

Dear Sir/Madam,

Re: Proposed Wood Gasification Facility Woodham Road, Barry, Reference 2015/00031/OUT

I am writing on behalf of Biofuelwatch to object to the application for outline planning permission to change the existing planning consent for a waste wood pyrolysis plant at Woodham Road, Barry. Biofuelwatch is a UK/US based organisation that researches and campaigns on the impacts of large-scale industrial bioenergy. As part of our work, we provide support and advice to local residents concerned about proposed biofuel and biomass power plants.

We have serious concerns about apparent contradictions contained in the planning documents and we believe that the application cannot be adequately considered without further information and clarification from the applicant.

This is an outline planning application seeking changes to the existing planning consent granted by the Planning Inspector in 2010 (Ref 2008/1203/FUL). According to the Planning Statement, the changes proposed relate to

- 1) Changes in the technology which would make the development more efficient and generate more electricity from the same amount of waste wood;
- 2) Changes to the layout of the buildings and site;
- 3) Changes to the height of the buildings, including the stack height, which will be increased from the consented 20m to 43m.

However, the Air Quality Assessment reveals that ***the proposed change in technology is towards one which will significantly increase emissions of air pollutants***. NO_x emissions are to be increased more than five-fold. We have compiled a table comparing the stack emissions predicted in the air quality assessments for the original 2008 and the 2015 applications respectively:

Year	2008	2015
Stack height	20 m	43 m
Stack diameter	0.9 m	1.23 m
NO _x emissions rate	0.8132 g/s	4.5 g/s
PM10 emissions rate	0.0407 g/s	0.22 g/s
CO emissions rate	0.2033 g/s	1.1 g/s
SO ₂ emissions rate	0.2033 g/s	1.1 g/s
HCl emissions rate	0.0407 g/s	0.22 g/s
HF emissions rate	0.0041 g/s	0.02 g/s
Hg emissions rate	0.0002 g/s	0.011 g/s

Furthermore, we have taken a closer look at the proposed technology and at the information contained in the planning documents, and we have also compared it with a nearly identical 'change of planning consent' application in Barrow-in-Furness by the same developer. Based on this, we believe that this ***proposal is likely to result in a less efficient plant than the one that had been consented, and use significantly more waste wood to generate more electricity less efficiently***. We believe that it

may even result in an efficiency level so low that, using the R1 formula, the proposed plant might no longer be classed as 'energy recovery' as opposed to 'waste disposal'. If this is correct, then it would have implications in relation to several material planning considerations, especially:

+ Traffic impacts;

+ Compatibility with the waste hierarchy and proximity principles contained in planning and waste-related policy and vital to the sustainable treatment of waste;

+ Compatibility with the principles of 'good design' in relation to energy recovery being maximised, set out in national energy, bioenergy and waste policies.

If it was confirmed that the new outline application would indeed result in more waste wood being burned less efficiently, then we would like to make a detailed submission on those points. However, ***we do not believe that adequate consideration of all material planning issues is possible until the developer has supplied more information in relation to missing and contradictory information. We therefore hope that the local authority will make a request for such further information and either re-launch or extend the consultation period once this has been obtained.***

Contradictions contained in the planning documents:

- The present Planning Statement claims:

"It is proposed to replace the system detailed in the 2010 Permission manufactured by Prestige Thermal Equipment (which produced a 9 MW average net output) with an alternative system made by the globally established manufacturer Outotec (www.outotec.com). The Outotec technology is more efficient and will result in the average net output increasing to 10MW for the same amount of fuel input." AND *"The wood fuel is fed into the gasifier system where it is converted into a raw natural gas ('syngas') which is reformed and used as the primary fuel in the gasification boiler to generate steam to power the steam turbine. The Outotec gasifier will process up to 72,000 dry tonnes of wood waste per year to produce an average net output of up to 10 MW (compared to 9 MW with the Prestige system) and is more flexible with respect to moisture content."* AND *"At the time of delivery, feedstock has a variable moisture content, the water having a function as a reformation agent in the gasification process"* (my highlights).

- However, the Planning Statement for the application consented in 2010 stated:

"The plant will be capable of pyrolysing up to 72,000 tonnes of wood per annum. This equates to approximately 216 tonnes per day, which will be sourced from wood recycling operations locally under a fuel agreement." AND *"Wood fuel at up to 35% moisture content is deposited into a hopper by a wheeled loading shovel which feeds a chipper which reduces the size of the wood prior to entry into the dryer"*.

- We note that the Planning Inspector's decision to approve the original planning application stated:

"The appellant does not wish to be limited to processing 72,000 tonnes of waste wood per annum. This figure forms the basis for the analyses in the ES and, whilst I

do not say that any greater amount would lead to a material change in its conclusions, I cannot be certain that it would not do so. I shall, therefore, limit the amount to 72,000 tonnes pa in order to safeguard the amenity of existing and prospective residents. For the same reasons, I shall impose a condition limiting the feed stock to waste wood."

Clearly, 72,000 dry tonnes of wood require a significantly greater quantity of wood that has not yet been dried to be delivered to the plant, i.e. ***the reference to 'dry tonnes of wood waste' contained in the present planning application implies a significant increase in the amount of waste wood to be sourced and used by the plant compared to what had previously been consented.***

- The previously consented application included a document called "Process Energy/Mass Balance Diagram". This document stated that 89.7% of energy would be converted to syngas and that the engines would run with 38-44% efficiency. Those two figures combine to an overall conversion efficiency of 34-39.5%. Although not high compared to efficient combined heat and power plants, such an efficiency would easily satisfy the requirement for 'energy recovery' from waste to meet the R1 formula set out in the EU Waste Framework Directive.
- The current outline application states that 72,000 tonnes of dry wood would generate 10 MW of electricity for around 8,000 hours a year and that there would be no heat use at all. We calculate that, with fuel energy of 17 MJ/kg for dry waste wood, the thermal energy input will be around 42.5 MW. This would come to an overall efficiency of just 23.5% - far below that of the previously consented pyrolysis plant. We understand that with such a low efficiency, the plant may, using the R1 formula, not even meet the EU Waste Framework Directive's definition of 'energy recovery' as opposed to 'waste disposal'. We must point out, however, that there is insufficient data to make a definite calculation using the R1 formula. We believe that full details related to the efficiency of the proposed plant should be requested from the developer.

We would further like to point out that Sunrise Renewables submitted virtually identical proposals in Barrow-in-Furness (first for a 9 MWe waste wood pyrolysis plant and then for a 10 MWe waste wood gasifier using the same Outec technology). However, when they applied for a change of planning consent in Barrow, they explicitly stated that this 10 MWe gasifier would require 86,000 tonnes of waste wood a year and they explicitly asked for planning permission to increase tonnage of feedstock (Application reference number PL\1347\05 (6/14/9009), Cumbria County Council).

Please can you advise us if additional information will be requested from the developer and let us know once it has been received so that we can make a fuller submission based on it. Many thanks.

Best regards,

Almuth Ernsting
14 Oygans Hill
Edinburgh EH13 9JR