

## **Solid Waste Industry for Climate Solutions**

***Allied Waste Industries, Inc.  
County Sanitation Districts of Los Angeles County  
Norcal Waste Systems, Inc.  
Regional Council of Rural Counties  
Republic Services, Inc.  
Waste Connections, Inc.  
Waste Management***

November 14, 2007

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Dear Mr. Markolf:

Thank you for the opportunity to provide comments on the California Climate Action Registry's second draft of the Landfill Project Reporting Protocol. On October 16, 2007, we provided comments to you on the first draft.

The undersigned are representatives of an informal organization of solid waste management and recycling organizations known as the Solid Waste Industry for Climate Solutions (SWICS). The entities represented by this organization provide comprehensive waste management, biomass energy and recycling services throughout California. The purpose of this organization is to provide Climate Change policy makers with the most accurate information about our industry and our potential contributions to climate change solutions.

This letter comprises the general comments of SWICS, and the CCAR Solid Waste Working Group. The comments are as follows

### **The GHG Reduction Project – Project Definition**

The first draft of the proposed Landfill Project Reporting Protocol (LPRP) included a project start date of January 1, 2001. In our October 16, 2007 comments, SWICS recommended a project start date of January 1, 1990 to coincide with the baseline year under California's AB 32 program. The revised draft LPRP, still proposes an in-service date of January 1, 2001. The SWICS again disagrees with the proposed project start date as it will disqualify many landfill methane reduction projects from being recognized for credible reductions and ultimately render the project protocol meaningless. At a minimum, the LPRP should allow for a project start date of January 1, 1999. This start date is consistent with the Chicago Climate Exchange (CCX) methane destruction protocol codified in Chapter 9 of its Rules Book. The January 1, 1999 start date also coincides with the initial NSPS regulatory start date of December 10, 1998 for MSW landfills. Please recognize that even though the CCX project start date is January 1, 1999, verified projects can only register carbon financial instruments (CFIs) for trade or sale for reduction which occur in calendar 2003 and forward.

### **Recognizing the Waste Industry's Previous Reductions**

The first paragraph of this section concludes that landfills are the largest source of anthropogenic methane emissions. We suggest you add the phrase "EPA has concluded" after "In the United States," Also following that sentence we suggest adding: "However, there is considerable uncertainty regarding the actual amount of fugitive methane emissions from landfills. This protocol does not address fugitive landfill methane emissions. Instead, it addresses the methane that is captured and destroyed in excess of any regulatory requirements that mandate the destruction of landfill methane.

The second paragraph should conclude: " , except in those situations where landfill gas may be used to manufacture a non-fuel chemical product. However, given that these types of projects are few, if any, non-combustion landfill gas destruction projects are not addressed in this protocol."

In first and subsequent drafts of the protocol, CCAR has made the statement "In the United States, landfills are the largest source of anthropogenic emissions of CH<sub>4</sub>, accounting for 25 percent of total CH<sub>4</sub> emissions." SWICS understands the important task the waste industry has in reducing this portion of the United State's methane emissions. However, not only does SWICS disagree with the method used to arrive at the 25 percent cited in the protocol, we believe there should be some recognition of the waste industry's efforts to reduce greenhouse gas emissions over the last 2 decades. Following the quoted text there should be a statement made to the effect of: "However, the solid waste industry has made significant efforts to reduce their GHG emissions over the past 20 years. According to the California Air Resources Board's Inventory of GHG emissions the waste sector is the only industry that has decreased it's emissions since 1990."

In support of this request, the updated Draft California Greenhouse Gas Inventory developed by the California Air Resources Board (CARB, August 2007) indicates that the statewide emissions of carbon dioxide equivalents (CO<sub>2</sub>E) were 496.95 million metric tons in 2004, the last year for which an inventory has been completed. Solid waste disposal (i.e., landfills) accounted for 6.88 million metric tons of CO<sub>2</sub>E in 2004 or about 1.4% of the total. This is a reduction from earlier estimates where landfills were considered to account for as much as 4% of the statewide total. Other sources or industries contributing to this statewide total include: (1) energy industries (170.56 million metric tons or 34.3%); (2) transportation (194.58 million metric tons or 39.2%); (3) manufacturing and industrial processes (46.85 million metric tons or 9.4%); and (4) agriculture, forestry and land use (27.45 million metric tons or 5.5%).

Landfills are the only industrial source, which show a reduction in emissions in the California statewide GHG inventory versus the 1990 baseline year. In the updated draft inventory developed by CARB, solid waste disposal emissions were 7.41 million metric tons of CO<sub>2</sub>E in 1990 and 6.88 in 2004. This is due to improved practices in LFG collection since that time and the very stringent air regulations in California, and despite the fact that refuse disposal in landfills increased over this same time period.

### **The GHG Reduction Project – Additional GHG Reduction Activities in the Solid Waste Sector**

SWICS commends CCAR and the workgroup for recognizing renewable energy projects that displace fossil-fuel derived electricity as a separate greenhouse gas reduction strategy. This approach is consistent with our October 16, 2007 comments and recommendations. Two separate and distinct offset protocols - methane destruction and electricity generation with avoided emissions - will lead to less confusion in the market, and provide a better representation of the Solid Waste Industry's efforts to reduce greenhouse gases and control landfill methane.

### **Eligibility Rules - Additionality: The Performance Standard Test and the Regulatory Test**

At the bottom of page 4 of the revised protocol, new language has been added that appears to tie the viability of landfill gas collection projects to the effectiveness of recycling and diversion programs. Further, this language suggests that if recycling and diversion protocols have not become operations with demonstrated effectiveness by the year 2013, that somehow these landfill gas protocols could be temporarily suspended. This language does not make any sense.

The development and effectiveness of recycling and diversion protocols are totally unrelated to the benefits of collecting and destroying landfill methane. Further, landfill gas project parties have no control over the development of recycling and diversion protocols. While some areas of the US may be diverting and recycling in excess of any protocols, other areas may not. *This language must be stricken from this landfill gas protocol.*

At the bottom of page 4, new language is added that is not consistent with a correct interpretation of the NMOC emission rules – as elsewhere described in these comments. This language must be stricken or revised to be consistent with an accurate interpretation of NSPS, EG and NESHAP regulations discussed below.

One of the key issues in developing credible reduction is “additionality”. SWICS understands that any credible reductions must be in addition to what is required by regulations or what is considered “better than business as usual.” However, there are some important distinctions that must be made when using these criteria. Most importantly, as recognized by the Chicago Climate Exchange (CCX) landfill methane destruction protocol, the only regulations that should be considered under the additionality criteria are landfill air regulations at the local, state, or federal level, which directly require landfill gas (LFG) collection and control resulting in methane reductions. Other regulations, such as landfill requirements under the Resource Conservation and Recovery Act (RCRA) Subtitle D (or state equivalent) or water quality regulations that do not directly require methane control systems at landfills should not be considered under the criteria of additionality. Under these other programs, compliance can be commonly achieved without methane control, and there are various options for meeting the regulatory requirements that do not involve LFG collection. As such, installing methane capture systems under these other regulations should not be deemed to violate the criteria of additionality as it relates to methane reductions.

We believe the protocol should also allow credible reductions for any controls installed prior to when the regulatory requirements mandate the controls, such as initial systems and expansions installed prior to the deadlines under the New Source Performance Standards (NSPS). If a project is implemented prior to its mandate, those reductions occurring before the implementation of the regulations should be credited to the project proponent. In addition, if the project proponent can show they have achieved a greater degree of control than what the regulations require, the difference between the required reductions and the actual reductions should be certifiable.

Language should be clear on the regulatory additionality pertaining to NSPS/EG requirements. The LPRP should correctly reference the NSPS and EG requirements for gas collection and control system installation. A landfill with documented NMOC emissions less than 50 Megagrams per year (Mg/yr) is still eligible to generate greenhouse gas emission reductions.

Most landfills are ***subject*** to NSPS/EG rules (i.e., required to submit initial design capacity reports and apply for Title V permits); however, landfills are not ***required*** to install a gas collection and control (GCCS) until they exceed the NSPS/EG regulatory threshold of 50 Mg/yr NMOC emissions. So, even though a landfill is subject to the NSPS or EG rules based on the ***size*** of the landfill, they are not necessarily required to install a GCCS. Therefore, the GCCS installation is ***voluntary*** until the landfill reaches the required date for installation and operation (i.e., 30 months from the date on the NMOC emissions rate report which reports that the annual NMOC emissions exceed 50 Mg/yr.). The LPRP should also clarify when a landfill is subject to the NESHAP regulation.

SWICS recommends the following revised Page 5 language:

*Landfills with a design capacity of at least 2.5 million megagrams and 2.5 million cubic meters of municipal solid waste are subject to the NSPS or EG. Landfills above the design capacity size cutoff must calculate their annual NMOC emissions using equations in the NSPS or EG rules. The landfill must install a gas collection and control system within 30 months after the first annual NMOC emissions rate report in which the emission rate equals or exceeds 50 Mg/yr. A landfill is subject to the NESHAP if the design capacity of at least 2.5 million megagrams and 2.5 million cubic meters of municipal solid waste and has estimated uncontrolled emissions equal to or greater than 50 Mg/yr NMOC as calculated according to Section 60.754(a) of the NSPS or USEPA approved Federal, state or tribal plan.*

### **State and Local Regulations, Ordinances and Permitting Requirements**

According to the proposed LPRP, “collection and combustion activities at landfills regulated under NSPS, EG, NESHAP, CAA, RCRA Subtitle D and other state and local regulations, ordinances or permitting requirements are not eligible as greenhouse gas reduction projects.”

As stated in the October 16, 2007 SWICS comments, the test should apply to landfill air regulations or ordinances and not multi-media regulations. Further, the test should only apply to an air rule or ordinance, and not an air permit, as the permit is the vehicle for enforcing the rule or ordinance. Also, an air permit is usually required for constructing and operating a process or emission units (i.e., flare, engine), irrespective of regulatory applicability, meaning the gas collection and control system could be voluntary, but a construction permit is required for criteria pollutant combustion emissions from the flare. According to the proposed LPRP, “In the situation where flexibility is allowed for regulatory compliance to control NMOCs and the clear compliance mechanism is the installation of a combustion device, the landfill gas control system in question does not pass the Regulatory Test.”

If several abatement options, including installation of a GCCS, are identified that would sufficiently address regulatory compliance, but the landfill *chooses* to install the GCCS for ancillary reasons, then the GCCS project should be eligible. If other methods would mitigate to the same level, then the GCCS is voluntary. Further, the LPRP seems to be concerned with NMOC control. Therefore, the LPRP should apply the regulatory test to this pollutant exclusively and not be concerned with other pollutants to determine regulatory additionality for the GCCS operations.

As stated in the proposed LPRP, “Projects that are in a state of non-compliance with air or water quality regulations are not eligible to register GHG reductions with the Registry.”

The non-compliance test should apply to the offset project compliance with the LPRP requirements only and not be concerned with re-occurring non-compliance or non-compliance from non-related issues. This is consistent with RGGI Model Rule. A non-compliance issue unrelated to the offset project (i.e., dust from roadways) should not negate or disqualify the project as the unrelated issue has no bearing on the validity of the project; the test should be exclusive to the project activity itself. The Clean Development Mechanism (CDM) protocol, number ACM00001/version 07 (attached), and supporting tools (i.e., “Tool for the demonstration and assessment of additionality”, Version 03 and “Combined tool to identify the baseline scenario and demonstrate additionality”, Version 02)"test" regulatory requirements relating to LFG projects and not the facility as a whole.

New language has been added at the bottom half of page 7 that purports to establish a “600 pounds NMOC per month” standard for determining whether a landfill gas combustion system is cost-effective in treating NMOCs as compared to an activated carbon treatment system. SWICS has not had sufficient time to independently verify the accuracy or practicality of this standard that is further articulated in Appendix B. *SWICS asserts that this language and Appendix B must be removed from the draft protocol until sufficient time is provided for SWICS to independently review and evaluate this new proposed standard.* Further, SWICS does not necessarily believe that such a standard is necessary. The project proponent should be able to demonstrate, based on the history of the project, whether landfill gas combustion is more or less practical than carbon adsorption – on a case-by-case basis.

New language has been added to the middle of page 8 that is an incorrect interpretation of NSPS, EG, and NESHAP, as discussed above. This language must be deleted or made consistent with a proper interpretation of these regulations.

## **GHG Reductions Calculation Methods**

The proposed LPRP requires that the project reductions account for the following:

- the total amount of uncontrolled methane collected from the landfill and combusted by the project landfill gas control system, minus
- the portion of methane oxidized in the baseline scenario, minus
- carbon dioxide emissions from fossil fuel consumption, minus
- indirect carbon dioxide emissions from the use of electricity from the grid, if applicable.

A methane oxidation factor associated with conversion of methane in the landfill cover is misapplied. Such discounting is inconsistent with existing protocols, most notably, the CDM protocol number ACM00001/Version 07, and CCX landfill methane destruction protocol. A landfill oxidation factor is normally applied when trying to estimate methane generation by a landfill in the absence of a landfill gas collection and control system. However, in the presence of a landfill GCCS, LFG recovery can be measured through the application of a proper flow meter. There is no need to use an oxidation factor to offset or reduce the measured flow, as any methane converted in the landfill cover is not part of the “offset” being generated and credited, and thus is not being double-counted.

We urge CCAR to modify the emissions baseline determination and emissions reduction calculations in the draft protocol to rely on measured quantities using widely accepted equipment, installation, documentation and verification procedures. Any references to use of a methane oxidation factor should be deleted from these calculations, as it is a misapplication of the concept.

According to footnote numbers 20 and 23, density of landfill gas should be calculated based on the metered temperature and pressure of the gas. No separate monitoring of temperature and pressure is necessary when using flow meters that automatically measure temperature and pressure, expressing LFG volumes in normalized cubic meters. Some flow meters, like a Thermal Mass meter, automatically adjust the flow rate based on measured temp and pressure; however not ALL flow meters do this automatically. The CDM protocol number ACM00001/Version 07 requires that temperature and pressure be determined but includes standard conditions conversion factors for methane density.

## **Project Monitoring**

Table 2 references data to be collected and used to monitor emissions from the project activity. This table appears to come from the CDM protocol number ACM00001/Version 07; however it has been modified to be more restrictive. Specifically, the CDM protocol allows for periodic monitoring of the gas quality; it does not require continuous monitoring of gas composition. The proposed LPRP requires continuous monitoring exclusively.

SWICS recommends that the PLRP allow for both approaches. Continuous measurement and recording of gas quality, specifically methane content, is beyond the NSPS, CCX, and CDM requirements. NSPS requires intermittent readings at least one per month, whereas CCX prefers weekly. CDM requires periodical measurements with 95% confidence level using calibrated portable gas meters (i.e., GEM) and taking a statistically valid amount of samples.

Continuous Recording of LFG captured and combusted is beyond NSPS and CCX requirements. CDM protocol ACM00001/Version 07 and the supporting tools (i.e., “Tool to determine project emissions from flaring gases containing methane”) do not speak to recording frequency, only measurement frequency. The CDM protocol and tools do however reference hour averaging of flow data and then aggregating the flow data monthly and yearly. NOT require continuous recording of flow - they require continuous OR periodic. CCAR should replace “recording frequency” with “measurement frequency” on Table 2 of the LPRP to be consistent with the CDM protocol ACM00001/Version 07. The LPRP should also clarify that the amount of landfill gas flared and/or combusted and/or upgraded must be continuously measured and recorded at least once every 15 minutes. The flow rates should then be aggregated monthly and yearly.

### **Reporting Parameters - Forms**

Much of the information being requested on Forms 1 through 4 has NO BEARING on the eligibility or validity of the methane destruction project. The following items on the relevant forms should be deleted for this reason:

**Form 1** - ITEMS 7 through 17. The information is irrelevant to the project and does not directly support eligibility, calculation, or verification needs and should therefore be deleted. Such request for information creates an unnecessary burden to the Project, which may or may not have access to this information.

**Form 2** - The information requested is irrelevant to the project and does not directly support eligibility, calculation, or verification needs and should therefore be deleted. To request suggest information creates an unnecessary burden to the Project, which may or may not have access to this information.

**Form 3** - ITEMS 1.iii and iv should be deleted because this information is not relevant to the project’s eligibility and verification needs.

**Form 4** - ITEMS b through d should be deleted because this information is not relevant to the project’s eligibility and verification needs.



### **Reporting Parameters – Project Crediting Period**

According to the proposed LPRP, project developers are eligible to register GHG reductions with the Registry for a period of seven years with the potential for a second five year period (second five year period is contingent upon satisfaction of the additionality eligibility criteria) if the collection and combustion system is installed and operational before any new regulation requiring the system to be installed is adopted. This is not consistent with the RGGI Model Rule. We do not support making the crediting period more restrictive for the landfill sector, exclusively.

We support a 10-year project-crediting period as required by the RGGI Model Rule. Further, with respect to NSPS and EG regulations, existing projects that reach 50 megagrams per year of calculated NMOC emissions should be eligible to register reductions with the Registry until the project is regulatory obligated to operate per the NSPS and EG. A Project should not be disqualified simply because it is subject to the NSPS and EG regulations because all landfills which are at least 2.5 million megagrams and 2.5 million cubic meters are subject to NSPS, however the landfill may not be required to install controls until it is regulatory obligated. There is no basis for establishing a different standard for landfills versus other sectors because all sectors could potentially become subject to regulatory requirements.

New language has been added to the bottom of page 22 and top of page 23 regarding landfill gas projects that are started during the “rule-making process” for a new regulation to limit or control landfill gas emissions. The term “rule-making process” is not defined. If this term is used it must be limited to a formal public notice and comment process or the formal opening of a rule-making docket. Frequently, informal rule discussion can take place and all state rule-making processes are different.

Further the final sentence of this new language on page 23 does not make sense. It appears to suggest that any landfill gas control project would be disqualified if it is implemented during a rule-making process that ultimately has absolutely no impact or effect on the project. *This language does not make any sense and must be deleted.*

We hope that CCAR will keep these comments in mind while writing the Landfill Project Reporting Protocol. As always, we are happy to offer our expertise and understanding of the solid waste industry throughout the protocol process. SWICS looks forward to working closely with CCAR during the drafting of the protocol, and the protocols implementation in the future. Should you have any questions, or require further explanation on any of the points made in this letter, please do not hesitate to contact any of the undersigned.

Derek Markolf  
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Best Regards,

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