Dear Sir/Madam,

**Re: Pre-application consultation about Egnedol's development proposals for the former RNAD Blackbridge site near Milford Haven**

Please find below comments by Biofuelwatch, Friends of the Earth Cymru and Pembrokeshire Friends of the Earth about the Environmental Impact Assessment for a waste and biomass gasification plant with ancillary developments at the former RNAD Blackbridge site. Our organisations object to the proposal

**Site selection:**

Egnedol states that site selection was conducted by looking at five potential sites identified through "sales notices and market knowledge". However, they confirm that the four other sites looked at were not available for purchase. This means that they only considered this one single site available for purchase.

Egnedol further states that the site selection criteria included "brownfield land if possible", "environmental impacts", "existing determinations and classifications", and "proximity to port facilities and existing jetties".

However:

- As the planning document on Ecology confirms, the site provides habitat for several European Protected Species, namely horseshoe bats, otters, and badgers and that those will be adversely affected by the development, with Egnedol proposing "compensatory" mitigation strategies for the destruction of badger setts, bat roosts and otter habitat. Furthermore, the jetty lies within the Pembrokeshire Marine Special Area of Conservation (SAC), and development site is in an area which Natural Resources Wales has identified as being of particular importance for bats. And the site is within 10 km of three Special Areas of Conservation, one Special Protection Area, a National Park, and 12 SSSIs, and within 2 km of 16 ancient woodland sites. ***We therefore cannot see how this choice of site accord's with Egnedol's site selection criterion of low environmental impacts***.

- Although a jetty is present, the local authority's Scoping Opinion, dated 11th December 2015, states: "*Following previous survey work, it was understood that the existing jetty is beyond practical repair*." ***If the existing jetty is beyond repair then it obviously would not meet the stated site selection criteria***. The EIA confirms that the existing jetty will merely be used as a "temporary works structure" during the construction of a new jetty. We would further point out that the environmental impacts of building a new jetty inside an SAC will be significant greater than that of using an existing jetty.

***Two of Egnedol's site selection criteria thus do not appear to be met and, furthermore, they provide no evidence of having carried out a meaningful search of other potential sites, having solely considered four other sites which were not available for purchase***.

**Technology selection:**

We believe that Egnedol should provide evidence that the technologies which they put forward are proven and viable. As we set out in a previous briefing (http://www.biofuelwatch.org.uk/2016/blackbridge-report/), we do not believe this to be the case for key technologies involved in the development. In particular, we believe that Egnedol should provide answers to the following questions:

1) All of the project activities which rely on waste heat, including aquaculture and the cheese processing unit, will rely on the uninterrupted, continuous operation of the gasification plant. Can Egnedol provide evidence of an existing waste/biomass gasification system of the type described in the EIA (i.e. involving syngas cleaning to a high standard and syngas combustion to power Jenbacher gas engines) which has achieved long-term uninterrupted continuous operation?
2) What would be the heat source for the project activities that rely on waste heat during scheduled or unscheduled downtime, e.g. during routine maintenance of the gasifier?
3) Can Egnedol provide evidence of a successful operational plant that uses Fischer-Tropsch technology to convert syngas derived from biomass or WDF to liquid biofuels? Biofuelwatch is aware of several such plants having been built worldwide, mainly in the US, which failed to operate successfully.
4) Can Egnedol provide details of how much of the syngas would be diverted to biofuel production and how this would impact on the electricity output and the conversion efficiency of the gasification plant?
5) Part of the project application is for an algal production unit. We believe that Egnedol should be required to submit significantly more information about this unit, including about energy use, nutrient use, and effluents. Biofuelwatch is familiar with much of the work that is being conducted into algal biofuel Research and Development worldwide. It is widely accepted that algal biofuel production is not commercially viable but remains in the research and development stages[1]. The two main pathways which are being developed involve either open ponds or photobioreactors, i.e. plastic tubing which contains the algae but exposes them to sunlight. Egnedol, however, propose to grow the algae inside a concrete building, i.e. without exposure to sunlight. We therefore believe that they ought to provide detailed evidence of

    a) the energy inputs required and the sources of energy (including details of electricity requirements);
    b) the energy outputs from algal biofuel production;
    c) the fertiliser requirement for the algal production unit;
    d) the impact of diverting CO2-rich syngas from the gasification plant to the algal production unit on the gasification plant's electricity output and on the conversion efficiency;
    e) how Egnedol propose to ensure continuous CO2 fertilisation during scheduled and unscheduled plant shutdowns;
    f) any evidence of a similar existing algal production unit inside a closed building and grown on power plant waste water;
    g) plans for treating the nutrient rich waste water from the algal production unit and the environmental impacts of such waste water treatment.

**Feedstock details and sustainability and carbon assessment:**

The EIA gives no details of the type of feedstock that will be gasified, except for stating that it will be "*a combination of biomass from sustainable plantations and the biomass fraction of WDF*".

Pembrokeshire Council's Scoping Opinion required Egnedol to provide "*an evaluation of the contribution towards reducing CO2 emissions and comparisons with alternative technologies, as well as an assessment of any potential wider environmental benefits should be included*". We do not believe this has been satisfied in the absence details about the feedstock. We believe that Egnedol should specify the type of biomass that will be used (e.g. wood), the proportion of virgin wood and that of WDF, and the

[1] See for example https://ec.europa.eu/jrc/en/news/biofuels-algae-budding-technology-yet-become-viable .

region(s) from which virgin wood and WDF will be sourced. We also believe that a full sustainability assessment in relation to the feedstock should be included.

We would like to point out in this context that an Egnedol spokesperson advised residents during a local 'consultation' event in January this year that 50% of the feedstock would come from fast-growing tree plantations in Greece and Morocco, referring to an article about proprietary hybrid trefolia tree plantations by Anagenesis Trees Corporation. Biofuelwatch has received an email from the CEO of Anagenesis Trees Corporation which states: "*The Morocco project and Greece projects are on*[sic] *the pipeline but for a later stage but Egnedol has nothing to do with them, therefore, the Egnedol statements false misrepresentations in more ways than one*."If the wood source which Egnedol claimed to be planning to use is not in fact available, does this, for example, mean that the project will rely predominantly or solely on waste derived fuel? And would the Waste Derived Fuel include only Municipal Solid Waste, only waste wood, or both?

Furthermore, we wish to point out that the application contains contradictory claims about the amount of feedstock that would be gasified. It states that around 480,000 tonnes of biomass a year will be gasified, yet the Traffic and Feedstock Logistics assessment is based on a feedstock figure of 52 tonnes per hour, which equates to the much lower figure of 416,000 tonnes a year. It is not transparent what figure has been used in the Air Quality model.

And finally, we would like to point out that the estimated 'CO2 reductions' appear to be based on inflated figures for average CO2 emissions from energy production for the National Grid. It is claimed in the EIA that "*it is estimated that 660 tonnes of CO2 are generated per GWh of electricity supplied*." Yet according to statistics published by DECC in 2015, the estimated emissions per GWh of electricity supplied via the National Grid in 2014 was only 394 tonnes of $CO_2$[2].

**Compliance with the waste hierarchy and waste proximity principles set out in Welsh planning policy:**

The Environmental Statement on Planning Policy confirms that the Welsh planning policy "Towards Zero Waste – Overarching Waste Strategy Document for Wales" is relevant to the application. Another relevant planning policy document is Technical Advice Note 21: Waste (2014). Both documents highlight the requirement for all waste management developments, including energy from waste schemes, to comply with the waste hierarchy and the waste proximity principles. The waste hierarchy principle in particular is central to the EU Waste Framework Directive

Egnedol's EIA fails to demonstrate compliance with those policy principles. It lacks information about the maximum amount of waste and the type of waste that would be gasified, as well as information about where this waste would be procured, what the availability of this type of waste is regionally, and whether a market assessment indicates that it would be diverted from landfill rather than from uses higher up the waste hierarchy, namely recycling. We believe that a detailed assessment of evidence related to the waste hierarchy and waste proximity principles must be required for an application of this type.

**Conversion and resource use efficiency of the proposed development:**

Efficient use of waste materials is one of the principles set out in Technical Advice Note 21: Waste, which also states that recovery of energy from mixed municipal solid waste

[2] gov.uk/government/uploads/system/uploads/attachment_data/file/447632/DUKES_2015_Chapter_5.pdf

should happen in "high efficiency facilities". "Towards Zero Waste – Overarching Waste Strategy Document for Wales" also emphasises the need for "high energy efficiency Energy from Waste plants".

Furthermore the Overarching National Policy Statement for Energy (2011) states:

> "*Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible*."

Energy and resource efficiency are thus clearly important planning concerns. However, the EIA contains no figures from which the conversion efficiency of the gasification plant nor the overall energy and resource efficiency of the development can be ascertained. Section 3.2.2 of the EIA document "Site selection, technology selection and project description" contains general claims about the conversion efficiency of gasification which we believe are misleading. The conversion efficiencies of different gasification plants and technologies vary considerably. Some are in fact less efficient than conventional combustion plants. And clean syngas cannot contain 100% of the energy content of solid biomass, not least because the gas needs to be cooled down before it can be cleaned. We believe that specific data must be provided for his proposed development.

We also believe that the resource efficiencies and energy use of the ancillary developments, such as the synthetic fuel plant, should be addressed in detail in the EIA.

**Job claims:**

According to Egnedol's EIA, 450 full-time jobs will be created during the first 49.9 MWe phase of their development. 150 of those jobs are to be located at the gasification plant itself.

We believe that Egnedol should provide evidence to back up their jobs claims. Biofuelwatch has extensive experience with analysing planning applications for biomass power plants, including gasification plants. We have never come across a company claiming that a 49.9 MWe power plant, whether it uses conventional combustion or gasification technology, creates anywhere close to 150 jobs during its operational phase. For example, Forth Energy's planning applications for biomass power stations of up to 200 MWe capacity stated that those would require 40 full-time jobs. A current planning application for a 10 MWe waste wood gasification plant in Andover, Hampshire[3], states that 16 full-time jobs would be created.

We believe that Egnedol should also publish the assumptions and methodology for calculating the number of jobs to be created for the ancillary activities – such as 149 jobs in packaging.

**Paucity of information about the environmental impacts to proposed activities other than the gasification plant**

We are concerned that only minimal and in some instances highly questionable information about the environmental impacts of, for example, the fish and prawn farm, the algal farm, or the biofuel refinery are provided.

[3] Planning application for an Energy Recovery Centre at Walworth Industrial Estate, Andover, Hampshire County Council, Ref: 16/00058/CMAN

For example, the EIA states that a Recirculating Aquaculture System (RAS) will be used which will not result in any effluent that needs to be disposed of. However, we understand that RAS merely reduces effluent – it does not reduce it to zero. We also believe that concrete estimates of water requirement should be provided.

No data for water requirement for the algal farm and for the treatment of the waste effluent after the harvest of algae has been provided.

Best regards,

Almuth Ernsting

Co-Director
Biofuelwatch