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Fiona Kinghorn, Interim Director of Public Health
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17 August 2017

Your Ref: PAN-000869
Our Ref: B2VX905

Victoria Seller
Natural Resources Wales
Cambria House
29 Newport Rd
Cardiff
CF24 0TP

Dear Victoria,

**Environmental Permitting (England and Wales) Regulations 2010:
Application for a wood gasification facility at Woodham Road, Barry, CF63 4JE
(PAN-000869).**

We have consulted with our colleagues at the Environmental Public Health Service (delivered collaboratively through Public Health Wales' Health Protection Team and Public Health England's Centre for Radiation, Chemical and Environmental Hazards Wales).

We welcome the opportunity to comment on the additional information relating to the proposed wood gasification facility which we received on 03/08/17. We understand that this consultation relates to a Schedule 5 notice from Natural Resources Wales (NRW) requiring the applicant to submit additional information (NRW letter dated 04/05/17). Our response therefore updates our earlier assessment of the proposed facility (our ref B8BY610 22/12/16).

Any recommendations are for consideration by the Regulator and be reflected in any permit conditions made (see rationale below).

Additional information

The applicant has undertaken a new air quality impact assessment to consider the impact of the emissions from the plant. This revised assessment includes additional dispersion modelling to better risk assess emissions in light of questions regarding the applicability of the topography and metrological conditions used in the initial model. The worst case predictions of both models have been presented in the risk assessment.

A revised acoustic assessment has also been submitted in support of the application.

Overall Conclusion

The updated risk assessment suggests that, if well managed, emissions from the process should not impact the local community. Revised maximum predicted ground level concentrations of nitrogen dioxide and particulate matter show only minor changes compared with the earlier risk assessment and should not have a significant impact on local air quality.

In our previous responses to the original permit application and the earlier planning consultation, we identified a number of gaps in the air quality risk assessment and made a number of recommendations relating to these. These do not appear to have been considered and, in our view, are still valid. Several pollutants (such as nitrogen dioxide and particulate matter) associated with this process are non-threshold pollutants, which means there are no known 'safe' threshold of exposure. Therefore, it is important that the applicant can demonstrate this process will not significantly add to the burden of air pollution. As such our recommendations (below) should be addressed prior to any decision around the permit:

- The applicant has not considered how emissions from transport associated with this process will impact on local air quality. It is important that the applicant should provide sufficient information to demonstrate that vehicles servicing the site will not adversely impact local air quality.
- Similarly, we have previously highlighted the need to consider cumulative impacts of currently operating (and consented) developments with similar emissions in the background air quality assessment. It is important that the applicant includes the cumulative emissions of other developments in the vicinity likely to be operational during the life of the plant. In our view this has still not been done.

In addition, we have two new recommendations based on the new information provided in this consultation:

- The applicant has not revised their dioxin risk assessment in light of the new dispersion modelling. We recommend that this assessment be revised and circulated for comment prior to any decision.
- The regulator should seek assurances that the recommended acoustic mitigation strategies are employed prior to operation of the plant. Additionally, given the heightened community awareness of the plant, any increase in noise levels should be avoided.

The position statement from Public Health England on incineration is relevant to this consultation. In 2009, PHE (then the Health Protection Agency) reviewed published epidemiological studies on municipal waste incinerators and health. While it is not possible to rule out adverse health effects from modern, well-regulated municipal waste incinerators with complete certainty, PHE concluded that any potential damage to the health of those living close-by is likely to be very small, if detectable.¹ To date, PHE is not aware of any evidence that requires a change in their position statement. A recent published peer review paper on emissions of particulate pollution from modern waste incinerators in the

¹ <https://www.gov.uk/government/publications/municipal-waste-incinerator-emissions-to-air-impact-on-health>

UK is also of relevance. This paper looked at incinerators which operate under the same regulations as this proposed facility and concluded that modern incinerators will only make a small contribution to background levels of air pollution².

These studies would support our view that, if properly regulated and managed, emissions from this proposed facility should not have a significant impact on local air quality.

Public Health Risk Assessment

The risk assessment indicates that the facility will make only a modest contribution to current background air pollutant concentrations. The facility is predicted to add 1 µg/m³ to the long-term concentration of nitrogen dioxide (NO₂) at the worst impacted residential receptor, this will result in a predicted environmental concentration at this point of 21 µg/m³ (52% of the long-term air quality objective of 40 µg/m³). The worst-case predicted short-term impacts of NO₂ will lead to a process contribution of 16.2 µg/m³, giving an environmental concentration of 56.2 µg/m³ (28% of the short-term air quality objective of 200 µg/m³). The revised modelling parameters result in a small increase in the predicted annual average concentration and decrease in the short-term concentration compared with the previous risk assessment.

The revised assessment of particulate matter (both the larger particles (PM₁₀) and smaller particles (PM_{2.5})) also suggests that the facility will only make a modest addition increase to background air pollutant concentrations. The facility is predicted to add 0.13 µg/m³ to the long-term concentration of PM₁₀ and PM_{2.5} (the assessment has assumed each particulate constituent is emitted as 100% of all particles) at the point of maximum impact; resulting in a predicted environmental concentration at this point of 13.63 µg/m³ for PM₁₀ (34% of the air quality objective of 40 µg/m³) and 9.63 µg/m³ for PM_{2.5} (39% of the target value of 25 µg/m³). The worst-case predicted short-term impacts of PM₁₀ will lead to a process contribution of 0.36 µg/m³, giving an environmental concentration of 16.36 µg/m³, (the air quality objective is 50 µg/m³, not to be exceeded more than 35 times a year). There is no short-term standard for PM_{2.5}.

The updated assessment has considered other relevant pollutants (carbon monoxide, sulphur dioxide, dioxins and furans, volatile organics and metals) and concludes that the impact of the proposed development is negligible.

The dispersion assessment of dioxins, furans and dioxin like PCBs has been revised in the additional information supplied; however a new human health risk assessment has not been submitted.

The applicant has not submitted its consideration of transport emissions within this application.

A revised acoustic assessment has been submitted in support of the application. The assessment recommends a series of measures to reduce noise levels and reduce its impact to sensitive residential receptors. The assessment identifies that day-time noise levels will be below background noise levels as such complaints are unlikely, however night-time noise levels at the worst impact receptor are predicted to be 4dB above background levels, this indicates a low adverse impact and the difference in noise level may be perceptible at this receptor location.

² <http://pubs.acs.org/doi/abs/10.1021/acs.est.6b06478>

Any additional information obtained by the Regulator in relation to these comments should be sent to us for consideration. Such information could affect the comments made in this response.

Yours sincerely

A handwritten signature in purple ink that reads "Fiona Kinghorn." The signature is written in a cursive, flowing style.

Fiona Kinghorn
Deputy Director of Public Health
Cardiff and Vale UHB