

Dear Sir

I wish to make the following comments on the Discussion Paper.

The general approach to modelling the generation of landfill gas follows the commonly followed methodology used in the Waste Industry, though it uses a slightly different modelling method.

For our landfill site and I think many others in Australia, there are reliable records going back at least 4 years on the classification of the waste into Municipal, Commercial and Industrial and Construction and Demolition sectors, because we have had to report these classifications to the EPA for Landfill Levy purposes. In the Melbourne metropolitan area, each landfill will have its own customer profile which differs markedly from the data given in Table 60. For example, the Construction and Demolition wastes tend to go to Solid Inert landfills at cheaper rates. I presume that the individual site data will be accepted by the AGO. Not many sites will have data on the waste compositions within these broad categories.

There was a note under Table 63 about recent research into the decay of wood products in landfills in Australia. This phenomena is mainly related to a component of wood products called Lignin which does not break down in an anaerobic landfill environment. Your note gave the impression that this effect is restricted to certain landfill sites. In fact it is a universal effect where anaerobic conditions exist; the same conditions that lead to methane generation. The Australian research found that even after burial for 46 years the loss of carbon in timber was 17-18% of the original. Even this small amount was considered reasonably likely to be due to degradation of the timber before the waste was properly buried and in an anaerobic environment. Increasing the half life of wood to only 25-25 years is at odds with these findings. A half life of more than 100 years would be more appropriate. Further research is underway in this area.

Another way of looking at this issue of non-degradation of Lignin and other organic carbon in landfills, is the acceptance of the IPCC default value for DOCf of 0.5 in the calculation of degradable organic carbon available for dissimilation. If half the organic carbon is not available for dissimilation then it must be sequestered in the landfill as a long term carbon storage. The landfill should be credited with this carbon storage to offset the net methane emissions. If conditions are right for methanogenesis they are also right for carbon storage. The carbon stock model that is used in the Guidelines could easily be modified to include the carbon storage effect.

The net emissions also do not take account of the electricity generated from the methane displacing fossil fuel derived electricity. If the methane is burned to eliminate it in a generator, there must be fossil fuel somewhere not being burned to balance that generation.

If all these factors are taken into account a modern best practice landfill can be carbon neutral or better if a high enough proportion of the methane gas is collected (approximately 70%).

I hope that the AGO will consider these modifications to its Technical Guidelines and I would be glad to provide further information.

Best Regards
Sam Bateman
Project Manager
Hanson Landfill Services
Locked Bag 4000
Doncaster Vic 3108
Sam.bateman@hanson.biz

Hanson Landfill Services
03 9274 3700
0438 609 505

