

Proposed Development: Kronospan, Holyhead Road, Chirk

Proposed Additional Silos and Extension to Chip Preparation Building

Air Quality: Technical Note

1. Background

- 1.1. A planning application is to be submitted to Wrexham County Borough Council (WCBC) for the construction of additional raw material and prepared wood chip storage silos and an extension to the existing wood chip preparation building at the above facility.
- 1.2. In pre-application discussions with WCBC regarding the proposed additional silos, in conjunction with other possible development proposals at the facility, WCBC identified the requirement for the submission of information on air quality. WCBC specifically requested that the application should include full details of the measures that would be installed to minimise dust emissions from the site¹.
- 1.3. The following Note has therefore been provided to detail information on air quality considerations.

2. Existing and Proposed Development

- 2.1. The existing wood chip preparation building is sited in the western part of the facility as shown on the plans provided in Appendix A.
- 2.2. The proposal includes for construction of 2 new silos for raw material storage (storage volume of 14,065m³), an extension northwards to the existing wood chip preparation building and construction of a further 3 new silos (597 m³) for storage of the prepared wood chip (referred to 'wet chip silos'). The new raw material storage silos are all to be sited to the north-east of the extended chip preparation building and the prepared chip silos to the immediate north. The new prepared chip silos will supplement the existing silos to the south of the chip preparation building.
- 2.3. The proposals also include for the relocation of the existing dust abatement equipment to the building (comprising three bag filter boxes and associated exhaust stacks) and the installation of a fourth bag filter box and stack.
- 2.4. The proposals do not include for any changes to the current activities within this building. They do however allow for an increase in through-put.

3. Regulatory Control

- 3.1. The facility is presented operated under two separate Environmental Permits under the Environmental Permitting Regulations 2016 (EPR).
- 3.2. The permit issued by WCBC (ref: WCBC/IPPC/03/KR(V3)) covers the following activities: particleboard and medium density fibre board production, two biomass plants, sawmill and

¹ Wrexham County Borough Council, Develop and Improve the existing Industrial Facility, Kronospan Ltd, Holyhead Road, Chirk, Wrexham, ref: ENQ/2021/0315, dated 07/01/2022

laminated flooring line, as well as some heat generating plant. Raw material deliveries and storage and waste handling, processing and storage are directly associated activities in the permit [ref].

- 3.3. The permit issued by Natural Resources Wales (NRW; permit ref: EPR/BW9999IG) covers the following activities: Manufacture of formaldehyde by catalytic oxidation of methanol, manufacture of urea-formaldehyde and melamine-urea-formaldehyde resin and the operation of natural gas fired combustion plant. The VITS paper impregnation process and operation of surface water lagoons 1, 2, and 3 are directly associated activities in the permit [ref].
- 3.4. The permits require the management and operation of the permitted activities and plant in accordance with Best Available Techniques (BAT) to prevent, or where that is not practicable, to reduce, emissions from the facility. The Permits include a large number of conditions which prescribe detailed emission limits and controls, together with management, reporting, monitoring and recording requirements.
- 3.5. Following a Direction issued by the Welsh Government in March 2018 (the '2018 Direction') NRW is currently consolidating the existing permits for the Installation into one. NRW will then subsequently conduct all regulatory functions in relation to that permit. The current consolidation also includes a full review of the conditions to ensure compliance with EPR, the Industrial Emissions Directive (IED) and BAT and an assessment of predicted releases from plant and process changes resulting from investment in the site by Kronospan Ltd since October 2014 when the current version of the WCBC permit was issued.
- 3.6. At the time of preparing this Note the application was awaiting determination and issue of a draft decision by NRW.
- 3.7. The wood chip preparation building and associated silos currently fall under the requirements of the WCBC permit. They will subsequently be included within the single NRW permit following determination.
- 3.8. The permit requires the capture, containment and extraction of wood dust and wood particles from machine operations at the facility (other than the debarking or chipping of logs) to suitable dust abatement plant. The chip preparation building is served by a dust abatement system with four resulting particulate emission points to air. The permit consolidation application has included a review of all particulate matter point source emissions at the facility; those associated with the chip preparation building are Particulate Matter Emission Points 23, 24, 25 and 26 (Particulate Filtration Points drawing 7000/604-E, v2.0, updated 11.11.2020). The emission points are required to meet specified Emission Limit Values (ELVs) for particulate matter following abatement with bag filters.
- 3.9. The permit review has included a detailed atmospheric dispersion modelling exercise carried out by Fichtner Consulting Engineers Ltd (Fichtner) to assess the potential impacts of particulate emissions from all site point sources on nearby relevant sensitive receptors². An annotated extract of the modelled receptor plan provided in the Fichtner AQA is provided in Appendix B. This shows the location of the chip preparation building in relation to the modelled receptor points.

² Fichtner Consulting Engineers Ltd, Chirk Particleboard Facility, Kronospan, Dispersion Modelling Assessment, S2376-0030-0003RSF, 31st July 2021

- 3.10. The report concluded that the particulate matter emissions from the facility would not result in exceedances of Air Quality Assessment Levels (AQALs) established for the protection of human health for PM₁₀ (particulate matter of diameter less than 10µm) or PM_{2.5} (particulate matter of diameter less than 2.5µm)
- 3.11. The proposed alterations to the chip preparation building would result in the provision of an additional bag filter box and stack and slight relocation of the existing dust abatement system. The Fichtner modelling exercise assumes emissions from the existing particulate emission points are at the maximum flow rates of the extraction equipment and that the extraction units are operated continuously at maximum capacity. The modelling also assumes that the particulate matter (PM) emissions comprise 100% PM₁₀ and PM_{2.5} whereas these would only form a proportion of the total PM emissions. As such the results of the Fichtner AQA are highly conservative.
- 3.12. The proposed additional emission point and relocation of existing release points are not likely therefore to significantly affect the conclusions of the Fichtner AQA. Any changes to the particulate matter release points would require a variation to the Environmental Permit and as such would be subject to detailed review and assessment requiring an update to the dispersion modelling exercise.
- 3.13. There are no combustion emission sources associated with the chip preparation building or proposed changes that require consideration.
- 3.14. The existing permit also requires that any storage silos for dry wood dust or wood particles that are vented to air are vented through particulate abatement equipment to meet the required ELVs. Conditions are also included in the permit in relation to the control of dust emissions from conveyors, storage and handling of wood residue and wood dust. The proposed new silos and any associated plant such as conveyors would be as per the existing silos and would meet all the required permit conditions in relation to particulate emissions.
- 3.15. Dust emissions are managed at the facility in accordance with a Noise, Dust and Odour Management Plan.

4. Air Quality Considerations / Conclusions

- 4.1. Particulate matter emissions from point and fugitive sources associated with the chip preparation building, and associated activities, at the facility are presently controlled under an environmental permit issued by WCBC. This is presently in the process of being consolidated with the activities currently permitted by NRW into a single permit for the facility and which would be regulated in the future solely by NRW. As part of the consolidation / variation application process potential impacts associated with point source particulate matter emissions have been assessed through detailed air quality dispersion modelling and assessment. The assessment was highly conservative and concluded the existing emissions do not result in exceedance of established AQALs.
- 4.2. The proposed alterations to the existing chip preparation building would result in an additional bag filter box and associated stack and relocation of the existing particulate matter release points. The additional point emission source would be subject to specified emission limit values as per the existing emission sources. Based on the findings of the current Fichtner AQA, and distance of the chip preparation building from the modelled receptor points, it is not considered that these changes would result in significant impacts on local air quality at these receptors.

The proposed changes would also need to be subject to review and assessment under the Environmental Permitting regime and the earlier atmospheric dispersion modelling exercise revised to incorporate the proposed changes.

- 4.3. The management and control of other particulate matter emissions from the changes, including from any vents on the silos, would be as per the existing measures for existing plant. Given this, and the distance of the area of interest from sensitive receptors no significant impacts that would preclude planning permission for the proposed development have been identified.

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