

APPENDIX 8.1

Transport Statement





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Transport Statement to Accompany an Environmental Statement Addendum

**Enviroparks Wales Ltd
Hirwaun Industrial Estate
Aberdare**

**Report Issue No: Issue 2
Report Date: February 2017
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EXECUTIVE SUMMARY

Enviroparks Wales Ltd (EWL) has planning consent for the development of an eco-park at their site in Hirwaun, South Wales. Since the original consent was granted (2010), there have been a number of changes to the proposals, and an application is to be made for the approval of a revised scheme. As such, it is considered appropriate that an Addendum to the original Environmental Statement (ES Addendum) be prepared and submitted with an application to amend the current planning consent. This Transport Statement has been prepared by Environmental Visage Limited (Envisage), and considers the likely changes to and impacts of vehicle movements associated with the revised scheme.

In summary, each of the impacts considered can be described as having a negligible (impact barely perceptible) or minimal (a small impact on the highway or environment) positive or negative effect. As such there are no further mitigation measures proposed for the small residual impacts, and the proposal can be deemed acceptable.

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1. INTRODUCTION

Enviroparks (Wales) Ltd (Enviroparks) are developing a site on the Hirwaun Industrial Estate in Hirwaun, Aberdare. Phase I of this development is underway and will see the construction of a waste handling and sorting facility. Phase II of the scheme has however changed slightly from the original concept of a multi-process facility, and is now planned to focus specifically on the advanced thermal treatment processes designed to accept pre-treated wastes and convert these to energy. As such, the nature of the incoming waste streams and outputs from the site will change, and this Transport Statement has been prepared by way of an update to the original Transport Assessment⁽¹⁾ submitted as part of the original planning application in 2008.

This Transport Statement should therefore be read in conjunction with, and with full consideration of, the original Transport Assessment.

Although changes to a development could require the preparation of a new and comprehensive Transport Assessment, discussion with Souren Zeinali, Highways Development Control and Adoptions Manager at Rhondda Cynon Taf County Borough Council (telephone correspondence 25th October 2016) confirmed that, for the purpose of the assessment, if the proposal has not changed substantially, or if there is a reduction in the overall traffic numbers then provision of a Transport Statement rather than a full Transport Assessment should suffice. This Transport Statement has therefore been prepared in the same format as the original Transport Assessment, and will provide update and comment only where a change is identified or is now proposed.

In summary, the proposed amendments to the site processes and operation, will result in slightly more staff visiting site on an average daily basis, although with fewer staffing movements at the peak hour of commuting, and will see a significant reduction in the number of heavy goods vehicles visiting the site. Further detail now available on the likely construction vehicle movements required do however result in an increase on those originally proposed, over a two-year construction period.

2. EXISTING CONDITIONS

The site location and transport infrastructure serving it has not changed since the original Transport Assessment (TA), although significant works have been undertaken on the Heads of the Valleys Road (A465), which provides strategic road access to Hirwaun Industrial Estate. Upgrades to sections of the A465 between Dowlais and Brynmawr to the east of Hirwaun are complete, and improvements between Dowlais and Hirwaun are programmed to commence in 2018. A map of the development site location is included as Figure 1 for completeness, and a layout plan of the proposed development is included as Figure 2.

Significant portions of the A465 are being extended to dual carriageway and the road is being re-aligned in places. This will only serve to improve the transport links to the Hirwaun Industrial Estate in the longer term, and although some negative impact on the construction vehicle movements for the Enviroparks development may be experienced once work on the road in the local area commences, the improvements to the A465 to date have been managed with appropriate traffic control and diversions as necessary.

Since the preparation of the original TA in 2008, a number of new developments have been proposed for or included within the Hirwaun Industrial Estate as follows:

- Green Frog Connect Ltd, Main Avenue, Hirwaun Industrial Estate. A standby embedded Short Term Operating Reserve (STOR) power plant with a connection to the National Grid.
- Hirwaun Energy Centre, Unit 43 - 44 Seventeenth Avenue, Hirwaun Industrial Estate. A renewable energy generation production facility, treating waste wood.
- Hirwaun Power, Hirwaun Industrial Estate. A gas fired 'peaking' power generating plant providing 50 - 299MWe.

A separate application for another gas fuelled power plant within the industrial estate was refused at the start of December 2016.

Baseline Transport Data

Although Phase I of the Enviroparks development has begun, with a single unit now in situ at the site, there is currently no operational traffic to or from the development, which has not yet been commissioned. Nor is there any construction traffic currently visiting the site. The transport network in the area largely consists of the highway linkages, although other facilities are available, and updates to all information are provided below.

Highways

Count data for the main trunk roads in the area has been obtained from 2015 and is presented in Appendix 1. Traffic counts were undertaken for the original TA in 2008, and where these are considered to be of relevance to the current assessment, they are also included. No additional traffic counts have been undertaken to support this Traffic Statement or the Addendum to the Environmental Statement, as a reduction in overall vehicle movements suggest that these would not be necessary. Table 1 summarises the 2008 and 2015 traffic count data.

Table 1 Traffic Count Data

Road / Link	Assessment Period	All Vehicles	2015 Level
The Estate Roads; Junction with Fifth Avenue and Main Avenue	PM Peak 2008	84	94
A4061 and Hirwaun Industrial Estate Junction	PM Peak 2008	148	165
A4059	AADT 2015	4198	4198
A465 (West of Estate)	AADT 2015	10852	10852
A465 (East of Estate)	AADT 2015	20552	20552

2008 data has been uplifted to 2015 levels using the Air Quality Consultants Automated Traffic Growth Calculator for England and Wales.

Railways and Buses

Trains still run to and from Cardiff and Aberdare or Treherbert half hourly during week days, and are now also half hourly to Merthyr Tydfil.

Accessible destinations from Hirwaun via bus are as follows:

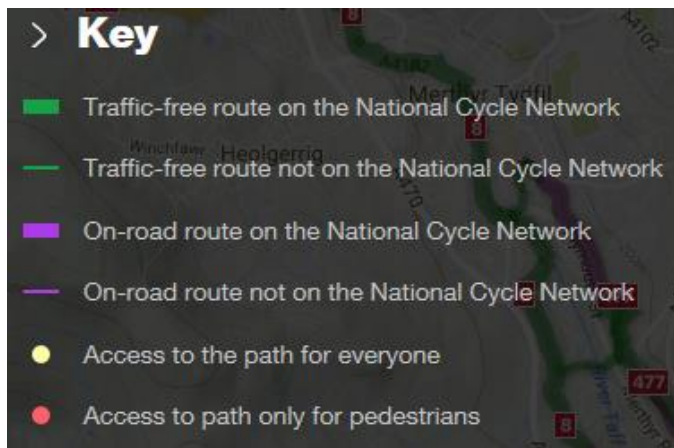
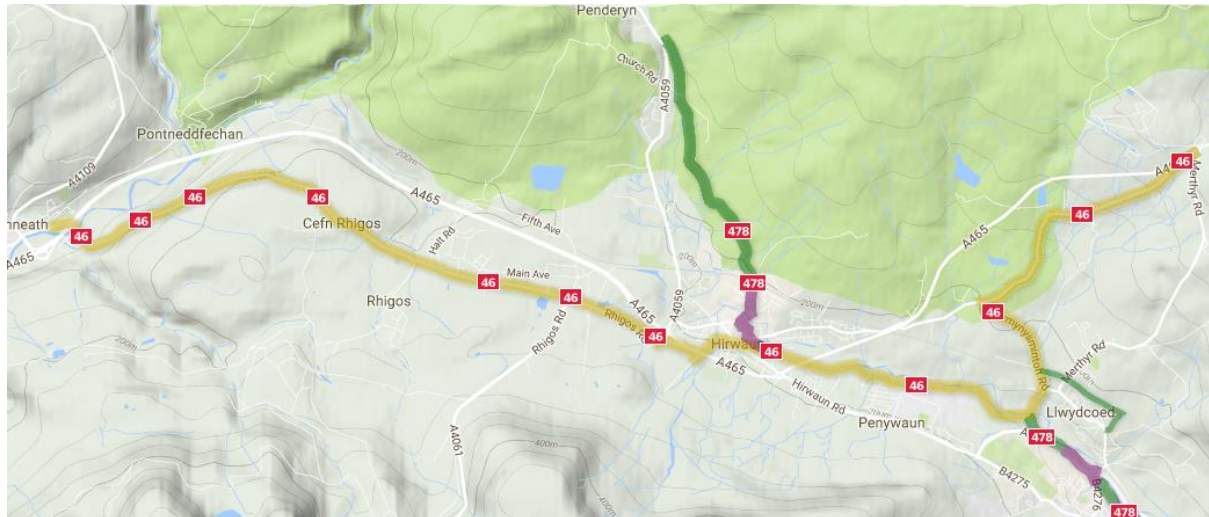
Aberaman	Hirwaun, Coop	Godreaman	Pont Walby
Aberdare	Heolgerrig	Llwydcoed	Resolven
Baverstocks Hotel	Hirwaun	Morfa Glas	Rhigos
Brynn	Gadlys	Penderyn	Trecynon
Aberdare, Bus Station	Glebeland	Penywaun	Ynysfach
Cefn Rhigos	Glynhafod	Merthyr Tydfil; town centre, bus station, and	
Cwmaman	Glynneath	Tydfil Cyfarthfa Retail Park	

As previously, bus routes 7 and 8 serve the Hirwaun Industrial Estate to a degree.

It is possible that public transport services could be utilised by day staff at the Enviroparks facility or the associated high energy user to be located at the site, although are unlikely to be suitable for use by shift workers.

Walking and Cycling

The site already includes cycle storage facilities, and full shower and locker room facilities will be available to staff, which promotes the adoption of cycling and walking. The following plan of local cycle routes has been taken from the Sustrans website (<http://www.sustrans.org.uk/ncn/map/route/route-46>), and shows the cycle routes local to Hirwaun and the Hirwaun Industrial Estate, specifically Route 46.



Walking access remains unchanged with the Estate served by pedestrian footpaths and street lighting, and being easily accessible from the Rhigos area on foot. The route to the industrial estate from Hirwaun however, remains less suitable for pedestrians.

Collision Analysis

A limited assessment has been made of collision data for the local area from 2015, available from the Department for Transport (<https://data.gov.uk/dataset/road-accidents-safety-data>), although a comprehensive assessment was undertaken in the original ES (2008).

From the accident records, there were eight accidents on the A465 in 2015, and six of these were within an approximate 5 km distance of the Hirwaun Industrial Estate. Four of the six accidents occurred on the dual carriageway sections of the A465, generally in the 60 mph sections. Three of the six accidents local to the Estate were on the roundabout for the A4059 / A4061.

Only one of the accidents occurred in darkness, albeit with street lighting, with others occurring during daylight, and weather conditions were fine with no high winds on all occasions. The road surface was dry on all occasions with the exception of the night time accident when it was wet or damp.

There were also six accidents on the A4059 within a rough 5 km distance of the industrial estate, and two on the A4061. These are both single carriageway roads where the accidents occurred, with speed limits ranging from 30 – 60 mph. One of the accidents was at a T-junction or other staggered junction, three were at roundabouts, and four were not at or close to any junction. Three of the accidents occurred in darkness with street lighting, the other five occurring during daylight. Weather conditions were generally fine, although on one occasion it was raining and dark, on another it was snowing, and conditions on one occasion were simply recorded as 'other'. The road surfaces were recorded as wet or damp, or 'snow' during these three incidents.

Of the fourteen accidents occurring within approximately 5 km of the Hirwaun Industrial Estate, two occurred in the first quarter of the year, six in Quarter two, and 3 each in Quarters three and four. Cars were the most likely vehicle to be involved in an accident, although three light goods vehicles or vans were involved, two pedal cycles, one heavy goods vehicle and one bus or coach. The purpose of most of the journeys at the time of the accident were either unknown or were work related, either travelling to and from work, or on behalf of work. Two accidents involved a single vehicle (cars), and one involved three cars.

For the most part, vehicles were going ahead, although two accidents involved vehicles waiting to turn right, two involved vehicles turning right, and two vehicles were moving off. Single accidents were also caused by overtaking a moving vehicle, performing a U-turn, and slowing or stopping.

All reported casualties were of slight severity.

The original TA considered accident data between 2003 and 2007, on a stretch of the A465 from just south of Pontneddfechan in the west, to the western edge of Gellideg in the east (approximately 17 km in total). A total of 74 accidents were reported in total over that period, and the eight accidents recorded on the A465 in 2015 would suggest a reduction in the average number of accidents caused. Although only one heavy goods vehicle (HGV) was involved in any of the 2015 accidents, the reduced number of accidents overall implies a higher percentage of HGV involvement over the small area considered in 2015, and indeed, only three of the incidents recorded between 2003 and 2007 involved HGVs at all.

3. THE PROPOSED DEVELOPMENT

Enviroparks propose to develop an eco-park facility on the Hirwaun Industrial Estate, on the outskirts of Hirwaun, in South Wales. The development already has planning consent, however changes to the proposed scheme require an amendment to this. The Company will still only receive non-hazardous wastes, however a percentage of that will have been pre-treated in line with Welsh Government Waste Policies. Other non-hazardous wastes will be received from commercial and industrial sources. This material will undergo further treatment at the site to separate out the recyclable fraction for dispatch from site to third parties, and to create a refuse derived fuel to a specification matched to the requirements of the on-site gasifiers, which will then process the fuel to create energy for use around the site, by a third party high energy user co-located at the site, and for export of the remaining energy to the grid. The development will therefore include a Weighbridge and Security Guard building, a Fuel Preparation Hall, a Fuel Storage Hall, and a Gasification Hall, as well as a sub-station building.

The Enviroparks proposal is intended to be a showcase development and a reference site to which waste authorities and contractors from the UK and beyond will be interested in visiting. Accordingly, the proposals incorporate a combined administration building and Visitor Centre at the South-East corner of the site.

The proposed changes to the site processes have resulted in changes to the building layout, and the gross floor areas of the buildings within the newly proposed layout (the red line boundary for the purpose of this application) are provided in Table 2.

Table 2 Gross Floor Area of the Proposed Enviroparks Development

Building Name	Building Class	Gross Floor Area (m²)
Visitors Centre and Offices	B2 Offices	791
Gate House	B2 Offices	103
Fuel Preparation Area	B2 General Industry / Warehousing	5,098
Gasification Hall	B2 General Industry / Warehousing	9,448
Sub-station	B2 General Industry / Warehousing	220
	TOTAL	15,660 m²

There are no proposed changes to the road layouts already permitted by the current planning consent, and as per the current consent, there will be no HGV movement along Halt Road during either construction or operation of the Enviroparks facility. All HGV movements associated with the scheme will enter the industrial estate from the A465 / A4059 / A4061 roundabout, entering the estate by turning right at the roundabout on Rhigos Road, onto Fifth Avenue, and will exit the estate via the same route.

Due to the inclusion of a sub-station at the site, which will now be divided in two, with half being owned and operated by Enviroparks and the other half being leased to Western Power, permanent access is required directly to the sub-station infrastructure to provide Western Power with unencumbered and secured access to the station without relying on Enviroparks for access from the main site. The inclusion of this access point is now the subject of a separate planning application, and a safety audit was prepared for the proposal which identified no issue, although the general suitability of the new access is also considered here. The application for the new access point was submitted on 23 February 2017 to Rhondda Cynon Taf County Borough Council under section 96A of the Town and Country Planning Act 1990 for a non-material amendment following a grant of planning permission. The non-material amendment application seeks to relocate the High Voltage (HV) substation from its approved location on the eastern site boundary fronting Ninth Avenue to a new south-eastern location within the site fronting Fifth Avenue.

The access point will be for occasional use only, anticipated to be required up to a maximum of four times per year by a visiting engineer. The entrance point will be gated and will include signage reminding those entering the sub-station compound that they must enter and leave the site in forward gear. There will be no obstructions within the visibility splay area, enabling drivers and pedestrians to see and be seen. The intention is to include a drop kerb across the pedestrian walkway at the access point, and hence there will be no formal roadway access. The access point is located approximately 26 m from the next nearest site access / egress point, over the carriageway of Fifth Avenue, and has more than 100 m straight roadway before any bend in the road which may impair visibility of approaching traffic. Hence the stopping sight distance is more than double the required 40 m in a built-up area.

There are no other proposed changes to the access points already permitted by the current planning consent.

Subject to planning, construction works are planned to commence as quickly as possible and Enviroparks hope to be ready for commissioning two years from the start of the build. Information on the likely construction traffic for the development has been estimated by the project Construction Advisors, Dawnus Construction Limited and is presented in Appendix 2. The construction traffic details presented in Appendix 2 represent anticipated average vehicle visits per day during each month, and should be doubled to provide the total number of vehicle movements. The figures assume that for trades and labour there is an average of two people travelling per vehicle, whilst staff are considered to travel in single occupancy vehicles.

Nominal construction dates are identified as July 2017 – June 2019. The maximum number of daily vehicle movements is expected to occur in October 2018 and will equate to 495 movements (248 trips). This is expected to comprise 395 car or light goods vehicle movements carrying staff and tradesmen, and 100 HGV movements. This is significantly larger than the original estimates for the project, which equated to 148 vehicle movements per day.

In addition, there will be approximately 63 wide-load deliveries spread over around 24 weeks which will be delivered under a licence via escorted wide load. This equates to approximately 3 exceptional loads per week, and such movements are expected to occur between February and July 2018.

Traffic movements are expected to occur largely between 07:30 and 09:30, and 16:00 and 18:00, with approximately a third of the vehicle movements anticipated during each of these time periods (165 two way movements during morning and afternoon peaks; 82.5 two way movements per hour, or 1.375 vehicles per minute). It is noted that these times represent mainly staffing or trades and labour movements, with work and HGV movements limited at the site to between 08:00 – 18:00. The remaining 165 movements will take place between 10:00 and 16:00 (27.5 two way movements per hour).

Other periods of the build see 100 trips or less (200 vehicle movements per day) between July and September 2017 (inclusive), 100 – 200 trips (up to 400 vehicle movements per day) between both October 2017 and February 2018, and then again from April 2019, and more than 200 trips (over 400 vehicle movements per day) between March 2018 and March 2019.

Most vehicles, and all HGVs are expected to enter the Hirwaun Industrial Estate from the A465 / A4059 / A4061 roundabout, travelling along Rhigos Road before turning right at the industrial estate entrance roundabout.

Although the details of the tenant proposed to occupy the high energy user building are not yet finalised, the Enviroparks operation will work on a 24 hour, seven day week basis, and it is assumed for the purpose of this Transport Statement that the high energy user will work similarly. As there are no further details available yet on the proposed occupant of the high energy user building, the assumptions regarding the use of that building within this Traffic Statement remain the same as those within the original TA.

Parking

The original TA gave full consideration of the draft CSS Wales Parking Standards 2008⁽²⁾, which have now been superseded by the Rhondda Cynnon Taf Supplementary Planning Guidance: Delivering Design and Placemaking: Access, Circulation & Parking Requirements⁽³⁾, which was adopted in March 2011.

The current guidance is based on the Wales Parking Standards previously applied, and continues the consideration of maximum parking standards, but has been developed to be appropriate for Rhondda Cynon Taf. As the parking guidelines are a material consideration in individual planning applications, and the gross floor area of the proposed development has changed slightly since the original TA, the parking requirement has been re-calculated and is included as Appendix 3.

Although the guidance suggests that industrial developments over 5,000 m² could require the production of a TA, discussion with Souren Zeinali detailed earlier in this report (telephone correspondence 25th October 2016) confirmed that if the proposal has not changed substantially, or if there is a reduction in the overall traffic numbers then provision of a Transport Statement rather than a full Transport Assessment should suffice. It is indeed the case that, with the exception of construction traffic, the vehicle movements to the site during operational periods have reduced substantially.

The guidance uses zones to determine the access and parking requirements of any development, and it is considered that the Hirwaun Industrial Estate would fall into Zone 4 – Countryside. This zone comprises the small villages with limited local facilities and countryside, and is defined by those areas falling outside of the settlement boundary or a Strategic Site.

In assessing the parking requirements for a particular development, account must be taken of a number of factors in relation to the development and its location. These are copied from the guidance, below:

- (a) accessibility to and the service provided by the public transport system;
- (b) the availability of private buses or the extent of car-pooling;
- (c) the relative proportions of full time / part time / local catchment of labour;
- (d) shift patterns;
- (e) accessibility by walking and cycling;
- (f) the existing and possible future congestion in streets adjacent to the development;
- (g) accessibility to and the availability of public and/or private car parking space in the vicinity;
- (h) Topography of the area.

The baseline transport data included in Section 2 discusses the potential for walking, cycling and the use of public transport, and while these are options for staff living very locally or working 09:00 – 17:00 hours, it is anticipated that most of the shift workers at the site will travel by car. That said, the Company maintains a Transport Plan which will be fully implemented at the start of operation, and promotes (amongst other things), car sharing.

Different elements of the development will receive different classifications when considering the parking requirements, with the offices, visitor centre and gatehouse areas being Class B1' (business offices, research and development, light industry etc), and the main operational buildings of the development, including the high energy user building, being Class B2 (general industry). As such, the following guidelines have been applied in the parking assessment:

Table b2 : Offices: Zones 3 & 4 (Use Class B1 and A2)

Offices (< 1000m ²)	1 space per 20-25m ²
Offices (> 1000m ²)	1 space per 25-40m ²

Table e2 : General Industry, Distribution and Storage: Zones 2, 3 & 4

Type of Development	Operational	Non-operational
General Industry (<235m ²)	1 van space	2 spaces
General Industry (>235m ²)	See Note 4	1 space per 80 m ²
Distribution/ Storage (<1000 m ²)	35% of GFA	1 space per 80 m ²
Distribution/ Storage (≥1000 m ²)	25% of GFA	1 space per 80 m ²

For general industry with areas above 2,000 m², the required minimum operational area should be taken as 10% of gross floor area. In the case of the Enviroparks facility, this equates to 1,477 m² required for operational vehicle manoeuvring, standing and loading. Including staff parking within the non-operational requirement, the main areas to be considered as operational include the main road to the Gatehouse, which is designed for the movement and waiting of heavy goods vehicles entering the site, the unloading area at the entrance to the Fuel Preparation Hall, and the loading area between the Fuel Preparation Hall and the Fuel Store and Gasification Halls, which is used to dispatch recycled materials to third parties. These three areas alone, before any consideration of the main roadway through the site account for more than 5,500 m² and hence provide sufficient room for the operations at the site.

The gross floor area of the industrial buildings which are the subject of this current planning amendment is 14,766 m². Allowing 1 space per 80 m² results in a maximum parking allowance for the general industrial areas of the facility of 184.59 spaces. Adding the 35.76 spaces and the commercial vehicle bay required for the office accommodation (see Appendix 3), results in a total maximum car parking requirement of 220 spaces, plus a commercial vehicle bay. The Enviroparks facility within the confines of the red line of the current planning application includes 104 spaces which is less than the maximum allowance. Six of these (5.77 %) are designated disabled spaces, and the site includes sufficient space to allow the maximum number and size of vehicles which will serve the business at any one time to manoeuvre with ease and stand for loading and unloading without inconvenience to others. A drop-off / unloading bay is also included for commercial vehicles and coaches, located close to the Visitor Centre.

Additional to the requirement for car parking spaces, is the need to consider bicycle and motorcycle storage. Such storage should be located in a secure and convenient place, and should be visible to promote informal surveillance and deter thieves. Storage for motorbikes is located within the site boundary close to the exit point of the main car parking area, and within sight of the weighbridge which is constantly manned. As part of the planning pre-commencement work already undertaken for the site, information on covered cycle storage has already been provided to both Rhondda Cynon Taf and Brecon Beacons Councils, and as the site develops, the provision for cycle storage will be increased as required. The site will provide covered 'Alpine' type storage areas for bicycles. Bicycle storage is accessed via a short cycle lane into the area of the offices and Visitor Centre, with two cycle stores located here, again promoting informal surveillance to deter theft. As such, the proposals are considered to meet the Access, Circulation & Parking Requirements⁽³⁾. The facility will also include shower and locker storage facilities, which can be used by all staff as required.

The required number of motorcycle spaces is identified as 5 % of the car parking facility, and thus provision will be made for at least 6 motorcycles. The required number of storage spaces for bicycles is much more significant and suggests a combined requirement for the office and industrial areas of the site of 34 spaces (long stay storage for staffing), and an additional 16 spaces for visitors. The number of staff to be employed by the Enviroparks facility will total 69, with a maximum of 58 staff on site at any given time, although it is accepted that the site will also receive visitors, and this will likely largely occur during standard week day operations, where staffing is at its peak. As part of the original planning application and ES, Enviroparks submitted a Transport Plan and intends, on commencement of operations, to review and implement this plan to encourage staff to travel in a sustainable way. Initiatives include the promotion of car-sharing, walking or cycling, or the use of public transport. It is therefore considered that, although significantly below the maximum level for car parking spaces proposed by the guidance, the development includes ample car-parking for the needs of the specific development, including appropriate disabled facilities.

With regards to the bicycle and motorcycle requirements, it is proposed to incorporate 6 motorcycle spaces as per the guidance, although reduce the number of bicycle facilities in the first instance to 20, with a commitment to provide more as required. This proposed reduction in bicycle storage takes account of the fact that the majority of staff attending the site work shifts and hence some of these are perhaps less likely to cycle to work. It also recognises the fact that un-used storage space may instead develop alternative uses, for example becoming an equipment store. Enviroparks is committed to encouraging commuting using alternatives to the car, but with a relatively small number of staff compared to gross floor area, wish to tailor the use of the site appropriately to their needs, which will only become clear once operational. Should additional cycle storage be required, these will be located in a similar area to those already proposed, close to the offices and Visitor Centre.

In-Combination Effects

Since the production of the original TA, a number of developments have been proposed and had planning consent granted on or around the Hirwaun Industrial Estate, and there is the potential for these developments to impact on the Enviroparks proposals. A list of the developments which are considered to have a potential in-combination effect with the Enviroparks development is provided in Table 3. Additionally, a list of other developments which could potentially be considered to have an in-combination effect but which have been discounted is provided in Appendix 4.

Table 3 Developments Which Could Have a Combined Effect with Enviroparks on Traffic Movements

Project	Proposal	Impact on Traffic	Effect on Enviroparks
Abergorki Wind Farm, Craig yr Aber, Land to the North East of Forchorky, Treorchy, CF42 6TF	Installation of three wind turbines and construction of associated infrastructure on upland	Mainly during construction. Project currently on hold, with decision as to future direction due Q2 2017.	Assuming build progresses and commences in Q3 2017, construction traffic could impact on the A465 between July 2017 and June 2018. 200 staffing movements per day (on the A465) during construction, and a maximum HGV movements on concrete pour days in month 8 of the development (assumed to be February 2018), of 116 HGV movements. Operation will commence mid-2018, and will have negligible traffic associated with it.
Hirwaun Power Hirwaun Industrial Estate, Hirwaun, Aberdare	Gas fired 'peaking' power generating plant of providing 50-299MWe	Mainly during construction, which is expected to be between November 2017 and August 2019.	Estimated that at peak of construction a total of 91 workers could be expected on site. Car share proportion of 1.6 people/car is assumed, and results in 114 movements per day. Maximum daily HGVs movements are estimated as a total of 149 per day.

Although the maximum construction impacts of the developments being considered in-combination with the Enviroparks development do not occur at the same time. The construction periods do all overlap, most significantly during December 2017 – February 2018 when the following combined two way movements may be experienced, assuming that all of the developments progress in the timescales proposed:

Table 4 Combined Construction Traffic Data

Project	December 2017	January 2018	February 2018
Enviroparks	247	309	353
Abergorki Wind	312	312	316
Hirwaun Power	163	173	157
Total Daily Movements	722	793	825

It is noted that the stated vehicle movements for the Abergorki Wind Farm development focus on a worst case (concrete pour days), and will generally be less than those figures stated. Concrete pours are expected to take three days each. Additionally, although at the peak, the A465 junction may experience 825 vehicle movements in a day (averaging at 1.375 movements per minute for all three developments), it is noted that within the Hirwaun Industrial Estate and therefore on the minor roads, the maximum movements reduce to 655 per day during the worst-case construction month, or 1.1 per minute as an average. This occurs in October 2018 and is the next highest combined traffic flow of construction movements after the peak months detailed above.

Considering the estimate that two thirds of the Enviroparks development traffic movements are likely to occur in peak am and pm two hour periods (four hours in total), and applying a similar principle to the vehicles which could be entering the industrial estate at a similar period for the Hirwaun Power development, the combined number of vehicles over these peak periods (437 in October 2018), equates to 109 vehicle movements per hour, or 1.82 vehicles per minute, combined, travelling on the industrial estate roads during peak hours. Considering the wider network, the maximum cumulative movements would equate to 550 vehicle movements during the 4-hour peak movement window, or 137.5 movements per hour, equating to 2.29 movements per minute on the wider network.

Whilst it is appreciated that during construction, the combined effect of these developments could lead to heavier than normal loadings on the network and thus perhaps the potential for some additional congestion in the area, these impacts will only occur over a relatively short period, with all Enviroparks construction currently planned to occur between July 2017 and June 2019, and with peak movements occurring over a 3-month period.

4. IMPACT ON THE TRANSPORT NETWORK

Although additional transport choices are proposed by Enviroparks for their staff in the longer term, as identified in the Company Transport Plan submitted with the original TA, as a currently undeveloped site, all journeys associated with the site are assumed to be undertaken by motor vehicle on the highway network. Coupled with an assumption that staff will all travel in single occupancy vehicles, this approach is considered to represent a worst-case scenario.

Trip Rate and Distribution

The trip rates, distribution and modal matrix for the development have been calculated with reference to the discussions already underway between Enviroparks and potential suppliers and sources of feedstocks. Information on the required staffing levels for the development have been included, although estimates must be made of the likely distribution of staff sourcing across the local area.

Materials Handling

Incoming waste feedstock and outgoing recycled material movements have been calculated based on the maximum capacity of the plant. That is, the calculations assume that the plant is fully operational at 100 % capacity. As the gasification lines and associated abatement plant are designed to operate with a specific fuel quality, but with the capacity to handle lesser quality fuels should this be required, the difference in the design point and maximum abatement chemical deliveries and ash residue removals from the gasification lines is substantial, and it is considered an unreasonable assessment to only apply the worst-case figures, as this would denote commercially unsustainable operation for the Enviroparks facility. Therefore, the design point figures for chemical deliveries and ash removals have been assumed to apply for 100 % of the year, and ash residues are assumed to be stored and dispatched in skips. This is considered to provide a robust assessment, as the gasification lines have 10 % shut-down time factored into their annual operation for necessary maintenance, and the choice of container, and therefore the removal requirements of the ash generated by the process has not yet been finalised. Applying the maximum potential number of collections (assuming that all ash is collected and transported in skips rather than bulk bags or lorries), provides a worst-case assessment of the design point scenario.

The change in the nature and sources of incoming wastes to the site has dramatically reduced the number of HGV movements to the Enviroparks facility. The original TA assumed deliveries in both refuse collection vehicles and HGVs, and amounted to 80 incoming waste vehicles per day (160 vehicle movements), coupled with 11 outgoing material vehicles and 18 HGVs serving the high energy user, the total number of HGV movements per day were 218.

The revised scheme requires a design point maximum of 38.44 incoming waste and material vehicles, and 23.39 outgoing material trips per day, plus 18 HGVs serving the high energy user, resulting in a total number of HGV movements of 160 per day. The timing of vehicle movements has been estimated based on the likely delivery and collection availability throughout the course of the day (08:00 – 18:00), and the likely time required on site for vehicles to be un-loaded / loaded. The revised scheme therefore results in a reduction of 58 HGV movements per day, or 5.8 per hour.

Although as detailed above, it is not considered reasonable to apply the overall maximum abatement chemical delivery and ash residue removal requirements of the gasification lines for 100 % of the time, it is noted that, even if these figures were to be applied, the overall daily vehicle movements would reduce to 179, from the 218 vehicle movements of the currently consented scheme.

As the two sites considered for their potential in-combination effects during construction should be developed by the time the Enviroparks site is fully operational, and as these sites produce negligible operational traffic, neither are considered further in this assessment.

Staffing Movements

The Enviroparks facility intends to operate two different shift systems, depending on the process being staffed. Materials recycling staff will work days (06:00 – 14:00), afternoons (14:00 – 22:00) and nights (22:00 – 06:00). There are 10 staff required on each materials recycling shift, plus 1 weighbridge operator or security guard. Maintenance staff will work days and afternoons only, with two staff on each shift. Three gasification staff are required and will work 12 hour shifts (06:00 – 18:00 / 18:00 – 06:00). Managers and office staff work 09:00 – 17:00.

The site will employ a total of 69 staff, and on any given weekday, 58 staff will be required at the site. Reduced operations continue over the weekends, with gasifier and security staff present on site.

As in the original TA, it is assumed for the purpose of this assessment that the high energy user co-located at the site will employ 16 staff per shift on 12 hour shifts, and 20 day staff and managers. The shifts and the day staff hours have been assumed to coincide in order to provide a worst-case scenario.

The source of staff cannot be determined accurately at this stage, however Enviroparks intend to recruit locally and therefore hope to provide jobs for local people. As such, it has been assumed that all staff will be from the local area, and the distribution of likely recruitment has been based purely on the size and locality of the various residential areas. Table 5 demonstrates the chosen area distribution, and identifies the total number of staff trip rates. All staff have been assumed to travel in a single occupancy car to provide a worst-case scenario of the likely additions to the road network.

Table 5 Estimated Distribution of Staff Sources

Local Areas Assumed for Staff Sourcing	Energy Producer		High Energy User		TOTAL
	% staff likely to travel from this area	Number of staff travelling to site (Mon to Fri)	% staff likely to travel from this area	Number of staff travelling to site (Mon to Fri)	
Rhigos	5	2	5	3	5
Penderyn	5	2	5	3	5
Neath	10	6	10	5	11
Hirwaun	20	12	20	11	23
Pen-y-Waun	20	12	20	10	22
Aberdare / Mountain Ash	20	12	20	10	22

Clearly any such judgements on availability of labour at this stage remain speculative, however, it is considered that the application of such a spread of staff sourcing is the most appropriate method of incorporating staff movement data into the transport assessment, and thereby considering the potential impact of local labour sourcing.

A summary of the likely hourly vehicle movements to and from the site along the main link roads affected is presented in Table 6. Note, data for 05:00 – 23:00 hours are included as this represents the limit of the usual vehicle movement times. No regular vehicle movements associated with the site are anticipated outside of these hours, although it is noted that the gasifier operations will continue throughout the weekend, and hence shift changes of gasifier and security staff will be required. The materials recycling facility does not operate between 14:00 hours on Saturday and 06:00 hours on Monday.

The peak number of vehicle movements occurs between 17:00 and 18:00 when day staff leave site, shift changes occur, and HGVs are still in circulation. The maximum combined number of vehicle movements for both the Enviroparks facility and the high energy user is 59 two way movements during this peak hour. These movements will occur on the local industrial estate roads, reducing in volume at each significant junction.

The original TA calculated peak hour am and pm movements of 45 and 73 two way movements within the industrial estate. The peak hour pm movements therefore reduce by 14 under the revised scheme, and although the peak hour am increases by 1 vehicle movement, the impact of this is considered to be negligible.

Table 6 Proposed Hourly Contribution of Development to Main Links

Impacted Route		A465 between B4276-A4059								A465 between A4059-A4061								Local Traffic (within the Estate)							
		Enviroparks				High Energy User				Enviroparks				High Energy User				Enviroparks				High Energy User			
		Cars W	Cars E	HGVs W	HGVs E	Cars W	Cars E	HGVs W	HGVs E	Cars W	Cars E	HGVs W	HGVs E	Cars W	Cars E	HGVs W	HGVs E	Cars N	Cars S	HGVs N	HGVs S	Cars N	Cars S	HGVs N	HGVs S
Time (Mon - Friday)																									
05:00	06:00	3				5				13				13				16				16			
06:00	07:00		3				5				13				13				14				16		
07:00	08:00							2								2								2	
08:00	09:00	3		3	2	6		2	2	12		3	2	16		2	2	15		4	3	20		2	2
09:00	10:00			3	3			3	2			3	3			3	2			6	5			3	2
10:00	11:00			4	3			2	3			4	3			2	3			7	6			2	3
11:00	12:00			4	4			2	2			4	4			2	2			9	8			2	2
12:00	13:00			4	4			3	2			4	4			3	2			8	8			3	2
13:00	14:00	3		4	4			2	3	10		4	4			2	3	13		9	9			2	3
14:00	15:00		2	4	4			2	2		10	4	4			2	2		13	7	8			2	2
15:00	16:00			3	3				2			3	3				2			6	7				2
16:00	17:00			2	3							2	3							4	5				
17:00	18:00	1	3	1	2	5	6			3	12	1	2	13	16			3	15	2	3	16	20		
18:00	19:00		1				5				3				13				3				16		
19:00	20:00																								
20:00	21:00																								
21:00	22:00	2								10								11							
22:00	23:00		3								10								13						

Despite the significant reduction in vehicle movements proposed by the revised scheme during operation, the percentage increase in vehicle movements during the construction of the Enviroparks development has been assessed against available data for impacted roadways. Vehicle data from, or factored to 2015 has been applied as a base to assess the construction movements against. Growth rates for traffic flows were calculated using the Trip End Model Presentation Program TEMPro 7.1, which includes National Trip End Model (NTEM) forecasts for areas of England and Wales.

Table 7 TEMPro Growth Factors for Rhondda Cynon Taf Area 1.

Year	Origin	Destination	Local Growth Factor
2016	0.9955	0.9954	1.0194
2017	1.0017	1.0016	1.0365
2018	1.0079	1.0078	1.0536
2019	1.014	1.014	1.0707
2034	1.068	1.0684	1.1997

As operational traffic flows will reduce substantially from those which are already consented should the revised scheme progress, the percentage increase of the Enviroparks facility once operational has not been calculated.

Table 8 presents the percentage increase results for the construction of the development and notes that construction impacts from the Enviroparks development alone range from increases of approximately 24 % to 84 % on the local network serving the industrial estate. This is relatively comparable with the previous assessment which suggested increases of 71.43 % on the estate roads during the peak hour, and 31.45 % at the junction with the A4061 at the peak hour. The percentage increases are higher still when considering the cumulative effects of other proposed developments, and are predicted to be 110 % of the current peak local traffic level at their maximum. Although percentage increases of more than 5 % where congestion is an issue and 10 % in all other areas is deemed to constitute the criteria for further assessment, these large increases only apply to the estate roads, which are currently under-used, and of course are only planned for a short period during the construction of one or more industrial facilities. Hence no further assessment is proposed at this stage.

The percentage increase caused by construction traffic on the A465 is, as would be expected, far less significant, and remains below 5 % when considering the construction vehicle movements from the Enviroparks development in isolation, and when considered cumulatively with other potential construction projects. In the absence of any additional breakdown, construction vehicles are assumed to travel East and West along the A465 in a 50:50 split for all construction projects. No further assessment is deemed necessary.

The original TA included an assessment of the impact of the traffic from the development on air quality in the local area. The results of this assessment demonstrated that the impact of the development traffic was insignificant for air quality, and that no further assessment or proposed mitigation measures were considered necessary. As the revised scheme sees a significant reduction in the operational traffic movements of the facility, the modelling work would demonstrate an associated reduction in the air quality impacts and hence has not been repeated here. The development is not located within or near to an Air Quality Management Area (AQMA).

Table 8 Percentage Increase Assessment During Construction of the Development.

Road / Link	Assessment Period	2015 Level	Local Growth Factor to 2017	Total	Construction Traffic	Increase on Baseline	Combined Construction Traffic	Increase on Baseline
The Estate Roads; Junction with Fifth Avenue and Main Avenue	PM Peak	94	1.0365	97	41	42.08%	68	69.79%
A4061 and Hirwaun Industrial Estate Junction	PM Peak	165	1.0365	171	41	23.97%	68	39.76%
A465 (West of Estate)	AADT	10852	1.0365	11248	123	1.09%	361	3.21%
A465 (East of Estate)	AADT	20552	1.0365	21302	123	0.58%	361	1.69%
Road / Link	Assessment Period	2015 Level	Local Growth Factor to 2018	Total	Construction Traffic	Increase on Baseline	Combined Construction Traffic	Increase on Baseline
The Estate Roads; Junction with Fifth Avenue and Main Avenue	PM Peak	94	1.0536	99	83	83.81%	109	110.06%
A4061 and Hirwaun Industrial Estate Junction	PM Peak	165	1.0536	174	83	47.74%	109	62.70%
A465 (West of Estate)	AADT	10852	1.0536	11434	248	2.17%	413	3.61%
A465 (East of Estate)	AADT	20552	1.0536	21654	248	1.15%	413	1.91%
Road / Link	Assessment Period	2015 Level	Local Growth Factor to 2019	Total	Construction Traffic	Increase on Baseline	Combined Construction Traffic	Increase on Baseline
The Estate Roads; Junction with Fifth Avenue and Main Avenue	PM Peak	94	1.0707	101	72	71.54%	99	98.36%
A4061 and Hirwaun Industrial Estate Junction	PM Peak	165	1.0707	177	72	40.75%	99	56.04%
A465 (West of Estate)	AADT	10852	1.0707	11619	215	1.85%	296	2.55%
A465 (East of Estate)	AADT	20552	1.0707	22005	215	0.98%	296	1.35%

5. ENVIRONMENTAL IMPACT ASSESSMENT

The checklist of environmental effects as detailed in the Guidelines for the Environmental Assessment of Road Traffic⁽⁴⁾ are as follows:

- Noise and Vibration
- Visual Impact
- Community Severance
- Driver Delay
- Pedestrian Delay
- Pedestrian Amenity
- Accidents and Safety
- Hazardous Loads
- Air Pollution
- Dust and Dirt
- Ecological Impact
- Heritage and Conservation

With the exception of the potential effects of noise and vibration and air pollution during construction, each of these issues is discounted within this Transport Statement on the basis of the original TA and the reduced impact of the revised scheme. Consideration is however given below to the potential noise and vibration impacts of traffic movements associated with the construction of the Enviroparks site.

Noise and Vibration

As part of the wider Environmental Impact Assessment of the development, the likelihood of noise nuisance from the construction traffic, which is set to increase from that which was estimated previously, has been considered and is summarised below. See chapter 10 of the ES Addendum for full consideration of noise issues associated with the proposed development.

Increased noise may result on the local road network due to an increased volume of HGVs travelling to and from the site during the construction programme, or the operational phase. However, as the vehicle movements associated with the operational phase of the development have reduced from those previously considered, and the 2008 ES confirmed that the increase in noise associated with the proposed scheme based upon the traffic flow information supplied would have a neutral impact on the existing traffic noise levels of the area, the noise and vibration issues associated with operational traffic movements have not been considered further here.

Consideration of the potential impact of construction traffic noise from the increased level of vehicle movements confirms that it will not result in any perceptible increase in road traffic noise on the A465, and thus, it is considered that HGV movements during the construction phase will not result in any significant noise impacts. The same conclusion is considered to apply to the cumulative effects of other development which may be on-going during the construction of the Enviroparks site. The conclusion of no perceptible increase in traffic related noise results in the effect of noise and vibration from construction vehicle movements to be considered of neutral impact.

Air Pollution

Although once operational, the potential impacts of traffic associated with the Enviroparks facility on the air quality of the local area were considered to be insignificant within the original TA, and will reduce further with the revised scheme, the potential for impacts during the significantly increased construction movements predicted have been assessed to determine their potential impact on air quality. The Design Manual for Roads and Bridges⁽⁵⁾ (DMRB) methodology has been applied with full consideration of the construction traffic data both for the Enviroparks facility and the cumulative effects of other sites which are likely to be under construction at the same time.

The DMRB considers the Annual Average Daily Traffic along roads and at junctions and, in conjunction with the current or likely future background concentration of pollutants, predicts the combined concentration of pollutants at a named receptor. Although peak am and pm traffic counts were obtained for five junctions on which it was deemed the proposed development could have an impact, the DMRB requires annual input and provides annual concentration output. Therefore, the main route to be affected by the development, the A465, has been considered in isolation.

The receptors considered by the assessment were the same as previously considered in the 2008 (main Transport Assessment) and 2009 (sensitive ecological receptors) studies, and were as follows:

- Hotel to the north of B4276 junction (Grid Ref: 300550 207375);
- Petrol Station to the east of the A465 roundabout, Dowlais (Grid Ref: 307900 208300);
- Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC - (Grid Ref: 295050 205650); and
- Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC - (Grid Ref: 294250 206300).

The results of the DMRB assessment are presented in Appendix 5, and detail the levels of air pollution calculated at the receptors on each year between 2015 and 2019, with construction traffic contributions in 2017, 2018, and 2019. The results suggest very limited effects on levels of air pollution at the receptors, with levels of Carbon Monoxide experiencing no change from the addition of construction traffic. Levels of Benzene, 1,3-Butadiene and Particulate Matter occasionally increase by $0.01 \mu\text{g m}^{-3}$ as an annual average with construction traffic from the Enviroparks development and when in combination with other developments. Impacts on levels of Oxides of Nitrogen are most noticeable, and predict increases of up to $0.1 \mu\text{g m}^{-3}$ as an annual mean when considering the cumulative construction traffic potential, at the petrol station to the east of the A465 roundabout. These predicted increases are all negligible, due both to their quantity in relation to the Air Quality Standard for the protection of health, and their duration as, once the Enviroparks and other local operations commence in 2019, traffic levels will reduce substantially.

6. CONCLUSIONS

This Traffic Statement considers the impact of a revised planning scheme for a proposed development to be located off Fifth Avenue within the Hirwaun Industrial Estate, Hirwaun, Aberdare. It should be read in conjunction with the Transport Assessment submitted with the original 2008 Environmental Statement as only elements which have or are proposed for change are considered by this Statement.

Public transport facilities are currently limited, and options for pedestrians could be improved. However, commitments by the developer, Enviroparks both through their current planning consent and their Company Transport Plan will promote the use of walking, cycling, and car sharing.

The likely traffic flows of the revised scheme have been detailed and demonstrate a significant reduction from those associated with the current consented development. Within each assessment, all vehicle trips were considered to be new, and to be by motor vehicle along the public highway, whereas in reality, the promotion of other transport options could reduce this. There are no proposed modifications to on-site roadways already consented, although a single new, occasional use access point is proposed as part of a separate non-material amendment to the current consent.

Although not part of this planning application, the Transport Statement notes that this new access point will be used very infrequently by Western Power to access the sub-station located within the confines of the Enviroparks site. Access will be assured of adequate visibility, and the compound will include sufficient room to manoeuvre vehicles which enter. Signage will instruct engineers to access and leave the compound in forward gear only. A Road Safety Audit has been undertaken for this access point and identifies no issues.

Growth rates have been applied to identify the projected vehicle flows around the network during the construction of the facility. The largest percentage increase of vehicle movements has been calculated to be within the industrial estate network, and is seen to increase during some construction years from the original Transport Assessment. However, within that assessment, modelling demonstrated that, due to current under-use, the road network would not suffer capacity issues if the development proceeded. Although the revised construction figures do increase the use of the estate network substantially during a 2 year period, and especially if coincident with other local development projects, these increases are short term, and with a reduction in the operational traffic of the development now proposed, the available highway network is considered to remain suitable and sufficient for the needs of the revised scheme, and the impact of the development on the traffic flows in the area will be minimal.

The environmental effects of the proposed additions to traffic flows have been assessed with consideration to the potential for noise and vibration, and air pollution. The additional traffic will have a neutral impact on the current noise levels, and negligible impact on the local air quality. Within the original 2008 Transport Assessment, contributions to driver and pedestrian delays were considered negligible, although increased traffic flows could have an impact on driver or pedestrian safety. The on-going widening of the A465 is aimed, in part, at improving road safety and reducing delays along the link.

The only additional risk from the proposal therefore, will come from any increased traffic volume. Once operational, the vehicle movements associated with the revised development will reduce significantly from those which are already consented. During construction, revised figures provided by the Construction Advisor suggest an increase on those originally proposed. However, percentage increases of more than 5 % are only predicted on the estate roads, which are currently under-used. Thus, although the latest figures are calculated to have a more significant contribution to current traffic levels than those construction vehicle movements previously assessed, especially when in combination with the construction of other local developments, the impacts will be short term and the significance of the contributions is a factor of the minimal use of the roadways during the 2008 traffic counts. Hence the impact is considered to be minimal in real terms.

The potential for increased air pollution from the traffic movements of the proposed development have been considered through the application of the DMRB model to assess the local effects of traffic loadings. The model has been run applying current or projected 'no change' data, before the incorporation of the development traffic loadings. The increase in pollution from all substances through the addition of the development traffic is very low and can be considered negligible.

As each of the impacts considered can be described as negligible (impact barely perceptible) or minimal (a small impact on the highway or environment) positive or negative effect, there are no further mitigation measures proposed for the small residual impacts, and the proposal can be deemed acceptable.

7. REFERENCES

- (1) Transport Assessment for a Proposed Development on Hirwaun Industrial Estate. Enviroparks Hirwaun Ltd, Hirwaun Industrial Estate, Aberdare. Report Issue 1, October 2008, prepared by Environmental Visage Limited as part of the original 2008 Environmental Statement.
- (2) The Wales Parking Standards 2008. January 2008. CSS Wales Development Control Forums. © CSS Wales 2008.
- (3) Rhondda Cynnon Taf Local Development Plan. Supplementary Planning Guidance: Delivering Design and Placemaking: Access, Circulation & Parking Requirements. March 2011.
- (4) Guidelines for the Environmental Assessment of Road Traffic. Guidance Notes No. 1. Institute of Environmental Assessment.
- (5) Design Manual for Roads and Bridges. Volume 11 Environmental Assessment; Section 3 Environmental Assessment Techniques. Part 1 HA 207/07 Air Quality. May 2007.

8. GLOSSARY

Traffic flow - The number of motor vehicles in a given period of time, expressed as a two-way total.

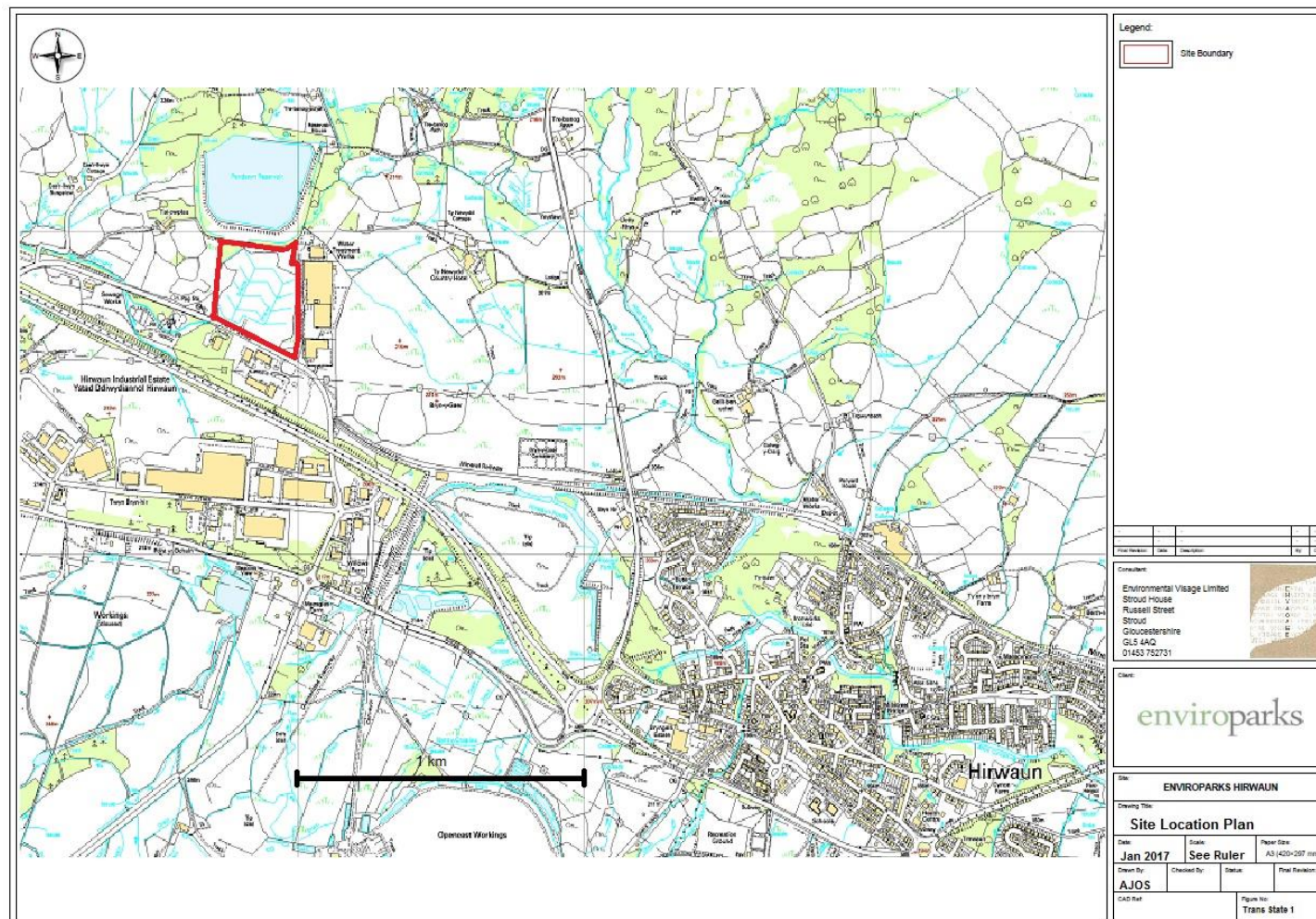
Vehicle trips or visits – a one-way journey.

Vehicle movements – a two-way journey.

AADT - Annual Average Daily Traffic (the average flow on an average day). This can be expressed as AADT, 5 day AADT (Monday to Friday) or 7 day AADT (Monday to Sunday).

HGV – Heavy Goods Vehicle.

Figure 1 Site Location Plan



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Appendix 1 Summary of 2015 Traffic Count Data for the Road Network in the Vicinity of the Enviroparks Development

Road	RoadCategory	Easting	Northing	Starts	Ends	Pedal Cycles	Motorcycles	Cars/Taxis	Buses/Coaches	LightGoodsVehicles	All HGVs	All Motor Vehicles
A465	Trunk Road	292600	207000	LA Boundary	A4059 Hirwaun	6	91	13670	49	3412	830	18052
A465	Trunk Road	296000	205080	A4061	A4059	7	131	15222	62	3697	1440	20552
A465	Trunk Road	300000	207070	A4059	B4276 Merthyr Rd	2	67	12085	117	3063	1025	16357
A465	Trunk Road	301000	207380	B42776 Merthyr Rd	Swansea Rd	3	69	17376	165	3960	1217	22788
A465	Trunk Road	305000	208600	A4054	A4060	0	28	13611	66	3027	1104	17837
A465	Trunk Road	308050	208450	A4060	LA Boundary	2	195	20972	165	4991	1380	27703
A4059	Principal Road	295082	208013	A465	C-road west of Chapel Rd	25	77	2942	65	544	572	4198
A4060	Trunk Road	306630	207200	A4102	A465	5	13	9871	38	2254	680	12855
A4061	Principal Road	292270	202000	Hill St, Treherbert	A465 / A4059	24	47	2212	9	781	176	3224

Appendix 2 Construction Traffic Data Estimated by Dawnus Construction

ENVIROPARKS PHASE 2 - WASTE PROCESSING & GASIFICATION PROJECT																								
enviroparks																								
FORECAST OF VEHICLE VISITS TO SITE																								
INCLUDING, MOVEMENTS OF STAFF, OPERATIVES, PLANT & MATERIALS																								
	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
<u>DAWNUS CIVILS, STRUCTURES AND BUILDING SERVICES</u>																								
DAWNUS VEHICLE VISITS PER DAY	46	53	59	88	107	107	112	120	125	123	122	102	88	81	63	68	53	45	44	47	54	48	44	38
<u>BIOMASS POWER LIMITED</u>																								
BPL VEHICLE VISITS PER DAY	0	0	0	0	0	0	17	26	39	41	52	60	60	69	69	78	78	69	69	62	62	54	54	45
<u>BALANCE OF PLANT</u>																								
BOP VEHICLE VISITS PER DAY	0	0	0	0	0	0	7	11	17	17	22	26	28	32	32	35	35	32	32	28	30	26	26	23
<u>OKAY ENGINEERING</u>																								
OKAY VEHICLE VISITS PER DAY	0	0	0	0	0	0	0	0	0	0	0	14	21	29	29	35	35	38	38	35	37	33	27	20
<u>EPC OR EPCM</u>																								
STAFF VEHICLE VISITS PER DAY	2	3	3	3	4	4	4	5	5	6	6	8	8	10	10	10	10	10	10	10	10	10	8	8
<u>ZEUS & ENVIROPARKS</u>																								
STAFF VEHICLE VISITS PER DAY	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3rd PARTY VISITS PER DAY	8	8	8	10	10	10	12	12	14	16	16	16	18	18	20	20	20	20	20	20	20	18	16	14
TOTAL VEHICLE VISITS PER DAY	58	66	72	103	123	123	154	176	202	204	220	228	225	241	225	248	233	216	215	205	215	191	176	149



Appendix 3 Summary of Parking Requirements for Revised Development Area

Visitors Centre and Offices	Gross Floor Area m2	Parking Requirements 1 space per 25 m2, plus a commercial vehicle bay			
Visitors Centre and Offices	791			Bicycles	
Guard House	103	Cars	Commercial	Staff 1 / 200 m2	Visitors 1 / 1,000 m2
Total	894	35.76	1	4.47	0.894
General Industrial Units	Gross Floor Area m2	Parking Requirements 1 space per 80 m2		Staff 1 / 200 m2	Visitors 1 / 1,000 m2
Substation	220			29.53	14.77
Fuel Preparation Hall	5098				
Fuel Store, Gasification and Turbine Halls	9448	Minimum Operational Area	Non Operational Area	Maximum Spaces	
Total	14766	1,476.6	13,289.4	184.58	
Maximum Total Spaces	220	5,587	Actual Op Area m2	Spaces and 1 commercial vehicle bay	
Actual Spaces	104	Proposed Provision, plus one commercial vehicle bay			
Reserved Disabled Spaces (5 %)	5	6			
Motocycle Spaces (5%)	5	6			
Bicycle Spaces (total)	50	20			

Appendix 4 Projects which Potentially Impact In-Combination with Enviroparks, but which have been Discounted

Project and Proposal	Impact on Traffic	Effect on Enviroparks
Former Ferraris Bakery Co Ltd, Bryngelli Est, Hirwaun, Aberdare, CF44 9PT Demolition of existing buildings and erection of foodstore (Class A1), petrol filling station, highways works, car parking, landscape and ancillary works	Weekdays: 190 am peak hour movements and 527 pm peak hour movements. However, access is off Rhigos Road between Hirwaun Centre and the A4059. Therefore, although there will undoubtedly be an impact on the A465 and the A465 / A4059 / A4061 roundabout, this is not quantified.	Development site was purchased at auction in 2016. Planning Consent is valid until 2019, however there is no information on the progress of any potential development at this stage. With this in mind and the limited data on the potential impact of the development on the main roads of concern to the Enviroparks development, no further assessment is made of the development of the Ferraris Bakery site here.
Green Frog Connect Ltd, Hirwaun Industrial Estate, Main Avenue, Hirwaun, CF44 9UY Standby embedded STOR power plant with associated transformers / generators and connection to National Grid	Limited once operational	STOR has been operational since 2012 and now involves negligible vehicle movements.
Hirwaun Energy Centre Unit 43 - 44 Seventeenth Avenue, Hirwaun Industrial Estate, Hirwaun, Aberdare, CF44 9UP Change of use and development of the existing B2 industrial unit into a renewable energy generation production facility.	14 - 18 HGV trips per day (28 - 36 movements in total) per day. 22 staff trips (4 office staff and 18 shift staff = 44 two way movements).	The combination of HGV and staff vehicle trips equates to 62-70 vehicle trips per day. This however constitutes a reduction on previous uses which will be part of the original baseline assessment, and hence no further assessment is made of the development of the Hirwaun Energy Centre here.

Appendix 5 Result of Air Quality Impact Assessment; Design Manual for Roads and Bridges Methodology.

All receptors			Pollutant concentrations at receptor						
Receptor number	Name	Year	CO *	Benzene	1,3-butadiene	NO _x	NO ₂ *	PM ₁₀	
			Annual mean mg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Days >50µg/m ³
1	Hotel to the north of B4276 junction (Grid Ref. 300550 207375)	2015	0.11	0.18	0.06	18.21	10.56	13.46	0.00
1	Hotel	2016	0.11	0.18	0.06	17.48	10.15	13.33	0.00
1	Hotel	2017	0.11	0.18	0.06	16.84	9.77	13.22	0.00
1	Hotel (With Construction Traffic)	2017	0.11	0.18	0.06	16.86	9.77	13.23	0.00
1	Hotel (With Construction Traffic & Other Developments)	2017	0.11	0.18	0.06	16.89	9.79	13.23	0.00
1	Hotel	2018	0.11	0.18	0.06	16.27	9.40	13.12	0.00
1	Hotel (With Construction Traffic)	2018	0.11	0.18	0.07	16.30	9.41	13.12	0.00
1	Hotel (With Construction Traffic & Other Developments)	2018	0.11	0.18	0.07	16.32	9.42	13.12	0.00
1	Hotel	2019	0.11	0.18	0.07	15.71	9.05	13.01	0.00
1	Hotel (With Construction Traffic)	2019	0.11	0.18	0.07	15.74	9.06	13.02	0.00
1	Hotel (With Construction Traffic & Other Developments)	2019	0.11	0.18	0.07	15.76	9.06	13.02	0.00
2	Building to the east of the A465 roundabout, Dowlais (Grid Ref. 307900 208300)	2015	0.18	0.29	0.14	33.07	15.93	16.42	0.46
2	Petrol Station	2016	0.18	0.29	0.14	31.80	15.34	16.25	0.40
2	Petrol Station	2017	0.18	0.29	0.14	30.78	14.81	16.11	0.35
2	Petrol Station (With Construction)	2017	0.18	0.29	0.14	30.81	14.82	16.12	0.35
2	Petrol Station (With Construction Traffic & Other Developments)	2017	0.18	0.29	0.14	30.87	14.84	16.12	0.35
2	Petrol Station	2018	0.18	0.29	0.14	29.90	14.33	15.99	0.31
2	Petrol Station (With Construction)	2018	0.18	0.29	0.14	29.96	14.34	15.99	0.31
2	Petrol Station (With Construction Traffic & Other Developments)	2018	0.18	0.30	0.14	30.00	14.35	16.00	0.31
2	Petrol Station	2019	0.18	0.30	0.14	29.10	13.86	15.87	0.28
2	Petrol Station (With Construction)	2019	0.18	0.30	0.14	29.15	13.87	15.88	0.28
2	Petrol Station (With Construction Traffic & Other Developments)	2019	0.18	0.30	0.14	29.17	13.87	15.88	0.28

All receptors			Pollutant concentrations at receptor						
Receptor number	Name	Year	CO *	Benzene	1,3-butadiene	NO _x	NO ₂ *	PM ₁₀	
			Annual mean mg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Days >50µg/m ³
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC - (Grid Ref: 295050 205650)	2015	0.12	0.23	0.08	16.55	10.40	15.35	0.16
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1	2016	0.12	0.23	0.08	15.81	9.96	15.21	0.15
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1	2017	0.12	0.23	0.08	15.16	9.55	15.09	0.13
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction)	2017	0.12	0.24	0.08	15.16	9.55	15.09	0.13
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction Traffic & Other Developments)	2017	0.12	0.24	0.08	15.17	9.55	15.09	0.13
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1	2018	0.12	0.24	0.08	14.55	9.15	14.97	0.00
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction)	2018	0.12	0.24	0.08	14.56	9.15	14.97	0.00
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction Traffic & Other Developments)	2018	0.12	0.24	0.08	14.56	9.15	14.97	0.00
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1	2019	0.12	0.24	0.08	13.96	8.75	14.85	0.00
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction)	2019	0.12	0.24	0.08	13.97	8.76	14.85	0.00
3	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 1 (With Construction Traffic & Other Developments)	2019	0.12	0.24	0.08	13.97	8.76	14.85	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC - (Grid Ref: 294250 206300)	2015	0.11	0.21	0.06	13.67	9.01	13.43	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2	2016	0.11	0.22	0.06	13.09	8.64	13.32	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2	2017	0.11	0.22	0.06	12.56	8.29	13.21	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction)	2017	0.11	0.22	0.06	12.56	8.29	13.21	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction Traffic & Other Developments)	2017	0.11	0.22	0.06	12.58	8.30	13.21	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2	2018	0.11	0.22	0.06	12.04	7.94	13.10	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction)	2018	0.11	0.22	0.06	12.06	7.95	13.10	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction Traffic & Other Developments)	2018	0.11	0.22	0.06	12.07	7.95	13.10	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2	2019	0.11	0.22	0.06	11.54	7.60	12.99	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction)	2019	0.11	0.22	0.06	11.56	7.61	13.00	0.00
4	Blaen Cynon Cors Bryn-Y-Gaer SSSI / SAC 2 (With Construction Traffic & Other Developments)	2019	0.11	0.22	0.06	11.56	7.61	13.00	0.00