

Streamlining of the Alberta Offset System Waste Management Protocols

Overview

May 2008



Blue Source
Canada

Streamlining of Waste Management Protocols

- The quantification of offsets from landfill gas (LFG) capture and avoided emissions from waste diversion was reviewed by the Alberta Research Council
 - Objectives for updating the Alberta Offset system protocols following the results of the review
 - *To assess the baseline emissions from diversion of waste from landfill based on updated IPCC methodology and Environment Canada data*
 - *To streamline the Alberta Offset System protocols relating to waste management*
- Proposed changes to the calculation of LFG emissions
 - Methodology for calculation of DOC
 - Methodology for modelling of landfill emissions

Streamlining of Waste Management Protocols

- Protocols impacted
 - *Landfill Gas*
 - *Aerobic Composting*
 - *Biomass*
 - *Anaerobic Digestion (Biogas)*
 - *Biofuels*
 - *Non-Incineration Thermal Treatment Waste Management (Draft Protocol)*

Recommendations and Changes to Protocols

- Recommendation: Include the Environment Canada calculation methodology for Degradable Organic Carbon (DOC) in relevant protocols;
- *Action*
 - *Revised relevant appendices to include the DOC calculation for all relevant protocols*
 - *The project proponent may now assess their waste stream composition and apply the formula to calculate DOC rather than use the default value.*

Recommendations and Changes to Protocols

- Recommendation: Allow for an alternative approach for project proponents to calculate DOC values for source segregated wastes that may differ in LFG generation potential from average DOC values;
 - *DOC may be assessed from:*
 - *Classification of source segregated wastes based on the most representative waste types (wood, food waste, etc.)*
 - *Quarterly waste audits for mixed waste streams (non incineration);*
 - *From biochemical methane potential assays or other appropriate methods for other waste streams; or*
 - *Default values from Environment Canada (updated).*

Recommendations and Changes to Protocols

- Recommendation: Improve consistency of application of the "SS Emissions Decomposition, Collection and Destruction" in the project and baseline for all relevant protocols
 - *Previously this SS was not included in the project and baseline of all protocols*
 - **Response:** *The LFG protocol was updated to include this SS to account for any methane not captured in the project condition. The SS was then excluded on the basis of functional equivalence.*
 - *The Biogas protocol has been amended to include a new project SS to account for wastes sent to landfill for project configurations that generate a waste stream in the project.*

Recommendations and Changes to Protocols

- *In both protocols, this SS was excluded from quantification due to functional equivalence and there is no material impact to the offsets generated.*
- *This SS was already contained in both the project and baseline in the remainder of the waste related protocols (although depending on the protocol it may or may not be excluded in one or both conditions based on functional equivalence or materiality).*

Recommendations and Changes to Protocols

- Recommendation: Calculation of LFG emissions using the Scholl Canyon model to account for the time dependence of emissions and temporary storage of LFG in soil pore space
 - **Response:** *In the current approach the methane generation potential is captured over the project lifetime to avoid variation in LFG generation rates each year and ensure baseline stability (i.e based on default DOC, DOCf, and MCF factors independent of time).*
 - *The GHG reduction occurs when waste is composted/ combusted as it is converted to an inert material with no methane generation potential.*

Recommendations and Changes to Protocols

- *Based on the 2006 IPCC Guidelines, which recommend the use of the Scholl Canyon model, this model will be considered in keeping with Best Practice guidance.*
 - *Methane emissions would be summed so that all offsets are still generated in the year that material is diverted*
 - *Working with ARC and Alberta Environment to determine the difference between the two approaches*
- *The LFG protocol is not affected by this issue as the protocol is based entirely on metered LFG collection/destruction data.*

Recommendations and Changes to Protocols

- Conclusions: Streamlining of the AB 'waste' offset protocols
 - *With the exception of the LFG protocol, where methane generation is measured directly, protocols have been adjusted to reflect updated/ revised values for DOC.*
 - *Protocols have been reviewed for consistency with respect to the inclusion of emissions from methane decomposition, collection and destruction.*
 - *If the Scholl Canyon model is selected, this will harmonize the modeling process used in the offset protocols with that used for landfill sites under the Specified Gas Emitters Regulation.*

Recommendations and Changes to Protocols

- Questions and Comments
 - *Technical issues?*
 - *Policy concerns?*