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Bryan Esterly
Sustainability Accounting Standards Board
1045 Sansome Street, Suite 450
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Re: Waste Management Sustainability Accounting Standard, Proposed Changes To Provisional Standards, Exposure Draft

Dear Bryan:

Thank you for the opportunity to comment on the Exposure Draft of the Waste Management Sustainability Accounting Standard ("Draft Standard"). Covanta is a world leader in providing municipalities and corporate customers with sustainable waste and energy solutions. We operate over 40 Waste-to-Energy (WTE) facilities which recover energy in the form of steam and electricity from waste resources. These facilities reduce greenhouse gas (GHG) emissions, conserve land and complement recycling efforts. We also provide commercial and industrial waste clients a variety of sustainable waste management services, including consulting, logistics support, recycling and energy recovery services providing our clients with additional routes to meet their zero-waste, zero-waste-to-landfill and sustainability goals.

We fully support transparent sustainability reporting and applaud SASB's efforts to develop a set of standards, tailored to specific industry groups, to guide the incorporation of sustainability information into existing reporting mechanisms. We are also supportive of the guidance that individual companies must determine what information is material based on specific operations. We have adopted this approach since our first sustainability report was issued in 2011 in accordance with the Global Reporting Initiative (GRI) series of standards.

After our review of the Draft Standard, we believe there are some areas that could be further refined to improve disclosure. Along these lines, we have the following comments and suggestions on the Draft Standard:

We support the use of the most recent Global Warming Potentials (GWPs) of the IPCC 5th Assessment Report.

Reliance on older 100-yr GWPs, as is currently done by many regulatory programs, underestimates the climate impact of landfill methane. The recognized potency of methane relative to CO_2 (i.e. methane's global warming potential, "GWP") has steadily increased over time. Use of the most recent figure will align the reporting of GHG emissions with current scientific consensus. We recommend, however, that SASB explicitly recommend the use of the methane GWP with the incorporation of climate-carbon feedbacks (100-year value of 34, 20-year value of 86). The IPCC concluded that "it is likely that including the climate-carbon feedback for non-CO_2 gases as well as for CO_2 provides a better estimate of the metric value than including it only for CO_2."[1] Methane may be also lingering longer in the atmosphere today than before, as a result of a possible decline in the atmosphere's oxidative capacity, adding to its impact.[2]

The standard should specify the reporting of methane emissions using a 20-year GWP in addition to the 100-year GWP in recognition of its role as a key short-lived climate pollutant.

The choice of the 100-yr timeframe commonly used for GWPs is somewhat arbitrary and doesn't have a basis in science. According to the IPCC's 5th Assessment Report:

> "There is no scientific argument for selecting 100 years compared with other choices. The choice of time horizon is a value judgment because it depends on the relative weight assigned to effects at different times."[3]

There is growing recognition that the 100-yr GWP does not accurately capture the climate impacts of SLCPs, including methane. For years, climate scientists have been calling for separate regulation of climate pollutants like methane owing to their potency and other differences relative to CO_2.[4,5,6] In response, California uses a 20-year GWP in its *Short-Lived Climate Pollutant Reduction Strategy:*

> "The use of GWPs with a time horizon of 20 years better captures the importance of the SLCPs and gives a better perspective on the speed at which SLCP emission controls will impact the atmosphere relative to CO_2 emission controls."[7]

In its *Policy and Action Standard*, the WRI GHG Protocol recommends the use of 20-year GWPs in looking at the significant effects of policies or actions designed to reduce emissions of SLCPs:

> "Twenty-year GWP values may be used to focus on short-term climate drivers, and should be used if the policy or action accessed is specifically designed to reduce emissions of short-lived greenhouse gases, such as methane."[8]

Methane is a short-lived climate pollutant (SLCP), a group of GHGs increasingly under greater international scrutiny. Fast action to reduce SLCPs, including methane, has the potential to slow down the global warming expected by 2050 by as much as 0.5 Celsius degrees."[9] A failure to address SLCPs, like methane, significantly increases the risk of crossing the 2°C temperature increase threshold widely discussed as most likely to limit severe climate change impacts.[10] Reporting emissions with both factors would provide investors a more complete picture of the potential risks associated with significant methane emissions.

The future emissions burden of landfills should be characterized and reported to reflect long-term risks.

As identified in the Purpose & Structure section of the Draft Standard, "certain sustainability information is important for assessing the future financial performance of an issuer, *particularly over the long term* [emphasis added]." Waste placed in landfills today will emit landfill gas, including methane, for up to one hundred years or more and the waste itself presents a long-term environmental and financial risk. Regulators have set post closure care requirements in response, but the current Draft Standard does not address long-term potential impacts and risks of landfilling. To provide a more complete picture on GHG emissions, landfill operators should be required to estimate future GHG emissions from the facilities within the scope of their reporting, or report the lifetime methane emissions associated with wastes landfilled in a given reporting year.

This approach has been adopted by ICLEI – Local Governments for Sustainability to determine the emissions associated with the landfill disposal of a community's waste to better temporarily align quantified emissions impacts with policies designed to divert wastes from landfilling.[11] A similar approach could be adopted to more fully quantify the future emissions burden associated with a quantity of waste landfilled in a given year, or any overall portfolio of landfill sites within the reporting scope of a company.

The Draft Standard should be revised to identify energy recovery as separate from recycling, consistent with widely adopted waste management hierarchies and existing reporting norms.

Waste to energy ***should not*** be included in the scope of recycled material. Energy recovery is identified as a separate tier, representing the next preferable option for waste management after recycling, in the U.S. EPA, European Union, and many state, waste management hierarchies.[12,13] Energy recovery is commonly reported separately from recycling by the U.S. EPA, the European Union, academics, communities, and states. The National Recycling Coalition specifically excludes energy recovery from its definition of recycling,[14] as does the European Union's Waste Directive:

> " 'recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations;"[15]

Under GRI 306, companies are directed to report recycling and energy recovery separately.[16] Furthermore, SASB's own Draft Household & Personal Products Sustainability Accounting Standard distinguishes between energy recovery and recycling. Creating a separate reporting rubric under SASB Standards would result in many companies reporting their waste management practices differently under the SASB Waste Management Sustainability Accounting Standard than in other contexts.

Anaerobic digestion includes both energy and recycling components and could be handled two ways. We recommend that, when residuals of the process are reused beneficially as a compost, soil amendment, or fertilizer, anaerobic digestion be classified as recycling to reflect the materials that are put back into productive use. Anaerobic digestion without residual reuse should be classified as energy recovery to reflect the primary benefit of energy extraction from the waste resource.

Disclosure of strategy and plans to manage GHG emissions should include lifecycle and Scope 2 and Scope 3 emissions, in addition to Scope 1.

WTE is an internationally recognized source of GHG mitigation, including by CalRecycle, U.S. EPA, U.S. EPA scientists, the Intergovernmental Panel on Climate Change ("IPCC"), the World Economic Forum, and the European Union. However, while WTE facilities are sources of net GHG mitigation, they generate stack or "Scope 1" GHG emissions of their own as part of normal operation. The more waste we divert from landfilling, the greater the net GHG reduction achieved overall. However, this also translates to an increase in our Scope 1 emissions.

The only way we can lower our stack, or Scope 1, GHG emissions would be to process less waste. Doing so would increase the amount of waste going to landfills, and as a result, increase overall net GHG emissions. So, we focus our GHG emission reduction efforts on energy efficiency, raw materials, metal recovery, and most importantly, helping our customers divert biodegradable wastes from landfills. These real GHG reductions don't show up in our Scope 1 inventory, but can be demonstrated through Scope 2&3 inventories, and lifecycle analysis. Some of the most significant GHG reductions can be achieved outside of an organization's Scope 1 inventory. Therefore, we recommend that SASB revise the standard to include the disclosure of strategy and plans to manage Scope 2, Scope 3, and lifecycle GHG emissions.

References to waste incineration, combustion, and waste to energy should be made consistent throughout the standard.

At various points in the standard, thermal processing or treatment of waste is referenced as incineration, combustion, and waste-to-energy. For consistency throughput the standard, we recommend that the term "thermal processing" from 40 CFR 240 be used throughout the document. This term is inclusive of the general terms incineration, combustion, pyrolysis, and gasification *and* the specific combustion sources regulated by the U.S. EPA, including municipal waste combustors (e.g. 40 CFR Subparts Cb, Eb), hospital/medical/infectious waste incinerators (40 CFR Subparts Ce, Ec), commercial and industrial solid waste incineration (CISWI) units (40 CFR Subparts CCCC & DDDD), and portland cement plants processing wastes (40 CFR Subpart F).

Beyond the specific Draft Standard pertaining to the Waste Management sector, we believe that the overall collection of standards should reconsider waste & materials management more broadly. The U.S. EPA has found that the full lifecycle of materials management, including the provision of goods and food, is responsible for 42% of U.S. GHG emissions.[17] More sustainable waste management in the U.S. focused on recycling, anaerobic digestion, composting, and energy recovery could achieve GHG reductions of over **260 million tons** of CO_2e / year, worth $2.9 – 23 billion a year based on the U.S. government's previous social cost of carbon.[18,19]

Companies up and down the value chain have an important role to play in realizing the benefits of more sustainable waste management, and SASB's set of standards can help drive progress. Many companies are already looking at more sustainable waste management as part of their own plans and goals. In a review of approximately 80 sustainability reports we completed last year, fully 90% of the companies we reviewed had some form of a waste and materials goal. Companies are making public commitments around zero landfill and zero waste, and are communicating their progress. It is clearly a material (with regard to reporting) issue for these companies. A more inclusive treatment of sustainable waste management across the SASB standards would help bring consistency in reporting of efforts already underway and spur additional efforts that could have large environmental benefits.

Thank you again for the opportunity to comment on the Draft Standard. We look forward to continuing to work with SASB on development of the Sustainability Accounting Standards.

Sincerely,

Michael E. Van Brunt, P.E.

References

[1] See Table 8-7 of IPCC WGI Fifth Assessment Report, Chapter 8: Anthropogenic and Natural Radiative Forcing.

[2] Voosen, P. (2016) Scientists flag new causes for surge in methane levels, Science, **354**, 1513. http://science.sciencemag.org/content/354/6319/1513

[3] See p711-712 of of IPCC WGI Fifth Assessment Report, Chapter 8: Anthropogenic and Natural Radiative Forcing.

[4] Jackson, S., (2009), Parallel Pursuit of Near-Term and Long-Term Climate Mitigation Science, **326:** 526-527

[5] Weaver, A., (2011), Toward the Second Commitment Period of the Kyoto Protocol Science, **332**: 795-796

[6] See p2 of UNEP, WMO, (2011), Integrated Assessment of Black Carbon and Tropospheric Ozone: Summary for Decision Makers. http://www.unep.org/dewa/Portals/67/pdf/Black_Carbon.pdf

[7] CARB (2016) Proposed Short-Lived Climate Pollutant Reduction Strategy https://www.arb.ca.gov/cc/shortlived/meetings/04112016/proposedstrategy.pdf

[8] See p64 of WRI GHG Protocol (2014) Policy and Action Standard: An accounting and reporting standard for estimating the greenhouse gas effects of policies and actions. http://www.ghgprotocol.org/policy-and-action-standard

[9] Climate and Clean Air Coalition website, accessed 9/2/2014. http://www.unep.org/ccac/Short-LivedClimatePollutants/BenefitsofMitigation/tabid/130286/Default.aspx

[10] Shindell, D. et al., (2012) Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security, Science, **335**, 183-189.

[11] ICEI – Local Governments for Sustainability USA (2013) U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix E: Solid Waste Emission Activities and Sources, Version 1.1 http://icleiusa.org/publications/us-community-protocol/

[12] European Union, EU (2008) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. Official Journal of the European Union. L312, 51, 3-30, http://ec.europa.eu/environment/waste/framework/

[13] See p13 of U.S. EPA (2015a) Advancing Sustainable Materials Management: Facts and Figures 2013. https://www3.epa.gov/epawaste/nonhaz/municipal/pubs/2013_advncng_smm_rpt.pdf

[14] National Recycling Coalition (2016) NRC Policy Document – Recycling https://nrcrecycles.org/mobius/nrcwp-content/uploads/2016/08/NRC-RecyclingDefinitionPolicy.pdf

[15] European Union, EU (2008) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. Official Journal of the European Union. L312, **51**, 3-30

[16] See GRI 306: Effluents and Waste 2016

[17] U.S. EPA (2009) Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices https://www.epa.gov/sites/production/files/documents/ghg-land-materials-management.pdf

[18] Methodology of [Bahor, B., M. Van Brunt, J. Stovall, K. Blue. "Integrated waste management as a climate change stabilization wedge" Waste Management & Research. 2009: 27: 839-849. http://www.seas.columbia.edu/earth/wtert/sofos/wmr_nov09_p839.pdf] applied to U.S. waste generation. Reductions assume future waste disposition of 65% recycling & composting, 25% energy recovery, and 10% landfilling.

[19] Based on 2010 social cost of carbon ("SCC") range of $11 - $89 / metric tonne from Interagency Working Group on Social Cost of Carbon, United States Government (2013) Technical Support Document: - Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 -