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WMAA National Landfill Division

Discussion Paper

Carbon Trading and the Waste Management Industry

1. Background

1.1 Greenhouse Gas Emissions from the Waste Management Industry

The latest available data for the generation of greenhouse gas (GHG) emissions from the waste management industry is quoted in the 2005 National Greenhouse Gas Inventory. This reports that 2005 emissions from the solid waste and waste water sectors were 3% of the Australian total and that methane emissions from landfills accounted for 86.5% (or 2.6% of the total).

Methane emissions from landfills are about 14% of total methane emissions in Australia. Larger emissions come from the livestock industry, fugitive emissions from the gas industry, rice cultivation and biomass burning.

1.2 Need for Clarification

Information provided to date suggests the Australian Emissions Trading Scheme (AETS) will be a cap and trade arrangement with industry sectors, such as waste management, being either 'in' or 'out' of the scheme. Further, it has been reported that industry sectors 'in' the scheme will not be able to create tradable offset credits.

As it is believed the waste management industry is being considered for inclusion in the AETS it is essential that the current uncertainties relating to the measurement of emissions and the future availability of tradable offset credits be addressed as early as possible.

1.3 How are GHG Emissions Estimated?

Recently, DCC released carbon mass balance modeling techniques for the calculation of methane emissions for GHG reporting. These Technical Guidelines are based on the 2006 IPCC model for National GHG Inventories and relies on four main variables:-

- Start date and quantities of waste deposited each year
- Degradable organic carbon based on waste composition
- Half life for waste components based on Location (by State)
- Quantities of methane recovered and methane oxidation through the landfill cap

The arbitrariness of the current model is highlighted by Veolia Environmental Services' recent submission to the Garnaut Review where they noted that their NSW Woodlawn Landfill would have 45% lower emission if located 50kms further south in the ACT. Further, some sites are reporting higher gas collection than the model generation estimates.

1.7 Future Permit Costs

As landfill gas is generated over a relatively long period – 15 to 30 years – the inclusion of landfills in the AETS will require owners to recover costs associated with permits acquitted well into the future. As the future cost of permits will not be known at the date of receipt of the waste at the landfill, inclusion of the waste management sector in the AETS will impose an inequitable risk on the landfill industry. .

1.8 Opportunities to Reduce GHG Emissions

Research completed since the release of the 2005 National GHG Inventory results suggests that landfill gas capture in 2005 was around 25%

Since this time, landfill operators have continued to expand their gas collection systems and it is believed that landfill gas capture – at least within metropolitan areas throughout Australia– is now well above this level.

Opportunities to reduce landfill GHG emissions fall into two categories – short term landfill operational improvements and longer term waste composition changes and methane oxidation advances.

Short term improvements include:

- Increased landfill gas capture;
- Improved landfill capping;
- Modified operational planning to bring forward capping and gas collection; and
- Modified operations - such as leachate recirculation - to accelerate methane generation and reduce long-term gas generation.

Longer term improvements are expected from:

- Changes to waste composition; and
- Alternative bio-filter capping that enhances the natural oxidation of methane.

(It should be noted that waste composition modification initiatives are expected to generally originate from waste generators)

5. Avoidance of Perverse Outcomes

Should the AETS cover the waste management sector, there is a risk of perverse outcomes.

To explore some of the potential risks, consider the following examples:

a) Early Landfill Closure

If a landfill is close to closure when the AETS is introduced in 2010 and no relief is given for previously deposited waste, it is likely that owners would opt for early closure to limit their liability and any incentive to reduce methane emissions would be lost.

b) Waste Diversion to Smaller Sites

If the threshold for inclusion in the scheme is too high waste carriers will likely bypass landfills in the scheme to take advantage of lower prices from landfills outside the scheme.

c) Waste Diversion to Council Sites

If Council sites are not included in the scheme waste carriers will likely bypass privately owned landfills in the scheme to take advantage of lower prices from landfills outside the scheme.

c) Delay to New Infrastructure

Exclusion of access to create tradable offset credits will restrict the development of new organic waste treatment infrastructure and further electricity generation from landfill gas as it is unlikely that these projects will gain support without direct access to income from tradable offset credits.

d) Cost Uncertainty

As landfill operators will need to forecast long term permit auction prices and estimate the composition of each customer's waste, the landfill prices will tend to become arbitrary and not necessarily result in the most efficient outcome.

e) Administrative Costs

If the threshold for inclusion in the scheme is too low both the government and landfill owners will be burdened with administrative costs disproportionate to the quantity of GHG being reported.

f) No Improvement in Landfill Practices

If the AETS is introduced with measurement based on a 'model' similar to the current DCC proposal for GHG emission reporting landfill improvements – other than increased landfill gas collection – will not be rewarded and therefore will less likely be implemented. This in turn will impact on landfill emissions following closure