1% of the critical level. The conservation objectives for this site relate to the structure and composition of canopy trees, presence of dead wood and the maintenance of ground flora and ancient woodland indicators. The PC of ammonia is 0.0015 µg/m3, this level of ammonia is considered insignificant and unlikely to result in likely significant effects on the interest features of the SAC.

300. The modelling also shows that for nitrogen deposition on the Cardiff Beech Wood SAC although the PC is below 1% of the lower end of the critical load range the PEC exceeds the lower end of the critical load for this habitat. Significant contributors to the current high levels of nitrogen deposition on the site include livestock, European imports and road traffic, with only a slight reduction in overall levels of nitrogen deposition between 2006 and 2016.

301. The PC of 0.01kgN/ha/yr. will not result in any discernible difference in current rates of nitrogen deposition across this SAC. The background level of nitrogen deposition on the Cardiff Beech Woods SAC is 26.6kg/N/ha/yr. This exceeds the upper end of the critical load range given for the habitats within the SAC. However, the conservation objectives relate largely to the structure of the woodlands and the composition of the ground flora. The management plan for the site notes that there is no current evidence to indicate that pollution is adversely affecting the interest features of the site. It is concluded that the predicted rate of nitrogen deposition on this site is unlikely to result in likely significant effects on the interest features of the SAC.

302. The additions of nitrogen and ammonia to the Cardiff Beech Woods SAC are minimal and would be indistinguishable from background variations. The ammonia concentrations (PEC) are below the critical level of 3 µg/m3 set for the protection of higher plants and the additions from the project would not affect the ability to deliver the conservation objectives set for this site.

303. The PC of total acid of 0.0021kgN/ha/yr. will not result in any discernible difference in current rates of acid deposition across this SAC. As there has been no observable

changes in the composition of ground flora within the SAC it is concluded that the predicted rate of acid deposition on this site is unlikely to result in likely significant effects on the interest features of the SAC.

304. The habitats and species within the River Usk/ Afon Wysg SAC are considered to be sensitive to acidity although no critical loads are given for either the Annex 1 habitat or Annex II species.

305. The PC of total acid at this site will not result in any discernible difference in current rates of acid deposition across this SAC. As the fish populations in the lower reaches of the Usk where the increase in acid deposition is predicted to be highest are likely to be transitory it is concluded that the predicted rate of acid deposition on this site is unlikely to result in likely significant effects on the interest features of the SAC.

306. Nitrogen deposition for the River Usk/ Afon Wysg SAC marginally exceed the lower end of the critical load for the most sensitive habitat. However, the Annex 1 habitat feature is not present in the lower reaches of the Usk so no likely significant effects on the interest features of the SAC are anticipated.

307. Traffic emissions associated with both construction and operational traffic will not reach levels on roads close to the Severn Estuary SAC/SPA/Ramsar where they will act in combination with emissions from the plant. Given the distance of the B4239 from the site and the lack of any significant increase in traffic related to this project on the B4239 it is concluded the project is unlikely to result in likely significant effects on the interest features of the Severn Estuary SAC/SPA/Ramsar. No significant increases in traffic flows associated with the project are predicted on major roads within 200m of the River Usk/Afron Wysg SAC or the Cardiff Beech Woods SAC.

308. The project alone is not considered to have any likely significant effects on the interest features of the relevant NSN sites. Given that the project would not give rise to any appreciable effects on the sites, it is considered that the project in combination with other plans or projects would be unlikely to give rise to any significant effects.

309. However, for completeness the air quality modelling looked at in-combination effects of the emissions from three other projects: 68 Portmanmoor Road, replacement chimneys to boiler rooms (20/01626/MNR); land at Rover Way, Section 73 application to vary time limit of outline planning permission 17/02130/MJR for, amongst other things, a 9.5MW biomass facility (20/01279/MJR); and Uskmouth Power Station (20/0748).

310. Existing facilities and operations (e.g Trident Park EfW, Celsa Steel Section Mill, Tremorfa Melt Shop and the Welsh Water Anaerobic Digestion Facility) are already included in the background data utilised from the DEFRA website. Emissions from existing plant will form part of the baseline conditions in the APIS figures, so inclusion of these in the in-combination assessment would be double-counting.

311. The air quality modelling shows that the level of in-combination nitrogen deposition exceeds 0.2kg/N/ha/yr over parts of the Severn Estuary SAC/SPA/Ramsar during both years modelled. The highest rate of deposition predicted is approximately 0.25kg/N/ha/yr. As the area affected by deposition rates is greatest in 2018 this year is used for assessment purposes. APIS data shows that across the Severn Estuary SAC/SPA/Ramsar the lower end of the critical load range for nitrogen of 20-30kg/N/ha/yr is not exceeded. The addition of 0.25kg/N/ha/yr across part of the site will not lead to the lower end of the critical load range being exceeded.

312. The APIS website gives a maximum level of nitrogen deposition for Peterstone Great Wharf (325569,179043) of 9.5kg/N/ha/yr. Even with an additional 0.2kg/N/ha/yr. being deposited on this part of the Severn Estuary SAC/SPA/Ramsar, the baseline rate of nitrogen deposition will still be less than half the rate below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge.

313. Consideration has also been given to two other plans/projects – a 45ha allocated strategic employment site south of St Mellons Business Park and a proposed solar farm and wind turbine development some 3.7km east of the application site. However, these other projects are not considered to give rise to likely significant effects in combination with the Môr Hafren scheme.

314. The HRA screening process carried out in connection with the application concludes there will be no likely significant effects on interest features of the NSN sites, either alone, or in-combination with other plans and projects. As such, the Applicant's screening opinion concludes that an appropriate assessment under Test 2 of the Habitats Regulations is not required.

The Applicant's Case

315. The case for the proposal relies on the documentation and assessments submitted in support of the application, including the Planning Statement, Waste Planning Assessment, Design and Access Statement and the Environmental Statement, incorporating the various Technical Assessments and Appendices addressing the topics identified as requiring assessment of likely significant environmental effects. The main points are:

Principle of the Development

316. The Applicant (Môr Hafren Bio Power Limited) seeks planning permission for an energy recovery facility (ERF) on land at Newlands Road, Cardiff. The Company has been established specifically to promote and build the ERF. The Applicant has chosen to work with a German engineering company and technology provider who have successfully delivered similar projects in the UK and elsewhere.

317. The application site had, until recently, the benefit of planning permission for the construction of an integrated waste management facility incorporating autoclave technology, materials recycling, thermal treatment and combined heat and power generation, ancillary offices and weighbridge office, and associated roads, car parking and landscaping. That facility had permission to process 200,000 tonnes of waste per annum.

318. Tthe proposal differs in terms of design from that granted permission in 2009, but the footprint of the two developments is basically the same. The main difference is the height of the main building and stack. The 2009 main building had a maximum height of 25m and a stack height of 30m. The proposed new buildings would have a maximum height of around 46m. The stack would be 70m high.

319. The reason for the increased height of the building is because of the different technology to be used for the thermal treatment process in the proposed ERF. The stack needs to be 70m because of environmental controls over emissions - full details of the stack height calculations are provided in Chapter 6 of the ES.

320. The proposed ERF will process up to 200,000 tonnes per annum of predominantly residual commercial and industrial waste per annum (i.e. that commercial and

industrial waste remaining post-treatment and destined for landfill), to generate electricity for export to the local electricity network. It is anticipated that the electricity generated will be used locally to support local businesses, housing and infrastructure. Any surplus would be exported to the National Grid.

321. The ERF would use a traditional moving grate technology, with a steam raising heat recovery boiler. Steam will drive a condensing steam turbine generator, set with turbine pass out steam capable of being used to provide heat to the site and a wider heat network.

322. The ERF would have an output rating of 15MW electrical, equivalent to the requirement of approximately 30,000 houses. The facility would operate continuously, 24 hours per day, with an approximate average of 8,000 hours of operation per year (being offline for maintenance purposes for approximately 10% of the year).

323. The proposed ERF also offers environmental improvements by using fewer HGV's for its deliveries when compared to the previously consented use. The Applicant considers that because the site has previously been granted planning permission for a similar use, that the principle of development for a waste management use on the site has been already been assessed as acceptable and established.

324. In relation to the development plan, LDP policy KP12 requires waste arisings from Cardiff to be managed by supporting additional sustainable waste management facilities in accordance with the requirements of the CIM Sector Plan (2012) and the guidance in TAN 21 *Waste*. A Waste Planning Assessment (WPA) accompanies this application, in accordance with LDP policy W1 and TAN 21. The WPA demonstrates how the proposed ERF complies with the underlying principles of LDP policies KP12 (i) and W1 (ii):

- Waste Hierarchy – the proposed ERF conforms to the waste hierarchy by only seeking to process residual waste, i.e. that waste that remains after material that can be removed has been removed through methods further up the hierarchy. The proposed ERF is a recovery facility as defined in the Waste Framework Directive, meeting R1 status, and will divert significant quantities of residual waste from landfill, a disposal operation sitting firmly at the bottom of the hierarchy.

- An integrated and adequate network – there is a clearly recognised role for energy from waste facilities in the achievement of sustainable waste management through an integrated and adequate network of facilities that will enable the waste hierarchy to be delivered.

- Nearest appropriate installation – waste should be disposed of or recovered in one of the nearest appropriate installations whilst ensuring that environment and public health are protected. The residual waste for the proposed ERF will be sourced predominantly from within a 30-mile catchment area and there is a realistic prospect of circa 50,000 tonnes of that residual waste being sourced from a facility in very close proximity to the site. A full Environmental Impact Assessment has been carried out which demonstrates that the environment and human health are protected and not significantly impacted.

- Self-sufficiency – the proposed ERF assists in the aim of self-sufficiency in waste management in this part of Wales.

325. In locational terms, CC's Locating Waste Management Facilities SPG confirms that the most appropriate locations for facilities for the handling, treatment and transfer of waste will generally be encouraged towards existing use class B2 general industrial land. The SPG confirms that as waste is increasingly being dealt with higher up the waste hierarchy, it is increasingly likely that the processes are industrial in nature and a B2 context is appropriate. For that reason, there is positive encouragement towards appropriately allocated land.

326. The Site is allocated for B1, B2 and B8 uses in Policy EC.1 (part EC1.4). In locational terms, the principle of a waste management use has already been deemed acceptable in principle. In policy terms there is clear and positive policy support for a waste management use on this site, subject to appropriately addressing environmental considerations.

327. Policy 33 of the National Development Framework proposes the South East Wales Region as a major focus for growth. This growth will give rise to an inevitable rise in the amount of commercial and industrial waste which is not managed by existing municipal waste facilities. There is therefore a need for adequate infrastructure to deal with this.

328. The proposal is in accordance with national policy. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic and cultural well-being of Wales, as required by key legislation including the Well-being of Future Generations Act, 2015. The key planning principles in PPW are;

- Growing our economy in a sustainable manner
- Making best use of resources
- Facilitating accessible and healthy environments
- Creating and sustaining communities
- Maximising environmental protection and limiting environmental impact

329. PPW at section 5.13 refers to the important role that the planning system has to play in providing a framework for decision making which recognises the social, economic and environmental benefits that can be realised from the management of waste as a resource to meet the needs of society and businesses. PPW supports the provision and suitable location of a wide ranging and diverse infrastructure., including facilities for the recovery of mixed municipal waste and disposal facilities for any residual waste which cannot be dealt with higher up the waste hierarchy.

330. TAN 21 provides advice on how the land use planning system should contribute towards sustainable waste management and resource efficiency. At paragraph 2.7.4 TAN 21 states: *"Where wastes cannot be recycled, other waste recovery operations should be encouraged. Waste recovery operations result in waste that can serve a useful purpose by replacing primary fossil fuel materials which would otherwise have been used to fulfil a particular function in the plant or in the wider economy.*

The recovery of energy from mixed municipal waste in high energy facilities is considered by WG to be a vital component of the waste management system in Wales. Such facilities are currently considered to represent the most sustainable outcome for mixed municipal waste."

331. TAN 21 also requires applicants to prepare a WPA in line with the guidance given – this has been done.

332. The Government's TZW strategy recognises that energy from waste has a role towards achieving zero waste as a mechanism for the transition from landfill. It sets a target for 70% of materials to be recycled and the remaining 30% diverted from landfill to high energy efficient plant, such as the proposed ERF.

333. TZW is an overarching waste strategy document; it is not a detailed action plan. The CIM Sector Plan (2012) supports TZW by detailing outcomes, policies and delivery actions. Until 24 March 2021 the CIM Sector Plan formed the basis on which the need for additional waste management facilities was to be determined. It identifies a need across Wales to develop more residual waste treatment and recovery facility capacity.

334. Beyond Recycling, published in March 2021, is a strategy document – it is a document of intent and aspiration and is not a statement of policy. The strategy lays out steps to be taken over the next 10 years – however, the timeline of "planned actions" relies on additional consultation with some actions requiring collaboration with other governments. The outcome of these actions is by no means certain and are not matters of policy material to the determination of this application. Beyond Recycling does not appear to have been formally ratified by the Senedd and its legal status is unclear, as are the subsequent actions taken on a moratorium and amended statistical basis for determining the need for energy from waste facilities.

335. Notwithstanding this, the revised WPA takes the new figures presented in the March 2021 Strategic Assessment as its starting point and demonstrates that a need for the Mor Hafren ERF is still shown.

336. The Applicant considers that the proposed ERF complies with both national and local policy in these respects.

Need for the ERF

337. The WPA[15] has been updated in the light of WG's publication of its *Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales*, which replaces the strategic assessment for the need for new energy from waste capacity provided in the CIM Sector Plan.

338. The WPA reaches the following conclusions:

- 'Need' for the facility needs to be considered in its widest sense, including its contribution towards WG policy drivers for a reduction in CO_2 (evidenced by the WRATE assessment) and towards achieving sustainable places and greener transport through electricity provision.
- There is sufficient residual waste to feed the Môr Hafren plant in all 3 years projected (2019/20, 2024/25 and 2034/35, as set out and evidenced by WG in its Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales. This is based on WG's own data.
- The Môr Hafren facility would offer an alternative EFW option for businesses preventing existing residual waste capacity having a "monopoly" on C&I waste recovery in the region.

[15] Application Document 10 and summarised at Paras 77-172 of this report

- From the WG perspective, it would be imprudent to rely just on one plant to recover commercial and industrial waste when this is an important element of meeting the targets for the diversion of that waste from landfill.
- The 2 scenarios presented in the Strategic Assessment do not take into account population and business growth in the region, which is predicted to continue.
- The moratorium should not apply to the Môr Hafren ERF and the application should be determined on its merits without the moratorium being a material consideration.
- The proposed ERF will make a major contribution to the waste hierarchy by diverting up to 200,000 tonnes of residual waste away from landfill.
- The WRATE calculation demonstrates that the facility saves some 46,307 tonnes per annum of CO_2 equivalent saved over the landfilling of waste from the environment, equivalent to taking 15,913 vehicles off the road.
- The R1 calculation demonstrates that the proposed ERF is designed to be highly efficient and improves the status of the proposed development to Waste Recovery.

339. LDP policy W1 states that proposals for waste management facilities will be permitted under certain circumstances. There is a requirement for a demonstration of need which should be elaborated in a WPA. The WPA that forms part of the planning application[16] addresses waste needs at Section 4 and sets out the waste management context, WG zero waste by 2050 aspirations, predicted future waste arisings and the supportive role that energy recovery can play in securing diversion of waste from landfill.

340. The March 2021 Strategic Assessment figures assist by clarifying the position regarding commercial and industrial residual waste, which the proposed ERF would predominantly deal with. It is misleading to include projections for municipal residual waste in the context of the Môr Hafren proposal and wrong to assume that the Trident Park EfW facility would increase its reliance on commercial and industrial feedstock as municipal waste supplies decline. The Trident Park facility has long-term contracts to take municipal waste from most of the local authorities within the region for the next 20 years or so. There is no basis for assuming that the Trident Park facility would take more commercial and industrial waste in the future; indeed, it would be more likely to take up contracts with other local authorities should the opportunity arise.

341. A fundamental flaw with the new Strategic Assessment figures is that they do not take account of the increase in population and economic activity that will occur in the SE Wales region as a consequence of identifying of Cardiff, Newport and the Valleys as a focus for growth in the National Development Framework. Such growth will inevitably result in an associated increase in waste arisings and a need for waste infrastructure to deal with it.

342. The Strategic Assessment projections show that there will be enough commercial and industrial waste within SE Wales to supply the Môr Hafren ERF in 2019/20, 2024/25 and 2034/35. Given its proximity to Trident Park, it could be expected that

[16] Application Document 10 Revised Waste Planning Assessment May 2021 (following WG publication of *Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales* in March 2021).

Môr Hafren could take at least 20% of the 100,000 tonnes per annum of commercial and industrial waste currently taken by that facility. In addition, there is the prospect of a local contract for the supply of up to 50,000 tonnes of feedstock to the proposed ERF.

343. Reference has been made by NRW and Residents Against the CF3 Incinerator to a proposed facility at Alexandra Dock, Newport. However, that site has a convoluted planning history and the nature and status of any planning permission that might exist is unclear. Reliance cannot be placed on an energy from waste facility being developed in that location.

344. The March 2021 Strategic Assessment updates the basis on which an assessment of need for the Môr Hafren ERF should be carried out. It is based on existing operational capacity, as that is stated as a "known guarantee". The strategic Assessment explains that the significance which can be attached to proposed/planned capacity, in accordance with TAN 21. The only known facts are:

- The Alexandra Dock facility is described in its planning applications as a bulk drying and pelleting facility with onsite energy centre.
- There is no Environmental Permit in place to operate the facility. NRW have confirmed that the last discussions took place in 2019 and as a Regulator have no awareness of the nature and status of the development.

345. The WPA concludes that there is a clear need for the Môr Hafren ERF to provide the necessary capacity to ensure that residual waste is diverted from landfill.

346. The WPA demonstrates compliance with part (i) and part (x) of policy W1.

347. In summary, the proposed ERF meets development plan and national policy requirements as regards demonstration of need for the proposed facility in this location.

Design

348. Various built form and design options have been considered and consulted upon with CC through a pre-application engagement process. The design process was informed by the following principles:

- A recognition that a functional ERF requires a large building to accommodate the necessary plant and a desire not to make the building physically bigger than needed;
- A desire to not increase the built form as result of 'design' e.g. by the introduction of non-functional wraps or cladding; and
- A desire to create a well-designed building, that sits well in its environmental context.

349. The design process commenced with a coherent development of form from a simple approach of horizontally and fractured blocks and evolved through the application of bands, sculpted abstraction and rectilinear cladding.

350. The favoured design, in elevational and visual representations, is shown on the drawings accompanying the planning application. The use of fractured and coloured panels, taking an angular form, provides the appearance of a 'bird's nest' grounded in its context. The use of colour and design assists in breaking up the mass of the

building and is designed to blend with the predominant colour palette of its surroundings. At the upper level, the colouring is blended to echo the predominant colouring of the sky and estuary in the background which assists in drawing the eye downwards and reducing the perceived scale of the building.

351. The favoured design:

- Fulfils the brief of providing a building that celebrates its context through its 'camouflage'. The careful use of colour palettes and fractured design assists in presenting a statement, while also providing mitigation through the breaking-up of the massing.
- Best achieves the basic premise of the design process as set out above. It works with the requisite elements of the ERF form and provides a functional building of no greater scale or appearance than that required.
- Presents opportunities to vary the design around the building – allowing each elevation and interface to be developed in response to its visual context which differs around the 360 degrees.
- Achieves a respectful balance between logic and creativity.

352. The landscape and visual impact assessment is contained within Chapter 11 of the ES and is summarised below.

353. In planning policy terms, and as set out in the Design and Access Statement, due regard has been had to the need for a good quality and sustainable design in conformity with Policies KP5, KP6 and EN3 of the LDP.

Environmental Considerations

Air Quality and Health

354. Detailed dispersion modelling has been undertaken of emissions to atmosphere from the stack of the proposed ERF. The objective of the modelling exercise was to assess the potential impact on local air quality of process emissions from the ERF, in terms of ground level concentrations of pollutants designated by the Welsh Air Quality Regulations and other relevant environmental assessment levels (EALs) recommended by NRW. Modelling was based upon emissions and process data, and site drawings supplied by Môr Hafren Bio Power Ltd and its technology providers.

355. Modelling of emissions from the ERF was undertaken for a scenario that represents normal operating conditions while operating at maximum output and discharging emissions to atmosphere via a 70 metre-high chimney.

356. The modelling was undertaken using ADMS Version 5.2 and incorporated a sensitivity analysis to determine which model parameters (building downwash, terrain, and meteorological data sets) would produce the most realistic set of predictions and then the set of worst-case predictions. Hourly average meteorological data for the Cardiff Airport measurement station for 2012 to 2016 was used to determine maximum Process Contributions (PCs) across a 4km x 4km receptor grid (20 metre grid spacing) and at nearby sensitive receptor locations.

357. The model predicted that PCs (the amount of emissions from the development that would contribute to background /existing pollutant levels) for all pollutants prescribed for control by the Industrial Emissions Directive (IED), and based on the recently updated Achievable Emission Levels in the BREF Note for Waste Incineration, would be

well below objective limits defined within the Air Quality Regulations, or relevant EALs recommended by NRW.

358. Modelling predicted that under normal operating conditions the maximum annual average PC for NO_2 would be about 2.0 µg m-3, approximately 5% of the 40 µg m-3 annual objective value. The location of the maximum PC is predicted to be about 400 metres to the north-east of the ERF chimney, with values considerably lower farther afield. The PCs for the other IED pollutants indicated that there would be no exceedence of their respective Air Quality Standard (AQS) objective values and relevant EALs.

359. The results from a cumulative impact assessment with the nearby Trident Park (Viridor) EfW facility indicate that when both the Trident Park EfW facility and the proposed Môr Hafren Bio Power ERF are considered in combination, there is no significant difference between the model predictions for the combined emissions scenario at the location of the maximum PC for the ERF, or at nearby residential properties.

360. The results from modelling the effects associated with a 2.5 MW wind turbine located at the nearby G24 Innovations Ltd site indicate that when the wind turbine is operational there is likely to be a marginal increase in annual average NO_2 concentrations at the location of the maximum PC, and a small, but insignificant, increase in hourly average values. Wind turbine effects on PCs at nearby residential receptors are significantly lower due to their distance from the site.

361. Operational odour management procedures would be implemented by Môr Hafren Bio Power Ltd. These indicate that fugitive emissions from the process buildings should not be a cause for reasonable complaint from nearby residential and commercial properties.

362. Chapter 7 in the ES considers the likely impact of the traffic movements that will be associated with the proposed development site once operational, and specifically focuses on the contribution of air pollutants associated with traffic movements. The assessment has applied the ADMS Roads tool to quantify and model the dispersion of traffic emissions, in order to assess the impact of emission concentrations around the key routes associated with material deliveries and waste removal.

363. The results from the ADMS Roads air quality assessment show that the impact of transport emissions from the operation of the proposed Môr Hafren Bio Power Limited energy recovery facility will be insignificant in their effect on air quality in the local area.

364. The maximum hourly contribution of pollutants from the peak hourly traffic movements associated with the development remains within the short-term AQS for the protection of human health, and the 99.79th percentile hourly average contribution to Nitrogen Dioxide remains within 10% of the AQS.

365. A health impact assessment was undertaken to assess the risk to the health of people living and working in the vicinity of the proposed Môr Hafren Bio Power ERF. The full assessment is contained within Chapter 8 of the ES.

366. Emissions will be released to atmosphere via a dedicated flue gas treatment plant and discharged to atmosphere via a 70 metre-high chimney. The results from a D1 calculation indicated that a 52 metre chimney would provide effective dispersion of emissions from the proposed ERF. However, Môr Hafren Bio Power Ltd propose to

install a 70 metre chimney to provide additional confidence that there will be no significant impact on local air quality. Compared to the D1-calculated value of 52 metres, increasing the height of the chimney to 70 metres results in a more than four-fold reduction in maximum annual average PCs.

367. Atmospheric dispersion modelling of emissions from the 70 metre high chimney was undertaken using the ADMS Version 5.2 model to predict increases in pollutant concentrations at nearby sensitive receptors such as residential properties, schools, playing fields and locations where people may congregate for significant periods of time. The assessment involved a comparison of model-predicted PCs against health-based air quality standards and relevant environmental assessment levels.

368. Short term acute effects for pollutants such as Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), Particulate Matter (PM10), Hydrogen Chloride (HCl), Hydrogen Fluoride (HF) and Carbon Monoxide (CO), showed that increases in background pollutant concentrations at nearby residential properties would be low and would not have a significant impact on the health of people living and working nearby. PCs for pollutants such as Volatile Organic Compounds and heavy metals were very low and their potential health effects screened out as insignificant in relation to health based AQSs and relevant EALs recommended by NRW.

369. The US EPA Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities was used to assess the potential risk to the health of people living and working in the locality of the facility due to emissions of Dioxins and Furans, and Dioxin-like PCBs. The assessment considered the potential health risks associated with the intake of Dioxins from the consumption of potentially contaminated foodstuffs due to emissions to atmosphere from the chimney of the Môr Hafren Bio Power ERF. The assumptions used within the assessment are conservative and the study was undertaken on a worst-case basis.

370. The assessment indicates that the risk to the health of the local population due to exposure to Dioxins in emissions from the facility is likely to be low, typically about 3% or less of the Tolerable Daily Intake of 2 pg/kg. The results also show that the combined emissions of Dioxins and Dioxin-like PCBs would be a small percentage of the European Food Standard Agency's recommended Tolerable Weekly Intake value of 2 pg/kg/week.

371. The assessment for health risks associated with exposure to emissions of Polynuclear Aromatic Hydrocarbons, expressed as Benzo[a]Pyrene, demonstrated that PCs would be less than 1% of the health-based air quality objective value of 0.25 ng m-3, and could be screened out as insignificant in relation to NRW guidance.

372. In conclusion, the results from the health impact assessment confirm that there is no significant health risk associated with potential exposure to emissions of pollutants from the Môr Hafren Bio Power ERF.

373. The overall conclusion from detailed modelling of emissions from the proposed Môr Hafren Bio Power ERF and modelling of emissions arising from vehicle movements to and from the site is that the potential impact on local air quality is likely to be small and is unlikely to result in a significant threat to the health of people living and working nearby. The proposed ERF would not cause unacceptable harm to the environment or human health. In these terms there is no conflict with the Development Plan, in particular LDP policies W1(iii), W1(viii) and E13.

Noise and Vibration

374. The Noise Impact Assessment (Chapter 9 of the ES), considers both the operational phase and construction phase environmental noise impact as expected at the nearest noise sensitive receptors (NSRs) in the vicinity of the application site, encompassing pre-existing and proposed residential housing, noise sensitive commercial receptors and ecological receptors.

375. The pre-existing environmental noise climate has been directly determined by measurement at the identified sensitive receptors, as during typical weekday and weekend daytime and night-time periods. This benchmark environmental noise measurement data has been used to set appropriate daytime and night-time criteria for the construction phase and operation phase of the Development, all in accordance with applicable current Standards and other relevant, generic acoustic guidance.

376. The noise assessment concludes that the total, aggregate environmental noise impact arising from the operational phase of the Development, with a duly implemented Noise Mitigation Plan in place, is expected to result in a negligible impact at the worst affected residential receptors, during both daytime and night time periods. A minor impact is expected to occur at the nearest identified noise- sensitive commercial receptor.

377. Similarly, the expected construction phase environmental noise impact at the worst affected residential and noise-sensitive commercial receptors is expected to be negligible.

378. The expected construction phase vibration impact is typically up to minor (but moderate worse case) during any proposed percussive piling. However, the Applicant will fully engage with the occupier of Pinewood Studios and residents of the nearest residential dwelling (Newton Farm) regarding the means of mitigating any impact from construction activities, including prospective piling. This will include dialogue on the timeframe and duration of such activities.

379. Turning to ecological receptors, the site is located within the Rumney and Peterstone SSSI, which may contain habitat for ecological receptors. The acoustic assessment considers the potential noise impact on the area immediately surrounding the site and specifies the anticipated distance from the site perimeter where appropriate noise levels for ecological receptors are expected to be achieved. This acoustic assessment confirms that the advised noise level of 55dB LAeq,T is expected to be achieved at a setback distance of about 40 metres from the site boundary during the operational phase and about 170 metres from the boundary during the noisiest stage of the construction activities.

380. The Noise Impact Assessment concludes that the proposed ERF would not cause unacceptable harm to residential or ecological receptors and the wider environment, in terms of noise and vibration. In planning policy terms, there is no conflict with the LDP, in particular policies W1 (iii), W1 (viii) and E13.

Ecology

381. Chapter 10 of the ES presents the approach and findings of the assessment of potential effects of the proposal on ecology and nature conservation.

382. The site is dominated by large areas of grazed/heavily poached grassland which are considered to be of low biodiversity value, punctuated with some areas of elevated value including scrub, tree-lined drain and scattered trees. Without mitigation the potential effects have been assessed as up to Moderate Adverse. Habitats of Local

value within the site include the tree-lined drain which is to be retained as part of the scheme design.

383. Non-statutory sites include Hendre Road SINC immediately to the north of the site assessed as up to County importance with three other SINC's within 1 km of the Site. Statutory designated sites for nature conservation include three internationally designated sites within 10 km and two nationally designated sites within 2 km. These sites haves been subject to detailed air quality and noise assessments to ensure no significant indirect impacts are likely. A separate HRA Stage 1 Assessment has been prepared with regard to potential effects on the European designated sites.

384. The Applicant's professional advisors have provided a robust response[17] explaining why NRW's view that a lower critical load for nutrient nitrogen (10Kg/N/ha/yr) should be used for the assessment of impacts on the Gwent Levels SSSI is not justified.

385. However, notwithstanding the Applicant's professional advisors' views on the use of a lower level of nitrogen, the updated Air Quality Assessment uses the lower level to model the impacts. The updated Assessment confirms that cumulative contributions to levels of nutrient Nitrogen deposition are screened as insignificant when assessed against the specified Critical Loads for most sensitive ecological receptors, although eight sites, including locations within the Gwent Levels and one modelled area of the Severn Estuary SAC/SPA/RAMSAR and various SINCs cannot be screened.

386. Exceedance of a Critical Load is not a quantitative estimate of damage to a particular habitat, but instead represents the point at which significant harmful effects do not occur according to present knowledge. As such, and as the cumulative Process Contributions do not result in an exceedance of the nutrient Nitrogen Critical Load at any site where one currently does not exist, it is considered that the potential for the development of the Môr Hafren facility to have a significant negative impact on nutrient Nitrogen levels at local ecological sites, is limited.

387. Notwithstanding the robust position presented by the Applicant, it should be noted that there is a further opportunity for detailed emissions assessment by NRW during determination of the application for an Environmental Permit.

388. Due to the current conditions and use of the site, potential for protected and notable species is limited to a small number of restricted species including potential bat foraging corridor (the retained tree-lined drain) and low potential for individual great crested newt and reptiles in the locality only. No evidence of water vole, otter, badger, dormouse or notable bird assemblages has been recorded to date; presence of these species is not anticipated based on local records and site condition.

389. The development proposals retain the important features present within the site and incorporate these into the landscaping scheme, maintaining habitats of value and connection with adjacent habitats. The existing unmanaged drain and its densely shaded banks will be actively managed throughout the lifetime of the development so as to improve water quality and habitat value.

390. Mitigation and enhancement proposals include habitat retention and protection, appointment of an Ecological Clerk of Works and implementation of Reasonable Avoidance Measures for key species groups, with details to be included within an approved CEMP (Construction Environmental Management Plan).

[17] Doc 105 Môr Hafren Technical Note 6 Ecology Response

391. New habitat areas are proposed with enhancement of retained features and creation of specific wildlife features such as hibernacula and installation of bat and bird boxes. Further enhancements and habitat management proposals would be set out in a supporting LEMP (Landscape Ecological Management Plan) including long-term maintenance and monitoring commitments for species and habitats as required.

392. The proposed ERF would not cause unacceptable harm to the environment. In planning policy terms there is no conflict with the development plan, in particular LDP policies W1 (iii) and policies EN5 *Designated Sites*, EN6 *Ecological Networks and Features of Importance for Biodiversity* and EN7 *Priority Habitats and Species*.

Landscape and Visual Impact

393. A Landscape and Visual Impact Assessment (LVIA) has been carried out for the proposal and is presented within Chapter 11 of the ES.

394. The assessment of potential landscape impacts is primarily focused upon the proposed ERF, placed within its landscape context. The general conclusion is that, in a localised context landscape impacts would arise. However, when considered in an increasingly broad context, especially more than 2km distance from the site, these impacts are of moderate or minor significance. The extent within which this transition to minor/not significant would occur, is considered to be beyond the 2km distance from the application site due to the topography, positioning against a semi-rural background with industrial pockets and large areas of built form amongst the natural landcover.

395. The assessment of potential visual impacts is, primarily, focused upon the proposed development, placed within its visual context. The general conclusion is that, in a localised context, potential visual impacts would arise. However, when seen in an increasingly broad context, these impacts are of moderate/minor significance or not significant. The extent within which this transition to not significant would occur is considered to be within 3-4km of the application site.

396. The existing views within 2km of the application site contain forms of similar developments and land use to the proposed development. Industrial units and railway infrastructure are prominent features within the majority of the views assessed. Furthermore, existing electricity pylons cross most views, forming notable vertical detractors from views. The introduction of the proposed development is therefore anticipated to appear as an extension of the existing vernacular, particularly by receptors closest to the application site.

397. When considered in its broad context of the peri-urban landscape (the landscape interface between town and country), it is expected that the development would assimilate into the existing landscape and views. The existing industrial landscape is considered to have the capacity to absorb the introduced characteristic elements without overarching change to the landscape character of the area and the loss of low sensitivity and uncharacteristic elements is considered acceptable. Where the visual impacts of the proposed development have been assessed to be the highest, the impacts are considered to be sufficiently localised and contained that the impacts are deemed to be acceptable.

398. Where views of the development would be possible, they would generally be seen against a backdrop of similar industrial elements. As such, the introduction of the proposed development into these views will not appear uncharacteristic.

399. The majority of visual effects will be of minor/moderate adverse significance. However, from some viewpoints the significance of visual effects is anticipated to be moderate/major adverse. From viewpoint 13 the significance of visual effects is anticipated to be major adverse during construction. However, during the operational phase the significance will reduce to moderate/major adverse.

400. The proposed ERF would not cause unacceptable harm in landscape and visual impact terms. There is no conflict with the development plan and in particular LDP policies W1 (iii), KP3 *Green Wedge*, KP5 *Good Quality and Sustainable Design* and EN3 *Landscape Protection*.

Transport

401. The Transport Assessment (Chapter 12 of the ES) reports the likely significant transport effects of the ERF in the context of the site and surrounding area. In particular, it considers the likely significant effects of additional vehicle trips on all road users.

402. Feedstock will be sourced predominantly from within a 30-mile catchment area in and around Cardiff, with approximately 200,000tpa being delivered by road. The tonnage of feedstock is the same as that previously consented at the site, however there would be fewer vehicle movements. There will be a total of 80 two-way HGV movements each day and 36 light vehicle two-way movements related to staff.

403. The arrival of vehicles will be spread evenly throughout the day; however, HGV deliveries and departures will not take place during the morning or evening peak hours. Based on an 11-hour day, there will therefore be 7 HGV movements (two-way) per hour and 6 staff vehicles in and 6 staff vehicles out in each peak hour. The combined peak hour trips are an estimated 10 vehicles entering the site and 10 vehicles exiting the site in both peak hours, resulting in 20 two-way movements.

404. The site is well connected with the surrounding strategic road network. All HGV traffic will travel along Newlands Road and Wentloog Avenue/Lamby Way towards the A4232, which joins the A48 approximately 2km north of Lamby Way. The A48 then connects to the M4 at junction 29. HGV's would thus not travel through residential areas.

405. Newlands Road, Wentloog Avenue and Lamby Way are industrial estate roads, and all have footway widths of approximately 2m along the entire stretch and adjacent to both sides of the road, with street lighting also present. Newlands Road and Wentloog Avenue are subject to 30mph speed limits whereas Lamby Way has a speed limit of 40mph. The general carriageway width of Newlands Road is approximately 8.9m while Wentloog Avenue is approximately 8.4m wide in the vicinity of the site.

406. The 7 two-way HGV movements per hour associated with the proposal is minimal. Given the existence of footways, pedestrian crossings, streetlights and the absence of hazardous conditions, there would be negligible impact in terms of safety and security for users. The assessments show that the proposal will have a negligible impact on the operation of the Lamby Way (north)/Mardy Road junction and the Mardy Road/New Road junction with very little change in ratio of flow to capacity or queue length in the peak periods.

407. The daily HGV movements associated with the application will amount to only 2.9% of the total daily HGV two-way movements on this section of the A4232. This level of impact on the nearest strategic road is significantly less than the 10% threshold at

which, according to the Guidelines for the Environmental Assessment of Road Traffic, a discernible environmental impact would occur. The impact is therefore considered none or negligible. Spread over an 11-hour day, the impact of the additional movements from the ERF would be negligible compared to the general traffic on this section of the A4232.

408. Nonetheless, various mitigation measures are proposed to further reduce the impact of development traffic. A lorry routeing strategy will ensure that all heavy goods vehicles travel westbound from the site along Wentloog Avenue towards the A4232 and the strategic road network. Routeing can be controlled through a legal agreement with the feedstock suppliers. A Traffic Management Plan can restrict deliveries to times outside of the network peak hours. Moreover, there is a realistic prospect that up to 50,000 tonnes of feedstock will be derived from the local area, reducing HGV movements via the strategic road network.

409. In summary, the transport impacts of the proposed ERF on the road network would be acceptable. The proposal would provide a safe means of access to the highway and adequate on-site parking and turning facilities. In planning policy terms, there is no conflict with the Development Plan, in particular policies W1 (iii) and (ix), KP8 *Sustainable Transport* and T6 *Impact on Transport Networks and Services*.

Historic Environment

410. Chapter 13 of the ES assesses the effects of the project on all aspects of the historic environment, including buried archaeological remains, historic buildings, and historic landscapes. The site has a long history of prior industrial use. As recommended in the EIA Scoping Direction by Cadw, a Stage 1 assessment was carried out for the designated assets identified in their response, comprising: Scheduled Monuments, Historic Landscapes, and Listed Buildings.

411. The assessment has found that the only potential significant adverse effect with regard to the historic environment would occur as a result of physical impact during construction on a discrete and rare type of structure or artefact (for example a waterlogged timber structure or vessel), although no such structures or artefacts are currently known to be present within the project site. There is also the potential for minor adverse effects on buried archaeological remains of all periods from prehistoric through to modern.

412. If considered appropriate, a programme of archaeological investigation would be agreed with the archaeological advisers to the planning authority. This would enable a better understanding of the presence, nature and date of any archaeological remains within those parts of the project site where construction activities are planned, and allow for the development of an appropriate strategy to avoid, reduce or offset any impacts that could occur as a result of construction.

413. As the assessment confirms, the proposed ERF would not cause unacceptable harm to built heritage. In planning policy terms, there is no conflict with the Development Plan, including policy W1 (iii).

Water Resources

414. The ES has assessed the constructional and operational effects of the proposed development on the water environment. Whilst the development has potential to adversely impact the water environment, the site is located within an area formerly used as a rail yard and also designated for industrial development.

415. The site will experience HGV traffic in addition to employee vehicles. If not mitigated, this could have an acute impact on the water environment, through the increased risk of accidental spillage of contaminant. Chronic impact to the water environment could also arise, by way of routine runoff from all types of vehicles over the lifetime of the development.

416. Mitigation measures will be employed to guard against adverse impacts on water resources, including a construction and environmental management plan (CEMP), measures to contain spillages and separate out contaminants and a drainage strategy to ensure that all surface water flows are positively captured by the network and discharged as close to greenfield rates as possible.

417. The proposed ERF would not cause unacceptable harm to the environment. In planning policy terms, there is no conflict with the Development Plan and in particular policies W1 (iii) and (vii), KP15 *Climate Change* and EN11 *Protection of Water Resources*.

Flood Consequences and Drainage

418. The site is within Zone C1 and is served by significant infrastructure including flood defences which lower the potential flood risk at the site. There is still a residual risk of flooding in the event of defence failure or breach, but this is likely to be a low risk scenario. There is an isolated area at low risk of surface water flooding to less than 300mm in depth and having a low or negligible hazard risk.

419. The site is currently defended along the Severn estuary tidal frontage by an earth embankment. Only the section at Peterstone Gout has a standard of protection against tidal flooding of less than 1 in 1000 years (0.01%).

420. The maximum predicted water level identified for the 1 in 200-year tidal flood event (with defences) in 2119 is 6.88mAOD. The proposed Finished Floor Levels of buildings at the site are at a minimum of 7.18mAOD and as such will be flood free with a freeboard of 300mm in 2119 for the 1 in 200-year tidal event (with defences) in the event that defence improvements are not undertaken.

421. The administration office accommodation provides opportunity for a first-floor refuge for all staff, should an unexpected flood event occur. Flood resilience measures will be incorporated at ground floor level, such as wall and floor treatments and positioning of infrastructure such as electrical circuits and air conditioning above the potential flood level.

422. Surface water flows will be managed by attenuation tank with rates restricted to greenfield runoff rates of 3.5l/s/ha up to and including the 1 in 100 year +40% climate change event. Foul flows will be discharged via a private pumping station and rising main to the existing Welsh Water sewer located to the south east.

423. The Flood Consequences Assessment demonstrates that with the proposed mitigation in place the site will be made safe and will be flood free for 1 in 200-year tidal event both now and for at least the next 75 years. The effects of climate change over the next 100 years will result in a potential inundation of less than 300mm at the site for the 1 in 200-year event. Mitigation of the risk of tidal breach through strategic reinforcement of the coastal defences would extend the flood free scenario for the proposals.

424. The potential consequences of a flooding event for the particular type of development have been considered and found to be acceptable. Accordingly, the justification test is deemed to be passed.

425. The development would not cause unacceptable harm to the environment. In planning policy terms, there is no conflict with the Development Plan and in particular policies W1 (iii) and (vii), KP15 *Climate Change*, EN11 *Protection of Water Resources* and EN14 *Flood Risk*.

Socio Economic Considerations

426. There are major socio-economic benefits associated with both the construction and operation of the proposed ERF. The proposed ERF will:

- generate 25 full-time direct jobs and wider indirect and induced employment;
- contribute GVA through its impact on economic activity;
- provide 15MW of electricity to the local grid, via the District Network Operator, and will support local businesses, housing and infrastructure as well as providing opportunities for private wire transmission to support local businesses and investment into the area;
- provide opportunities to provide heat to local businesses; and
- contribute to sustainable waste management and the Welsh Government's zero waste at 2050 ambitions by providing a solution that assists the transition by diverting residual waste from landfill, energy recovery and moving the means of management up the waste hierarchy.

427. During construction, the ERF will give direct employment at full time equivalent levels of around 356 jobs annually over the three-year construction phase.

428. Besides direct employment, the proposed ERF will create indirect and induced employment opportunities through supply chain effects. Indirect and induced employment levels are calculated to provide an addition 461 full time equivalent jobs per year of construction. The total direct, indirect and induced employment equates to 772 full time equivalent jobs per annum during the construction period.

429. The proposed ERF will also generate additional Gross Value Added (GVA) through wider economic activity. Over the three-year construction phase, this is calculated to be worth £74.7m.

430. During its operational phase, the ERF would provide 25 full time, skilled jobs. Indirect and induced employment levels are calculated to be around 32.5 in the local area and a further 36 full time equivalent jobs in the wider area. The proposed ERF will also generate additional Gross Value Added (GVA) during its operational life. This is calculated to be worth up to £15.7m in the local impact area and up to £43.73m in the wider impact area.

431. In summary, the assessment demonstrates that there will be major socio-economic benefits for the local community, business community and the economy. The assessment also demonstrates significant, wider socio-economic benefits associated with sustainable waste management. The creation of temporary construction jobs and full-time jobs during the operation of the facility contributes significant levels of GVA to the local economy through direct, indirect and induced employment. Overall, the

proposed ERF would contribute significantly to the socio-economic standing of the area and wider economy.

Overall Conclusion

432. The site is allocated for B1, B2 and B8 uses. There is positive policy and guidance support and encouragement for waste management development to be located on B2 land.

433. The principle of a waste management development on the application site has already been established by the previous permission. The proposed land-use is very similar for both proposals and throughput is the same. The main difference is the height of the main buildings and the stack height. However, these are design and technical pollution control issues and should not affect the principle of development.

434. The proposed ERF will process up to 200,000 tonnes of mainly commercial and industrial waste per annum to export around 15MW of electricity to the local electricity network. The plant will be classified as a recovery facility and will be designed with the ability to export heat, as well as electricity.

435. The application has been subject to EIA which has in turn resulted in a detailed and robust ES, which is part of the supporting documentation for the planning application. The process has considered the full range of environmental issues. The EIA shows that, taking into account proposed mitigation, the development will not have significant adverse environmental effects.

436. The findings of the EIA demonstrate that the proposed development will not give rise to significant adverse air quality effects for either human or ecological receptors in either the short-term or the long term.

437. In respect of landscape and visual impact the proposed development is located within an established industrial area and the scale and design of the building have taken this into account. A high quality and innovative design is proposed that also fully reflects its location.

438. In terms of ecology the proposed mitigation and enhancement include habitat retention and protection, appointment of an Ecological Clerk of Works, and implementation of reasonable avoidance measures for key species groups, enhancement of retained features and creation of new habitat areas together with specific wildlife features such as hibernacula and installation of dormouse, bat and bird boxes.

439. The potential impact of the development as regards issues such as noise, traffic, the water environment and cultural heritage has also been assessed. The conclusion in respect of each of these is that the nature of the development and the design process has ensured that there will be no adverse impacts on any of these issues.

440. The proposal has been assessed against the development plan and other relevant material considerations. This has demonstrated that the proposal accords with development plan policies and will not give rise to any unacceptable adverse environmental, health or amenity impacts. There is a clear need for the proposal, which will prevent residual commercial and industrial waste from going to landfill, moving it up the waste hierarchy and using it to generate around 15MW of energy, enough to power about 30,000 homes, together with the potential to supply local heat. This will contribute positively to WG waste and carbon emission reduction objectives. The proposal will generate significant socio-economic benefits. It accords with national

waste planning objectives and sustainable development principles. Planning permission should therefore be granted for the proposed ERF.

Consultation Responses

Cardiff Council (CC) – Local Impact Report (LIR)

441. In accordance with the legislative requirements for DNS proposals the Council has prepared a LIR. The LIR provides a factual, objective view of the likely impact of the proposed development on the area, based on the Council's local knowledge and awareness of local issues. The impacts are presented in terms of their positive, neutral and negative effects. The LIR does not constitute a representation on the merits of the proposals and contains no recommendation to grant or refuse planning permission.

442. The LIR begins by noting various designations relevant to the site and its surroundings. It identifies that the site and its surroundings lie within with the Gwent Levels (Rumney & Peterstone) SSSI and within an Archaeologically Sensitive Area. In confirms that the site is located within Flood Zone C1 on NRW's Development Advice Maps (i.e. served by significant infrastructure, including flood defences). The LIR identifies the Hendre Road Site of Importance for Nature Conservation (SINC) immediately north of the application site beyond the railway line and three other SINCs in the vicinity of the application site and states that the Gwent Levels Historic Landscape lies immediately north of the application site.

443. The LIR confirms the previous planning permissions granted relating to development for a waste management facility[18] at the site.

Local Planning Policy Context

444. The LIR identifies the following LDP policies considered relevant by the Council:
- KP5 Good Quality and Sustainable Design
- KP6 New Infrastructure
- KP7 Planning Obligations
- KP8 Sustainable Transport
- KP12 Waste
- KP14 Healthy Living
- KP15 Climate Change
- KP16 Green Infrastructure
- KP18 Natural Resources
- EC1 Existing Employment Land
- EN3 Landscape Protection
- EN5 Designated Sites
- EN6 Ecological Networks and Features of Importance for Biodiversity
- EN7 Priority Habitats and Species
- EN8 Trees, Woodlands and Hedgerows
- EN9 Conservation of the Historic Environment
- EN10 Water Sensitive Design
- EN11 Protection of Water Resources
- EN13 Air, Noise, Light Pollution and Land Contamination
- EN14 Flood Risk
- T1 Walking and Cycling
- T5 Managing Transport Impacts

[18] Summarised at paras 21 & 22 of this report

- T6 Impact on Transport Networks and Services
- C3 Community Safety/Creating Safe Environments
- W1 Sites for Waste Management Facilities

445. The following SPG documents are also indicated as relevant:
- Locating Waste Management Facilities (January 2017)
- Archaeology and Archaeologically Sensitive Areas (July 2018)
- Green Infrastructure (including Ecology & Biodiversity and Trees and Development Technical Advice Notes) (November 2017)
- Managing Transportation Impacts (July 2018)
- Tall Buildings (January 2017)

Likely Impacts of Development on the Area

Transport

446. The Council's Operational Manager, Transportation has examined the Transport Assessment (TA)[19] and sees no objection to the application. The planning history for the site and the operational parameters of the proposed development are noted. The internal vehicular movements associated with the operation of the facility and the site access/egress movements (illustrated in the TA) appear satisfactory. The proposal is acceptable as regards car parking (14 spaces) and cycle parking (20 spaces) provision within the site, having regard to relevant SPG and subject to clarification of the number of covered cycle stands to be provided.

447. The LIR notes that the Design and Access Statement has considered walking and cycling accessibility to sustainable transport and local facilities. The pedestrian footways along Newlands Road and Wentloog Road are 2m in width and include street lighting. However, sections of the footways require clearance of undergrowth. An alternative 2.5m footpath connects the site directly to the residential area of Trowbridge to the north via a pedestrian/cycle bridge over the railway, although this path is unlit.

448. The anticipated HGV traffic generated would be 80 HGVs per day. Staff vehicular movements are put at 36 per day. The TA states that feedstock deliveries would take place between 7am and 6pm Monday to Friday and 7am and 1pm on Saturday with no deliveries on Sunday. All of the waste material would be generated within 30 miles of Cardiff and be delivered by road. The TA indicates the access and egress routes to the site, which makes use of the strategic highway network (TA para 4.11). The TA also states (para 4.10) "it is proposed to prepare a Traffic Management Plan with the opportunity to restrict deliveries to times outside of the network peak hours", which CC would welcome to reduce any potential impact during peak traffic periods.

449. The TA shows the impact on the local network of the anticipated traffic generation to be minimal, which would be reinforced by the implementation of an approved traffic management plan. It is also noted that the previous approved planning permission for a biomass plant on this site would have generated greater numbers of HGV and staff vehicular movements compared to the current application.

450. The TA identifies collisions involving cyclists on the local road network. The Council's Operational Manager, Transportation suggests further examination of this and

[19] Application Document 73

consideration of whether the applicant should provide measures to reduce the likelihood of such incidents.

451. Various conditions are suggested, including requirements for a travel plan and a traffic management plan.

452. *The likely transport impacts of the development: Neutral effect.*

Ecology

453. CC's Ecologist draws attention to the location of the site within the Gwent Levels: Rumney and Peterstone SSSI and the role of NRW in this regard. The Ecologist notes further that a HRA has been undertaken to consider the likely significance of the impacts of the proposed scheme upon the SACs, SPAs and Ramsar sites in the area. That exercise has reached the conclusion that the proposals are not likely to have a significant effect upon those sites.

454. The application is supported by a Preliminary Ecological Appraisal Report (PEAR)[20] and a follow-up Ecological Verification Assessment (EVA)[21], and CC's Ecologist has made observations on these. The Ecologist considers that previous surveys in 2008 and 2014 referred to in the PEAR are now out of date and not relevant to assessment of the impact of the current proposal. He also draws attention to erroneous references to superseded policy guidance and legislation

455. *Bats*: In PEAR section 3.6.2.2 the site is assessed as having low potential to support foraging and commuting bats, but no justification is given for this conclusion. PEAR section 4.5.1.1 states that the site has moderate potential for foraging and commuting bats, which contradicts section 3.6.2.2, and advised that bat flight surveys should be carried out. The follow-up EVA re-visited this matter and section 3.3.5 of the EVA states that a bat flight survey is not necessary because the applicant will retain and manage the tree-lined drain corridor along the south-western boundary and control lighting in accordance with current lighting best practice and guidance.

456. CC Ecologist notes that the submitted arboricultural impact plan[22] identifies the removal of 11 of the 13 individually surveyed trees in the vicinity of the ditch on the south-western boundary, together with associated specimens collectively identified as group G1. These trees should be assessed for their bat roosting potential.

457. CC Ecologist supports the proposal for a sensitive lighting scheme as part of the development. If a planning condition were to be imposed requiring a lighting scheme to ensure no artificial light spillage above 1.0 lux onto the retained tree-line, then it may be acceptable to omit a bat survey if this were the only potential source of disturbance. However, if there is potential for noises from operation of the facility or emissions from exhaust flues etc to disturb bats foraging along the hedgerow, then a bat flight survey should be undertaken.

458. *Dormouse*: In PEAR section 3.6.8 the site is assessed as having negligible potential for dormice; section 3.10.3 of the EVA also assesses the value of the site for dormice as negligible and does not advocate a survey. However, this species has been detected very nearby to the south of the railway at Wentloog Avenue about 200m to the west and in direct ecological connectivity with the present site. In addition, there are

[20] Application Doc 39
[21] Application Doc 40
[22] Application Doc 96

habitats present on the site such as scrub and outgrown hedgerow which could support this species, therefore a full survey should take place before consent is granted.

459. *Great Crested Newt (GCN)*: Although GCN have sometimes been known to disperse significantly further than 500m from their breeding pond, this, over 1Km distance. CC Ecologist notes that an eDNA survey was carried out and that the result was negative, which confirms CC's understanding of the distribution of this species in this area, so no further consideration of this species at this site is needed.

460. *Reptiles*: Concerns are expressed over various aspects of the methodology used in compiling the reptile survey report dated June 2020. However, notwithstanding these caveats, CC Ecologist accepts the conclusion that there is a low population of Common Lizards present, and that Adders and Slow-worms are probably absent. However, he does not accept the view that Grass Snakes are likely to be absent. The reptile fencing referred to is largely destroyed, giving access for this species to the site, and Grass Snakes are ubiquitous on the Gwent Levels generally. The refugia used were too small to reliably detect adult Grass Snakes, and much of the survey took place during a heatwave when activity would naturally have been low. CC Ecologist advises that it should be assumed that the site supports both Grass Snakes and Common Lizards, and that any mitigation methodology should proceed on that basis.

461. *Enhancements*: Section 6 of the Environment (Wales) Act 2016 requires public bodies to seek to maintain and enhance biodiversity, and in doing so to promote the resilience of ecosystems, in the exercise of their functions. Furthermore, PPW highlights the role of the planning system in meeting biodiversity objectives. The decision-maker in respect of this application should have regard to this guidance and to the Section 6 duty under the Environment (Wales) Act.

462. The likely ecological impacts of the development: Negative effect.

Design and Appearance

463. The scheme will appear large within a very flat landscape with few vertical features and will therefore be very visually prominent from certain positions. The proposed study area for carrying out the Landscape and Visual Impact Assessment (LVIA) was set at a 5km radius which is considered to be appropriate, although the scheme would be visible beyond this where long-range views allow.

464. The proposed external treatment was produced through discussions with CC during the pre-application process. The use of fragmented shapes in colours taken from the local landscape context is considered a good approach to the external treatment intended to break up the mass of the building, reducing visual impact and helping the building sit more comfortably in its setting.

465. Despite this approach to the development's external appearance the scheme will remain visually prominent, being significantly taller than surrounding buildings.

466. The LVIA considers views from the residential communities to the north and from the Wales Coast Path to the south to have the highest sensitivity and the greatest visual impact, with close range views from the east, south and west of low/moderate sensitivity and a lower visual impact.

467. The building will be visually prominent from certain close range views; however it will be read in the context of the site's industrial location with other business, industrial and warehousing uses in the immediate vicinity. The scheme will also be visible from

the long-range views however this doesn't automatically lead to a conclusion of a negative impact.

468. The overall success of the design is one of aesthetic judgement. The approach is considered interesting and attractive. Additional measures such as landscaping and sensitive lighting, which are recommended in the LVIA, would further assist in blending the development into its setting and mitigating impact in relation to short and medium range views.

469. The likely impact of the development's design and appearance on the area: Neutral effect.

Air Quality

470. Two separate air quality assessments have been submitted. The first concerns stack emissions. Adverse impacts are predicted for Nitrogen deposition at ecological receptors (Gwent Levels Rumney & Peterstone SSSI 2, Wentloog Industrial Park SINC). The predicted environmental concentrations (PEC) at these two receptors indicate exceedances of the critical load limit value. The report outlines that the PEC value calculated for each of these receptors is heavily influenced by current background concentrations.

471. The nearby Trident Park EfW facility is taken into consideration when assessing cumulative impacts are assessed in the report. However, other nearby influencing facilities, such as Celsa Steel's Section Mill Steelworks, Rover Way or Tremorfa Melt shop have not been included. It is thus difficult to draw a full conclusion concerning likely cumulative impacts.

472. The second assessment examines transport emissions associated with the proposal. It assesses transport contributions as NOx and makes the assumption that NOx levels equate to NO2 levels for the assessment of human health impacts. The assessment therefore does not specifically ascertain projected NO2 levels at human health receptor locations.

473. The likely Air Quality impacts of the development: Negative effect

Noise and Vibration

474. As regards operational noise, the ES concludes that subject to implementation of a noise management plan it is possible to achieve a negligible impact on the existing residential Noise Sensitive Receptors (NSRs) during day and night. This conclusion is drawn from existing background noise levels and acoustic modelling of the plans for the site. This estimation is based on the total aggregate noise from the facility and HGV movements, anticipated to match existing background levels (LA90) after a +3 correction is applied for the "readily distinctive" acoustic feature from the HGV movement.

475. CC initially deemed it necessary to seek noise mitigation measures that would achieve aggregate noise levels not exceeding 10dB below the existing background noise levels. Now more is known about the proposal CC would accept an aggregate operational noise level of 5dB below LA90 at the monitoring positions, after corrections.

476. The noise management plan would need to be developed in detail, with further professional assessment to ensure that significant noise sources are considered, assessed and attenuated through design. To ensure that a cumulative noise level below background levels is achieved a condition requiring a noise management plan to be

agreed and subsequently followed through is essential. A condition would also be needed to regulate the timing of feedstock HGV movements.

477. The submitted construction noise and vibration assessment concludes that there likely to be a negligible impact for noise and between minor and moderate impact (worst case) for vibration. There is an indication that the preferred piling method is likely to be percussive though there has been no justification as to why this is the case. If this is the only possible method due to existing site conditions, this will need to be reflected in any CEMP document. Given that high impulsive noise, albeit over a shorter period, is generally more disturbing and less acceptable, CC would seek an alternative method of piling, whereby a lower steady noise over time is produced. It is recognised that a 2m acoustic barrier would be erected around the construction site perimeter as the main noise attenuation measure. However, if percussive piling is proposed then specific attenuation to address this, as outlined in section 8.5.1 of BS5228, must be utilised and reflected within a final agreed CEMP Document.

478. Construction activities should commence at 0800 rather than 0700, as outlined in the EIA scoping direction.

479. Acceptable proposals for management of dust, exhaust gases and waste disposal are included within the draft CEMP. The final CEMP should also include arrangements for noise and vibration monitoring, including corrective measures where set limits are breached.

480. The likely Noise and Vibration impacts of the development: Neutral effect

Odour and Light

481. There is no assessment of odour management, nor any scheme of lighting or its impact once operational, both of which have scope to significantly impact amenity. The plant would operate 24/7 and some level of floodlighting is therefore likely, which could pose pollution issues both to the night sky, and nearby residential receptors. However, as there is much detailed design stage remaining to be finalised, these matters can be mitigated by condition, whereby schemes of odour control and lighting are submitted and discharged prior to operation.

482. *The likely Odour and Light impacts of the development: Neutral effect*

Flood Risk and Drainage

483. The site is located within Flood Zone C1 and is served by significant flood defence infrastructure. The risks of flooding from tidal sources is concluded to be low, with a residual risk of flooding in the event of defence failure or breach. Surveys undertaken in 2013 by NRW found that only one section of the sea wall fails to protect against a 1 in 1000-year event. Finished floor levels of the development would be a minimum of 7.18 metres AOD and will consequently be flood free for projected 1 in 200-year tidal events in 2119.

484. The site is located within a Flood Warning Area and in the event of a flood emergency access to a safe refuge would be available in the upper floors of the administration building.

485. A sustainable drainage system (SuDS) to manage on-site surface water is required before the development can proceed. The required system will imitate as far as possible the natural drainage processes for the site to remove the risks of flooding andcontamination. Separate consent from the SuDS Approval Body (SAB) must be obtained before the development can be carried out. CC's SAB recommends a pre-

application meeting before any planning application is submitted to enable a viability check of SAB approval; no such meeting has taken place at this stage.

486. On the basis of the Flood Consequences Assessment (FCA) and the storm, outflow and attenuation figures included, some key elements of the SuDS standards appear achievable. However, it has been assumed that because it is a proposal for an industrial site, only mechanical separators should be considered. This is not considered a correct approach as there are, from the proposed plans, opportunities to make use of bio-retention features, at least for some of the highway areas, roof drainage and parking. The applicant does not appear to consider either amenity or biodiversity as particularly relevant for such a scheme. This also is incorrect, as every site must meet suitable criteria for these standards. The addition of bio-retention features could well enhance both biodiversity and amenity.

487. CC's Drainage Division would normally expect an applicant to have spoken to Dwr Cymru in relation to foul drainage as there are capacity issues in this area of Cardiff.

488. In conclusion, whilst the proposal has the potential to achieve SAB approval, CC considers that it would be unlikely to do so on its current design layout.

489. The likely impact of the development on Flood Risk and Drainage: Neutral effect

<u>Ground Conditions</u>

490. The ES considers the potential land contamination effects of the development at construction and operational stages. The ES indicates that construction activities will follow best practice to minimise the risk of pollution incidents, such as fuel or chemical spillage during construction, which will be set out in detail in the proposed CEMP.

491. The site has been identified as vacant land including an historical infilled pond and made ground. Activities associated with this use may have caused the land to become contaminated. In addition, former landfill/raised sites have been identified within 250m of the proposed development. Such sites are associated with the generation of landfill gases, within subsurface materials, which have the potential to migrate to other sites. Both factors may give rise to potential risks to human health and the environment for the proposed end use. A contamination and ground gas assessment of the site is therefore required to identify any associated risks. This will further inform the applicant's environmental risk assessments in relation to the construction phase of the development and determine whether remediation is required to ensure the site is made suitable for use.

492. Any importation of soils to landscape the development, or any site-won recycled material or materials imported as part of the construction of the development, must be demonstrated to be suitable for the end use. This is to prevent the presence of materials containing chemical or other potential contaminants which may give rise to potential risks to human health and the environment.

493. CC request relevant conditions to ensure that the safety of future occupiers is not prejudiced in accordance with LDP policy EN13. Conditions should cover ground gas protection, contamination assessment and remediation measures, and imported and site-won materials.

494. The likely impact of the development on ground conditions: Neutral effect

<u>Trees</u>

495. No tree assessment has been submitted with the application[23], which is necessary to demonstrate that there would be no unacceptable harm to trees of amenity value.

496. The footprint of development will result in the loss/disturbance/sealing/ compaction of a very large volume of vegetated soil. Whilst it appears that there is an intention to retain a vegetated corridor bounding the site, CC's Tree Officer considers this does not offset the loss of the vegetated soil covering the rest of the site in terms of its contribution to mitigating the predicted impacts of climate change. There is no significant space to accommodate new planting with large, long-lived woody species that are especially important and effective at mitigating the predicted impacts of climate change and accreting soil. Mitigating the impacts on vegetated soil needs to be understood. There is no detailed, upfront landscape scheme that would be expected for a development of this scale.

497. The likely impact of the development on trees: Negative effect

The likely impact in relation to any secondary consent application being granted

498. No secondary consents are being sought alongside this DNS application.

Draft Conditions and Obligations (Offered Without Prejudice)

499. A schedule of suggested conditions should the Welsh Ministers be minded to grant permission is included, on a without-prejudice basis, at section 7 of the LIR. The schedule of conditions has subsequently been reviewed, in consultation with other parties, during the application process.

Natural Resources Wales (NRW)

500. NRW issued statutory pre-application advice to the applicant[24]. This was followed by a high-level review of the submitted air quality assessment[25]. NRW then provided its formal observations on the submitted application on 26 November 2020[26]. In summary, its response is as follows:

501. NRW had significant concerns with the proposed development as submitted. NRW's recommendation was that planning permission should only be granted if two specified requirements were met and subject to the imposition of various conditions. The two specified requirements were for a revised air quality assessment and a revised site layout plan and further information demonstrating an appropriate buffer zone to the drainage ditch along the site's south-western side.

Effect on Statutory Designated Sites

502. The application site is located within 10km of the Severn Estuary SAC, SPA and Ramsar. The Severn Estuary supports habitat types and species listed in Annexes I and II of the Habitats Directive that are afforded legal protection on a European level.

503. The site is also located entirely within the Gwent Levels – Rumney and Peterstone SSSI. The SSSI is notified for its range of aquatic plants and invertebrates associated with the reens and ditches of the drainage system. The large number of hedgerows add

[23] An arboricultural assessment was subsequently submitted by the Applicant – Doc 94 and Technical Appendices Docs 95-98
[24] NRW pre-application consultation advice dated 13 August 2020
[25] NRW letter dated 13 October 2020
[26] NRW application consultation response dated 26 November 2020

to the diversity of the area and, together with the main reen banks, provide a habitat

for nationally important assemblages of terrestrial and aquatic invertebrates. The area supports notable species, including the shrill carder bee. In summary, the special interests of the SSSI are dependent on the habitat extent, the water quality and quantity, the existence of the drainage system and its continued management. Any development which would damage the features for which the area was notified should be avoided.

504. There are potential impacts from the proposal upon statutory designated sites from aerial emissions, changes in water quality and quantity and noise.

Impacts of Aerial Emissions

505. The applicant has responded to the issues raised by NRW at pre-application stage concerning aerial emissions[27]. However, NRW considers that the following matters have not been satisfactorily addressed:

- Critical loads: With regards to the Gwent Levels designated sites, the applicant has used a nutrient nitrogen critical load of 20kgN/ha/yr. NRW has advised that the nutrient nitrogen critical load for the Gwent Levels designated sites is 10–20kgN/ha/yr, as a key part of the managed grazing marsh areas within the Gwent Levels are the traditionally drained fields via a system of grips. This can lead to the development of marshy grassland areas in these grips, generally dominated by species of Juncus (rush). On this basis the relevant critical load is 10-20kgN/ha/yr, i.e. to be assessed as a type of marshy grassland. NRW has noted the applicant's response to its comments, but maintains its advice that the relevant nutrient nitrogen critical load is 10–20kgN/ha/yr. The reason for this is that the designated features of the Gwent Levels are in the reens. If the land adjacent to the reens experiences greater increases in nutrient, this will have an influence/consequence (for example through run-off) on the condition of the reens and in turn the designated features. It is important that the nutrient content of the reens be mesotrophic, and to help achieve this, NRW requires the applicant to use the lower end of the 10-20kgN/ha/yr range in their assessment.

  Assessment is required using the correct nitrogen critical loads. Where the Process Contributions (PCs) are found to be above 1% and the Predicted Environmental Concentration (PECs) above 70%, detailed modelling and assessment will be required because these contributions cannot be screened out as insignificant.

  The Applicant has subsequently repeated the assessment using the lower end of the nutrient nitrogen critical load range. The updated assessment shows that two of the three SSSI's in the locality exceed the 1% significant effect threshold. Although there is already an exceeding background as a result of other activities, consideration of the predicted increase in terms of Process Contribution as a % of the exceedance indicates that, for SSSI2, the extent to which the nutrient nitrogen loading would exceed the 10kg/N/ha/yr critical load would be increased by 14%. For SSSI3, the increase would be about 7%. Whilst these might be regarded as small increases overall, they would be a significant step in the wrong direction. This should not be dismissed as significant, and should be weighed in the overall balance when determining the planning application.

[27] See Applicant letter to NRW dated 4 September 2020 (Doc 79) and Appendix A by Environmental Visage (Doc 80)

- Significance thresholds and in-combination assessment: NRW has considered the updated air quality assessment . However, this does not contain both a cumulative assessment (effects of this project against the 'baseline' i.e. background values which include existing installations) and an in-combination assessment (effects of this project against the 'baseline' and other relevant projects which are not within the background values, e.g. planning applications lodged but not determined, projects permitted but not yet started). For European sites, the applicant needs to consider the in-combination impact of all relevant permissions, plans or projects that affect the site. NRW advise that even if the PC for a proposal alone is below 1% an in-combination assessment is required.
- Ecological Receptors: It is unclear which ecological receptors have been used. Clear assessment is needed of the impact of nutrient nitrogen deposition on ecological receptors using the value 30 µg m-3 (this value relates to protection of ecosystems and vegetation).
- High-level Air Quality Modelling Review: NRW has undertaken a high-level review of the submitted air quality assessment. NRW is satisfied that there are no fundamental issues with the modelling methodology used and that it is suitable to inform the planning application. However, only when further details of modelling and technology is provided as part of an Environmental Permitting (England and Wales) Regulations 2016 (EPR) application, will NRW's permitting function be in a position to verify in detail the modelled outputs themselves.

Water Quality and Pollution Prevention

506. In the Gwent Levels SSSI NRW requires the provision and maintenance of buffer zones in relation to watercourses. The watercourse along the south-west side of the site is a field ditch and requires a minimum 7m buffer zone from the top of the bank. NRW advises that such a buffer must be maintained and remain free from use during construction and operational phases of development, secured via a planning condition. The buffer zone is necessary to prevent pollution of the water environment; to allow access to, and management of, ditches; as well as maintaining habitat corridors both during construction and operational phases of development.

507. At pre-application stage NRW requested a revised site layout plan detailing relevant infrastructure and an appropriate buffer zone, with the exact distance of the proposed buffer zone width and other infrastructure shown annotated on a plan. Such a plan would enable NRW to determine whether the proposed buffer zone is appropriate, meeting the necessary objectives in terms of pollution prevention, access, management and maintaining habitat corridors which helps protect the special features of the SSSI.

508. The submitted application includes a plan titled *Boundary Zones and Buffers*[28] and the applicant states this shows an appropriate buffer zone between the ditch and major infrastructure[29]. This does not show an annotated buffer width. However, the plan indicates that the 7m buffer zone (from the top of the bank) includes infrastructure such as access roads and pavements, weighbridge and fencing. Whilst the plan indicates an area allocated for access for ditch maintenance, NRW consider that this area is not wide enough to allow access for the necessary machinery and to deposit silt along the bank edge during the programme of casting and de-silting.

[28] Application Document 14
[29] Applicant letter to NRW dated 4 September 2020 (Doc 79)

509. NRW also draw attention in their consultation response to various inconsistencies and ambiguities within the submitted documentation, giving rise to uncertainty as to whether existing trees were to be removed or were to remain within the proposed ditch maintenance buffer zone. In addition, NRW is concerned that structures such as acoustic fencing close to the ditch might cause shading, with consequent impact on its condition.

510. Given the above concerns, NRW has requested revised plans demonstrating an appropriate 7 metre buffer zone from the top of the bank. The buffer should be free of infrastructure which would preclude access to, and management of, the ditch. Plans should also indicate what vegetation (including any trees) will be removed and how the habitat corridor will be maintained. NRW request the plans are accompanied by information detailing how ditch management works will be carried out, including access for the relevant machinery required and space for temporary storage of silt along the bank edge during the programme of casting and de-silting. The additional information must include evidence that the proposals will not impact the ditch during the construction and operational phases, including the effects of shading from new infrastructure.

Flood Risk

511. The proposal is for highly vulnerable development. NRW's Flood Risk Map confirms the site to be within Zone C1 of the Development Advice Map (DAM) contained in TAN 15 and the 0.5% (1 in 200 year) and 0.1% (1 in 1000 year) annual probability tidal flood outlines. Section 6 of TAN 15 requires the determining authority to determine whether the development at this location is justified. Therefore, it will be for the determining authority to assess whether the proposal meets the tests set out in criteria (i) to (iii). The final test (iv) is for demonstration that the potential consequences of flooding can be managed to an acceptable level.

512. NRW have reviewed the submitted Flood Consequences Assessment (FCA)[30]. The FCA confirms the buildings are to be set at 7.18mAOD and the site plans appear to show the tarmac areas of the site (including the internal access / egress roads) to be set at the same level. As such, these areas will all be above the 0.5% (1 in 200 year) and 0.1% (1 in 1000 year) annual probability tidal flood outlines including climate change. It appears only small areas of the site (shown as landscaping) will be at lower levels and so potentially at risk from flooding.

513. NRW are satisfied that the development will not result in loss of functional floodplain storage. As regards mitigation measures, the FCA recommends that flooding resilience measures should be incorporated into the ground floor wall and floor treatments. A Flood Management Plan will be produced for the site, which may include the deployment of demountable flood barriers with a flood warning response and management system to warn building users of a potential flooding incident.

514. In the light of the above NRW have no concerns in respect of flood risk matters.

Recommended Conditions

515. NRW's consultation response states that other matters raised with the applicant during the pre-application stage have been addressed to the extent that any outstanding details could be covered satisfactorily by conditions imposed on any

[30] Application Document 75

permission granted. Conditions are recommended covering the following matters: provision of drainage details/strategy; provision of a water quality monitoring plan; of an ecological monitoring and contingency plan; provision of a landscape and ecological management plan (LEMP); provision of a construction environmental management plan (CEMP); provision of a biosecurity risk assessment; provision of a 2m high acoustic fence during construction; provision of a lighting plan for both construction and operational phases of development; land contamination.

Demonstration of Need

516. At Hearing Session 1 NRW drew attention to issues concerning the CIM Sector Plan 2012 figures for waste arisings and their consistency with more recent data. The assessment of need for energy from waste developments in the CIM Sector Plan has now been replaced by the new Strategic Assessment published on 24 March 2021, which necessitated the Applicant preparing the revised WPA discussed at Hearing Session 5. NRW have commented on the revised WPA in their letter of 10 June 2021 and draw attention to an energy from waste scheme at Alexandra Dock Newport with extant planning permission. NRW say that the local planning authority (Newport City Council) consider this permission to be implemented, as works to construct the access commenced in 2016, and believe that a re-start on-site began in April 2021. NRW has had discussions concerning submission of an EP application. NRW note that the Alexandra Dock scheme has a convoluted planning history dating from 2010 and that there is a lack of clarity regarding the specific fuel or feedstock for this plant.

517. At my request, and following submissions concerning the Alexandra Dock scheme at Hearing Session 5 by Residents against the CF3 Incinerator, NRW have provided additional information on the status of the scheme, in consultation with Newport City Council[31]. This information indicates that there is an operative 2019 planning permission (ref 19/0599), approved as a variation to the terms of an earlier permission (ref 17/1185) which itself was a variation to the original permission (ref 10/1238). The officer application reports state that electricity (up to 20MW power output) would be generated by extracting a synthetic gas from waste feedstock. However, NRW say that the local planning authority is unable to confirm, one way or the other, whether there is planning permission for an energy from waste facility. Neither NRW nor the LPA hold any evidence concerning the likely feedstock capacity of the Alexandra Dock proposal.

518. The LPA confirms that all pre-commencement conditions on permission 19/0599 are discharged. Works to construct the access commenced in 2016. The LPA understand that a restart began on site in April 2021 but cannot confirm this.

519. NRW held a pre-application meeting concerning the scheme in August 2019. Information submitted in advance of the meeting stated that the proposal was for the construction and operation of a waste-to-energy plant processing pre-processed waste with biogenic content using a moving grate technology/boiler/steam turbine. However, no environmental permit application has been received to date.

Respresentations from Other Parties

Cadw

[31] NRW email response dated 16 July 2021.

520. Cadw have no objections to the above proposal[32] and agree with the conclusions in the ES submitted with this application. The ES includes chapter 13 Cultural Heritage and Appendix 12 Historic Environment Desk Based Assessment. The information in these documents shows that the assessors have considered the impact of the proposed development on the settings of the above designated historic assets and apart from listed buildings 13865 Church of St Mellon and 13905 Pill du Farm concluded that there will be no impact. In respect of the Church of St Mellon they consider that there will be a slight adverse effect on the setting of the church and in the case of Pill Du Farm a negligible adverse effect. In both cases the scale of the effect will not be significant. Cadw concur with these conclusions.

Dwr Cymru

521. Dwr Cymru's consultation response[33] does not raise any matters which materially affect whether planning permission should be granted.

Wentlooge Community Council; Marshfield Community Council

522. Wentlooge Community Council's area covers the villages of Peterstone and St Brides and their surroundings within the Gwent Levels to the east of the site. The Community Council objects to the proposed development[34]. The Community Council objects for the following reasons:

- Attention is drawn to the area's SSSI, landscape, archaeological and ecological/biodiversity designations and the advice in PPW and statutory requirement under the Environment (Wales) Act to maintain and enhance biodiversity and ecosystem resilience in the exercise of planning functions.
- The effects from the plant's emissions would be felt over the area of the Wentlooge levels when the wind direction from the area of the plant is coming from the west sending the cloud east. This would cover the area of the Green Belt and Green Wedge and 3 villages.
- The area of the Wentlooge Levels has seen a revival in species of recent years, including the Shrill carder Bee, swans and other nesting and migrating birds, water vole and dive beetle. There is concern that the wildlife and its habitat will be greatly affected by the emissions from the plant.
- Residents of the villages of Peterstone, Marshfield and St Brides have raised grave concerns of the effect to health the output of the plant emissions could bring. The fear of cancer from a prolonged period of exposure seems to be the most prevalent concern.
- There is also concern about vehicle movements to and from the facility. The proposed traffic management plan is like those of other businesses in the same area, but the conditions can only be levied on the vehicles under the facility's control. The B4239 travelling to the area in question is not suitable for heavy goods traffic yet contractors who deliver to businesses in that location use it as the shortest route. This would be the case of waste being taken to this facility by road with the volumes declared at the public presentations being up to 80 vehicles a day. This could easily lead to 160 movements along a road and 2 villages which

[32] Cadw consultation response dated 27 November 2020
[33] Dwr Cymru consultation response dated 26 November 2020
[34] Wentlooge Community Council consultation response (undated)

are in no way suitable for a fraction of this volume of traffic. This again would bring further pollution, traffic issue, noise, and effects of people's wellbeing.

523. Marshfield Community Council has concerns relating to air quality[35]. The Community Council serves the villages of Marshfield and Castleton. Both villages sit within the Wentlooge Levels and border with Cardiff City Council boundary. The Community Council notes that air quality tests have been carried out within the various Cardiff suburbs that lie within relatively close proximity to the proposed recovery facility. It does not appear that any tests have been carried out within the Newport boundary, in particular, those villages close to the boundary and in close proximity to the proposed facility. The Community Council has concerns that Marshfield and Castleton may fall outside the protection of the stack, and that harmful emissions could affect the residents health. The Community Council feels that additional air pollution tests are necessary to evaluate the health risks to the villagers, as both villages lie in the path of the predominant south westerly winds that blow in this area.

Other Interested Parties

524. Approximately 250 representations have been received from other parties either objecting to or expressing concern about the proposal. The majority of these are individual representations from residents in the locality who consider that they would be adversely affected. The representations include objections by the MS for the Cardiff South and Penarth constituency; the MPs for the Cardiff North and Newport West constituencies; and CC elected Members for the Trowbridge and Rumney Wards.

525. The main grounds of objection relate to:

- No need or justification.
- Conflict with sustainability/climate change objectives and commitments, including Cardiff's One Planet commitment to become carbon neutral by 2030.
- Will give rise to significant carbon dioxide emissions; no carbon capture.
- Adverse effect on air quality/pollution/effect on health.
- Cumulative impact with Viridor incinerator.
- Proximity to homes and schools – effect on health and well-being.
- Traffic impacts – HGVs and associated air pollution.
- Exacerbation of existing local health/deprivation issues.
- Noise.
- Odours.
- Excessive scale in relation to context – negative visual impact.
- Harm to SSSI.
- Harm to ecology and wildlife, including protected species.
- Pollution of land and water.

[35] Marshfield Community Council consultation response dated 26 November 2020

526. The representations against the proposal include submissions by a local group "Residents Against the CF3 Incinerator" ("CF3 Residents"). These comprise detailed responses to a number of the Applicant's assessments supporting the application. The CF3 Residents' submissions are:

- Response to Môr Hafren Planning Statement.
- Response to Waste Planning Assessment.
- Response to Air Quality Assessment.
- Response to Air Quality Assessment (Addendum).
- Response to Health Impact Assessment.
- Response to Noise and Vibration Assessment.
- Response to Landscape and Visual Impact Assessment.
- Response to Transport Assessment.
- Response to Transport Assessment (Addendum).
- Response to eDNA Surveys.
- Response to Welsh Government Policy – Local Ownership of Energy generation in Wales.

CF3 Residents' Response to Môr Hafren Planning Statement

527. CF3 Residents disagree that the principle of a waste management use on the site is established by the previous grant of planning permission in 2009.

528. CF3 Residents point out that the previous grant of planning permission pre-dates significant changes in national policy, namely Towards Zero Waste – One Wales: One Planet (2010); The CIM Sector Plan 2012; TAN 21 Waste (2014); and revisions to PPW. These set out how Wales will reduce the amount of waste it produces and make the transition to a high recycling society, with an aim to achieve zero waste by 2050, where all products and services are delivered with waste prevention in mind.

529. At the local planning policy level, Cardiff Council's LDP has been adopted in 2016. Importantly, the LDP introduced policy W1, which echoes TAN 21 and includes a requirement that waste management facility proposals be supported by demonstration of need assessed against regional requirements. The demonstrable need case is crucial bearing in mind the south east Wales region already benefits from Viridor's Trident Park ERF, which commenced operation in 2014 and has a throughput capacity of 425,000 tpa. This facility had spare capacity in 2019.

530. The 2009 proposal was different to the current proposal. It would have taken unsorted waste from a mix of local authority contracts and private industrial and commercial waste producers and separated the waste into recyclable materials, raw materials input for on-site combined heat and power (CHP) and residual waste. Although the overall throughput capacity of the facility would have been 200,000 tpa, only 110,000 tpa would have been feedstock for the CHP element. The current proposal provides no waste treatment processes or recycling facilities, so 100% of the inputs (200,000 tpa) are for recovery in the incinerator.

531. These obvious differences between the 2009 and 2020 planning applications are such that the two types of facility plant (a facility with waste treatment, recycling, recovery and waste disposal as compared to a facility with recovery and waste disposal only) are not comparable. CF3 therefore do not agree that the proposed land use is the same.

532. Moreover, the significant differences in the sizes of the buildings proposed in each case means a significant difference in the visual impact of the former and current proposals. The 2009 scheme involved a main building height of 25m and a stack height of 30m; the current application involves a main building 48m high and a stack height of 70m.

533. These differences are so significant that it cannot be said that the principle of the current proposal is established by the 2009 permission.

CF3 Residents' Response concerning Socio-Economic Considerations – Local Ownership of Energy Generation in Wales

534. In February 2020 WG published their policy statement "Local Ownership of Energy Generation in Wales – benefitting Wales today and for future generations". The policy aims:

- To retain social and economic benefit from future energy developments located in Wales.
- To retain money in the local economy, contributing to prosperity.
- For all new energy projects in Wales to include at least an element of local ownership, in order to retain wealth within Wales and provide real benefit to communities across Wales.

535. The project's estimated Gross Value Added (GVA) during the operational phase (25 years) is calculated at only £15.7m in the local impact area, compared to up to £43.73m in the wider impact area. There is no evidence the applicant is seeking investment from investors based in Wales or seeking local community involvement to deliver their energy project. CF3 Residents consider that the Applicant's Socio-Economic assessment has not duly considered or has overlooked the opportunity of retaining Gross Value-Added by compliance with the Welsh Government policy of Local ownership of energy projects during the operation and lifetime of the proposed ERF.

536. The Applicant's proposed energy project business model endorses and encourages leakage of GVA from Wales. The foregoing is evidence of non-compliance with the Welsh Government policy of local ownership and retention of GVA.

CF3 Residents' Response to Original Waste Planning Assessment

537. CF3 Residents note that the Waste Planning Assessment should provide sufficient evidence to identify the extent to which a proposal demonstrates a contribution to the waste management objectives, policy, targets and assessments contained in national waste policy. The Residents' submission analyses various data sources and raises a number of points in respect of the applicant's original Waste Planning Assessment:

- Potential feedstock – analysis of the South East Wales C & I residual waste landfill stream demonstrates there is no potential to divert 200,000 tonnes of feedstock to the applicant's proposed ERF.

- 30-mile catchment area - analysis of the permitted waste sites in the 30-mile catchment area demonstrates there is no potential source of the applicant's claimed 50,000 tpa of RDF feedstock.
- Capacity gap – CF3 Residents identify and evidence an energy recovery potential surplus capacity of 338,236 tonnes. The applicant's proposed Energy Recovery facility would only add to this surplus.
- Projected future demand – CF3 Residents' estimates of the projected future demand by 2025 demonstrate the anticipated reduction in C & I waste sent to landfill and the lack of a viable and sustainable source of ERF feedstock.
- Growth in recycling - The reduction in landfill rate complements the opportunity to increase the recycling rate, as recyclable waste is currently being sent to Landfill, as reported by WRAP (the Waste and Resources Action Programme).

538. Based on their analysis of NRW survey of C & I waste data (2018), CF3 Residents find no evidence or demonstration how the proposed ERF contributes to "Towards Zero Waste" waste management objectives, policy and targets. The applicant's Waste Planning Assessment is non-compliant with TAN 21 as it fails to provide the required information, demonstrate a need against the regional requirements, or allow an assessment of its contribution to the Waste Strategy and its objectives and targets.

CF3 Residents' Response to Revised Waste Planning Assessment

539. The residents note that the March 2021 Strategic Assessment is now the baseline against which the need for energy from waste applications will be determined. Having examined the applicant's revised WPA and justification of need for their proposal against the new baseline, the residents group feel that all their previous responses remain valid.

540. The timeframe for the applicant's proposal commencing operations, if approved, is between 2025 and 2030. The capacity gap in SE Wales for 2024/25, according to the 2 scenarios in the strategic Assessment, shows an overcapacity of 10,000 tonnes (Scenario 1), or a shortfall of 40,000 tonnes, of which only 15,000 tonnes is commercial and industrial residual waste (Scenario 2). Projecting forward to 2034/35, the scenarios confirm an overcapacity in SE Wales of 150,000 tonnes (Scenario 1) and 55,000 tonnes (Scenario 2).

541. The applicant has not provided a commercial and industrial residual waste marketplace assessment for the 30-mile catchment area in their previous WPA and the revised WPA does not provide this either. However, the applicant has stated that the proposed development would operate on a "merchant" basis. Therefore, waste would be sourced from wherever it is available. The applicant has confirmed that if there is insufficient feedstock available within the 30-mile catchment then it would be sourced from further afield. If this to be the case then the proposed development would be contrary to the Strategic Assessment document, as this would lock in transport emissions and associated pollution.

542. The authoritative source of information to be used when considering the need for new energy from waste facilities is the Strategic Assessment document of March 2021. The Applicant has unilaterally decided to tailor the Strategic Assessment in an attempt to justify the need for their proposed development. Their figures present a declining proportion of feedstock available to feed their facility. The 2034/35 column is the only one of relevance as the earlier time periods pre-date the proposal's date of

commencement of operations. This shows a capacity gap of just 90,000 tonnes, based on an assumption that Trident Park only has capacity to process 100,000 tonnes of commercial and industrial residual waste per annum. This is a highly selective analysis and tailoring of the WG Strategic Assessment data as it only uses the worst-case Scenario 2. By comparison the best-case Scenario 1 projects a capacity gap of only 45,000 tonnes for 2034/35.

543. The Applicant's case is further flawed in that it overlooks the projected decrease in household and non-household residual waste available to Trident Park between 2024/25 and 2034/35. The strategic Assessment projects a decrease of such waste between these dates of 105,000 tonnes (Scenario 1) and 85,000 tonnes (Scenario 2). This potentially creates additional Trident Park capacity. This projected future additional capacity also means that Trident Park is ideally positioned to accommodate additional commercial and industrial residual waste resulting from the future growth of population and business in SE Wales.

544. The Applicant seeks to add to their justification for the proposed ERF by introducing "commercial competition" between the Môr Hafren proposal and the Trident Park facility, claiming that Môr Hafren could conservatively pick up 20% of Trident Park commercial and industrial waste contracts. There is no certainty or evidence to back up this assumption or "conservative estimate".

545. The proposed ERF will have to compete with other facilities, which already import waste from England to maintain throughput. Trident Park has maintained, in recent years, a surplus capacity of around 49,000 tonnes. There is certainty that the Applicant's scheme would create overcapacity – the Applicant's analysis confirms this.

546. There is insufficient feedstock available within SE Wales to divert 200,000 tonnes per annum from landfill. Even with diversion of feedstock from Trident Park there would still be a need to import feedstock for the Môr Hafren facility.

547. Trident Park's commercial and contractual arrangements are not relevant to the Strategic Assessment or the determination of this proposal. The argument that a single energy from waste plant in SE Wales is imprudent from a WG perspective is not relevant to the consideration of need.

548. The Applicant's proposal does not contribute towards WG policy drivers. WG has set greenhouse gas emission targets through to 2050 in line with advice from the UK Committee for Climate Change. WG targets for diversion of waste from landfill are to prioritise and increase reuse and recycling, as outlined in its Waste Strategy, Beyond Recycling and Towards Zero Waste. The role of energy from waste will significantly reduce over time, rather than increase.

549. The Strategic Assessment clearly states that WG does not consider there to be a need for any new large-scale energy from waste plants of 10MW or greater. In particular, by 2034/35 SE Wales will have an estimated over-capacity for residual energy from waste recovery of between 55,000 and 155,000 tonnes per annum. The recent NRW landfill diversion analysis of residual commercial and industrial waste suitable for energy recovery (carried out for the March 2021 hearings) identified less than 90,000 tonnes per annum in 2018. The Applicant's tailoring of the Strastegic Assessment, whilst a flawed analysis, confirms that there is no opportunity to divert 200,000 tonnes of commercial and industrial residual waste from landfill in SE Wales to supply their proposal.

550. The proposal is non-compliant with Cardiff LDP policy W1 and with TAN 21. There is no demonstrated need in the SE Wales Region for the proposal. The Applicant's WPA does not provide evidence which identifies the extent to which a proposal demonstrates a contribution to the waste management objectives, policy, targets and assessments contained in national waste policy, as required by TAN 21. The proposal will not contribute to these, the focus of which in the short term is now on increasing recycling from 65% to 70%. If the development is approved the achievement of this will be put at risk by the creation of significant over-capacity of energy recovery in SE Wales.

551. Attention is also drawn to the energy from waste proposal at Alexandra Dock, Newport, also referred to by NRW. The most recent application concerning this on the Newport City Council Planning website is reference 21/0091, approved on 11 March 2021. This was for discharge of conditions, attached to planning permission 19/0599, granted on 12 September 2019. The agent for application 21/0091 is CoGen Limited, who are also the holding company for Môr Hafren Bio Power Ltd. CoGen have also developed the proposal for ground clearance works in connection with the Alexandra Dock project.

552. The planning history for the Alexandra Dock site is convoluted and includes other planning applications commencing with 10/1238, then 15/1050[36], 17/1185 and 18/0911. The initial application was for a bulk drying and pelleting facility with an on-site energy centre.

553. The planning statement for 19/0599 includes reference to HGV movements to the proposed development for feedstock supply and ash and waste removal.

554. The application documentation for 21/0091 also includes reference to a site visit report by Harris Pye dated 5 February 2019 referring to the Newport 20MWe Waste to Energy project. This states that Harris Pye are currently offering to design, supply, install and commission, on an EPC basis, a 20MWe waste-to-energy plant firing refuse derived fuel on a brownfield site in Newport within the docks area.

555. The documentation for application 21/0091 includes a site layout drawing, titled "Newport Energy from Waste Plant", for client RDF Energy No 1 Ltd, showing an incinerator hall, air pollution control, fly ash pit, residue ash silo and feedstock pits. Other sources reference that the proposed development at Alexandra Dock is an EfW plant. The website of Andusia Resource Recovery highlights that company's announcement in January 2020 that they have been confirmed as the sole waste supplier to the new energy from waste plant at Alexandra Docks. It states that construction of the plant is scheduled for the period 2020-2022 and that Andusia will be supplying 220,000 tonnes per annum of refuse derived fuel under a 25-year deal. The RDF will largely be sourced locally, from South Wales industrial, commercial and municipal waste, with all recyclable materials removed.

556. This evidence confirms that the Alexandra Dock site has planning permission, construction work has commenced and planning conditions to clear the site have been discharged. This evidence also supports NRW's evidence that an energy from waste proposal is being actively pursued at the Alexandra Dock site. On this basis the Alexandra Dock EfW capacity should be factored into the energy from waste capacity in SE Wales when considering the need for the Môr Hafren proposal.

[36] The correct reference for this application in the sequence of variation permissions is 15/1513

CF3 Residents' Response to Air Quality Assessment (including Addendum) and Response to Health Impact Assessment

557. The effect of the proposal on air quality is a serious concern for local residents, who are aware that the incinerator's emissions will contain pollutants and their concerns are that these pose a risk to their health and the health of their children. CF3 Residents comment that although the applicant says that the ERF will be fully compliant with the operational requirements specified by the Industrial Emissions Directive (IED) for waste incineration plants there will inevitably be periods, e.g. during start-up and when the incinerator is not working at maximum output due to variations in the feedstock calorific value, when it will be non-compliant.

558. The WG's Clean Air Plan (August 2020) draws particular attention to Nitrogen Dioxide and particulate matter (PM10) pollutant levels, which are said to close to or over legislative limits. These same pollutants are assessed in the Applicant's AQA, which also refers to high background levels of these pollutants at a number of the receptor locations. This raises questions as to whether the AQA is fit for purpose, since the regulatory framework it relies on is inadequate.

559. The AQA's overall conclusion that the potential impact on local air quality is likely to be small and unlikely to result in a significant threat to the health of people living and working nearby is based on a false assumption that the facility would continuously be operating normally and at maximum capacity. Despite this, the conclusion is that there is an impact on local air quality and a threat to health; albeit these are rated as "likely to be small" and "unlikely to result in a significant threat". Any additional risk to air quality in Cardiff, already one of the most polluted cities in the UK, is unacceptable.

560. There is confusion over the precise model of wind turbine actually installed at the G24 Innovations Ltd site. CF3 Residents are concerned that the wrong turbine type may have been used in modelling the turbine's effect on dispersion of emissions from the ERF chimney.

561. Moreover, the results from the modelling of wind turbine effects refer only to Nitrogen Dioxide. Whilst this is the most significant of the emissions from the Môr Hafren Bio Power ERF, CF3 Residents cannot understand why the modelling of the wind turbine effects does not consider all sources of pollution and omits to consider particulate matter (PM10 & PM2.5) emissions. CF3 Residents consider that the Applicant's Air Quality Assessment lacks credibility and robustness by not considering all sources of pollution when modelling the wind turbine effects.

562. The AQA comparison of dispersion effects with and without potential effects of the G24 Innovations wind turbine only refers to the model predictions for the Receptor 3 location and the modelled maximum PC location across the modelled grid. There are 23 receptor locations in total; CF3 Residents consider that results from other receptors close to residential areas and schools, or relevant to the predominant wind direction, should be included in the Applicant's modelling of the wind turbine effects.

563. In relation to the Applicant's Health Impact Assessment (HIA), CF3 Residents question the receptor locations used to support the HIA, which it is said do not properly reflect the predicted areas of highest concentrations of oxides of Nitrogen. CF3 residents query why a number of school sites in the area have not been assessed, and also why the Applicant has set a maximum distance of 1.5km, instead of 4km, from the site for the specific receptors in their model.

564. Overall, the HIA provides inadequate or no evidence of the predicted increases in pollutant concentrations at nearby sensitive receptors such as residential properties, schools, playing fields and locations where people may congregate for significant periods of time. The HIA is therefore insufficiently robust to support a conclusion that the results from the health impact assessment confirm that there is no significant health risk associated with potential exposure to emissions of pollutants from the Mor Hafren ERF.

CF3 Residents' Response to Transport Assessment (including Addendum)

565. The Applicant asserts that the number of HGV movements passing through key junctions will be limited by the sourcing of up to 50,000 tpa of feedstock from a source close to the ERF site. However, to supply such an amount of feedstock, CF3 Residents estimate that the source would need to be importing some 300,000 tpa of waste for separation. This would itself generate more HGV movements on the surrounding road network, which are not included in the transport assessment.

566. CF3 Residents dispute the HGV movements calculation used in the Transport Assessment. They put forward an alternative calculation, using industry-derived figures and rounding up all daily figures to the nearest whole number. This gives 88 daily two-way HGV movements, rather than the 80 used in the Transport Assessment. CF3 Residents therefore maintain that the corresponding annual increase of HGV movements on local roads to and from the site would be 23,232. Such an increase in HGV movements on the A4232 would adversely impact Cardiff's Air Quality Plan in this location.

567. CF3 Residents consider that the previously consented scheme's Transport Assessment is of significant and particular relevance. The applicant's discretionary baseline of 2020 instead of 2009 calls into question the robustness of their assessment rather than ensuring it. A comparison of the 2009 and 2020 peak hour flows demonstrates the significant increase in traffic on the road network close to the proposed site. The Transport Assessment shows that the Lamby Way arm of the Lamby Way (North)/Mardy Road junction now exceeds the practical capacity of 0.85 in both peak hours and that the Wentloog Avenue/Lamby Way roundabout queue survey recorded significant queues at this roundabout of up to 67 vehicles on the Wentloog Avenue East arm in the PM peak hour. This shows that the roads leading to the site are already operating beyond capacity; the proposal will add to this overloading of the road network.

568. The CF3 Residents Addendum draws attention to disparities between the DNS EIA Scoping Direction to Mor Hafren and the applicant's Transport Assessment. These are:

- The Transport Assessment indicates that operational HGV movements could commence at 7.00am, not 8.00am as specified in the EIA Scoping Direction.
- There are differences between the junctions required by the EIA Scoping Direction to be modelled as part of the Transport Assessment and those actually modelled by the Assessment. In particular, the Newlands Road/Wentloog Avenue junction has not been modelled – this is a significant concern, as residents consider that many HGVs might use the B road eastwards from this point to reach the M4.
- The Applicant's EIA Scoping Report and the subsequent EIA Scoping Direction contain estimates that daily HGV movements could be significantly higher than the numbers used in the Transport Assessment. The variation in HGV figures

referred to at various stages is confusing and it is unclear how the applicant has calculated the HGV vehicle movements for the development.

- There is a lack of clarity about the type of HGVs that would be used to deliver the feedstock. CF3 Residents are concerned that the Transport Assessment makes assumptions that lessen the impact of the HGV movements to and from the development site.

CF3 Residents' Response to Landscape and Visual Impact Assessment (LVIA)

569. The proposed ERF is of a mass and scale much greater than the surrounding industrial areas and protected areas. The topography of the surrounding land is flat, which heightens the significant visual impact. If approved this would set a dangerous precedent. The Applicant's assessment and viewpoints do not consider the impact of the ERF's unique mass and scale on educational facilities close to the site.

570. The applicant's LVIA has not given the impact of lighting, including aviation warning lighting of the stack, due consideration and this calls into question the robustness of the assessment.

571. The LVIA study area is a 5km radius from the site – however, the furthest viewpoint taken into consideration is 3.2km from the site and all but 2 of the 19 viewpoints are within a 2km radius. This mismatch is not explained and calls into question the robustness of the Applicant's assessment.

572. There are 6 viewpoints where the visual impact is rated as of High Sensitivity and Major/Moderate Significance between 500m and 1.8 km from the site. These are, in the main, views that the residential areas of Rumney, St Mellons and Trowbridge and schools in close proximity, e.g. Eastern High, will have of the proposed ERF's mass and scale. CF3 Residents do not agree with the conclusion that "these impacts are of moderate/minor significance or not significant" for these communities or schools.

573. 63% of the viewpoint assessments are either Major/Moderate or Moderate impact, which means they could result in exceeding of statutory objectives and/or breaches of legislation or are likely to be important considerations at a local level. It is unclear how the conclusion of "a transition to not significant at a distance of 3 to 4 km's" has been reached when there is only 1 viewpoint taken into consideration at this distance. Additionally, the LVIA has not given due consideration to the Travellers' site nearby or the residential population of St Mellons.

CF3 Residents' Response to Noise and Vibration Assessment

574. CF3 Residents consider that the noise and vibration assessment lacks clarity and robustness in respect of the following:

- The impact on commercial premises in close proximity has not fully been taken into consideration – in particular, the impacts of percussive piling.
- The assessment indicates that construction activities would commence at 7.00am, however the EIA scoping direction states that no activity audible at the boundary of residential property should take place before 8.00am.
- The impact on schools in close proximity, Eastern High in particular, has not been taken into consideration.

- The level of uncertainty regarding operational noise from the ERF is of significant concern. The full details of the plant and processes have not been considered and a further assessment is required when these details are available.
- It is unclear what HGV movement data has been included.

CF3 Residents' Response to eDNA Surveys Document (Great Crested Newt)

575. It is unclear from the report whether eDNA surveys of Pond 4 and Pond 5 were completed before the end of the survey season (30th June 2020).

Other Representations

576. A representation from the film studio employment facility involving noise-sensitive activities close to the site seeks assurances that there will be no adverse effects on its operations due to noise and vibration arising from the development, either during construction or subsequent operation.

577. The Barry and Vale branch of Friends of the Earth (FoE) objects to the proposal on the basis that it involves high-carbon technology. The incineration technology could only be carbon neutral if combined with carbon capture and storage, which is not proposed. FoE is also critical of the plume dispersion modelling, which it contends is inadequate for coastal areas which can give rise to particular air flow conditions, and maintains that the windspeed and direction data used in the modelling (from the meteorological records for Cardiff Airport) do not adequately represent conditions at the site. FoE is also critical of NRW's approach to the assessment of human health impacts and maintains that advice on this is required from public health authorities.

Appraisal

Main Issues

578. I consider that the main issues in this case are:

- whether the proposed development would be consistent with waste management policy requirements and objectives in Wales, particularly regarding need for the development, having regard to relevant development plan policies and other material policy considerations;
- the effect of the proposed development on the ecology of the area, in terms particularly of the special features of the Rumney and Peterstone SSSI, internationally designated sites in the area and protected species;
- the effect of the proposed development on air quality in the area in terms of consequences for human receptors;
- the environmental effects of the proposed development in other respects, including on the character and appearance of the area, on road traffic conditions in the surrounding locality and its effects in terms of noise and vibration, during both construction and operation of the facility;
- whether the benefits of the proposal outweigh any factors which weigh against it.

Need/Consistency with Waste Management Policy Requirements and Objectives

579. Demonstration of need for the proposed ERF is a fundamental requirement of development plan and national policy concerning waste-related development. LDP policy KP12 establishes that waste arisings from Cardiff will be managed by promoting and supporting additional sustainable waste management facilities in accordance with the CIM Sector Plan and TAN 21, which requires applicants to clearly justify why a

proposal is necessary. LDP policy W1 requires waste management facility proposals to demonstrate need assessed against regional requirements.

580. At national policy level, PPW and TAN 21 set a framework for facilitating the delivery of sustainable waste management infrastructure through the planning process[37]. PPW advises that the Welsh Government's policy for waste management is contained in Towards Zero Waste and associated sector plans[38]. TAN 21 states that it should be read in conjunction with PPW, Towards Zero Waste and relevant sector plans, particularly the CIM Sector Plan.

581. PPW confirms that the extent to which a proposal demonstrates a contribution to the waste management objectives, policy, targets and assessments contained in national waste policy is a material planning consideration[39]. The CIM Sector Plan describes the waste management framework to provide the best solutions to meet social, economic and environmental needs to 2050. It indicates a move towards the reduction of disposal and recovery options for treating waste in favour of high-volume source segregated collection followed by reprocessing as well as preparation for re-use and prevention.

582. TAN 21 identifies the role of the CIM Sector Plan in setting out the need for sufficient capacity for the recovery of residual mixed wastes which are incapable of being recycled, in the short to medium term, as a means to reduce disposal by landfill. However, the TAN further states this must be complementary to the overall aim of driving the treatment of all waste further up the waste hierarchy. TAN 21 recognises that in order to reach the goal of zero waste, there is a difficult balance to be struck between making sure we have sufficient capacity to deal with our waste arisings in the short term in a way which does not impede the achievement of longer term goals post 2024/25.

583. TAN 21 states that the recovery of energy from mixed municipal waste in high efficiency facilities is considered by WG to be a vital component of the waste management system in Wales. Mixed municipal waste includes those mixed wastes collected by third parties from commercial sectors as well as from private households. The Mor Hafren ERF proposal is for such an energy recovery facility.

584. However, TAN 21 also reflects the long-term framework for resource efficiency and waste management in Wales up until 2050, as set out in TZW and the CIM Sector Plan. Whilst TAN 21 confirms a short to medium term need for more waste treatment and recovery facilities in order to reduce reliance on landfill, it also confirms the longer-term aim of an infrastructure network based on higher levels of reuse and recycling.

585. TAN 21 requires applicants to clearly justify why a proposal is necessary. It makes clear that the CIM Sector Plan represents the starting point for the determination of need for future capacity. Where it cannot be clearly demonstrated there is a need for the proposal it may be appropriate to consider refusing planning permission. This is likely to be the case where the level of provision exceeds the upper range identified in the CIM Sector Plan for any given region.

586. TZW sets out the overarching WG strategy for achieving a zero waste situation in Wales by 2050. The strategy reflects WG's statutory commitment in relation to sustainable development. It recognises the need for a staged approach, setting a 2025 intermediate milestone on the way to the longer term 2050 target. The 2025 intermediate milestone focuses on significantly reducing waste generation, maximising recycling and minimisation of residual waste, with landfill eliminated as far as possible. Residual waste is phased out of landfill to high energy efficiency energy from waste plants. The 2050 zero waste target is seen as a minimum of producing 65% less waste

than in 2010 and aiming to phase out residual waste through actions on waste prevention and sustainable consumption and production so that the only waste produced is reused or recycled. The strategy includes aspirational targets for commercial and industrial waste prevention and reduction, together with increased recycling.

587. Beyond Recycling, published in March 2021, outlines in more detail the intended approach beyond 2025 towards the TZW 2050 goal. Like TZW, it is a strategy document, setting out intentions, aspirations and future actions for progress towards a circular economy. It reinforces the need to continue the trajectory on recycling beyond the 70% 2025 target to the ultimate goal of zero non-recycled residual waste by 2050.

588. The CIM Sector Plan 2012 supports TZW by detailing outcomes, policies and deliveryactions that contribute to the delivery of WG's commitments, including targets, set under relevant EU Directives. The Applicant points out that at paragraph 2.3.4.4 the Plan identifies a need across Wales to develop more residual waste treatment and recovery facility capacity and notes that the future needs for such capacity cannot bepredicted with any complete certainty due to the variety of factors affecting futuretonnages and actual existing capacity.

589. However, on 24 March 2021 the strategic assessment for the need for new energy from waste capacity provided in section 2.3.4 of the CIM Sector Plan (2012) was replaced by the *Strategic assessment for the future need for energy from waste capacity in the three economic regions of Wales*. The Strategic Assessment makes clear that the new information should be used when assessing the need for a new energy from waste facility. Notwithstanding the immediate moratorium on any future large scale (10MW or greater) energy from waste developments announced in the Ministerial Written Statement of 24 March 2021, the Strategic Assessment states that the information will be a material consideration in the wholly exceptional circumstances where large scale energy from waste proposals of 10MW or greater have, or may, come forward.

590. TAN 21 makes it clear that the CIM Sector Plan represents the starting point for the determination of need for future capacity. The new Strategic Assessment figures explicitly replace those in the CIM Sector Plan 2012 and should therefore be treated in the same way.

591. The waste flow modelling uses the latest available Local Authority, industrial and commercial and construction and demolition waste data. It uses two scenarios to estimate future waste arisings. Scenario 1 (recycling and waste minimisation targets met) uses the annual waste arising prevention targets contained within Annex 1 of TZW. The more conservative Scenario 2 (recycling targets met, no waste reduction) sets waste reduction to zero for the purposes of the projections and is the scenario against which the applicant's WPA assesses the proposal.

592. For the South East Wales economic region, Scenarios 1 and 2 estimate total non-inert residual waste arisings for 2019/20 of 550,000 tonnes, reducing to 415,000-465,000 tonnes respectively in 2024/25 and 270,000-370,000 tonnes in 2034/35. Available operating capacity (the existing Viridor Trident Park facility) is cited as 425,000 tonnes in each case. On this basis, the figures indicate a need for an additional 125,000 tonnes of energy from waste operational capacity in 2019/20, falling to minus 10,000 tonnes to 40,000 tonnes in 2024/25 (which is the earliest conceivable operating date of the facility, given the need to obtain an environmental permit, commission the build of the facility and the estimated 36 month construction period). By 2034/35, just 10 years into the estimated 25 year operating life of the proposed plant, the projected non-inert residual waste arisings for the economic region fall to between 155,000 and 55,000 tonnes below the 425,000 tonnes operational

capacity of the existing Viridor facility at Trident Park.

593. These overall baseline figures therefore indicate a regional need in 2019/20 for additional energy from waste capacity of around two-thirds of the amount represented by the Môr Hafren proposal. By 2024/25, when the plant would start to operate, even on the on the basis of the more conservative Scenario 2 the need for additional capacity will have fallen to less than a quarter of the capacity represented by the Môr Hafren scheme, with the need for the capacity provided by the proposed facility progressively diminishing thereafter.

594. The Applicant's WPA advances various reasons why the strategic assessment figures should not be relied on in determining need for the Môr Hafren ERF. First, it is argued that only the commercial and industrial waste figures are relevant, as these represent the proposed Môr Hafren feedstock. On this basis it is said that as the Viridor facility at Trident Park is contracted to accept up to 300,000 tonnes of municipal waste per annum, there is a theoretical capacity for Trident Park to process up to 125,000 tonnes of commercial and industrial waste each year, but in reality the actual annual amount of such waste taken by that facility is around 100,000 tonnes. On the basis that the proposed ERF would normally be operating at around 180,000 tonnes per annum and that estimated total amounts of non-inert commercial and industrial residual waste for the region are given in Scenario 2 as 230,000 tonnes in 2019/20, 200,000 tonnes in 2024/25 and 190,000 tonnes in 2034/35, it is claimed that there is sufficient residual commercial and industrial waste available to supply the proposed Môr Hafren plant in all 3 projected timelines.

595. I recognise that in practice an EfW facility is unlikely to operate continuously at its maximum capacity. Taking into account factors such as routine and unscheduled maintenance requirements and potential occasional issues with feedstock supply, I consider that an estimated annual throughput of 180,000 tonnes for the proposed facility is reasonable.

596. However, even making this allowance, the feedstock requirement of the Môr Hafren ERF would be around twice the projected Scenario 2 need for additional commercial and industrial feedstock capacity in the region in both 2024/25 and 2034/35, assuming that Trident Park continues to take around 100,000 tonnes per annum of commercial and industrial waste as at present. Whilst the 2019/20 commercial and industrial residual waste data show a need for additional capacity equivalent to roughly 70% of the likely Môr Hafren throughput, the earliest possible operating date of the Môr Hafren facility would be 2024/25. The applicant's contention that there would be sufficient commercial and industrial feedstock within the SE Wales region for the Môr Hafren proposal at all three dates ignores the fact that Trident Park is currently taking around 100,000 tonnes of these commercial and industrial residual waste arisings per year.

597. Moreover, although the Trident Park EfW plant has long term contracts with local authorities in the region to take up to 300,000 tonnes of municipal waste per annum, the amount of feedstock actually supplied via these contracts can be expected to decrease significantly as the waste prevention, recycling and reuse elements of the TZW strategy continue to take effect. Scenarios 1 and 2 in the Strategic assessment project that non-inert residual household waste arisings in SE Wales that can be managed in energy from waste facilities will reduce from 260,000 tonnes in 2019/20 to 180-210,000 tonnes in 2024/25 and 85-130,000 tonnes in 2034/35. As this occurs, the capacity for the Trident Park facility to accept more commercial and industrial residual waste instead will increase. Although it was contended for the Applicant during the Hearings that the Trident Park facility might replace its commercial and industrial feedstock with additional local authority waste contracts, there is no evidence to support this suggestion. Given the probable ongoing reduction in local authority-

collected residual waste availability I consider it unlikely that the Trident Park facility will reduce its commercial and industrial waste input in favour of the former, despite its more commercially lucrative nature. Rather, the converse is more likely to be the case.

598. It is also argued that, given its proximity to the Trident Park facility, the Môr Hafren facility could be expected to take at least 20% (about 20,000 tonnes per annum) of the commercial and industrial feedstock currently going to Trident Park. However, this would effectively amount to simply a diversion of residual waste arisings from one energy from waste facility to another. It does not alter the projected totals of residual waste suitable for EfW facilities available within the region, and so does not affect the calculation of need for additional EfW capacity. Feedstock derived from an existing supply to another EfW facility would not constitute diversion of waste currently going to landfill and the scheme's overall benefits in those terms would reduce accordingly.

599. In addition, the Applicant says that there is a likelihood of securing a contract for the supply of up to 50,000 tonnes per annum of commercial and industrial residual waste from a supplier in close proximity to the Môr Hafren site. Residents Against the CF3 Incinerator have researched permitted waste management sites within the 30-mile catchment radius of the proposed facility, using NRW data, and found only one producer of refuse derived fuel; the amount generated by that company totalled only about 15,000 tonnes in 2018/19. For commercial reasons the applicant is unwilling to provide details of the potential supplier, and no statistical evidence has been provided to substantiate the applicant's assertion. In the absence of any supporting evidence I give little weight to this argument, which does not in any case challenge the statistical projections in the Strategic Assessment.

600. The Applicant also points out that the Strategic Assessment projections do not attempt to factor in the rate of growth of households or population over the period concerned. The Applicant regards this as a fundamental flaw, given that SE Wales, and Cardiff in particular, is identified as a national growth area in the Future Wales to 2040 (Future Wales policy 33 refers). It is true that keeping pace with the Strategic Assessment projections will be more challenging against a background of population growth and related economic activity within the region. However, the progress in residual waste reduction so far has taken place within the context of a 9.6% population growth in the region's population from 1998 to 2018. Population projections for 2018 to 2028 suggest a similar rate of increase. Despite the non-use of rate of growth of households or population, therefore, I consider that the Strategic Assessment projections are a valid basis on which to assess need, particularly as regards Scenario 2 for which waste reduction has been set to zero.

601. TAN 21 also advises that where planning permissions already exist in an area (region) they should be taken into account in determining the level of need. The significance which can be attached to proposed capacity in determining the level of need will vary depending on the likelihood of facilities being built. Evidence to consider will include whether facilities are in the process of being built, whether they have been commissioned, whether pre-commencement conditions have been discharged and whether an environmental permit is in place.

602. In this instance submissions have been made in relation to an energy from waste proposal at Alexandra Dock, Newport. The proposal has a somewhat convoluted planning history, due in part to complications which arose during the period when the M4 relief highway scheme was under consideration, which would have impacted the site. Permission was originally granted in May 2011 (ref 10/1238) for the development of a bulk drying and pelleting facility with an on-site energy centre. The energy centre component comprised a 28.5MW combined heat and power facility based on natural gas and turbine electricity generation.

603. The 2011 permission has subsequently been modified by a succession of permissionsto vary the terms of the original permission, including variation of the approved plans and other conditions and change to the proposed internal firing system, resulting in a proposed 20MW EfW plant. The most recent of these variations was granted permissionin September 2019 (ref 19/0599). Evidence submitted by Residents against the CF3 Incinerator suggests that the intended feedstock would now be 220,000 tonnes per annum of refuse derived fuel, largely supplied locally from South Wales industrial, commercial and municipal waste via a 25 year contract with a sole supplier (Andusia), announced by the supplier in January 2020 and referred to by them again in June2020. However, neither NRW nor the Local Planning Authority hold any evidence concerning the likely feedstock capacity of the proposal.

604. The Applicant maintains that the original permission was not for an EfW development, pointing to its manufacturing purpose and saying that a waste planning assessment was not submitted with the proposal. The Applicant also questions whether it was procedurally correct for the local planning authority to entertain such substantive changes to the nature of the proposal by way of applications to vary the original permission. However, the local planning authority validated and determined the applications and the period for challenge to those decisions is long past. There has been on-going activity to discharge pre-commencement conditions, including a March 2021 application submitted by CoGen, who are also the holding company for Môr Hafren Bio Power Ltd, and it appears that commencement works may have taken place. Other submitted documentation (dated 5 February 2019) refers to a contractor's offer to design, supply, install and commission, on an EPC basis, a 20MWe waste-to-energy plant firing refuse derived fuel.

605. From the above it appears that there is an on-going proposal for some form of energy generation facility at Alexandra Dock with an energy generating potential of up to 20MW, potentially utilising refused-derived fuel. However, the precise nature of what has been permitted lacks clarity. Although there was a pre-application discussion with NRW concerning an environmental permit in August 2019, this has not been followed through. Having regard to the specific matters identified in TAN 21, it appears that whilst pre-commencement planning conditions have been discharged and some preliminary on-site works may have occurred, the construction of an EfW facility has not been commissioned and is not yet underway. An environmental permit is not in place and has not yet been applied for, nor is there evidence that such an application is imminent. Based on the evidence I consider that the Alexandra Dock proposal lacks sufficient clarity and certainty to carry substantive weight in determining the level of need for additional EfW capacity in the region.

606. The Applicant also seeks to argue that the Môr Hafren proposal would be beneficial in that it would introduce a second facility into a situation where at present the SE Wales region is reliant on just a single facility to recover residual waste and prevent it from going to landfill. Whilst it might not be ideal to rely solely on one plant to meet the needs of the region, the Strategic Assessment projections indicate that the proposed Môr Hafren facility would result in a significant overprovision of energy from waste operational capacity in SE Wales at the first year of operation. Moreover, the extent of overprovision would progressively increase still further through the operational life of the facility, as the measures described in Towards Zero Waste and Beyond Recycling are put in place and take effect. I therefore do not regard this argument as providing convincing justification for a further energy from waste facility of the scale proposed, which is plainly not supported by the capacity gap projections in the March 2021 Strategic Assessment.

607. The Applicant also points to the apparent inconsistency and ambiguity concerning

the commercial and industrial waste reduction projections presented in Appendix 2 of TZW. Whilst it is difficult to reconcile the 1.6% yearly reduction projection for commercial and industrial waste combined and the 1.2% and 1.4% reduction rates for each sector by itself, it is evident from the targets and priorities for waste prevention identified at page 53 of TZW that the annual reduction rates relied on in Table 1 Scenario 1 of the Strategic Assessment are 1.2% for commercial waste and 1.4% for industrial.

608. It is also argued in the Waste Planning Assessment that need for the facility should be considered in its widest sense, including the plant's contribution towards CO_2 emissions savings through a reduction of waste going to landfill and its benefits in electricity generation terms. However, whilst these are undoubtedly matters to be taken into account in considering the overall justification for the proposal, they are not matters which relate to the demonstration of need in waste management terms required by TAN 21 Waste and reiterated in the Strategic Assessment.

609. The Applicant questions the legal status of Beyond Recycling, the Cabinet Statement issued on 24 March 2021 announcing the moratorium on new large scale (10MW or greater) EfW developments and the amended statistical basis for determining the need for EfW facilities[40]. No legal submissions have been made concerning this; however, the basis of this suggestion appears to be that the Applicant can find no evidence of formal ratification by the Senedd. This is a matter which the Minister may wish to consider.

610. The Applicant also contends that in any event the immediate moratorium put into effect by the Cabinet Statement of 24 March should not apply to this proposal and should not be a material consideration in the determination of the application. The Applicant considers that since the application had already been submitted and was under consideration at the time of the moratorium announcement, the application should proceed to be determined on its own merits.

611. The moratorium announcement articulates the Welsh Government's view that there is no need for any new large-scale EfW plants of 10MW or greater. However, the Strategic Assessment also states that the information in it will be a material consideration in the wholly exceptional circumstances where large scale EfW proposals of 10MW or greater have, or may, come forward. In the light of this I have assessed the proposal on its merits, taking into account the information and guidance in the Strategic Assessment and the evidence submitted by the Applicant and other parties.

612. The Strategic Assessment reiterates the advice in TAN 21 that where planning permissions already exist in an area (region) they should be taken into account in determining the level of need. In practice it will be useful to differentiate between existing operational and proposed capacity. The Viridor Energy from Waste facility at Trident Park is an established, operational facility. There is insufficient certainty regarding the Alexandra Dock proposal to give it weight when assessing the capacity position within the region.

613. ~~Having regard to the~~ foregoing I conclude that need for an EfW facility of the scale proposed has not been demonstrated. The projections in the recently published Strategic Assessment indicate a capacity requirement in 2019/20 in SE Wales of 125,000 tonnes over that already provided by the Trident Park facility. This is 75,000 tonnes less than the capacity limit sought for the proposed Môr Hafren ERF. The Strategic Assessment projections suggest that the amount of additional capacity needed within SE Wales may fall to between minus 10,000 tonnes (Scenario 1) and 40,000 tonnes (Scenario 2) by 2024/25, which is the earliest possible date that the ERF might commence operation, if approved. By 2034/35, just 10 years into the estimated 25 year operating life of the plant, the operational capacity of the Trident Park facility may, depending on the success of the WG waste strategy, exceed the

amount of residual waste suitable as energy from waste feedstock by between 155,000tonnes (Scenario 1) and 55,000 tonnes (Scenario 2).

614. Even on the basis of projected commercial and industrial residual waste arisings alone and assuming Scenario 2 (no waste reduction), as argued by the Applicant, in 2024/25 the arisings within the region would only provide about half of the feedstock requirement of the proposed ERF, assuming that the Trident Park facility takes around 100,000 tonnes per annum, as at present. In practice I consider that the Trident Park facility would be likely to take increasing amounts of commercial and industrial feedstock if the amount of household residual waste arisings continues to reduce.

615. I recognise that TAN 21 does not preclude some waste being sourced from outside the region. However, there appears to be no particular reason from an industry standpoint why a facility dealing with the type of materials proposed in this case should cater for waste arising from further afield than the region in which it is situated. The evidence falls well short of demonstrating need for a facility on this scale, as required by TAN 21. The proposal therefore fails to satisfy LDP policies KP12 and W1 in this respect. My conclusion in this regard is not altered by the 2009 and 2015 permissions concerning an integrated waste management facility on the site; subsequent changes in policy considerations aside, the thermal treatment and combined heat and power element of that facility had a feedstock capacity of around 110,000 tonnes, just over half the capacity of the current proposal.

616. As regards consistency with overall waste management policy objectives, the clear direction of travel as articulated by TZW, Beyond Recycling and the Strategic Assessment is to continue the trajectory of increased recycling coupled with an overall reduction in waste production, towards the ultimate goal of zero non-recycled residual waste by 2050. Beyond Recycling records the significant progress made to date and signals the way that progress will be maintained beyond 2024/25. The increasing focus on this goal, as part of WG's commitment to a sustainable future and its response to the climate emergency, is indicated by WG's recently-published Well-Being Statement and Programme for Government for the 2021-26 term, which announce revised well-being objectives aimed at maximising the government's contribution to Wales' long-term well-being goals, in line with the statutory duty under the WFGA.

617. One of the objectives for 2021-26 is: "*Embed our response to the climate and nature emergency in everything we do"*. The actions identified to help bring this about include curbing the use of single-use plastics; incentivising waste reduction by businesses; developing a Wales Community Food Strategy; and supporting re-use and repair hubs in town centres. These initiatives will all contribute to waste reduction and minimisation.

618. A major plank of the case for the proposed development is that it would contribute to combating climate change through the substantial contribution it would make to reducing greenhouse gas emissions compared to the waste used as feedstock going to landfill. The proposal would also produce up to 15MW of energy from the waste, fed into the local electricity grid, equivalent to the requirement of about 30,000 houses. The facility would also have the potential to provide heat to local users via a district heating network.

619. I recognise that the plant would be designed to provide a highly efficient ERF, easily achieving R1 recovery status. The WRATE life-cycle assessment shows a CO_2 equivalent saving of 46,307 tonnes per annum, primarily derived from the avoided methane from the landfill alternative option. This is equivalent to taking 15,913

vehicles off the road and plainly a major benefit. However, if the availability within SE Wales of residual waste suitable for energy from waste developments were to reduce as projected over the expected lifetime of the facility, then this would be likely to result in the proposed facility needing to source more feedstock from further afield, adding to the transportation emissions involved.

620. A further point concerns carbon capture. The Strategic Assessment states, in relation to any new small-scale energy from waste facilities that may be permitted, these must, where feasible, be carbon capture and storage enabled or ready. A consistent approach would suggest that the same should apply in the exceptional circumstances where a large-scale facility of 10MW or greater might be approved. The proposed Môr Hafren ERF does not make provision for carbon capture and storage. During the Hearings it was stated that the applicant does not consider carbon capture to be a viable proposition, due to the absence of any identifiable destination for the stored by-product. It also became clear that there is insufficient space within the site to accommodate the necessary structures for carbon capture and storage at a future date.

621. Notwithstanding these matters, the proposal would nevertheless bring significant benefits in greenhouse gas emission and energy supply terms, which need to be weighed in the balance as regards the overall justification for the scheme.

622. The proposed development would move waste currently going to landfill to the next level up the waste hierarchy. However, whilst the evidence shows a certain quantity of unmet need for this within SE Wales at the present time, the level of need is insufficient to justify a facility of up to 200,000 tonnes per annum capacity. Moreover, the level of need is likely to have diminished substantially still further by the time the facility would be constructed and ready for operation, which would not be until 2024/25 at earliest.

623. There is an element of tension between the shorter-term objective of providing sufficient EfW capacity in order to divert residual waste away from landfill and the longer-term objective of moving away from landfill and recovery operations post 2024/25 in order to achieve the zero waste and net zero carbon goals. Although EfW has an important part to play within the TZW strategy in the shorter term, as reflected in the 2024/25 objective "residual waste is phased out of landfill to high energy efficiency Energy from Waste plants", the 2050 objective is for no EfW. Beyond Recycling makes clear that waste prevention will be at the core of the transition to a circular economy, and that as repair, re-use and recycling continue to expand the long-term solution is a move away from incineration. This underpins WG's wish to ensure that the capacity Wales has for generating energy from waste is in line with the capacity needed during the country's transition to a circular economy.

624. The Applicant contends that the projections provided in the Strategic Assessment are flawed in relation to the SE Wales economic region because they do not use the rate of growth of households or population that can be expected to accompany its role as a focus for population and economic growth. However, if the overall zero waste goal is to be achieved then the overall waste reduction targets will need to be met notwithstanding the context of population and economic growth. Providing extra energy from waste capacity on the basis that there will be population and economic growth would run counter to the overall aims and intentions of the TZW strategy as updated by Beyond Recycling.

625. Although I have assessed the Mor Hafren proposal on its merits, as the application was already under consideration when the moratorium on future large scale energy from waste developments was announced, the Strategic Assessment makes clear WG's view that the increase in recycling and waste reduction already seen means that there

is no need for any new large scale energy from waste plants of 10MW or greater. Having carefully considered all arguments I consider that the balance of evidence does not support a departure from that stance in this case.

626. I conclude that need for an energy from waste facility of the scale proposed in this location has not been demonstrated, and that the proposal fails to comply with government guidance in TAN 21 *Waste* in this respect and consequently conflicts with policies KP12 and W1 of the Cardiff LDP. Notwithstanding the region's identification for growth in Future Wales, the proposal runs counter to the WG strategy for waste, in particular as regards new energy from waste plants, as articulated in TZW, Beyond Recycling and the Strategic Assessment. The carbon emission savings and energy production benefits of the scheme, whilst substantial, do not outweigh the proposal's shortcomings concerning insufficient need and lack of compliance with waste policies and the WG waste strategy.

Ecology including Protected Sites and Species

627. Although the site has been developed in the past and is also part of an area allocated for industrial/employment uses in the LDP, it also lies within the Rumney and Peterstone SSSI, part of the wider Gwent Levels SSSI area. Whilst a large part of the site is degraded the drainage ditch and tree-lined corridor along the south-western edge together with other areas of scrub and undergrowth are features of ecological value.

628. The SSSI is notified for its range of aquatic plants and invertebrates associated with the reens and ditches of the drainage system. The special interests of the SSSI are dependent on the habitat extent, the water quality and quantity, the existence of the drainage system and its continued management. NRW advise that any development which would damage the features for which the area was notified should be avoided. LDP policy EN5 "Designated Sites" states that development will not be permitted that would cause unacceptable harm to sites of international or national nature conservation importance (including SSSIs).

629. The special interests of the SSSI are dependent on the habitat extent, the water quality and quantity, the existence of the drainage system and its continued management. Any development which would damage the features for which the area was notified should be avoided. There are potential impacts from the proposal upon the SSSI from changes in water quality and quantity, aerial emissions and noise

630. In the Gwent Levels SSSI area NRW requires the provision and maintenance of buffer zones in relation to watercourses. The watercourse along the south-west side of the site is a field ditch and in NRW's view requires a minimum 7m buffer zone from the top of the bank, to be maintained and remain free from use during construction and operation of the development. The buffer zone is necessary to prevent pollution of the water environment, to allow access to/management of ditches and to maintain habitat corridors.

631. The submitted development layout falls well short of this minimum buffer width requirement. The application Drawing No. "Boundary Zones and Buffers" referred to by NRW has subsequently been supplemented by further details (Drawing No. 1383 SK122 "Ditch to Fence Offset and Maintenance Widths"), showing a buffer less than 3m

wide between top of bank and the hard surfaced development footprint (internal access road and footway) along almost the whole of the watercourse length, reducing to just 2.0m wide at its narrowest point. The Arboricultural Impact Assessment shows that all of the 11 trees identified as individual specimens on the north-eastern (development) side of the watercourse would be removed during construction, together with an unspecified extent of "dead and collapsed trees and self-set saplings" comprised within the remnant of Group G1. The very narrow strip of mainly self-set specimens (labelled Group G2) on the south-west bank of the watercourse is shown as being actively managed and restocked with native species.

632. The Arboricultural Impact Assessment submitted by the Applicant accepts that "due to the size and scale of building requirement there is conflict with the trees that cannot be avoided and therefore mitigation proposals will need to be considered"[41]. Although new tree planting is illustrated on the site layout plan (Drawing No. 1383 PL101), including within the proposed watercourse buffer, there is no detailed information relating to tree species/sizes/numbers at this time. Moreover, the strip shown for new planting along the north-east side of the ditch is the same 2-3m wide strip between the watercourse bank top and the fencing enclosing the hard development footprint that is also needed for access along the length of the ditch for ongoing maintenance purposes, including vegetation management and periodic casting and de-silting.

633. The condition of the ditch has suffered through lack of management in recent years and it is desirable from an ecological standpoint to manage the water feature positively and limit the extent to which the watercourse is overshaded by trees. However, the existing vegetation along the watercourse also has an important function as a foraging and commuting corridor for bats; a small number of trees which would be lost also have some bat-roosting potential for individuals. Although bat boxes are proposed to compensate for any loss of trees with roosting potential, without adequate replanting there would be harm to the value of the ditch corridor as a bat foraging resource and connecting corridor to other areas of habitat.

634. Subject to appropriate design mitigation to ensure that noise from vents does not affect the bat migration/foraging corridor and the incorporation of a sensitive lighting scheme, I am satisfied that there would be no other adverse impacts concerning bats.

635. The Applicant's preliminary ecological assessments were that the value of the site for dormice (a European protected species) was negligible and did not require a survey. The ES concludes that presence of dormice is not anticipated based on local records and site condition. However, CC's Ecologist disagrees with this assessment. Dormice have been detected nearby to the south of the railway at Wentloog Avenue about 200m to the west and in direct ecological connectivity with the present site. In addition, there are habitats present on the site such as scrub and outgrown hedgerow which could support this species. In the circumstances, CC consider that a full survey should take place before consent is granted.

636. At the hearing session on Ecology matters the Applicant's view remained that the current habitat on the site was sub-optimal and that a full survey was not necessary. The Applicant suggests that the application can be determined on the basis of a precautionary assumption that dormice are present, and that any permission granted be conditional upon pre-commencement surveys and the implementation of mitigation measures should dormice be found to be present.

[41] Document 94 Executive Summary

637. However, this approach does not accord with advice in paragraph 6.2.2 of TAN 5 Nature Conservation and Planning, which states: *It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. It is considered best practice that such a survey is carried out before planning application is submitted. Planning permission should not be granted subject to a condition that protected species surveys are carried out and, in the event that protected species are found to be present, mitigation measures are submitted for approval*.

638. Whilst TAN 5 advises that developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of them being present, it goes on to say that, the level of likelihood that should trigger a requirement for developers to undertake surveys should be low where there is a possibility that European protected species might be present. Given the European protected species status of dormice, and in the light of the CC Ecologist submissions, I consider that dormouse surveys should be carried out and the presence or otherwise of the species on the site determined together with adequate mitigation to protect the species before planning permission is granted. The Applicant has been advised of this and commenced dormouse surveys, following relevant professional guidelines, in April 2021. The dormouse survey will continue until October 2021 or until presence of dormouse on the site is established, whichever occurs sooner.

639. In order that the advice in paragraph 6.2.2 of TAN 5 can be fully adhered to the Minister may wish to obtain confirmation from the Applicant of the result of the dormouse survey before any decision to grant planning permission is made, so that the presence or otherwise of dormouse, and the extent to which they may be affected by the development, can be properly established.

640. Given the concerns raised about the dormouse-supporting value of the site the Applicant has prepared a Dormouse Conservation Plan[42], on the assumption that dormice are present. The objectives of the conservation plan are to provide protection for hazel dormouse during and after construction works, together with measures for habitat creation, management and monitoring.

641. The Dormouse Conservation Plan states that approximately 0.6ha of suitable dormouse habitat would be lost, primarily comprising semi-mature woodland along of the south-western ditch corridor together with adjoining mature trees and dense bramble scrub protruding further into the site. Approximately 0.2ha of new suitable dormouse habitat would be created, in the form of dense double hedgerow planting on the site's north eastern, north western and south eastern boundaries. Approximately 0.1ha of suitable habitat is shown as retained where trees are kept along the south-western boundary adjacent to the ditch and within the western corner of the site. However, the accuracy of this last figure is doubtful, as it is based on the submitted layout plan which indicates the trees along the north-east side of the ditch as retained whereas the tree removal and retention plan shows that all 11 trees categorised as individual specimens and a significant amount of other vegetation in this area as being removed. Overall, the proposed development would result in a large net reduction in the amount of habitat present on the site.

[42] Application Document 119

642. The Dormouse Conservation Plan notes that should dormice be present the potential impacts of the works could be disturbance, killing or injuring of dormouse and/or damage/destruction of a dormouse resting place. Without mitigation, vegetation lost on site would affect the available habitat significantly enough to affect the ability of any dormice present to survive, reproduce or hibernate.

643. The average population density of hazel dormice is about 2.2 per hectare. It is therefore unlikely that the site could support a self-sustaining population of dormice. Nonetheless, the areas of bramble scrub and woodland currently on the site provide scope for foraging and cover. It also provides connectivity with areas of known dormouse presence close to the application site. LDP policy EN6 "Ecological Networks and Features of Importance for Biodiversity" states that development will only be permitted if it does not cause unacceptable harm to landscape features of importance for wild flora and fauna, including wildlife corridors and "stepping stones" which enable the dispersal and functioning of protected and priority species. The policy aims to protect Cardiff's ecological networks and landscape features that are important for biodiversity. Policy 9 Resilient Ecological Networks and Green Infrastructure reflects the statutory duty on public authorities in Section 6 of the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity and promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions. Policy 9 Resilient Ecological Networks and Green Infrastructure reflects the statutory duty on public authorities in Section 6 of the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity and promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions. Policy EN7 "Priority Habitats and Species" opposes development proposalsthat would have a significant adverse effect on the continued viability of protected species, including by harming its habitat. In the light of this I consider it important thatthe proposal does not diminish the site's value in these terms.

644. The Applicant considers that although there would be a net loss of suitable dormouse habitat in terms of extent, this would be compensated for by an improvement in habitat quality. The Dormouse Conservation Plan states that although bramble provides a good food resource for dormice, new hedgerow planting would increase connectivity, and a more diverse species mix would provide a more diverse food resource. Once mature, new hedgerows would provide a wider range of food availability and shelter. New hedgerows would provide suitable dormouse habitat for nesting and would provide connectivity opportunities within the site and link areas outside the site. To this end the Dormouse Conservation Plan states that hedgerows should be allowed to grow tall and bushy to maximise flowering and fruiting potential.

645. I acknowledge that a net reduction in habitat extent might be offset by an improvement in habitat quality. However, the Dormouse Conservation Plan fails to recognise the competing objectives and requirements of maintaining the ditch corridor in an appropriate condition that provides the habitat for aquatic plants and invertebrates which are key interest features of the SSSI. To achieve this NRW consider that adequate access is necessary alongside the ditch to enable vegetation management and periodic casting and de-silting. To prevent excessive overshading of the watercourse NRW consider that tree and shrub growth along the ditches and reens should be confined to the northerly side of the watercourse and be intermittent rather than continuous in nature, limited to not more than half of the watercourse length concerned.

646. Whilst NRW agreed at the hearing sessions that the 2-3m wide strip between watercourse bank top and the fence enclosing the "hard" development footprint, as shown on the submitted layout drawings, would be sufficient to enable access for maintenance by hand rather than machine, this narrow strip would not be sufficiently

wide to also accommodate a hedgerow allowed to grow "tall, wide and bushy", as specified in the Dormouse Conservation Plan. Moreover, a continuous tall hedgerow (on whichever side of the watercourse) would plainly conflict with the requirement to manage the watercourse corridor appropriately as a key feature of the SSSI.

647. I recognise that the planting details shown on the submitted drawings are indicative, and that full details would be agreed before development commenced. Nonetheless, from the site layout plan and other evidence I do not think it possible to design green infrastructure proposals which adequately address the combined habitat conservation and SSSI requirements concerned, given the serious constraint imposed by the extent of the hard development footprint relative to the overall site area. I am particularly concerned by the resultant weakening of the existing green corridor in the south western part of the site. Neither the hedgerow proposals on other site boundaries nor the management of the ditch adequately compensate for this loss, in my view.

648. In summary I consider that, whilst the proposed development would include some measures to manage the watercourse feature together with some other perimeter landscaping, much of the existing habitat value of the site would be lost owing to the extent to which the site would be covered by buildings, other built structures and surfaced areas. In my view the residual areas offer insufficient scope to preserve or replace adequate appropriate habitat for protected species such as dormouse and bats and would diminish the extent to which the site contributes to ecological connectivity. Consequently, the proposal fails to accord with LDP policies EN6 and EN7. The scheme also fails to comply with Future Wales policy 9 Resilient Ecological Networks and Green Infrastructure, which reflects the statutory duty on public authorities in Section 6 of the Environment (Wales) Act 2016 to seek to maintain and enhance biodiversity and promote the resilience of ecosystems in the exercise of their functions. Creation of artificial features such as bat and dormouse boxes would not adequately compensate for the reduction in extent of vegetation and natural habitat.

649. As regards other protected species, the ES assesses the site as having low potential for presence of individual great crested newt and reptiles due to its current condition and recent use, No evidence of water vole, otter, badger or notable bird assemblages were recorded or anticipated, based on local records and site condition. CC's Ecologist agrees in main with these conclusions, although he considers that there is a realistic possibility that the site supports both Grass Snakes and Common Lizards. In respect of these matters CC is content that precautionary mitigation methodology provisions in the CEMP (Construction and Environmental Management Plan) and/or LEMP (Landscape and Ecological Management Plan), to be agreed in writing with the LPA before development proceeds if permission is granted, would satisfactorily guard against potential harm to these other protected species. I find no reason to disagree with this approach.

650. The clear thrust of statutory obligation, development plan policy requirements and national planning policy concerning SSSI protection, protected species and biodiversity/sustainability objectives more generally is that the development design should seek to retain and positively manage this habitat corridor in a manner which maintains the habitat resource, particularly in respect of protected species, whilst also maintaining value of the watercourse as a key interest feature of the SSSI. The development proposals fail to do this.

651. Turning to the implications of aerial emissions for water quality in the reens and ditches of the SSSI, whilst the Applicant's ecology advisors disagree with NRW's stancethat a lower Critical Load for nutrient nitrogen (10Kg/N/ha/yr) should be used for the assessment of impacts on the Gwent Levels SSSI, NRW has explained the rationale for its position and I find no convincing reason to disregard its views as a

statutory advisor. Although the updated Assessment confirms that cumulative contributions to levels of nutrient Nitrogen deposition are screened as insignificant when assessed against the specified Critical Loads for most sensitive ecological receptors, locations within the Gwent Levels SSSI cannot be screened on this basis. This is due tothe high existing background concentration of 21.51 µg m-3, equating to 72 % of the EAL for ecological receptors. The overall contribution of the ERF aerial nutrient nitrogendeposition at the locations considered would range from 1.6% to 1.7% of the EAL, which the ES assesses as negligible. However, notwithstanding this, consideration ofthe predicted increase in terms of Process Contribution as a % of the exceedance indicates that, for SSSI2, the extent to which the nutrient nitrogen loading would exceed the 10kg/N/ha/yr critical load would be increased by 14%. For SSSI3, the increase would be about 7%. Whilst these might be regarded as small increases overall, they would be a step in the wrong direction.

652. I recognise that exceedance of a Critical Load is not a quantitative estimate of damage to a particular habitat, but instead represents the point at which significant harmful effects do not occur according to present knowledge. Nevertheless, the modelling undertaken indicates that the process contributions of the proposed ERF would have a negative impact on watercourse nutrient Nitrogen levels within SSSI2 and SSSI3, which cannot be ruled out as insignificant.

653. The Applicant has undertaken a comprehensive HRA screening exercise in the light of the site's proximity to the Severn Estuary SAC/SPA/Ramsar designations, the River Usk/Afon Wysg SAC and the Cardiff Beech Woods SAC. The screening process identifies the qualifying features and conservation objectives of each of the different designations and considers whether or not the ERF project would be likely to have a significant effect on the NSN site either alone or in combination with other plans or projects, having regard to these qualifying features. Aerial emissions and noise impacts are both considered.

654. The details and results of the exercise are summarised in paragraphs 244-314 of this report, and so are not repeated here. The HRA screening process concludes that there would be no likely significant effects on interest features of the NSN sites, either alone, or in combination with other plans and projects. As such, it concludes that an appropriate assessment under Test 2 of the Habitats Regulations is not required. I have scrutinised the HRA screening submission, along with all other submissions and evidence, and conclude that the results of the Stage-1 assessment with overall conclusion are robust. I consider that a Stage 2 appropriate assessment is not required in this case.

655. Drawing the foregoing together, I conclude that, overall, the proposed ERF would have adverse effects on ecology. In terms of the development plan there is conflict with LDP policies EN6 Ecological Networks and Features of Importance for Biodiversity and EN7 Priority Habitats and Species and with Future Wales Policy 9 Resilient Ecological Networks and Green Infrastructure. As regards policy EN5 Designated Sites, there would be negative effects in terms of increased nutrient nitrogen levels at locations within SSSI2 and SSSI3, contrary to the thrust of this policy. On the other hand, the proposal would result in better management of the ditch along the south-west marginof the application site, within the Gwent Levels (Rumney & Peterstone) SSSI.

Air Quality – Human Receptors

656. Detailed dispersion modelling has been undertaken of emissions to atmosphere fromthe stack of the proposed ERF. The modelling has assessed the potential impact on local air quality of process emissions from the ERF, in terms of ground level concentrations of pollutants designated by the Welsh Air Quality Regulations and other

relevant environmental assessment levels (EALs) recommended by NRW. Modelling of emissions from the 70 metre-high chimney was undertaken to predict increases in pollutant concentrations at nearby sensitive receptors such as residential properties, schools, playing fields and locations where people may congregate for significant periods of time. The assessment involved a comparison of model-predicted PCs against health-based air quality standards and relevant environmental assessment levels.Modelling was undertaken for a scenario that represents operating at maximum outputand discharging emissions via a 70m high chimney.

657. The model predicted that the amount of emissions from the development that would contribute to background /existing pollutant levels for all pollutants prescribed for control by the Industrial Emissions Directive (IED), and based on the recently updated Achievable Emission Levels in the BREF Note for Waste Incineration, would be well below objective limits defined within the Air Quality Regulations, or relevant EALs recommended by NRW. Modelling predicted that under normal operating conditions the maximum annual average PC for NO_2 would be approximately 5% of the 40 µg m-3 annual objective value. The predicted maximum PC location is about 400 metres to the north-east of the ERF chimney, with values considerably lower farther afield. The PCs for the other IED pollutants indicated that there would be no exceedence of their respective Air Quality Standard (AQS) objective values and relevant EALs.

658. Short term acute effects for pollutants such as Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), Particulate Matter (PM10), Hydrogen Chloride (HCl), Hydrogen Fluoride (HF) and Carbon Monoxide (CO), showed that increases in background pollutant concentrations at nearby residential properties were low and would not have a significant impact on the health of people living and working nearby. PCs for pollutants such as Volatile Organic Compounds and heavy metals were very low and their potential health effects screened out as insignificant in relation to health based AQSs and relevant EALs recommended by NRW.

659. The corrected[43] results from modelling the effects associated with a 2.5 MW wind turbine located at the nearby G24 Innovations Ltd site indicate that when the wind turbine is operational there is likely to be a marginal increase in annual average NO2 concentrations at the location of the maximum PC, and a small, but insignificant, increase in hourly average values. Wind turbine effects on PCs at nearby residential receptors are significantly lower due to their distance from the site.

660. The assumptions used within the assessment are conservative and the study was undertaken on a worst-case basis. The health impact assessment confirms that there would be no significant health risk associated with potential exposure to emissions of pollutants from the proposed ERF.

661. Emissions from existing facilities and operations in the locality, including Viridor at Trident Park, are reflected in the baseline data used in the modelling and so have been taken into account. The results of the cumulative impact assessment with other developments proposed locally conclude that there is no significant difference between the model predictions for Môr Hafren site in isolation and the combined emissions scenario at the location of the maximum PC or nearby residential properties, and the overall impacts continue to be screened as insignificant at either the initial or secondary assessment stage.

662. The modelling was undertaken using ADMS Version 5.2 and incorporated a sensitivity analysis to determine which model parameters (building downwash, terrain, and meteorological data sets) would produce the most realistic set of predictions and then the set of worst-case predictions.

663. Criticisms of the modelling exercise have been expressed by some opponents of the scheme. Barry and Penarth branch of FoE say that ADMS does not adequately model coastal situations where specific atmospheric conditions can occur, having the effect of forcing the stack plume downwards more quickly. However, whilst ADMS is apparently unable to include a coastal effect parameter simultaneously with the other parameters used as inputs, the Applicant has applied a coastal effect parameter in isolation and found that this influences the modelling results to a lesser extent than the other parameters used as inputs.

664. FoE also criticise the use of meteorological data from Cardiff Airport weather station in the modelling, arguing that is not sufficiently representative of wind speed and direction patterns at the application site. FoE and others point to photographs of the plume from the Trident Park Viridor stack in support of this contention.

665. However NRW, who are the statutory consultee in this matter and will also be the authority responsible for issuing the Environmental Permit required before the ERF would be able to operate, are satisfied that the modelling methodology is robust and that the results provide a sufficiently detailed basis for a determination of the planning application. NRW also consider that the windspeed and direction data from Cardiff Airport is sufficiently representative of the application site for the purposes of modelling the aerial dispersion of stack emissions. The photographs of the Viridor plume merely show a point in time; there is little information regarding frequency, duration or cause of such conditions, or comparison of the operating conditions of that facility to those of the facility proposed here. I do not find sufficient basis for disagreeing with NRW's opinion on these matters.

666. As regards traffic emissions, air quality in the vicinity of the proposed development is fairly good; there is no AQMA in the vicinity of the Wentloog industrial area, nor along any of the road networks modelled. The results from the ADMS Roads air quality assessment show that the impact of transport emissions from the operation of the proposed Môr Hafren Bio Power Limited energy recovery facility will be insignificant in their effect on air quality in the local area.

667. The environmental assessment examines transport emissions associated with the proposal. It assesses transport contributions as NOx and makes the assumption that NOx levels equate to NO_2 levels for the assessment of human health impacts. Whilst the assessment therefore does not specifically ascertain projected NO_2 levels at human health receptor locations, the use of the NOx values gives a result higher than the associated NO_2 level.

668. The maximum hourly contribution of pollutants from the peak hourly traffic movements associated with the development remains within the short-term AQS for the protection of human health, and the 99.79th percentile hourly average contribution to Nitrogen Dioxide remains within 10% of the AQS.

669. The odour management procedures to be implemented when the ERF is operational indicate that odour control will be effective. Detailed modelling of odour release from a 50 metre-high odour vent has shown that the maximum hourly average PC would be about two thirds of the EAL for moderately offensive odour. The corresponding values at nearby residential properties were shown to be unlikely to be perceptible to members of the public with "typical" sense of smell. Any fugitive emissions from the process buildings should not be a cause for reasonable complaint from nearby residential and commercial properties.

670. I appreciate that some local people are concerned about possible adverse health effects arising from aerial emissions associated with the ERF. However, the results

from the health impact assessment confirm that there is no significant health risk associated with potential exposure to emissions of pollutants from the ERF, when measured against recognised health guidelines. I consider that the modelling on which the assessment's conclusions are based is robust. The modelling has adopted a precautionary approach, in that it assumes that the ERF would be operating at full capacity all the time, which in practice would not be the case.

671. FoE is also critical of the fact that the views of public health bodies have not been sought at this stage and say that NRW's views cannot be relied on because NRW have assessed the modelling results against air quality standards rather than World Health Organisation guidance. However, NRW has responded that its remit in relation to the planning application is not to provide definitive advice on public health impacts; at this stage a high level review of the modelling methodology and results is sufficient to advise whether the submitted evidence is robust enough and whether the results provide a detailed enough basis on which to determine the planning application. The Environmental Permitting process provides a separate regulatory regime, through which NRW as the regulator will examine the modelling and results in more detail and fully consider public health impacts, in consultation with public health bodies as appropriate. Irrespective of whether planning permission is granted, the proposed ERF would not be able to operate unless an Environmental Permit has been granted and would be obliged to operate within any stipulated environmental limits. Given the existence of the Environmental Permitting regime and the comments of NRW, I am satisfied that the evidence submitted concerning emissions and health impacts provides a sufficiently robust basis on which to decide whether planning permission should be granted.

672. The overall conclusion from detailed modelling of emissions from the proposed Môr Hafren Bio Power ERF and modelling of emissions arising from vehicle movements to and from the site is that the potential impact on local air quality is likely to be small and is unlikely to result in a significant threat to the health of people living and working nearby. The proposed ERF would not cause unacceptable harm to the environment or human health. In these terms there is no conflict with the Development Plan, in particular LDP policies W1(iii), W1(viii) and EN13 which seek to ensure that development does not cause unacceptable air pollution or unacceptable harm to human health.

Other Environmental Effects

Character and Appearance

673. The application site has a semi-urban context within the fringe of Cardiff's built-up limits. It lies within an area allocated for general employment uses; industrial-scale buildings surround the site to east, west and south.

674. The landscape and visual impact of the proposed development has been assessed in detail as part of the EIA process. The LVIA was undertaken in accordance with relevant professional institute guidelines.

675. The landscape effects which would arise from the proposed development would primarily be focused in the area immediately surrounding the application site where the sensitivity to change of the landscape is low. Within the context of the wider landscape the residual significance of landscape effects will be low.

676. Turning to visual effects, the primary impacts of the development arise from the size of the main buildings, which would be much greater in height (46m, with an associated stack 70m high) than other buildings in the area. Whilst there are tall structures (the single wind turbine and electricity pylons) in the vicinity, I do not regard these as structures of comparable bulk and visual impact.

677. The assessment has considered the visual impact of the proposal, based on analysis of a combination of representative and key viewpoints in the area augmented by on-the-ground confirmation of the extent of visibility of the site from different areas and taking into account existing character, sensitivity to change, magnitude of change that would occur and the sensitivity of the receptor to such change.

678. The assessment concludes that the significance of the visual effects from viewpoints close to the site within its industrial/employment area context and from further afield on the south side of the railway line will typically be minor/moderate adverse. However, from a number of viewpoints looking towards the site from the north, west and north-east[44] (essentially the near fringe of residential areas looking towards the site from the higher ground north of the railway line, from amenity open space areas fringing those residential communities and from the elevated sea-wall section of the nearby Wales Coast Path) the significance of visual effects is anticipated to be moderate/major adverse.

679. It is evident that considerable effort has been made within the design of the development to minimise visual impacts. The design uses fractured angular panels with colour variations to break up the mass of the building and blend with the predominant colour palette of the building's surroundings. At the higher levels the colouring is blended to the paler colouring of the sky and estuary in the background, at the lower levels it is darker more akin with the industrial units and local vegetation. Lighting will be kept to a minimum and unnecessary night-time lighting avoided.

680. However, notwithstanding these measures, from the residential and amenity area viewpoints identified the moderate/major adverse visual impacts would remain. The prevailing views from these residential environs towards the site comprise wide views over the flat landscape of the levels and the Severn Estuary. Existing buildings within these views are relatively low in height. The proposed ERF would appear as an element of much larger bulk and scale, uncharacteristic of the area. The footprint of the development (including access roads and other service infrastructure) would leave little scope for tree screening of sufficient height to provide significant screening of buildings of this height from these areas.

681. Although planning permission has previously been granted at the application site for a waste management facility incorporating an energy from waste plant, that proposal was for a main building 25m high, with a 35m high stack. The current proposal is for a building almost twice as tall, which plainly would have a significantly greater visual impact on its surroundings.

682. LDP policy KP5 requires all new development to be of a high quality, sustainable design and make a positive contribution to the creation of distinctive communities, places and spaces by, amongst other things:

- i. Responding to the local character and context of the built and landscape setting so that layout, scale, form, massing, height, density, colour, materials, detailing

[44] Viewpoints 9, 11, 12, 13, 14, and 19

and impact on the built and natural heritage are all addressed within development proposals;

- xii. Locating Tall buildings in locations which are highly accessible through walking and public transport and within an existing or proposed cluster of tall buildings.

The Design and Access Statement submitted with the application confirms that, in terms of external appearance, due attention has been paid to satisfying the first of these requirements, so far as possible within the constraints imposed by the physical scale of the plant. As regards the expectation that tall buildings will be co-located in clusters, ERF development involves locational considerations which plainly militate against such an approach.

683. On this matter I conclude that whilst the proposed development would have an adverse impact on the character and appearance of the area, due to the exceptional height and bulk of the buildings and the landscape context it would occupy, there has been careful attention to building design in order to minimise such impact and assimilate the development with its surroundings as far as possible. The development would occupy a semi-urban context, within an allocated employment area where a wide range of built development forms can be expected. Whilst it cannot be said that the proposal accords with LDP policy KP5, I consider that, taking account of the intrinsic design requirements of the facility, it meets the expectations of the policy so far as can reasonably be expected. Overall, I regard the development's effect on the character and appearance of its surroundings as acceptable.

Traffic

684. As reported in the ES, the supporting Transport Assessment (TA) has considered the impact of the scheme in terms of transport accessibility, highway capacity, safety, parking and traffic routeing. CC's Operational Manager, Transportation has examined the TA and sees no objection to the application.

685. The anticipated HGV traffic generated would be about 80 two-way movements per day. HGV movements would occur between 7am – 6pm on weekdays and be limited to 7am – 1pm on Saturday, with no movements on Sundays. Staff car journeys are put at 36 two-way movements per 24 hr period, operating on a 3-shift system.

686. The site is connected to the surrounding strategic road network via Newlands Road and Wentloog Avenue/Lamby Way leading to the A4232, which joins the A48 link towards the M4 about 2km north of Lamby Way. The route does not pass through residential areas.

687. Newlands Road, Wentloog Avenue and Lamby Way are industrial estate roads, and all have footway widths of approximately 2m along the entire stretch and adjacent to both sides of the road, with street lighting also present. Newlands Road and Wentloog Avenue are subject to 30mph speed limits whereas Lamby Way has a speed limit of 40mph. The 7 or so two-way HGV movements per hour generated by the proposed development would have a minimal effect on traffic conditions. Notwithstanding CC's comment that the TA shows a number of collisions involving cyclists on the local road network, analysis of the historical collision data for the route shows that there are no clusters or patterns of collisions on the proposed route that indicate any particular hazards.

688. Some objectors express concern that HGV's might not use the above route towards the strategic network, but instead would travel eastwards from the site along the

B4239 to avoid congestion. They say that HGVs associated with existing uses in the vicinity already do this. However, a lorry routeing strategy will ensure that all heavy goods vehicles travel westbound from the site along Wentloog Avenue towards the A4232 and the strategic road network. I am satisfied that the Applicant is able to control HGV routeing through contract agreements with feedstock suppliers and so on, and that this provision can be secured through a planning condition requiring a Traffic Management Plan.

689. The Traffic Management Plan would also phase HGV deliveries to avoid network peak travel times wherever possible.

690. To test robustly the potential impact on the road network the TA assumed that HGV movements to and from the site would be spread evenly throughout the working day, including during the morning and evening peak hours. Even with this assumption the TA shows that the proposal would not have a significant impact on the operation of the various junctions on the intended HGV route to and from the site.

691. The TA has assessed the impact of traffic arising from the development on the nearby principal road network, both in terms of annual average daily traffic flows and peak hour traffic volume and junction queue length surveys. The analysis has shown that the daily HGV movements associated with the application site would amount to only 2.9% of the total daily HGV two-way movements on this section of the A4232. Spread over an 11-hour period they would have a negligible impact.

692. Assuming HGV movements during the am and pm peak periods, the increase in traffic flow on the approaches to the Lamby Way/Wentloog Avenue roundabout junction and the Lamby Way/Wentloog Avenue staggered junction would be less than 2% on the major arms, and less than 3.5% on all approaches to the junctions in both peak periods. There is significant peak hour queueing on certain arms of these junctions, to which peak hour HGV movements from the development, if not restricted, would add slightly.

693. Moreover, the proposed Traffic Management Plan would restrict HGV deliveries during network peak periods, which would alleviate the impact on road network congestion at these times. Taking into account the routeing strategy and Traffic Management Plan, the residual effects from the development are considered Negligible on all receptors.

694. The DAS has considered walking, cycling and accessibility to sustainable transport and local facilities. I consider that the site is satisfactorily located in these terms.

695. In summary, the traffic impacts of the proposed ERF on the road network would be acceptable. The proposal would provide a safe means of access to the highway and adequate on-site parking and turning facilities. In planning policy terms, there is no conflict with the Development Plan, in particular policies W1 (iii) and (ix) Sites for Waste Management Facilities, KP8 Sustainable Transport and T6 Impact on Transport Networks and Services.

Noise and Vibration

696. The EIA included a Noise Impact Assessment, which considers both operational and construction phase environmental noise impacts as calculated at the nearest noise sensitive receptors in the vicinity of the application site. As regards operational noise, the assessment concludes that, with a duly implemented Noise Mitigation Plan, there would be a negligible impact at the worst affected residential receptors, during both

daytime and night-time periods. A minor impact is also expected to occur at the nearest noise-sensitive commercial receptor.

697. The noise impact during construction, as expected at the worst-affected residential and noise-sensitive commercial receptors, is expected to be negligible. The expected construction phase vibration impact is typically up to minor, but moderate at worst during any periods of percussive piling. The Applicant has undertaken to engage fully with any occupier of Pinewood Studios and the occupiers of the Newlands Farm dwelling regarding the means of mitigating any impact from construction activities, including piling. Other residential receptors are significantly further away from the site and would be proportionally less noticeably affected.

698. Given that high impulsive noise, albeit over a shorter period, is generally more disturbing and less acceptable, I consider that an alternative method of piling should be utilised wherever possible, whereby a lower steady effect over time is produced. A 2m acoustic barrier is proposed around the construction site perimeter as the primary noise attenuation measure. However, if due to ground conditions percussive piling should prove necessary then additional specific attenuation to address this, as outlined in section 8.5.1 of BS5228, will be needed. This can be addressed in a CEMP required as part of the planning conditions. The CEMP should also include arrangements for noise and vibration monitoring, including provision of corrective measures where set limits are breached.

699. In terms of operational noise control, CC initially sought noise mitigation measures that would achieve aggregate noise levels not exceeding 10dB below the existing background noise levels. However, after further examination of the proposal CC now considers that an aggregate operational noise level of 5dB below LA90 at the monitoring positions, after corrections, would be satisfactory.

700. To ensure that a cumulative noise level below background levels is achieved a condition requiring a Noise Mitigation Plan to be agreed and subsequently followed through would be necessary. As the finer design details of the ERF are not fully available at this stage, the Noise Mitigation Plan would need to be developed in detail, with further professional assessment to ensure that significant noise sources are considered, assessed and attenuated through design.

701. Turning to effects on ecological receptors, the site is located within the Rumney and Peterstone SSSI. The acoustic assessment considers the potential noise impact on the area immediately surrounding the site and specifies the anticipated distance from the site perimeter where appropriate noise levels for ecological receptors are expected to be achieved. This acoustic assessment confirms that the advised noise level of 55dB LAeq,T is expected to be achieved at a setback distance of about 40 metres from the site boundary during the operational phase and about 170 metres from the boundary during the noisiest stage of the construction activities.

702. However, the designated interest features of the SSSI are not susceptible to these predicted noise impacts. As regards protected species, subject to appropriate design mitigation to ensure that noise from vents does not harm the existing bat migration/foraging corridor along the south-western boundary ditch, I consider that protected species would not be adversely affected. The HRA Screening report has assessed the noise implications of the development for the special features of the nearby Severn Estuary SAC/SPA/Ramsar designations, finding that there would be no impact within the designated areas themselves and that the areas immediately around

the site and affected by noise were unlikely to be of value to species named as interest features for feeding or roosting purposes. I accept that conclusion.

703. The Noise Impact Assessment concludes that the proposed ERF would not cause unacceptable harm to human or ecological receptors and the wider environment in noise and vibration terms. CC conclude that with appropriate safeguards in place the likely noise and vibration impacts of the development would have a neutral effect. I find no reason to disagree with these conclusions. In planning policy terms, there is no conflict with the development plan, in particular LDP policies W1 (iii) and (viii) and EN13 concerning avoidance of unacceptable noise pollution or vibration impacts.

Other Matters

704. The site is located within Flood Zone C1 and is served by significant flood defence infrastructure. The risks of flooding from tidal sources is assessed as low, with a residual risk of flooding in the event of defence failure or breach.

705. TAN 15 *Development and Flood Risk* classifies the proposed ERF as Highly Vulnerable Development, due to the particular potential consequences for its surroundings in terms of pollution and contamination were flooding of the site to occur. Satisfaction of the justification test in Section 6 of TAN 15 is required before such development should be permitted in zone C1. The justification test comprises four elements, of which the first two are alternatives.

706. Having regard to the justification test, the site is previously developed land, lies within the established developed confines of this part of Cardiff and is part of an area allocated for employment development. Energy from waste facilities, where demonstrated to be needed, are an integral part of providing an appropriate mix of waste management facilities to support WG's overall waste strategy in the interests of fostering sustainable communities. In the event of a conclusion by the Minister that need for the proposed Môr Hafren ERF has been adequately demonstrated I would regard the proposal as satisfying parts i-iii of the TAN 15 justification test.

707. With regard to part iv of the justification test concerning flooding consequences, a Flooding Consequences Assessment has been undertaken. Finished floor levels of the development would be a minimum of 7.18 metres AOD and the site plans appear to show the tarmac areas of the site (including the internal access/egress roads) to be set at the same level. As such, these areas would all be above the 0.5% (1 in 200 year) and 0.1% (1 in 1000 year) annual probability tidal flood outlines including climate change. Only small areas of the site (shown as landscaping) would be at lower levels and so potentially at risk from flooding. NRW are satisfied there would be no loss of functional floodplain storage as a result of the proposed development.

708. The site is within a Flood Warning Area and in the unlikely event of a flood emergency safe upper floor refuge would be available. Flooding resilience measures including ground floor wall and floor treatments, demountable flood barriers and a flood warning response and management system would provide additional safeguards. NRW accept that the potential consequences of flooding can be managed to an acceptable level and in the light of the above have no concerns in respect of flood risk matters, subject to the agreement and .

709. A sustainable drainage system (SuDS) to manage on-site surface water would need to be consented by the SuDS Approval Body before the development could proceed. It appears that certain details of the indicated internal site drainage arrangements may require alteration in order to satisfy SuDS requirements, particularly as regards making

use of bio-retention features. However, I would not regard this as an obstacle to the grant of planning permission in circumstances where the submitted scheme was deemed to be otherwise acceptable.

710. I have considered all other relevant matters, including the evidence relating to the possible implications of the proposal in terms of effects on cultural heritage and the potential for light pollution. None of these other matters raise issues which weigh significantly in the planning balance.

Benefits of the Proposal and the Planning Balance

711. The Môr Hafren ERF development would bring various benefits. The ERF would deliver around 15MW of electrical power to the local electricity network for the 25 year or so operational life of the plant, equivalent to the requirement of around 30,000 houses and available to meet the needs of businesses, housing and infrastructure. Any electricity surplus to local requirements would be exported to the national grid. In addition, the electrical power output would be continuous (barring unforeseen disruption to normal operation), apart from occasional maintenance downtime. The plant would thus provide a reliable and stable continuous energy source to supplement the more variable energy supply provided by renewable energy sources such as wind and solar. This would be a significant contribution to future electricity requirements during a period when demand for electricity is likely to increase, as the degree of reliance on oil and gas reduces.

712. The resulting energy supply would not be carbon emission-free as with supply from non-carbon renewable sources. Nonetheless, as the WRATE life-cycle assessment[45] shows, there would be a small net carbon saving associated with the energy generated by the facility offsetting energy generated by fossil fuels. Overall, utilising the waste as feedstock compared to it going to landfill would provide a significant CO_2 equivalent saving (estimated as 46,307 tonnes per annum, equivalent to almost 16,000 cars being taken off the road).

713. The ERF would also have the potential to utilise the pass-out steam to create a local heat network serving nearby businesses.

714. In relation to delivering sustainable waste management, the proposal would divert residual waste from landfill to energy recovery, so moving the means of management up the waste hierarchy and thereby helping to achieve this aim as part of WG waste strategy. This would be a clear benefit while large amounts of non-inert, non-hazardous residual commercial and industrial waste in S E Wales continue to go to landfill. However, as Wales moves towards its 2050 zero waste ambition by phasing out residual waste through actions on waste prevention and sustainable consumption and production so that the only waste produced is reused or recycled, the significance of the proposal's benefit in these terms would progressively diminish.

715. There would be significant socio-economic benefits associated with the construction and operation of the proposed ERF. The construction of the ERF would give direct employment at full time equivalent levels of around 356 jobs annually over the three-year construction period. The project would also create indirect and induced employment opportunities through supply chain effects, estimated at 461 full time equivalent jobs per year of construction. The total direct, indirect and induced employment benefit equates to 772 full time equivalent jobs per annum during the

[45] Appendix 2 of Application Doc 10 Revised Waste Planning Assessment May 2021

construction period. Besides these employment benefits, it is calculated that the scheme would also create additional Gross Value Added (GVA) worth £74.7m through wider economic activity.

716. During its 25-year operational life the ERF would provide 25 full-time, skilled jobs. Associated indirect and induced employment levels are calculated at about 32.5 full time equivalent jobs locally and a further 36 full time equivalent jobs in the wider area. The ERF would also generate additional Gross Value Added (GVA) during its operational life, calculated at up to £15.7m in the local impact area and up to £43.73m in the wider impact area.

717. As referred to in the foregoing section on ecological impacts, a benefit of the proposal in those terms is that the currently unmanaged and over-shaded length of ditch along the south-western edge of the site would be proactively managed throughout the lifetime of the ERF in order to improve its water quality and habitat value. The ditch forms part of the network of watercourses which are a key feature of the Gwent Levels (Rumney & Peterstone) SSSI; securing its improvement and management in this way would be a beneficial outcome of the development in terms of safeguarding the SSSI's special features, although the length of ditch concerned is minor relative to total length of watercourses present within the designated area.

718. I conclude that there would be substantial energy, environmental and socio-economic benefits if the proposed development were to proceed, which must be weighed in the balance.

719. Turning to the overall balance of considerations, the evidence falls well short of demonstrating need for a facility of the scale proposed. This is a fundamental requirement of TAN 21 and, notwithstanding that the site is allocated for a range of uses which includes waste management facilities, the proposal therefore fails to accord with LDP policies KP12 and W1. If implemented, the development would result in an overprovision of energy from waste capacity in the SE Wales economic region, which would plainly run counter to the thrust of the WG Towards Zero Waste Strategy as supplemented by Beyond Recycling and the Strategic Assessment, particularly as regards the longer-term objective of moving away both from landfill and from recovery operations post 2024/25 in order to achieve the zero waste and net zero carbon goals.

720. The proposal would result in the diversion of residual waste from landfill to recovery, moving it up the waste hierarchy. This would bring substantial CO_2 equivalent emission savings, a consideration which I do not dismiss lightly. However, even on the basis of commercial and industrial residual waste arisings alone and no waste reduction, the projected unmet need for additional from waste capacity within the region would only amount to about half of the feedstock requirement of the proposed ERF as at its earliest possible operating date, and would progressively diminish further thereafter if the waste strategy is effective. Having considered all of the evidence, I conclude that WG's view that there is no need for any new large-scale energy from waste plants of 10MW or greater is well-founded in this case.

721. The scheme would also bring substantial benefits in terms of energy generation, providing a consistent 15MW supply of electricity to the local grid. It would also provide opportunity for a local heating network. However, the carbon emission savings and energy production benefits of the scheme, whilst substantial, do not outweigh the proposal's shortcomings concerning insufficient need and lack of compliance with waste policies and the WG waste strategy.

722. The proposal would bring significant socio-economic benefits, through the employment generated during the construction and operational phases of the facility and associated wider economic activity.

723. Although there would be some ecological benefit through the positive management of the ditch forming part of the wider SSSI watercourse system, overall the scheme would have a negative effect on the site in ecological/biodiversity terms, such that the proposal does not accord with LDP policies EN6 and EN7 and with Future Wales Policy 9.

724. The proposal is acceptable as regards its implications for Rumney and Peterstone SSSI1 and for nearby internationally designated sites. However, there would be a negative impact in terms of nutrient nitrogen levels at nearby locations within SSSI2 and SSSI3. There would be no unacceptable effects as regards air quality effects on human receptors or as regards traffic, noise and vibration, flood risk, effect on character and appearance or in other respects.

725. Overall, I conclude that the objections to the proposal in terms of insufficient need, adverse ecological effects, conflict with the development plan and lack of compliance with the WG waste strategy outweigh the carbon emission, energy generation, socio-economic and SSSI ditch management benefits that the scheme would bring. I have considered all other aspects of the proposal, but find no other matters which alter my conclusion that the balance of considerations is such that planning permission should be withheld.

726. In reaching my conclusion I have considered the extent to which my recommendation accords with the well-being goals of the Well-being of Future Generations Act. The principal WG well-being objectives pursuant to the well-being goals are to "build a stronger, greener economy as we make maximum progress towards decarbonisation" and "embed our response to the climate and nature emergency in everything we do". The WG programme for Government 2021-26 responds to these objectives by focussing, amongst other things, on infrastructure investment for a zero-carbon economy, increasing waste reduction and expanding re-use and repair. I consider that, by reason of its consistency with the WG Towards Zero Waste strategy, as supplemented by Beyond Recycling and the Strategic Assessment for Future Need for Energy from Waste Capacity in the Three Economic Regions of Wales, my recommendation is consistent with the well-being goals and objectives.

Conditions in the Event of a Decision to Grant Permission

727. I have considered what conditions would need to be imposed in the event of a decision that planning permission should be granted. In so doing I have had regard to the tests for conditions and the model conditions, as contained in government guidance. CC and NRW have both put forward conditions which they consider necessary; these and other potential conditions have been discussed during the Hearing Sessions and refined with input from the Applicant, CC, NRW and other parties, resulting in a finalised schedule of agreed conditions to be attached to a permission if granted. The schedule of agreed conditions is appended to this report.

728. In addition to conditions 1 and 2 concerning the statutory time limit for commencement, and the identification of the plans to which the permission relates, condition 3 would impose an annual tonnage waste treatment limit, in order to ensure that the development would be in line with the limit against which it has been assessed. Condition 4 is needed to ensure that the waste processed would be non-hazardous waste, to safeguard health and guard against pollution or contamination.

729. Condition 5 concerns the submission and agreement of a Construction Environmental Management Plan before development commences, covering a range of matters to be regulated during the construction period, in order to protect the local environment and public amenity and to maintain highway safety.

730. Conditions 6, 7 and 8 require highway/public realm works needed as a consequence of the scheme and on-site provision of car parking (including 2 electric charging points) and cycle parking facilities, in the interests of highway safety and to promote sustainable travel modes. Condition 9 requires a travel management plan to encourage sustainable travel to and from the site, whilst condition 10 requires a traffic management plan, to ameliorate impacts on the highway network. Condition 11 is required to control the design of the new highway access/egress points in the interests of highway safety. Condition 12 limits delivery vehicle movements and associated activity, to safeguard local amenity.

731. Conditions 13 and 14 require noise and odour management plans, to safeguard the amenities of neighbouring occupiers. Conditions 15, 16, 17 and 18 control the details of external lighting, external finishes, site enclosures/gates and refuse storage associated with staff facilities, to ensure an acceptable standard of design, safeguard local amenity and ecological interests and avoid undue light spillage.

732. Conditions 19 – 26 comprise a suite of conditions needed to guard against ground, soil, air and water pollution or contamination risks during development.

733. Conditions 27 – 29 require measures for tree protection and the agreement and implementation of soft landscaping details, to maintain and improve the environmental value of the area. Condition 30 requires the agreement and implementation of a Landscape and Ecological Management Plan, including measures concerning protected species and priority habitats and "green" and "blue" infrastructure provision and enhancement, in order to maintain and enhance the ecological resource present at the site.

734. Condition 31 requires prior approval of finished ground and internal floor levels, to regulate displacement and redirection of flood water and address potential flood risk. Condition 32 requires approval of foul and surface water drainage details, to guard against harm to groundwater. Condition 33 is needed to guard against the spread of invasive plant species. Condition 34 requires the prior approval of piling methods during construction, to safeguard the amenities of neighbouring occupiers an avoid unacceptable risks to groundwater; condition 35 requires the inclusion of Gigabit capable broadband infrastructure measures, in accordance with Future Wales Policy 13 (supporting digital infrastructure). Condition 36 requires details of arrangements for any future local heat network connection and for connecting to the local electrical grid to be agreed and implemented, to realise the energy benefits of the development. Finally, condition 37 requires the agreement and implementation of a flood management plan, as referred to by NRW in its comments on the proposal, in the interests of flood risk resilience.

Overall Conclusion and Recommendation

735. I conclude that the objections to the proposal in terms of insufficient need, ecological harm, conflict with the development plan and lack of compliance with the WG waste strategy outweigh the carbon emission, energy generation, socio-economic and SSSI ditch management benefits that the scheme would bring. These are no other matters of such weight as to alter this balance as regards the critical issues. Having

taken all matters into account, I conclude that the balance of considerations is such that planning permission should be refused.

736. For the reasons given in this report, I recommend that planning permission for the proposed Môr Hafren ERF (DNS Application 3236340) be refused.

737. If, notwithstanding my recommendation, the Minister decides to grant permission, then I recommend that conditions are imposed as set out in the appendix overleaf.

Alwyn B Nixon

Inspector

APPENDIX: DNS3236340 Môr Hafren Energy Recovery Facility –

Recommended conditions in the event of a decision to grant planning permission

1. Statutory Time Limit

The development permitted shall be begun before the expiration of five years from the date of this planning permission.

Reason: In accordance with the provisions of Section 91 of the Town and Country Planning Act 1990.

2. Plans and Documents

The development shall be carried out in accordance with the following approved plans:

(i) PL100 Existing Site Layout, GSDA, 200820
(ii) PL101 Site Layout, GSDA, 200820, Rev A
(iii) PL102 Fencing Layout, GSDA, 200820, Rev A
(iv) PL103 Boundary Zones and Buffers, GSDA,200820
(v) PL110 ERF Ground Floor Plan, GSDA, 200820, Rev A
(vi) PL111 ERF Roof Plan, GSDA, 200820
(vii) PL120 Admin and Amenity Block, Ground and First Floor Plans, GSDA, 200820
(viii) PL121 Admin and Amenity Block, Second and Third Floor Plans, GSDA, 200820
(ix) PL200 Existing Site Sections, GSDA, 200820
(x) PL201 Proposed Site Sections,GSDA,200820,Revision B
(xi) PL300 North East_South East Elevations,GSDA,200820
(xii) PL301 South West_North West Elevations,GSDA,200820
(xiii) PL302 North East_South East Hidden Elevations, GSDA,200820
(xiv) PL303 North West Hidden Elevation_Without FGT_ Residue Silo,GSDA,200820
(xv) PL310 ACC Elevations,GSDA,200820
(xvi) PL311 Residue Silos Elevations,GSDA,200820
(xvii) PL312 Fire Water Tank and Pump House Elevations,GSDA,200820, Rev A
(xviii) PL313 Substation and Transformer Elevations,GSDA,200820
(xix) PL314 Cycle Shelter Plan and Elevations,GSDA,200820
(xx) 7000_S2 Proposed Drainage Strategy, Clarke Bond,260820,Rev P2
(xxi) 1383 SK122 Ditch to Fence Offset and Maintenance Widths

Reason: To ensure satisfactory completion of the development and for the avoidance of doubt in line with the aims of Planning Policy Wales to promote an efficient planning system.

3. Annual Tonnage Limit

The Energy Recovery Facility hereby approved shall not treat in excess of 200,000 tonnes of residual waste per annum.

Reason: The environmental impacts of the development hereby approved have been assessed against this tonnage limit.

4. Non-Hazardous Waste

The waste processed within the approved Energy Recovery Facility shall at all times be non-hazardous.

Reason: To safeguard health in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

5. Construction Environmental Management Plan (CEMP)

Prior to the commencement of any site clearance, construction works or development a Construction Environmental and Management Plan (CEMP) shall be submitted to and approved in writing by the Local Planning Authority in order to manage the impacts of construction. The CEMP shall include:

(i) an implementation programme for the construction of the roads and footways;

(ii) details of construction traffic management, which shall include: identification of the routes that construction vehicles would take and measures to regulate the routeing of construction traffic; times within which traffic can enter and leave the site; times of deliveries, site access, loading and unloading of plant and materials; access within the site including measures to ensure safe and convenient pedestrian, cycle and vehicular access through those areas not under construction or where construction is complete; wheel washing facilities; and details of parking for contractors' vehicles, site operatives and visitors;

(iii) details of the storage of plant and materials, construction compounds and any temporary facilities for construction staff;

(iv) details of site hoardings (including their erection, maintenance, security and any decorative displays);

(v) details of restrictions to be applied during construction including timing, duration and frequency of works and measures to control the emission of dust, dirt, vibration and noise during construction;

(vi) details of site waste management for the recycling and/or disposal of all waste resulting from construction works;

(vii) a construction drainage scheme including the attenuation tank indicating how surface water and land drainage flows will be controlled to prevent contamination, nuisance, subsidence or flooding to land, buildings, watercourses or adjacent highways during the construction period;

(viii) details of fuel and chemical storage and containment; details of water consumption, waste water and energy use. Provision for safe storage of the proposed fuel storage and urea offloading areas in accordance with Control of Pollution (Oil Storage) (Wales) Regulations 2016;

(ix) demonstrate how relevant guidelines for pollution prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan;

(x) invasive species management, species and habitats protection, avoidance and mitigation measures (including a detailed lighting plan showing type and siting of lighting and light spill reduction measures, use of 2 metre high acoustic fencing, warning signs and site toolbox talks to ensure all key habitat retention and sensitive areas are protected and remain unaffected by construction works);

(xi) details of topsoil strip, storage and amelioration for re-use;

(xii) ecological clerk of works to ensure construction compliance with approved plans and environmental regulations;

(xiii) list of on-site contacts, their roles and responsibilities; and

(xiv) contact details for local community liaison;

The approved details shall be complied with in full throughout the construction period.

Reason: In the interests of highway safety, and protection of the environment and public amenity in accordance with Local Development Plan Policies T5 (Managing Transport Impacts), T6 (Impact on Transport Networks and Services), EN5 (Designated Sites), EN7 (Priority Habitats and Species), EN10 (Water Sensitive Design), and EN13 (Air, Noise, Light Pollution and Land Contamination.

6. Highway Reinstatement Works

No development shall take place until a scheme of public realm/highway reinstatement works has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include but not be limited to the reinstatement/resurfacing as required of the carriageway and footway abutting the site including surfacing, kerbs, edging, drainage, lighting, lining, signing and street furniture as required as a consequence of the scheme. The development shall not be brought into beneficial use until the scheme has been constructed in accordance with the approved details.

Reason: To reinstate the footway/highway and provide an improved pedestrian environment to facilitate safe commodious access to the proposed development in accordance with Local Development Plan Policies T1 (Walking and Cycling), T5 (Managing Transport Impacts) and T6 (Impact on Transport Networks and Services).

7. Car Parking

The 14 no. car parking spaces (including 2 no. disabled spaces and 2 no. electric vehicle charging points) hereby approved shall be provided prior to the development being brought into beneficial use and thereafter shall be maintained and shall not be used for any purpose other than the parking of vehicles.

Reason: To ensure that the use of the proposed development does not interfere with the safety and free flow of traffic passing along the highway in accordance with Local Development Plan Policy T5 (Managing Transport Impacts) and to accord with the requirements of Future Wales Policy 12 (Regional Connectivity).

8. Cycle Parking

The 10. no cycle stands hereby approved shall be constructed on site in accordance with the details shown on the drawing titled "Cycle Store Plan and Elevations" (Garry Stewart Design Associates, drawing no. 1383 PL314) prior to beneficial use of the development.

Reason: In the interests of promoting sustainable modes of transport in accordance with Local Development Plan Policies KP8 (Sustainable Transport), T1 (Walking and Cycling) and T5 (Managing Transport Impacts).

9. Travel Management Plan

No part of the development hereby approved shall be brought into beneficial use until a Travel Management Plan has been submitted to and approved in writing by the Local Planning Authority (LPA). The Travel Management Plan shall set out proposals and targets, together with a timetable to limit or reduce the number of single occupancy car journeys to the site, and to promote travel by sustainable modes. The Travel Management Plan shall be implemented in accordance with the timetable set out in the plan. Reports demonstrating progress in promoting the sustainable transport measures detailed in the Travel Management Plan shall be submitted annually to the LPA, commencing from the first anniversary of beneficial occupation of the development and continuing for five consecutive years thereafter.

Reason: To effect modal shift to non-car modes in order to maximise travel to/from the site by sustainable modes of transport, in accordance with Local Development Plan Policies KP8 (Sustainable Transport).

10. Traffic Management Plan

No development shall take place until a Traffic Management Plan has been submitted to and approved in writing by the Local Planning Authority (LPA). The Traffic Management shall include, but not be limited to:

(i) the maximum quantity of deliveries per annum (not exceeding the 200,000 tonne limit hereby approved);
(ii) the maximum number of deliveries per day; phasing deliveries to avoid peak travel times wherever possible;
(iii) the route for delivery vehicles to travel and from the site; and
(iv) detail for recording the number, arrival time and departure time of vehicles.

The Traffic Management Plan shall be implemented in accordance with the approved details.

Reason: To manage the traffic impacts of the proposed development in accordance with Local Development Plan Policy T6 (Impact on Transport Networks and Services).

11. Junction Design

Prior to the commencement of development details of the new junctions to access and egress the site shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the use of the proposed development does not interfere with the safety and free flow of traffic passing along the highway abutting the site, in accordance with Local Development Plan Policy T5 (Managing Transport Impacts).

12. Deliveries

No arrival, departure, loading or unloading of delivery vehicles shall take place outside the hours of 0700 – 1800 Monday to Friday, 0700 – 1300 Saturday and at no time on Sundays or Bank Holidays.

Reason: To safeguard the amenities of neighbouring occupiers, in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

13. Noise Management Plan

Prior to beneficial use an Environmental Noise Impact Assessment and a detailed Noise Management Plan shall be submitted to and approved in writing by the Local Planning Authority that demonstrates that the cumulative noise from plant and vehicles within the site boundary achieves a rating noise level of no greater than 5dB below background (LA90) at the nearest noise sensitive residential receptors outlined in the Environmental Noise Assessment P1844-REP01-REVC-BDH, when measured and corrected in accordance with BS4142:2014 +A1 2019 (or any British Standard amending or superseding that standard).

Reason: To safeguard the amenities of neighbouring occupiers, in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

14. Odour Management Plan

Prior to beneficial use a scheme shall be submitted to and approved in writing by the Local Planning Authority which specifies the provisions and management of odour from onsite activities. The scheme shall be implemented and maintained in accordance with the approved details.

Reason: To safeguard the amenities of neighbouring occupiers, in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

15. External Lighting (Operational Phase)

Prior to its installation full details of external lighting (including a lighting plan, details of type and siting of lighting, and light spill reduction measures) for the operational phase

of development shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details and retained thereafter.

Reason: In the interests of the safe operation of the adjacent railway, biodiversity (including European Protected Species) and neighbour amenity, in accordance with Local Development Plan Policies, (T6 (Impact on Transport Networks and Services), EN5 (Designated Sites), EN6 (Ecological Networks and Features of Importance for Biodiversity), and EN13 (Air, Noise, Light Pollution and Land Contamination).

16. External Finishes

Prior to their installation on site, samples of the external finishing materials shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To ensure a satisfactory finished appearance of the development in keeping accordance with Local Development Plan Policy KP5 (Good Quality and Sustainable Design).

17. Site Enclosures & Gates

Prior to their erection on site, details of the means of site enclosure and vehicle access gates shall be submitted to and approved by the Local Planning Authority. The development shall be constructed in accordance with the approved details prior to the development being put into beneficial use.

Reason: To ensure a satisfactory finished appearance of the development in keeping accordance with Local Development Plan Policy KP5 (Good Quality and Sustainable Design).

18. Refuse Storage

Prior to their construction on site, details of any facilities proposed for the storage of recyclates and refuse associated with the office/canteen areas shall be submitted to and approved in writing by the Local Planning Authority. The approved facilities shall be provided before the development is brought into beneficial use.

Reason: To secure an orderly form of development and to protect the amenities of the area accordance with Local Development Plan Policies KP5 (Good Quality and Sustainable Design) and W2 (Provision for Waste Management Facilities in Development).

19. Ground Gas Protection

Prior to the commencement of development a scheme to investigate and monitor the site for the presence of gases* being generated at the site or land adjoining thereto, including a plan of the area to be monitored, shall be submitted to the Local Planning Authority (LPA) for its written approval.

Following completion of the approved monitoring scheme, the proposed details of appropriate gas protection measures to ensure the safe and inoffensive dispersal or management of gases and to prevent lateral migration of gases into or from land surrounding the application site shall be submitted to and approved in writing by the LPA. If no protection measures are required then no further actions will be required.

All required gas protection measures shall be installed and appropriately verified before occupation of any part of the approved development and the approved protection measures shall be retained and maintained until such time as the LPA agrees in writing that the measures are no longer required.

*'Gases' include landfill gases, vapours from contaminated land sites, and naturally occurring methane and carbon dioxide, but does not include radon gas. Gas Monitoring programmes shall be designed in line with current best practice as detailed in CIRIA 665 and BS 8485:2015+A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

20. Contaminated Land Measures – Assessment

Prior to the commencement of development an assessment of the nature and extent of contamination shall be submitted to and approved in writing by the Local Planning Authority (LPA). This assessment shall be carried out by or under the direction of a suitably qualified competent person * in accordance with BS10175 (2011) Code of Practice for the Investigation of Potentially Contaminated Sites and shall assess any contamination on the site, whether or not it originates on the site. The report of the findings shall include:

(i) a desk top study to identify all previous uses at the site and potential contaminants associated with those uses and the impacts from those contaminants on land and controlled waters. The desk study shall establish a 'conceptual site model' (CSM) which identifies and assesses all identified potential source, pathway, and receptor linkages;

(ii) an intrusive investigation to assess the extent, scale and nature of contamination which may be present, if identified as required by the desk top study;

(iii) an assessment of the potential risks to:

- human health;
- groundwaters and surface waters;
- adjoining land;
- property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes;
- ecological systems;
- archaeological sites and ancient monuments; and
- any other receptors identified at (i)

(iv) an appraisal of remedial options, and justification for the preferred remedial option(s).

All work and submissions carried out for the purposes of this condition shall be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017), or guidance which may supersede this.

* A 'suitably qualified competent person' would normally be expected to be a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, Geological Society of London, Royal Institution of Chartered Surveyors, Institution of Environmental Management) and also have relevant experience of investigating contaminated sites.

Reason: To ensure that information provided for the assessment of the risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems is sufficient to enable a proper assessment, in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

21. Contamination Land Measures – Remediation and Verification Plan

Prior to the commencement of the development a detailed remediation scheme and verification plan to bring the site to a condition suitable for the intended use by removing any unacceptable risks to human health, controlled waters, buildings, other property and the natural and historical environment shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include all works to be undertaken, proposed remediation objectives and remediation criteria, a timetable of works and site management procedures. The scheme shall ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation.

All work and submissions carried out for the purposes of this condition shall be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017), or guidance which may supersede this.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offiste receptors in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

22. Contaminated Land Measures – Remediation and Verification

The remediation scheme approved by Condition 21 shall be fully undertaken in accordance with its terms prior to the occupation of any part of the development unless otherwise agreed in writing by the Local Planning Authority (LPA). The LPA shall be given two weeks written notification of commencement of the remediation scheme works.

Within 6 months of the completion of the measures identified in the approved remediation scheme, a verification report that demonstrates the effectiveness of the remediation carried out shall be submitted to and approved in writing by the LPA.

All work and submissions carried out for the purposes of this condition shall be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017), or guidance which may supersede this.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

23. Contamination Land Measures – Unforeseen Contamination

In the event that contamination is found at any time when carrying out the approved development that was not previously identified it shall be reported in writing within 2 days to the Local Planning Authority (LPA), all associated works shall stop, and no further development shall take place unless otherwise agreed in writing until a scheme to deal with the contamination found has been approved. An investigation and risk assessment shall be undertaken and where remediation is necessary a remediation scheme and verification plan shall be prepared and submitted to and approved in writing by the LPA. Following completion of measures identified in the approved remediation scheme a verification report shall be submitted to and approved in writing by the LPA. The timescale for the above actions shall be agreed with the LPA within 2 weeks of the discovery of any unsuspected contamination.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

24. Imported Soil

Any topsoil [natural or manufactured], or subsoil, to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority (LPA) in advance of its importation. Only material approved by the LPA shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the WLGA / WG / NRW guidance document, 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems.' (2013). Subject to approval of the above, sampling of the material received at the development site to verify that the imported soil is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

25. Imported Aggregates

Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority (LPA) in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the WLGA / WG / NRW guidance document, 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems.' (2013). Subject to approval of the above, sampling of the material received at the development site to verify that the imported material is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

26. Use of Site Won Materials

Any site-won material including soils, aggregates, recycled materials shall be assessed for chemical or other potential contaminants in accordance with a sampling scheme which shall be submitted to and approved in writing by the Local Planning Authority (LPA) in advance of the reuse of site won materials. Only material which meets site specific target values approved by the LPA shall be reused.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

27. Tree Protection

No development shall take place until the following have been submitted to and approved in writing by the Local Planning Authority (LPA) in accordance with the current British Standard 5837:

(i) An Arboricultural Method Statement (AMS) detailing the methods to be used to prevent loss of or damage to retained trees within and bounding the site, and existing structural planting or areas designated for new structural planting. The AMS shall include details of site monitoring of tree protection and tree condition by a qualified arboriculturist, undertaken throughout the development and after its completion, to monitor tree condition. This shall include the preparation of a chronological programme for site monitoring and production of site reports, to be sent to the LPA during the different phases of development and demonstrating how the approved tree protection measures have been complied with.

(ii) A Tree Protection Plan (TPP) in the form of a scale drawing showing the finalised layout and the tree and landscaping protection methods detailed in the AMS that can be shown graphically. The development shall be carried out in full conformity with the approved AMS and TPP.

Reason: To enable the Local Planning Authority to assess the effects of the proposals on existing trees and landscape, the measures for their protection, to monitor compliance and to make good losses, in accordance with Local Development Plan Policy EN8 (Trees, Woodlands, and Hedgerows).

28. Landscaping Scheme

No development shall take place until full details of soft landscaping have been submitted to and approved in writing by the Local Planning Authority (LPA). These details shall include:

(i) A soft landscaping implementation programme;

(ii) Scaled planting plans prepared by a qualified landscape architect;

(iii) Evidence to demonstrate that existing and proposed services, lighting, CCTV, drainage and visibility splays will not conflict with proposed planting;

(iv) Schedules of plant species, sizes, numbers and densities prepared by a qualified landscape architect;

(v) Scaled tree pit sectional and plan drawings prepared by a qualified landscape architect that show the Root Available Soil Volume (RASV) for each tree;

(vi) Topsoil and subsoil specification for all planting types, including full details of soil assessment in accordance with the Cardiff Council Soils and Development Technical Guidance Note, soil protection, soil stripping, soil storage, soil handling, soil amelioration, soil remediation and soil placement to ensure it is fit for purpose. Where imported planting soils are proposed, full specification details shall be provided including the parameters for all imported planting soils, a soil scientists interpretive report demonstrating that the planting soil not only meets British Standards, but is suitable for the specific landscape type(s) proposed. The specification shall be supported by a methodology for storage, handling, amelioration and placement;

(vii) Planting methodology and post-planting aftercare methodology prepared by a qualified landscape architect, including full details of how the landscape architect will oversee landscaping implementation and report to the LPA to confirm compliance with the approved plans and specifications.

Reason: To maintain and improve the amenity and environmental value of the area, in accordance with Local Development Plan Policy KP16 (Green Infrastructure).

29. Landscaping Implementation

Any newly planted trees, plants or hedgerows, which within a period of 5 years from the completion of the development die, are removed, become seriously damaged or diseased, or in the opinion of the Local Planning Authority (LPA) otherwise defective, shall be replaced.

Replacement planting shall take place during the first available planting season, to the same specification approved in discharge of Condition 28.

Reason: To maintain and improve the amenity and environmental value of the area, in accordance with Local Development Plan Policy KP16 (Green Infrastructure).

30. Landscape and Ecological Management Plan (LEMP)

Prior to any works commencing on site a Landscape and Ecological Management Plan (LEMP) for the delivery and ongoing management (including contingencies), maintenance, and monitoring of green and blue infrastructure comprising the ecological, arboricultural, landscape, soil, SuDS and ditch shall be submitted to and approved in writing by the Local Planning Authority (LPA). The LEMP shall include but not be limited to:

(i) Details of dormouse surveys, together with appropriate measures of avoidance, mitigation, compensation and enhancement for dormice;

(ii) Details of bat surveys, together with appropriate measures of avoidance, mitigation, compensation and enhancement for bats;

(iii) A method statement to avoid harm to Great Crested Newts;

(iv) Details of measures of avoidance of harm, mitigation and enhancement for reptile populations;

(v) Details of measures of avoidance of harm and enhancement for nesting birds;

(vi) Details of a sensitive lighting scheme to demonstrate avoidance of disturbance to nocturnal species such as dormice and bats.

(vii) Details of a water quality monitoring & contingency plan including details of triggers for specific action.

(viii) Details of watercourse and watercourse corridor management and maintenance over lifetime of development

The development shall be carried out in accordance with the approved details.

Reason: To maintain and enhance the green and blue infrastructure resource in accordance with Local Development Plan Policies EN3 (Landscape Protection), EN5 (Designated Sites), EN7 (Priority Habitats and Species), EN10 (Water Sensitive Design), and EN13 (Air, Noise, Light Pollution and Land Contamination).

31. Ground and Floor Levels

Prior to any works commencing on site details of finished ground and internal floor levels shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To avoid any doubt and ambiguity as to finished levels and to avoid displacement and redirection of floodwater in accordance with Local Development Plan Policy EN14 (Flood Risk).

32. Site Drainage

No development shall commence until full details of surface and foul drainage has been submitted to and approved in writing by the Local Planning Authority. The drainage scheme shall be carried out in accordance with the approved details.

Reason: To ensure that the development does not cause unacceptable harm to ground water in accordance with LDP Policy EN11 (Protection of Water Resources).

33. Invasive Species

Prior to the commencement of development, a detailed scheme for the treatment and disposal of soils affected by Japanese Knotweed and other invasive species and measures for their ongoing management shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall accord with the advice in the publication The Eradication of Japanese Knotweed (WDA: Cardiff 1998) and Guidance for the Control of Invasive Plants Near Watercourses (Environment Agency 2001) or and guidance which may supersede this. Thereafter the development shall be carried out in accordance with the approved scheme.

Reason: To ensure the safe destruction and prevention of spread of Japanese Knotweed and other invasive species in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

34. Piling Methods

No development shall take place until details of methods and types of piling (including timing and duration) or any other foundation designs using penetrative methods has been submitted to and approved in writing by the Local Planning Authority (LPA). The submitted details shall demonstrate that there is no unacceptable risk to groundwater and no adverse impact on the amenities of the nearest noise sensitive residential receptors when assessed against BS5228 2009 'Code of Practice for Noise and Vibration on Construction and Open Sites.'). The piling/foundation designs shall be implemented in accordance with the approved details.

Reason: To ensure that the development can be carried out safely without unacceptable risks to groundwater and to safeguard the amenities of neighbouring occupiers in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

35. Digital Communications

The development hereby approved shall include measures for the provision of Gigabit capable broadband infrastructure.

Reason: To accord with the requirements of Future Wales Policy 13 (Supporting Digital Communications).

36. Renewable Heat and Electricity

Prior to the construction of the Energy Recovery Facility hereby approved, details of the creation of heat and electricity, arrangements for establishing a connection to the local electrical grid and the timing for such provision shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To realise the potential for renewable energy in accordance with Future Wales Policy 16 (Heat Networks) and Local Development Plan Policy EN12 (Renewable Energy and Low Carbon Technologies).

37. Flood Resilience Measures and Flood Management Plan

Prior to the commencement of development, details of flood resilience measures, to include ground floor wall and floor treatments and demountable flood barriers, and a Flood Management Plan based on the recommendations of the Flood Consequences Assessment (Clarke Bond Report No. E05092/FCA dated 26 August 2020) shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out and thereafter operated in accordance with the approved details.

Reason: To ensure the acceptability of the development in relation to the safety of future occupiers in relation to flood risk, in accordance with Local Development Plan Policy EN14 (Flood Risk).

APPEARANCES AT THE HEARING SESSIONS:

For the Applicant (Mor Hafren Bio Power Ltd)

Maureen Darrie	Director, GP Planning Ltd
Amanda Owen	Environmental Visage
Brian Horner	Associate Director, Sol Acoustics
Catherine Bean	Senior associate, Applied Landscape Design
Sarah Halsey	Principal Consultant, Origin Transport
Seymour D'Oyley	Associate Director, Clarke Bond
James Patmore	Director of Ecology, Bradley Murphy Design
Jeff Picksley	Air Emissions and Designated Sites (Ecology)
Sebastian Onslow	Director, Urban Environmental Consultancy

For Natural Resources Wales

James Davies	Senior Advisor, Development Planning Team
Gareth Lewis	Lead Specialist Advisor, Waste Policy Team
Sandra Wells	Senior Advisor, Protected Species Team
Annabelle Evans	Advisor, Development Planning Team
Anna Griffiths	Lead Specialist Officer, Installations, Permitting Service
Khalid Aazem	Senior Officer, Air Quality, Protected Sites
Miguel Ortuno-Sanchez	Conservation officer, Environment Team

For Cardiff Council

Tim Walter	Principal Planner, Development Management
Matthew Harris	Ecologist
Craig Lewis	Air Quality
Tomos Jenkins	Noise and Vibration
Chris Hanson	Transport
Ian Titherington	Drainage
Ed Baker	Trees

For Wentlooge Community Council

Cllr David Birch

Cllr Amanda Birch

For Marshfield Community Council

Cllr Cath Davies

Cllr Linda Southworth-Stevens

For Residents Against the CF3 Incinerator

Jon Alderman

James Alderman

Atif Hussain

For Friends of the Earth

Max Wallis Barry and Vale Branch

Documents

Applicant's Documents

Doc 01	Môr Hafren ERF Planning Application Document Reference List
Doc 02	Môr Hafren ERF Planning Application Form
Doc 03	Môr Hafren ERF Proposed Application Articles 8 and 9(2) Notice
Doc.04	Môr Hafren ERF Proposed Application Article 9(3) Notice
Doc 05	Môr Hafren ERF Certificate of Ownership - Certificate B Notice Under Article 16 (1)(a)
Doc 06	Môr Hafren ERF Article 6 Acceptance of Notification Letter to Applicant
Doc 07	Môr Hafren ERF Article 11 Pre-Application Consultation Report and Appendices
Doc 08	Môr Hafren ERF Design and Access Statement, GSDA 2 September 2020, Issue 2
Doc 09	Môr Hafren ERF Planning Statement, GP Planning, 3 September 2020, Revision 2
Doc 10	Môr Hafren ERF Waste Planning Assessment, GP Planning, 20 May 2021, Revision 2
Doc 11	Môr Hafren ERF Dwg. PL100 Existing Site Layout, GSDA, 200820
Doc 12	Môr Hafren ERF Dwg. PL101 Site Layout, GSDA, 200820, Rev A
Doc 13	Môr Hafren ERF Dwg. PL102 Fencing Layout, GSDA, 200820, Rev A
Doc 14	Môr Hafren ERF Dwg. PL103 Boundary Zones and Buffers, GSDA,200820
Doc 15	Môr Hafren ERF Dwg. PL110 ERF Ground Floor Plan, GSDA, 200820, Rev A
Do 16c	Môr Hafren ERF Dwg. PL111 ERF Roof Plan, GSDA, 200820
Doc 17	Môr Hafren ERF Dwg. PL120 Admin and Amenity Block,Ground and First Floor Plans,GSDA, 200820
Doc 18	Môr Hafren ERF Dwg. PL121 Admin and Amenity Block,Second and Third Floor Plans,GSDA, 200820
Doc 19	Môr Hafren ERF Dwg. PL200 Existing Site Sections,GSDA, 200820
Doc 20	Revision B Môr Hafren ERF Dwg. PL201 Proposed Site Sections,GSDA,200820,Revision B
Doc 21	Môr Hafren ERF Dwg. PL300 North East_South East Elevations,GSDA,200820

Doc 22	Môr Hafren ERF Dwg. PL301 South West_North West Elevations,GSDA,200820
Doc 23	Môr Hafren ERF Dwg. PL302 North East_South East Hidden Elevations, GSDA,200820
Doc 24	Môr Hafren ERF Dwg. PL303 North West Hidden Elevation_Without FGT_ Residue Silo,GSDA,200820
Doc 25	Môr Hafren ERF Dwg. PL310 ACC Elevations,GSDA,200820
Doc 26	Môr Hafren ERF Dwg. PL311 Residue Silos Elevations,GSDA,200820
Doc 27	Môr Hafren ERF Dwg. PL312 Fire Water Tank and Pump House Elevations,GSDA,200820, Rev A
Doc 28	Môr Hafren ERF Dwg. PL313 Substation and Transformer Elevations,GSDA,200820
Doc 29	Môr Hafren ERF Dwg. PL314 Cycle Shelter Plan and Elevations,GSDA,200820
Doc 30	Môr Hafren ERF Dwg. 7000_S2 Proposed Drainage Strategy,Clarke Bond,260820,Rev P2
Doc 31	Môr Hafren ERF Dwg. 7001_S2 Indicative Off Site Foul Rising Main Route,Clarke Bond,260820, Rev P1
Doc 32	Môr Hafren ERF Dwg. GPP-MHBP-WC-20-01 Site Context Plan,GP Planning 150620 Revision 1
Doc 33	Môr Hafren ERF Non-technical Summary, GP Planning, 3 September 2020, Revision 2
Doc 34	Môr Hafren ERF Environmental Statement, GP Planning, 3 September 2020, Revision 1
Doc 34a	Appendix 1 Environmental Statement, PINS, 25 October 2019
Doc 35	Version 2 Môr Hafren ERF Technical Appendix 6 Air Quality Assessment, Environmental Visage, 29th January 2021, Revision 7
Doc 36	Môr Hafren ERF Technical Appendix 7 Air Quality and Traffic, Environmental Visage, 26th August 2020 Revision 2
Doc 37	Môr Hafren ERF Technical Appendix 8 Health Impact Assessment, Environmental Visage, May 2020
Doc 38	Môr Hafren ERF Technical Appendix 9 Environmental Noise Impact Assessment, Sol Acoustics, 2 September 2020 Revision C
Doc 39	Môr Hafren ERF Technical Appendix 10 Appendix 1.1 Preliminary Ecological Appraisal, REC, 30th July 2019 Issue 1
Doc 40	Môr Hafren ERF Technical Appendix 10 Appendix 1.2 Ecological Verification Report, BMD, April 2020 Rev A

Doc 41	Môr Hafren ERF Technical Appendix 10 Appendix 1.3 Air Quality and Noise, BMD, April 2020
Doc 42	Môr Hafren ERF Technical Appendix 10 Appendix 1.4 File Note: eDNA Surveys, ADAS, 10th June 2020
Doc 43	Môr Hafren ERF Technical Appendix 10 Appendix 1.5 File Note: Reptile Surveys, ADAS, 19th June 2020
Doc 44	Môr Hafren ERF Technical Appendix 10 Appendix 1.6 Botanical Survey and Invertebrate Assessment, ADAS, 26th August 2020, Revision 01
Doc 45	Môr Hafren ERF Technical Appendix 11 Landscape and Visual Impact Assessment, ALD, 26 August 2020, Revision P08
Doc 46	Môr Hafren ERF Technical Appendix 11 LVIA Dwg.s, ALD, 1 August 2019, Part 1 Rev 04 and P05
Doc 47	Môr Hafren ERF Technical Appendix 11 LVIA Dwg.s, ALD, 1 August 2019, Part 2 Rev 04 and P05
Doc 48	Môr Hafren ERF Technical Appendix 11 LVIA Dwg.s, ALD, 1 August 2019, Part 3 Rev 04 and P05
Doc 49	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1034 RevP02 - Viewpoint 1 Winter, ALD, 10th June 2020, Revision P02
Doc 50	Môr Hafren ERF Technical Appendix 11 LVIA, A LD837_LD1053 Rev P02 - Viewpoint 2 Winter, ALD, 10th June 2020, Revision P01
Doc 51	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1036 Rev P02 - Viewpoint 3 Winter, ALD, 10th June 2020, Revision P01
Doc 52	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1037 - Viewpoint 4 Winter, ALD, 21st February 2020, Revision P01
Doc 53	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1038 - Viewpoint 5 Winter, ALD, 21st February 2020, Revision P01
Doc 54	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1055 - Viewpoint 5 Winter Photomontage, ALD, 25th February 2020, Revision P01
Doc 55	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1054 - Viewpoint 5 Winter Wireframe, ALD, 25th February 2020, Revision P01
Doc 56	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1039 - Viewpoint 6 Winter, ALD, 21st February 2020, Revision P01
Doc 57	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1040 - Viewpoint 7 Winter, ALD, 21st February 2020, Revision P01
Doc 58	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1041 - Viewpoint 8 Winter, ALD, 21st February 2020, Revision P01
Doc 59	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1042 - Viewpoint 9 Winter, ALD, 21st February 2020, Revision P01

Doc 60	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1043 Viewpoint 10 Winter, ALD, 21st February 2020, Revision P01
Doc 61	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1044 Viewpoint 11 Winter, ALD, 21st February 2020, Revision P01
Doc 62	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1045 Viewpoint 12 Winter, ALD, 21st February 2020, Revision P01
Doc 63	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1056 Viewpoint 12 Winter Photomontage, ALD, 21st February 2020, Revision P01
Doc 64	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1046 Rev P02 Viewpoint 13 Winter, ALD, 10th June 2020 Revision P02
Doc 65	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1057 Rev P02 Viewpoint 13 Winter Photomontage, ALD, 10th June 2020 Revision P02
Doc 66	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1047 Viewpoint 14 Winter, ALD, 21st February 2020, Revision P01
Doc 67	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1048 Viewpoint 15 Winter, ALD, 21st February 2020, Revision P01
Doc 68	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1049 Viewpoint 16 Winter, ALD, 21st February 2020, Revision P01
Doc 69	Môr Hafren ERF Technical Appendix 11 LVIA,ALD837_LD1050 Viewpoint 17 Winter, ALD, 21st February 2020, Revision P01
Doc 70	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1058 Viewpoint 17 Winter Photomontage, ALD, 25th February 2020, Revision P01
Doc 71	Môr Hafren ERF Technical Appendix 11 LVIA,ALD837_LD1051 Viewpoint 18 Winter, ALD, 21st February 2020, Revision P01
Doc 72	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1052 Viewpoint 19 Winter, ALD, 21st February 2020, Revision P01
Doc 73	Môr Hafren ERF Technical Appendix 12 Transport Assessment, Origin Transport, August 2020, Revision 6
Doc 74	Môr Hafren ERF Technical Appendix 13 Historic Environment Desk Based Assessment, RPS Group, 27th August 2020, Revision 3
Doc 75	Môr Hafren ERF Technical Appendix 15 Flood Consequences Assessment & Drainage, Clarke Bond, 26th August 2020, Revision P7
Doc 76	Version 2 Môr Hafren ERF Habitats Regulations Assessment Screening, BMD, January 2021, Revision A
Doc 77	Version 2 Môr Hafren ERF Habitats Regulations Assessment Screening, European Sites, BMD, January 2021, Revision A
Doc 78	Covering Letter to PINS, GP Planning, 4th September 2020

Doc 79	Letter to Natural Resources Wales, GP Planning Ltd, 4th September 2020
Doc 80	Appendix A to Letter to Natural Resources Wales, GP Planning Ltd, 4th September 2020
Doc 81	Letter to PINS, GP Planning Ltd, GP Planning, 9th October 2020
Doc 82	Statement National Development Framework, GP Planning, 9th October 2020
Doc 83	Letter to Cardiff Council re National Development Framework, GP Planning, 9th October 2020
Doc 84	Letter to PINS, GP Planning, 9th October 2020
Doc 85	Môr Hafren ERF Environmental Statement Addendum, GP Planning, 9th October 2020
Doc 86	Version 2 Môr Hafren ERF DRAFT Construction Environmental Management Plan, GP Planning February 2021
Doc 87	Version 2 Môr Hafren ERF DRAFT Landscape and Ecological Management Plan, GP Planning February 2021
Doc 88	Letter to PINS, GP Planning, 1st February 2021
Doc 89	Môr Hafren ERF Environmental Statement Addendum 2, GP Planning, 1st February 2021
Doc 90	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1059 Rev P01 Viewpoint 9 Winter Photomontage, ALD, 19th January 2021 Revision P01
Doc 91	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1060 Rev P02 Viewpoint 11 Winter Photomontage, ALD, 25th January 2021 Revision P02
Doc 92	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1061 Rev P01 Viewpoint 14 Winter Photomontage, ALD, 19th January 2021 Revision P01
Doc 93	Môr Hafren ERF Technical Appendix 11 LVIA, ALD837_LD1062 Rev P01 Viewpoint 19 Winter Photomontage, ALD, 19th January 2021 Revision P01
Doc 94	Môr Hafren ERF Technical Appendix 16 Arboricultural Impact Assessment, Urban Environmental Consultancy, 27th January 2021, V2
Doc 95	Môr Hafren ERF Appendix 4 Technical Appendix 16 Tree Constraints Plan, Urban Environmental Consultancy, 19th January 2021, V1
Doc 96	Môr Hafren ERF Appendix 4 Technical Appendix 16 Arboricultural Impact Plan, Urban Environmental Consultancy, 27th January 2021, V1
Doc 97	Môr Hafren ERF Appendix 4 Technical Appendix 16 Tree Retention and Removal Plan, Urban Environmental Consultancy, 25th January 2021, V2

Doc 98	Môr Hafren ERF Appendix 4 Technical Appendix 16 Draft Tree Protection Plan, Urban Environmental Consultancy, 25th January 2021, V2
Doc 99	Môr Hafren ERF Dwg. SK122 Ditch to Fence Offset and Maintenance Widths, GSDA, 29th January 2021
Doc 100	Môr Hafren ERF Technical Note 1 Response to Residents Against CF3 Incinerator Chapter 6_Local Ownership of Energy Generation_Waste Planning Assessmnet, GP Planning, 1st February 2021
Doc 101	Môr Hafren ERF Technical Note 2 Air Quality Response to Messrs Cuffe, Wallis, Prosser, Alderman, Residents Against CF3 Incinerator, NRW and Cardiff Council, Environmental Visage, 30th January 2021
Doc 102	Môr Hafren ERF Technical Note 3 Noise and Vibration Response to Cardiff Council and Residents Against CF3 Incinerator, Sol Acoustics, 19th January 2021
Doc 103	Môr Hafren ERF Technical Note 4 Transport Assessment Response to Residents Against CF3 Incinerator, Origin, January 2021
Doc 104	Môr Hafren ERF Technical Note 5 Landscape and Visual Impact Assessment Response to Residents Against CF3 Incinerator, ALD, 26th January 2021
Doc 105	Môr Hafren ERF Technical Note 6 Ecology Response to NRW, Cardiff Council and Residents Against CF3 Incinerator, ALD, 19th January 2021
Doc 106	Môr Hafren ERF Pre-application Submission SuDS Approval, January 2021
Doc 107	Môr Hafren ERF Hearing Statement Hearing 1, GP Planning 9th March 2021
Doc 108	Môr Hafren ERF Hearing Statement Hearing 2, GP Planning 9th March 2021
Doc 109	Môr Hafren ERF Hearing Statement Hearing 3, GP Planning 9th March 2021
Doc 110	Môr Hafren ERF Hearing Statement Hearing 4, GP Planning 9th March 2021
Doc 110A	Môr Hafren ERF Schedule of Conditions Appendix to Hearing Statement Hearing 4, GP Planning 9th March 2021
Doc 111	Môr Hafren ERF Response to Question 5 Hearing Agenda 4, GP Planning 18th March 2021
Doc 112	Doc 112a Môr Hafren ERF Response Air Quality Response to Barry and Vale FoE (Mr Wallis) , Environmental Visage 19th March 2021
Doc 113	Commericial and Industrial Waste in Wales, Composition analysis of Commercial and Industrial waste in Wales WRAP Cymru January 2020
Doc114	Môr Hafren ERF Erratum Doc 10 Paragraph 4.2.5 DOC 10 Waste Planning Assessment GP Planning 26th March 2021

Doc 115	Môr Hafren ERF View Point 19 Visual Confirmation of Accuracy Applied Landscape Design March 2021
Doc 116	Letter to PINS, GP Planning, 20th May 2021
Doc 117	Môr Hafren ERF Environmental Statement Addendum 3, GP Planning, 20th May 2021
Doc 118	Môr Hafren ERF Technical Appendix 10 Appendix 1.7, Potential Bat Roost Features Inspection Report, ADAS, May 2021
Doc 119	Môr Hafren ERF Technical Appendix 10 Appendix 1.8, Dormouse Conservation Plan, ADAS, May 2021
Doc 120	Letter to PINS, GP Planning, 24th June 2021
Doc 121	Letter to PINS, GP Planning, 9 July 2021

Cardiff Council

1	Môr Hafren Local Impact Report
2	Cardiff Local Development Plan Extracts
3	SPG Extracts: Archaeologically Sensitive Areas; Green Infrastructure; Locating Waste Management Facilities; Managing Transportation Impacts; Tall Buildings
4	Technical Guidance Note Extracts: Ecology and biodiversity; Soils and Development; Trees and Development
5	Council Ecologist's Comments on initial HRA Screening Assessment
6	LPA Hearing Statement – Session 1
7	LPA Hearing Statement – Session 2
8	LPA Hearing Statement – Session 3 plus Addendum
9	LPA Hearing Statement – Session 4
10	Cardiff Council Response to further information submitted 20 May 2021 (10.6.2021)
11	Final List of Suggested Conditions

Representations from Statutory Consultees

1	Natural Resources Wales – Pre -application consultation correspondence (26.11.2020)su
2	Natural Resources Wales – Comments on submitted application (22.01.2021)

3	Natural Resources Wales: Second Consultation Window Response - Comments on further information submitted by Applicant (12.3.2021)
4	Natural Resources Wales – Hearing Session 1 Statement
5	Natural Resources Wales – Hearing Session 2 Statement
6	Natural Resources Wales – Hearing Session 3 Statement and Attachments
7	Natural Resources Wales – Hearing Session 4 Statement
8	Natural Resources Wales: Third Consultation Window Response - Comments on further information submitted by Applicant (10.6.2021)
9	Natural Resources Wales: Supplementary representation concerning Alexandra Dock EfW proposal (following Hearing Session 5)
10	Cadw: Consultation response dated 27.11.2020
11	Dwr Cymru/Welsh Water: Initial consultation response (26.11.2020) and further consultation response (7.6.2021)
12	Wentlooge Community Council: Initial consultation response and representation received in third consultation window (received 9 6.2021)
13	Marshfield Community Council: Initial consultation response (26.11.2020); Hearing Session 1 Pre-Hearing Statement; and representation received in third consultation window (Response to Doc 10 Revised Waste Planning Assessment)

Residents Against the CF3 Incinerator

1	Response to Air Quality Assessment
2	Response to Air Quality Assessment (Addendum)
3	Response to EDNA Surveys
4	Response to Health Impact Assessment
5	Response to Landscape and Visual Impact Assessment
6	Response to Planning Statement
7	Response to Noise and Vibration Assessment
8	Response to "The WG Policy – Local Ownership of Energy Generation in Wales"
9	Response to Transport Assessment
10	Response to Waste Planning Assessment
11	Second Consultation Window Responses to Applicant's further documents 100, 103, 104 and 86
12	Hearing statement Session 1

13	Hearing statement Session 2
14	Hearing statement Session 3
15	Hearing statement Session 4
16	Third Consultation Window Response to Doc 10 Waste Planning Assessment (revision 4)
17	Supplementary representation concerning Alexandra Dock EfW proposal (following Hearing Session 5)

Max Wallis (Barry and Vale FoE)

1	Initial Representation
2	Further Representation received in Second Consultation Window