

Dear Sir/Madam,

Re: Carbon Sole Ltd. - new documents for the planning application Ref. 20705

We originally objected to Carbon Sole Ltd's application for a biomass gasification, CHP and methanisation development on 2nd November 2020. Having read the new documents and environmental reports submitted by the developer, we confirm that we wish to uphold our objection to this planning application.

In our previous objection letter, we explained that the methanisation technology proposed is not a mature technology and that, furthermore, EQTEQ appears to not be operating any other gasification plant of the type proposed at Stonehouse and that their gasification plant in Spain has had to be abandoned (i.e. the fuel switched to natural gas). We would now like to add the following observations and grounds for objection:

Air quality:

In November, we wrote that we believe that the developer should be required to provide real-world data on which to base data regarding expected air emissions and noise. The Air Quality Assessment Report contains a number of very low and optimistic values about expected emissions from the syngas flare and from the CHP plant stack. However, we can see no reference to any existing plant(s) on which these figures are based. Please find attached a copy of the 2019 environmental monitoring data for two wood gasification plants in the UK: Ince Biopower and Birmingham Biopower.

Both the Ince Biopower and the Birmingham Biopower plants were granted Emissions Limit Value (100) of 300 mg/N₃ average daily NO_x emissions, they met throughout 2019, with average daily NO_x emissions above 240 mg/Nm³. Carbon Sole claims that their expected NO_x emissions from the CHP plant will be just 45 mg/Nm³ and that they can easily meet an ELV of 100 mg/Nm³ NO_x. Although the gasification technologies may not be identical, we would believe that Carbon Sole should be required to back up their optimistic assumptions about NO_x emissions with real-world data.

Furthermore, we are concerned that the baseline air quality levels on which the Air Quality Assessment relies combine measurements from various rural locations, all of them at some considerable distance from Stonehouse. The plant would be built next to Shannon Airport, itself a source of air pollution, including NO₂. We understand that there are further sources of pollutant emissions in the Shannon Free Zone and the Shmithstown Industrial Estate. Furthermore, we understand that the cement factory in Limerick, around 30km away, has just been permitted to start burning waste, including used tyres. Also in County Limerick is the Aughnish Alumina plant, and aluminium refinery. We believe that baseline emissions must be based on average measured or at least modelled air pollution levels around Stonehouse, not on levels measured in rural areas with far less pollution sources.

Lack of information about expected heat and electricity supply to customers or the grid:

The developer has still not provided details as to how much heat and electricity they intend to deliver, nor how efficient the plant would be. As we noted before, significant energy will be required to dry the woodchips which are to arrive with 50% moisture

content. There is no information about the number of megawatt hours heat and electricity per year expected to be supplied to customers – assuming that a heat network (not included in this application) was in fact permitted and then delivered. An engineer we consulted that up to 40% of the heat generated might be required for woodchip drying, which would reduce the amount of heat available to any heat network significantly.

Misleading or contradictory claims related to biomass feedstock – and climate impacts

Appendix B of the new documents supplied states: "The planning application will utilize forestry by-products as fuel only. The plant has been designed specifically for forestry by-products." However, the letters from potential suppliers provided by Carbon Sole refer to pulpwood and not just residues. Carbon Sole themselves state elsewhere: "Pulpwood is only sourced from Private Sector Woodlands within 75km".

Pulpwood is not a forestry by-product. It is roundwood that would otherwise be used for pulp and paper, particleboard or fibreboard. (<http://www.fao.org/forestry/34572-0902b3c041384fd87f2451da2bb9237.pdf>). Essentially, any tree that logged that does not go to a sawmill would commonly be described as pulpwood. The figures for wood supply that are provided in the new documentation thus include whole trees that would otherwise be useful for a range of forestry industries. It is not wood that is excess to current demand. Indeed, Ireland continues to heavily depend on net imports for meeting existing demand for wood and wood products (<https://www.teagasc.ie/media/website/crops/forestry/advice/Forest-Statistics-Ireland-2020.pdf>).

Generating energy from trees cut down for this purpose (as is proposed here) is associated with a high carbon debt and thus not compatible with the aim of limiting warming to 1.5 or well below 2 degrees. The European Academies' Science Advisory Council (EASAC) has stated: "*Carbon neutrality involves a 'payback' period (the time taken for forests to reabsorb the carbon dioxide emitted during biomass combustion), which ranges from decades to hundreds of years (depending on the type of biomass and what happens to the forest and land area after harvesting).*" (https://easac.eu/fileadmin/PDF_s/reports_statements/Carbon_Neutrality/EASAC_commentary_on_Carbon_Neutrality_15_June_2018.pdf) And 500 scientists signed an Open Letter to world leaders in February this year, stating: "*Regrowing trees and displacement of fossil fuels may eventually pay off this carbon debt, but regrowth takes time the world does not have to solve climate change. As numerous studies have shown, this burning of wood will increase warming for decades to centuries. That is true even when the wood replaces coal, oil or natural gas.*"

Carbon Sole claims in Appendix B that the plant would be 'carbon negative' by virtue of using gasification technology. This does not make any sense to us. Gasification involves different chemical processes than combustion, but it does not affect carbon emissions (in the absence of carbon capture and storage which is not proposed here).
Yours sincerely,



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