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Our ref: NB/gmj/2048

Monday, 20 April 2009

Mr Steven J Ball
Principal Planning Officer (Development Control)
Vale of Glamorgan Council
Dock Office
Barry Docks
Barry
CF63 4RT.

Dear Steven,

Re: Planning Application 2009/00021/FUL construction of an Energy Recovery Facility on Barry Dock.

I refer to our recent meeting and your letter dated the 25th March 2009 and the various consultation responses you handed to me at the meeting namely:

- Letter from the Countryside Council for Wales (CCW) dated the 20th March 2009
- Letter from the Environment Agency (EA) dated the 10th March 2009
- Letter from the Curatorial Division dated the 19th February 2009
- Letter from Welsh Water dated the 20th February 2009
- E-mail from Richard May, Ecology Officer, Vale of Glamorgan council dated the 23rd February 2009
- E-mail from Emma Smith, Economic Development Officer, dated the 13th February 2009
- Letter from Kirstian D James, Team Leader Environmental Health (Pollution)

I have also made comment on issues raised by Barry Friends of the Earth in a letter dated the 8th April 2009 from Mr Max Wallis. Friends of the Earth are not a statutory consultee to the planning application process but for completeness I have addressed the majority of points raised. Rather than responding to the responses individually, I thought it more appropriate to deal with subject matters to avoid duplication.

As per my e-mail dated the 30th April 2009 Croft Goode, our architects, have prepared revised elevation drawings and accompanying 3D perspective for the Facility that will be issued shortly. The angular nature of the building has been replaced and the peak height has been reduced from 23.58m to 21.4m above ground level (fins) and 22.8m to 21.3m above ground level (roof). Section drawings showing the relationship of the redesigned Facility to the Docks Office and the Rank Hovis building will also be issued by Croft Goode.

Ecology

I welcome the comments from CCW and the conditions proposed which reflect comments in the Environmental Statement (ES).

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As you are aware, we propose that all site clearance works take place outside the bird breeding season but if for some reason this cannot be avoided a full survey of the development area would be required to demonstrate that breeding birds were absent from the site.

I note the suggested condition regarding the proposed landscaping scheme illustrated in Figure 8.6 of the ES and the need for direct and indirect lighting, subject to health and safety requirements, to have regard to the proposed wetland area. Regarding lighting, BioGen Power would invite the authority to impose a planning pre-condition that requires a lighting scheme to be submitted and approved. Any such scheme could incorporate dark corridors across the site, subject to health and safety considerations. However, I would wish to point out that the ES fully considers the potential of Bats to both roost and forage on the site and the overwhelming conclusion is that "*... the habitat at the site is highly unlikely to support 'bats' or offer habitat of particular value...*". I note the comments made by CCW in relation to section 40 of the NERC Act(2006). I note the requirement to include a pre-condition to deal with the remediation of Japanese Knotweed.

Contaminated Land

The ES at Section 7 Ground Conditions provides the results of a full desk top assessment which considers previous land uses that is informed by an Envirocheck report, supplied by the Landmark Information Group. The ES provides a full review of the Envirocheck report previous land uses and a conceptual site model (a risk assessment) has been developed. Further, and in accordance with the Authority's scoping opinion, a Phase II investigation has been undertaken consisting of the installation of 7 no. trial pits and 4 no. boreholes. I have spoken with the EA regarding the proposed conditions and they point out that the information supplied with the ES appropriately considers land quality issues and the risks posed. However, the reason for including condition No.1, Parts 1 and 2, is to ensure that a single submission of **all** the Land Quality information is submitted to them for consideration at the detailed design in order that the interrelationship between the various elements of the land quality assessment can be considered together.

Foul Sewerage /Water Resources

Attached to this letter is a plan obtained from Welsh Water showing the foul sewerage infrastructure in the vicinity of the site. In BioGen Power's opinion the costs of connecting to the foul sewer would be prohibitive. During the EIA BioGen Power held discussions with the site owners, Associated British Ports (ABP) regarding the provision of private foul drainage infrastructure. BioGen Power is informed that private foul drainage infrastructure is not available on the Docks. The intention is therefore to drain foul water to a septic tank and to remove it to suitable licensed premises. All foul water will be kept separate from surface and roof water. Roof water and surface water will be kept separate up to the proposed interceptor where after they will be mixed. The Energy Recovery Process will not produce trade effluent. Please note that condenser water and/or roof water will be reused in the quench pits and/or in steam production.

Former Landfill

I note the comments made in relation to the former BP Chemical Landfill. However, the Phase II site investigation indicates that the made ground overlying the natural ground consists of construction and demolition waste.

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Notwithstanding this we are fully aware that any hazardous waste encountered during the construction phase will need to be managed appropriately. As referred to above, a full desk top assessment has been undertaken to investigate the previous uses of the site and this included consultation with ABP.

ABP do not have any information relating to the location of the PB Chemical Landfill. Gas monitoring has been undertaken and the monitoring results provided to the EA as part of the EIA process. The results indicate that the site is not producing landfill gas and as such I would conclude at this point that no gas is migrating off site.

Wales Waste Strategy

I note the comments made in relation to The Waste Framework Directive. The title *Energy Recovery Facility* accurately described the Advanced Thermal Treatment of the residual waste delivered to the Facility whereby the energy inherent within the residual waste is recovered. The energy recovery process consists of two stages; first the waste is heated in a reduced oxygen environment to produce a synthetic gas and then this gas is oxidised in an oxygen rich environment. The fact that the fuel is a gas means that the combustion process is very efficient. In addition the boiler system has been specifically designed to maximise the transfer of heat from the flue gases to the water in the boiler to produce steam.

BioGen Power is in discussion with Western Power Distribution Limited (WPD) and has undertaken an initial feasibility study that concludes that the necessary infrastructure is available near to the proposed site to allow an appropriate connection to be made to the local grid. At this stage it is not appropriate to pursue the connection further but if planning permission is granted the connection capacity will be secured. Any connection would be via an underground cable. As we have discussed, it is BioGen Power's intention to provide heat in the form of steam/hot water to local business/residents and the realisation of such plans could be dealt with by the authority through conditions. There are existing businesses within the vicinity of the docks that have already expressed an interest in taking heat from the Facility but as referred to below if the Facility were built BioGen Power expects additional opportunities in this regard to arise.

Energos Facilities in Norway operate as combined Heat and Power Plants and have an excellent track record in this regard. It is the company's intention to replicate this at Barry. I would note that the Energy Act 2008 conveys powers on Local authorities to require businesses to use a proportion of their energy requirements from renewable sources, I am sure that this will prove to be a useful mechanism to allow BioGen Power to expand the CHP network to new developments on the Dock and nearby. The CHP network in Forus Stavanger is being continually expanded and the attached slide shows the CHP network as it stood a couple of years ago. As we have discussed, the ability to export heat does not lie with BioGen Power, the company will make heat available and endeavour to export this heat. One would anticipate that the fiscal, environmental and public relations benefits associated with using renewable forms of energy, coupled with the ever developing legislative framework, will have a major effect in the development of CHP.

Inward Investment

I note the EA's comments in relation to inward investment.

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BioGen Power is of the view that the development of an Energy Recovery Facility on Barry Dock could be a precursor to the redevelopment of the whole of the docks and the creation of a high quality light industrial/commercial/technological environment to complement the authority's development aspirations for the Docks area.

Sub Group/Waste Stream/ Ministerial Statement

The proposed facility is predicated on the requirement to provide recovery capacity for Industrial and Commercial and an element of Construction and Demolition waste airings. The Sub Group is not a formal and established arrangement and does not impact upon the Council's procurement process that is concerned with the management of Municipal Solid Waste. The ministerial statement referring to a 30% cap on the amount of waste that a Local Authority can dispose of at an Energy Recovery Facility applies to wastes that are under the control of the local authority i.e. Municipal waste, not industrial and commercial/construction and demolition wastes as detailed in the response from the authorities waste management department.

I note your officer's comment "... that there is obviously a significant need for disposal and treatment facilities for industrial and commercial wastes in Wales and particularly in south east Wales where the majority of these wastes are generated..." The proposed Facility will provide much needed recovery capacity for CIW and an element of C&D waste generated in Barry;

I note your officer's comments that "...should Prosiect Gwyrdd procure an MBT option a plant similar to that 80,000 t/y EFW facility seeking planning at Barry Dock could play a part in the Councils future Waste Management Strategy...";

I note the advisory comments made by the EA, clearly if the proposed development were granted by the authority BioGen Power would need to submit an application for an Environmental Permit to the EA under the Environmental Permitting Regulations 2007 that would regulate many of the advisory items they refer to;

I note your officer's comments in relation to the Regional Waste Plan (RWP) 1st Review 2008. The RWP is principally concerned with the management of MSW but also relates to the following waste streams:

- Industrial Waste
- Commercial Waste
- Construction and Demolition Waste.

The RWP states that "...the preferred options would ensure that the targets for the management of the other principal controlled waste streams are also met...". The RWP considers 4 main options that were assessed using the following techniques:

- Life Cycle Assessment – to determine the **Best Practical Environmental Option (BEPO)**
- Sustainability Appraisal – to determine the Sustainable Waste Management Option
- Strategic Environmental Assessment; and
- Strategic Health Impact Assessment

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Following an assessment of the options against the above criteria seven Preferred Options have been selected as the RWP Technology Strategy and Gasification (as proposed by the planning application) is included within the seven Preferred Options at option (3b). The RWP states that "...*The options were generated on the basis that, in an integrated recovery and disposal strategy for all waste streams, MSW and waste within the other principal controlled waste streams that are similar to MSW and waste within the other principal controlled waste streams that are similar to MSW will be managed together...*".

The proposed Energy Recovery Facility at Barry has been sized to complement CIW and C&D reduction and recycling initiatives and will only accept residual waste. As the proposed development is consistent with the RWP Waste Technology Strategy the proposal is considered to be BEPO.

I would also like to make some observations regarding the RWP waste management strategy that may be of use to the SE Wales Regional Waste Group in future. At section 8.4.7 the RWP states For Option 2 (an EFW led strategy for residual waste) the Environmental Report notes; "...*This option has the potential to enhance resource recovery through various pre treatment processes. However, it is assumed for the purposes of the assessment that for the gasification process much of the BMW remaining, following extraction of RDF, goes to landfill without further treatment. This means that sub-Option 2b as modelled does not meet the WAG target for diverting BMW from landfill...*".

I would like to point out that the Energos Energy Recovery Process is very flexible in treating many different waste types with varying calorific values and this is why it complements other forms of waste management treatment options located higher up the waste hierarchy. The Energos process would be capable of treating all the output from an MBT plant, not just the RDF, allowing the WAG target for diverting BMW from landfill to be met.

One last point in relation to the RWP sub option 3a (high levels of recycling followed by pyrolysis) scores best in the assessment of the sub options and the RWP states: "...*The fact that pyrolysis scores well may be due to the German plant used within the WRATE tool. Efficiency and emissions standards in Germany are higher than in some other European countries so its overall performance may be better than other technologies...*". The Energos technology was developed in Norway where efficiency and emission standards are equally high.

Air Quality

As discussed the Air Quality section of the application assesses air quality impacts across a sizable grid. The ES has reported on impacts at specific receptors close to the proposed development but data for any grid co-ordinate within the modelled area can be provided. Attached to this letter is an addendum report to the detailed Air Quality Modelling provided in the ES that assesses the air quality impacts at two points within the Barry Water Front Development sites. The receptor points are shown on a plan within the document and are the two closest points of each development footprint. The combination effects for the BioGen and the Biomass Proposals are being prepared and will include the receptor points modelled in the attached Air Quality Addendum.

Within the ES a number of distances are quoted to the nearest residential receptors, however, such distances are to the site boundary – the air quality assessment quotes distances from nearby receptors to the stack position and so may appear to miscalculate. Notwithstanding this I have asked PB to reassess the distances to avoid any uncertainty.

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Dioxins, as stated in the ES actual emissions data collected by Energos and the equivalent of the EA in Norway indicates that the concentration of dioxins in the flue gas is 1% of the Waste Incineration Emissions Limits Value. However in accordance with the Environment Agency best practice dioxins have been modelled at the WID limits.

The assessment of the health impacts associated with dioxins emitted from the Facility follows the methodology given in Her Majesty's Inspectorate of Pollution which assumes that the exposure scenario is worst case – a subsistence farmer and child of a subsistence farmer - the exposure scenario is modelled in this way because 99% of the public's exposure to dioxins is estimated to come from the diet with animal products being the dominant source. The results of the model indicate that the exposure to dioxins would be above the World Health Organisation recommended Tolerable Daily Intake but that the model results are not realistic for human exposure because the exposure pathway is not realistic.

Air Quality background data is not available for all the pollutants that are required to be modelled but as the level of certain pollutants are low this is a clear indication that the levels of pollutants that are not available will also be similarly low notwithstanding the proximity of the Dow Corning Facility. Having discussed this with our consultants they advise that this assumption is not unusual for Air Quality Assessments

Odour

The ERF will not give rise to fugitive odours. The primary method of odour mitigation is incorporated within the reception hall. Once vehicles enter or leave the reception fast closing shutter doors will close behind effectively sealing the waste storage and handling areas. The reception hall (including the waste and fuel silos) is maintained below atmospheric pressure so that there is always an air flow into the building. **All** the air extracted from the reception hall is used in the Energy Recovery Process and therefore any odours are destroyed before being released as a flue gas via the stack.

Pest/Litter Management

A pest management scheme will be prepared as part of the Environmental Permit Application and the Facility (if constructed) will be regularly monitored by an EA inspector. As all unloading of waste will take place within the reception hall litter control will not be required other than in the reception hall itself.

Noise

The ES includes the sound power output levels (SPOL) for the main items of plant used within the Energy Recovery Process at page 126 Para. 9.4.13 table **9.4 Summary of Plant Noise anticipated for use at the Barry Site.**

The Sound Power Output levels are used to present a worst case assessment but at this stage in the design full details of all the plant cannot be provided. I would invite the authority to include a condition on any positive decision notice requiring full details of the noise attenuation measures incorporated in the buildings construction to be submitted and approved together with any other conditions the EHO officer felt were appropriate to demonstrate that the Noise assessment does indeed overstate the SPOL levels used in the EIA.

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The in combination effects for the BioGen and the Biomass Proposals are being prepared and will include the receptor points modelled in the attached Air Quality Addendum.

Construction Phase

A Construction Environmental Management Plan (CEMP) would be prepared prior to the construction of the Facility.

Ground Water

Ground Water will not be abstracted.

Education

I note your comments and this is something that the company is very keen to pursue. The company will consider providing a dedicated educational facility on site at the detailed design stage. However the Company will seek in co-operation with stake holders to promote sustainable waste management.

Unilateral Undertaking

I understand that contributions by BioGen Power have been agreed and will feature in a legal agreement.

Technical Presentation

As discussed, the management team at BioGen Power would very much like to offer to Council members the opportunity to attend a technical presentation ahead of the planning committee meeting. We recently held a technical presentation for members of the planning committee at Newport City Council that was very well received. Gasification is not a process that many people are familiar with and many believe that it is incineration with a different name, which of course as your waste management team points out, it is not. The presentation lasts for about 40 minutes, which includes the showing of a 'technology at work' DVD. In this regard I am told that some officers from the Vale of Glamorgan have visited the Facility in Stavanger and reported back to the Council. I would wish to make councillors' and officers' aware that the proposed development is a similar Facility although at a larger scale and incorporating additional environmental controls and design improvements.

Bottom Ash

The bottom ash from the proposed development will either be classed as inert or as non hazardous. The ES assumes the bottom ash will be removed from the site in 21 tonne vehicles. Once the ash is removed it will either be landfilled or it will be used for block making/fill either directly if classified as inert or via a treatment process if classified as non hazardous.

The planning application does not propose that bottom ash be treated on the proposed development site. Handling procedures for the bottom ash will be developed and submitted to the EA as part of any Environmental Permit application.

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Fly Ash

According to the European Waste Catalogue Fly Ash is termed an absolute hazardous waste. The ES assumes that the 4% Fly Ash generated by the proposal will be removed from the facility in HGV vehicles. The material will either be removed to a suitably licensed disposal facility or it will be removed to a treatment facility either to reduce its hazardous nature before being landfilled or to produce a reusable material for general fill, road building etc. Handling procedures for the bottom ash will be developed and submitted to the EA as part of any Environmental Permit application. Any handling procedure for Fly Ash will need to take account of its difficult physical characteristics i.e. a sealed system of transfer from the dust silo to a sealed vehicle for safe onward transport. Such handling procedures exist for a range of different hazardous waste types that pose similar handling difficulties to that posed by Fly Ash.

As stated within the ES BioGen Power is currently investigating emerging technologies for the treatment/processing of bottom/fly ash. Clearly such technologies are at early stage in their development but nevertheless could, in time, play an important role in managing fly ash produced by thermal treatment facilities. Such facilities would need to be strategically located to deal with the increasing volumes of ash likely to be generated as residual waste is diverted from landfill to ERF Facilities.

I trust the information provided in this letter meets with your approval but please do not hesitate to contact me if I can be of further assistance to you and/or the Consultees.

Yours sincerely,



NB Nicholas Baston
Planning Property & Licencing Manager

Enc: South Quay Strategic Development Site, Barry Docks Air Quality Assessment
Slide showing CHP network at ERF in Stavanger

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