

RESPONSE TO PUBLIC COMMENTS

March 2017

A methodology for **Emissions Reductions from Landfill Gas Destruction and Beneficial Use Projects** was developed by the American Carbon Registry (ACR), a nonprofit enterprise of Winrock International.

All new methodologies and methodology modifications, whether developed internally or brought to ACR by external parties, undergo a process of public consultation and scientific peer review prior to approval.

The methodology was posted for public comment from May 2, 2016 – June 3, 2016. Responses to public comments were finalized by the authors on July 12, 2016. Comments and responses are documented here. If applicable, additional public comments received after the formal close of the public comment period are also documented herein and were considered in the final version of the methodology.

This document is organized by sections of the methodology. Section numbers as referenced by the public in the following table refer to the document version as posted for public comment.

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GENERAL COMMENT

Section	Comment	Commenter	Response
N/A	<p><i>A requirement to demonstrate efforts to support organic waste diversion should be considered.</i> To avoid the possibility of abetting the waste industry in any complacency around organic waste diversion, ACR might consider requiring owners of active landfills to demonstrate a meaningful and continued effort to support organic waste diversion policies or programs and/or demonstrate full compliance with any organic waste diversion regulations already in place. Projects implemented at closed landfills might be exempted from this requirement.</p>	Origin Climate	<p>ACR appreciates and encourages the optimization of organic waste for beneficial uses. Thank you for submitting this comment. ACR will raise the issue for further consideration in the peer review process.</p>

SECTION 1

Section	Comment	Commenter	Response
1.3	<p>The Regulatory Eligibility Requirement Needs to be Revised: The regulatory eligibility requirement in Section 1.3 is deficient because it does not address the future requirements of currently enacted regulations. Methodology specific eligibility conditions are listed in Section 1.3 Applicability Conditions. The second condition, labeled (b), merely states that the project must not be “required by any regulatory agency.” This brief provision, without further language, merely implicates the current requirements of current regulations. However, as future requirements of current regulations that take effect during the lifetime of a project will affect the degree of mitigation the project provides, they ought to be addressed in the methodology. Section 1.3 (b) should explain that in order for the project to satisfy the ACR program eligibility requirements, it must satisfy the following condition: “The project is not required by any</p>	Interra Energy	ACR agrees with this comment and has added language to the methodology that requires the regulatory surplus assessment for each reporting period.

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	regulatory agency. In addition, the project will not be required by any phased-in regulatory requirements of current regulations.”		
1.3	The Language Describing Eligible LFG Activities Involving Destruction in a Flare should be Revised: The allowed project activity “Destruction in a Flare” should be more clearly limited to eligible projects. The language in the Section 1.1 Summary Description of the Methodology and Table 1 discussing “Destruction in a flare” should match that in the Section 1.3 Applicability Conditions for the “destruction of landfill gas in an <i>eligible</i> flare.” Since destruction in a flare is only allowed if it comports with regulations in the project’s jurisdiction, regulatory eligibility is the foremost concern and should be noted in Section 1.1.	Interra Energy	<p>The language in Section 1.3(1) now reads, <i>“The destruction of landfill gas in an open or closed flare”</i>.</p> <p>Please also note that regulatory compliance is required for all projects under ACR, per Chapter 3 of the ACR Standard which states, <i>“Adherence to all laws, regulations, and other legally binding mandates directly related to project activities.”</i></p>

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1.5	<p><i>Second crediting period should be restricted in some cases.</i> In our experience, few (if any) lenders or investors regards LFG-to-energy cash flows projected to occur beyond year 10 as a factor in making an investment decision. In other words, projects are required to demonstrate a reasonable return on investment by or before year 10. As such, ACR should consider categorically disallowing a second 10-year crediting period for projects with a material source of revenue other than carbon.</p>	Origin Climate	<p>ACR relies on a robust validation process which is used to assess the additionality for each project. At the renewal of a crediting period, each project must undergo an assessment against the methodology and ACR Standard requirements in effect at that time.</p>

SECTION 3

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3.0	<p><i>Raising the standard for additionality should improve LFG credit marketability and reward the projects in need. We have worked with a number of LFG operators that have been unable to fund ongoing expenses (including basic upkeep) due to low market prices and a lack of demand. Allowing LFG credits with marginal additionality in to the market not only rewards the wrong actors, but it floods the market with supply and drives down prices for the projects that really do need carbon revenue. Applying more stringent additionality and other criteria should make LFG credits more appealing to voluntary market buyers, which in turn could help stimulate demand and sustainable prices. This in turn could allow many small, rural landfill projects to be implemented and/or better maintained and optimized going forward.</i></p>	Origin Climate	<p>ACR agrees that only real, additional, permanent, and verified offsets should be allowed. We believe that the requirements found within this methodology are robust.</p>
3.2.1	<p><i>Practice-Based Performance Standard with WIP threshold is reasonable. We acknowledge that it is difficult to economically justify a gas capture and collection system (GCCS) at a</i></p>	Origin Climate	<p>Thank you for support of the practice-based performance standard threshold.</p>

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	<p>small landfill with low actual or projected gas flow – regardless of whether or not it is realizing (or attempting to realize) value from the energy content of the gas. In this regard, we believe that the Performance Standard with waste-in-place (WIP) thresholds as proposed is appropriate.</p>		
3.2.2	<p><i>Alternative Three-Prong Additionality Test should be severely restricted.</i> For projects above the WIP threshold, we acknowledge that a GCCS is a significant investment and also requires ongoing, long-term maintenance and investment to optimize environmental performance. Using carbon credits to provide a financial incentive for such investments is sensible <u>provided that</u> the project demonstrates a clear and unquestionable need for such carbon revenue. We would offer the following considerations in this regard:</p> <ol style="list-style-type: none"> 1. Flaring-only projects with no other material source of funding than carbon credits are reasonable but should still demonstrate financial additionality; 	Origin Climate	<ol style="list-style-type: none"> 1. Any project with an eligible activity that does not meet the practice-based performance standard will have to demonstrate additionality through the ACR Three-Prong Additionality Test. 2. ACR agrees that a project applying the three-prong test must demonstrate that it is overcoming a financial implementation barrier even if additional revenue streams are available. Given this recommendation however, the methodology has been amended to exclude the use of technological or institutional implementation barrier arguments to demonstrate additionality. 3. Per the ACR Standard, projects must demonstrate additionality during validation which only occurs once during the crediting period. The exception to this rule is that

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	<ol style="list-style-type: none"> 2. Projects that have other material sources of funding (such as energy revenue) should be subject to a highly prescriptive and rigorous analysis of financial additionality that demonstrates without question that the project is not financeable or operable without carbon revenue at contracted prices (or current market prices in the absence of a stated contract price); 3. Projects that begin as flaring-only but start to generate energy revenue during their crediting period should be subject to additionality testing for each reporting period; 4. Given the prevalence of LFG projects in the U.S. to date, it is our belief that there are few (if any) landfills in the U.S.* that could demonstrate technological or institutional barriers significant enough to amount to clear additionality. We believe that ACR should consider categorically removing these options from the available testing criteria for LFG so as to 		<p>LFG projects must demonstrate regulatory surplus during every reporting period.</p> <ol style="list-style-type: none"> 4. ACR agrees with this suggestion. Section 3.2.2 has been amended to state that only Financial Implementation barriers are acceptable in a demonstration of additionality. 5. While ACR appreciates this recommendation, we do not want to bifurcate the additionality tests based on funding sources as there may be cases where a municipality is operating a project in conjunction with a private company.

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	<p>preempt project owners who may be tempted to try this approach; and</p> <p>5. Notwithstanding the above comments, ACR might consider differentiating GCCS projects that are owned and operated by rural municipalities versus those that are owned and operated by private companies. In our observation, rural counties do not have access to resources available to private companies and they operate under more significant constraints. One means of such differentiation would be to make the alternative three-prong additionality test available to municipally-owned and operated GCCS projects (and not at all available to private landfill owners).</p> <p>*We recognize that ACR's methodology is intended for North America as a whole, but the depth of our expertise is limited to the United States.</p>		

SECTION 4

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4.1	<p>ACR Needs to Modify the Assumptions Related to the Baseline Emissions to Account for Local and Site Specific Regulations: The additionality assessment, by failing to account for local and site-specific regulations, incorrectly assumes that the “without project” scenario would result in the unmitigated release of landfill gas (LFG) into the atmosphere. Local and site-specific regulations may prescribe general emission reduction goals without detailing specific projects or actions to meet those goals. When such regulations are in place, the regulatory surplus test is an inadequate mechanism for preventing GHG emission reductions from being double counted. For example, the Gas Collection and Control System requirement under the California Air Resources Board Landfill Measure mandates capping of emissions for</p>	Interra Energy	<p>ACR agrees that projects that are required to mitigate methane emissions should not be eligible for carbon credits. As such, Section 3.2.3 states, <i>“In order to pass the regulatory surplus test a project must not be mandated by existing laws, regulations, statutes, legal rulings, or any other regulatory frameworks in effect as of the project start date that directly or indirectly affect the credited GHG emissions associated with a project. The project proponent must demonstrate that there is no existing regulation that mandates the project or effectively requires the GHG emission reductions associated with the installation of a destruction device or the infrastructure necessary for enhancing the landfill gas.”</i></p> <p>In regards to periodic regulatory surplus assessments, ACR agrees that no carbon credits should be issued if a project does not pass the <i>Regulatory Surplus</i> test. If a project is required to destroy LFG, whether by a local municipality or a federal regulation, then it is not additional. ACR has added language to the methodology that requires</p>

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	<p>certain landfills without specifying which types of “methane capture or use” projects/technologies are required to meet those goals.¹ The regulation sets a cap, but does not specify what technology type, or operational practice, is required to stay under that cap. However, just because the regulation does not specify how a project proponent will achieve the emission reduction or control, does not mean that the regulation allows for unmitigated release. The current assumption stated in the methodology (pg. 9) combined with the vague nature of the regulatory surplus test, would allow for a project proponent to demonstrate that neither the project, nor the emissions reductions associated, is required, despite the fact that the “without project” scenario under the local regulation would not necessarily allow the unmitigated release of LFG. The “without project” scenario should not presume unmitigated release of LFG but should instead require the project proponent to demonstrate a “without</p>		<p>the regulatory surplus assessment for each reporting period.</p>

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	<p>project” baseline based on all applicable regulations in the project’s jurisdiction.</p> <p>The baseline determination also fails to account for regulatory changes scheduled to occur during the project’s lifetime. Even though existing regulation may not mandate a project as of the project start, the project may nonetheless overlap with phased-in regulatory requirements at a later date. Since the variables for determining the baseline can be expected to change over the course of a project, a project proponent should be required to factor scheduled variations in regulatory compliance into the baseline determination. ACR should revise the methodology to require each year’s emission reductions to be calculated based on the regulations that affect the baseline practices in that year, so long as the regulations were in place when the project began.</p>		
4.2	<p>The Baseline Emissions Equation used to Calculate “CH4total” needs to be Revised: The quantification method of GHG emission reductions erroneously</p>	Interra Energy	As noted above, ACR agrees that no carbon credits should be issued if they do not pass the <i>Regulatory Surplus</i> test. If a project is required to destroy LFG,

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	<p>presumes that federal, state, or local regulations do not affect the baseline emissions. By providing no variable for the regulatory effect on the amount of landfill gas captured, the baseline emissions equations assume that 95% (see Equation 2 on page 11) of the methane not captured by the project would be released into the atmosphere. This assumption overlooks the role of possible regulations in the project’s jurisdiction that already require the destruction or beneficial use of LFG. Absent regulation, Equations 1 and 2 can serve as appropriate formulas for estimating the amount of GHG emissions without the destruction or beneficial use of the LFG. However, should relevant regulations exist in the project’s jurisdiction, the project proponent should be required to factor in the effect those regulations have on the baseline emissions. One method could consist of a separate formula for calculating the reduction in available LFG for capture, preceding the calculation of methane combusted in Equations 1 and 2; another</p>		<p>whether by a local municipality or a federal regulation, then it is not additional.</p> <p>Additionally, ACR does not assume that by implementing a project that 95% of the methane is destroyed based on the baseline scenario, but rather that percent of methane is destroyed through eligible project activities either in a combustion device or through the reuse of gas as fuel. This is a conservative destruction efficiency and is not related to regulatory efforts.</p> <p>If a landfill is required to destroy gas, then the project is not eligible for carbon credits. There is no option in this methodology to receive carbon credits above any regulatory thresholds if the project is required to destroy landfill gas.</p>

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	<p>method might consist of including a regulatory variable, similar to the oxidation factor, in Equation 1. From a practical standpoint, this would equate to reducing the baseline emissions by the amount of capture or destruction that is required by federal, state, or local regulations. The methodology may allow a project to generate credits due to regulations not requiring that specific project, but that does not necessarily mean that the baseline emissions without the project would be unmitigated. Thus, ACR should revise the methodology's baseline emission calculation to consider any federal, state, or local regulations.</p>		
<p>4.4, Equation 6</p>	<p>ACR should update the global warming potential of methane used in Equation 6, currently using the 2007 IPCC value of 25, to reflect the 2013 IPCC's value of 34. If not updated, then ACR should note a reason for the use of the 2007 figure in the methodology, such as being conservative in the emission reduction calculations.</p>	<p>Interra Energy</p>	<p>The ACR Standard specifies use of global warming potentials in the Fourth Assessment Report, per the ACR Standard, Section 1G, <i>Unit of Measure</i>, under the definition of Global Warming Potential, which is in alignment with the US EPA's greenhouse gas inventory.</p>
<p>4.4, Equation 6</p>	<p>The Equation 6 chart references the "conversion from kg to metric tons" value</p>	<p>Interra Energy</p>	<p>The value for conversion of kg to metric tons has been removed from this equation as the unit of</p>

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	of 1000, but does not apply this conversion figure in its formula.		measurement for both CH_{4total} and PE is already in metric tons.