

## Comments on The Reserve's Organic Waste Digestion Draft Protocol

*Submitted by Verdeo Group, August 2009*

### **Introduction**

Verdeo Group is a U.S.-focused carbon offset project developer founded by three senior executives with deep experience in the global carbon markets, particularly the development of Clean Development Mechanism (CDM) projects in Asia and Latin America. While Verdeo's US project development activities to date have primarily focused on the mining and oil & gas sectors, Verdeo's team has extensive experience developing landfill, composting, manure management and anaerobic digester projects around the world. In addition, Verdeo Group works closely with a number of innovative companies whose technologies can be applied in new emission reduction capacities across a wide range of project types. Given our real-world understanding of the benefits and challenges of project development under the CDM, Verdeo has a strong interest in seeing that the U.S. develops efficient and effective protocols that build on the lessons learned in the international carbon market. We therefore welcome the opportunity to submit our comments on the Reserve's draft Organic Waste Digestion (OWD) protocol and are available for further consultation or discussion as needed.

### **Comments on Draft Protocol**

#### ***I. Immediate Crediting (Section 5.1.1, p. 22)***

We are pleased to see the Reserve supporting immediate crediting for emissions from decay that would occur in future years. We believe this is not only critical to ensure projects in this space are viable, but also meets the Reserve's requirement for emission reduction estimates to be conservative since there is no risk of reversal. We believe other protocols that have failed to embrace an immediate crediting approach (e.g. CDM composting protocol) have made many credible, highly effective emission reduction projects unviable. As a result, these protocols have failed to achieve their ultimate goal of encouraging emission reductions. We are delighted to see the Reserve supporting an immediate crediting approach.

**Recommendation:** Move forward with immediate crediting of avoided emissions reductions from decay that would take place in future years.

#### ***II. Number of Years of Decay (Section 5.1.1, p. 22)***

We believe that the Reserve's proposal to credit emissions from only 10 years worth of decay dramatically undervalues the true emission reduction that takes place, particularly for any waste stream other than food. We present the following arguments in support of extending the number of years of decay allowed from 10 to 50 years.

- a. Overly conservative—We fully support the Reserve’s desire to build a system that creates conservative estimates for the emission reductions that would have taken place if the waste had been landfilled. We also recognize that there is concern that extending the time horizon beyond 10 years would create the risk of overstating the actual emission reductions because of uncertainty about how landfills will be managed in the future. We believe, however, that there is a way to extend the window to 50 years—a time horizon that would capture 100% of the emissions from the decay of food—while simultaneously ensuring that emission reduction estimates remain conservative. To achieve this, we propose extending the 75% gas capture rate for landfills for years 11 through 50 despite the fact that most landfills only maintain gas capture systems for the first 15 years after a cell is closed.<sup>1</sup> By extending the 75% gas capture rate assumption through year 50, you effectively create a 75% discount on the emission reduction calculation for years 19-50.<sup>2</sup> It seems both fair and conservative to assume that this very large “haircut” on the emission reduction estimate would dwarf any baseline uncertainty that exists.
- b. Counterproductive precedent—While we recognize that this protocol is focused on food waste, it may well set a precedent for other avoided landfill protocols developed in the future. As a result, it is critical to consider the impacts of this rule on other waste types that could also be diverted from a landfill and utilized more productively. As context, food comprises 11.7% of landfill waste whereas slower decaying waste such as wood and textiles represents 5.8% and 7.4%, respectively.<sup>3</sup> In addition, while food and wood generate very similar levels of methane over their lifecycles, the emissions from food are generated much more rapidly. As a result, the 10 year window captures approximately 85% of the emissions from food, but only captures around 27% of the emissions from wood. By allowing credit for only 10 years worth of decay, the Reserve would unintentionally create disincentives for projects that reduce emissions by diverting slower-decaying landfill waste streams such as wood. For the Reserve to maximize its impact on reducing emissions from landfills, it is important to ensure that the rules in this protocol encourage alternate treatment of all forms of waste, not just the fastest decaying waste. If the Reserve moves forward with the 10 year limit as written, it would create a perverse incentive for offset projects to favor the use of food waste while neglecting other waste streams that have an equally harmful—but more gradual—emissions impact.

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<sup>1</sup> EPA’s *Landfill Gas Project Development Handbook*, pp 4-4 & 4-13. <http://www.epa.gov/lmop/res/handbook.htm>

<sup>2</sup> Note: this assumes a gas capture system is installed after year three of the project (per The Reserve’s assumptions in the protocol) and then runs for 15 years (per EPA’s estimates). As a result, the project is unlikely to have a gas capture system in operation for years 19-50, but would still have the 75% discount assumption applied to it.

<sup>3</sup> US EPA 2003 Total US Waste Generation: paper: 35.2%, yard debris: 12.1%, food scraps: 11.7%, plastics: 11.3%, metals: 8%, textiles: 7.4%, wood: 5.8%, glass: 5.3%, other: 3.4%

- c. *Inaccuracy of annual emissions estimates*—The First Order Decay (FOD) model used to estimate landfill emissions is not particularly accurate on a year-by-year basis, but is very accurate for total emissions across the entire decay period. As a result, there is a much lower level of accuracy for emissions estimates derived from a small sample of the overall decay period, such as the first 10 years of the 50 years required for food to fully decay. This means that as the window increases on the number of years of decay allowed, the accuracy of the emissions estimate from the FOD model increases.
- d. *Irreversible nature of these emission reductions*—The emission reductions that occur from a digester project are permanent and irreversible in nature. As a result, any limitation on the number of years of decay allowed unnecessarily undervalues the emission reduction that actually took place.

**Recommendation:** The EPA recommends using 100 years as the time horizon for calculating emissions from decay when using the LandGEM model.<sup>4</sup> We recognize that the further you extend the window into the future, the greater the baseline uncertainty. As a result, we do not propose extending the window to 100 years, but instead propose a reasonable compromise: extending the number of years to 50, which is the time horizon needed to account for 100% of the emissions from food. To maintain the conservativeness of the emission reduction estimate, we recommend extending the 75% gas capture rate assumption for years 11 through 50, despite the fact that very few landfills maintain gas capture systems for more than 15 years.

### III. **Truncated Crediting Period Due to New Regulatory Requirement (Section 3.4.2, p. 8)**

We respectfully disagree with the Reserve's decision to disqualify a registered project during the course of its approved crediting period if a new policy or regulation mandates the diversion of waste from the landfill. Digester projects are capital-intensive, require lengthy payback periods, and rely on carbon offset revenue to be economically feasible. These projects cannot be financed unless investors have the assurance that they will be able to achieve a return on their investment.

Phase II of the CDM market provides an instructive lesson about the imperative of structuring the crediting period to encourage project investment. The fact that cash flows post 2012 are uncertain has severely hampered investment in new CDM projects; only those projects with short-term payback periods are proceeding. There is a similar risk that the Reserve's "new regulation" provision will provide enough financial uncertainty for investors that project developers register their digester projects with other certification bodies. If this happens, the ultimate goal of the Reserve's Organic Waste Digestion protocol—to encourage the development of high quality digester projects—will not be reached.

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<sup>4</sup> EPA's *Climate Leaders Greenhouse Gas Inventory Protocol Offset Project Methodology*, p. 10. [http://www.epa.gov/climateleaders/documents/resources/draft\\_landfill\\_offset\\_protocol.pdf](http://www.epa.gov/climateleaders/documents/resources/draft_landfill_offset_protocol.pdf)

It should be noted that elsewhere in its policy-making, the Reserve has demonstrated sensitivity to minimizing crediting risks. For example, the Reserve decided to allow approved projects to continue to generate offset credits for the duration of their crediting period despite subsequent changes in the protocol performance standard. This decision inherently recognizes the critical value of a fixed crediting period, and the need for this certainty to enable developers to voluntarily direct capital toward emission reduction projects. Guaranteeing a fixed crediting period for projects, despite subsequent regulatory changes, is consistent with the Reserve’s approach to uphold a crediting period despite subsequent changes in a performance standard. In another example, the Reserve has already designed its livestock methane protocol to provide approved projects with a fixed crediting period, despite changes in the regulatory test or performance standard. The Reserve should take a consistent approach by providing the same assurance to developers of digester projects.

**Recommendation:** Change wording in the draft protocol to ensure crediting periods are not truncated if regulatory requirements change at some point during the crediting period.

**IV. Diversion Goal Test (Section 3.4.2.1, p. 9)**

The protocol states “organic waste originating from a jurisdiction that has not yet met its landfill diversion target does not pass the regulatory test”. While we appreciate the importance of ensuring projects are truly additional, we believe this regulatory test is unnecessary and duplicative. The fact that only 2.6% of food waste is diverted from landfills means the common practice test has already been met.<sup>5</sup> What is currently proposed is a complicated and imperfect test which, given how infrequently food is diverted from a landfill, seems to create an unnecessary, bureaucratic hurdle to project development.

**Recommendation:** Remove the landfill diversion target regulatory test from the protocol.

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<sup>5</sup> Diversion rate data comes from the EPA and is referenced in the OWD draft protocol under the “Post-Consumer Food Waste” section on p. 70.