Summary Report for the Stakeholder Webinar on the Waste Sector Data and Methodology in the U.S. Greenhouse Gas Inventory (December 8, 2016)

EPA develops an annual report called the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (Inventory). This report tracks total annual U.S. emissions and removals by source, economic sector, and greenhouse gas (GHG) going back to 1990. One sector in the annual report is the waste sector, which includes municipal solid waste (MSW) landfills, industrial landfills, composting, and wastewater. With each Inventory report, EPA strives to improve the data inputs and calculations used. The national greenhouse gas inventory is submitted to the United Nations in accordance with the United Nations Framework Convention on Climate Change (UNFCCC). Additional information about GHG inventory reporting requirements can be found on the UNFCCC GHG Inventories Reporting Requirements page (http://unfccc.int/national_reports/annex_i_ghg_inventories/reporting_requirements/items/2759.php).

On December 8, 2016, EPA held a stakeholder webinar on the Inventory data and methodology for the waste sector, with a focus on MSW landfills.

1. Purpose of the Targeted Waste Sector Stakeholder Outreach

The purpose of this targeted waste sector stakeholder outreach series is to engage with stakeholders on the data submitted by facilities under the Greenhouse Gas Reporting Program (GHGRP) Subpart HH for MSW Landfills and the application of this information as inputs to the MSW landfill methane emissions estimates in the 1990-2015 U.S. GHG Inventory. EPA's decision to informally engage with stakeholders came about through public comments on the 1990-2014 U.S. GHG Inventory, where annual waste disposal data from Subpart HH was incorporated into the Inventory.

On December 8, 2016, Rachel Schmeltz from the EPA delivered a webinar and provided an overview of the methodology, data sources, and processes for compiling the U.S. GHG Inventory for MSW landfill methane emissions. The webinar is posted on the EPA Website at: https://www.epa.gov/ghgemissions/stakeholder-webinar-waste-sector-data-and-methodology-us-greenhouse-gas-inventory. The remainder of this report summarizes the webinar content, stakeholder questions and answers, and next steps for submitting input for the second webinar to be held in January 2017.

2. Summary of the Webinar

The December 8, 2016 webinar consisted of four distinct sections discussed further below.

In the first section, EPA opened with a brief review of the purpose of the webinar and a description of planned targeted waste sector stakeholder engagement opportunities/comment schedule. In addition to the December 8th webinar, EPA will host a second webinar in early January 2017 to discuss identified options to improve the U.S. GHG Inventory specific to MSW landfills. The EPA also plans to engage in follow-up discussion with stakeholders from early January to February 17, 2017, prior to the publication of the public review draft of the 1990-2015 U.S. GHG Inventory. After the comment period for the public review draft, EPA will decide which data from the GHGRP Subpart HH, or other sources provided by stakeholders, can and should be incorporated into the 1990-2015 Inventory.

The next two sections of the webinar focused on describing the methodology used to estimate MSW landfill methane emissions for the U.S. GHG Inventory and GHGRP, outlining the differences in determining key data elements in those two EPA GHG data products. For the U.S. GHG Inventory, the EPA uses a combination of Tier 1 and Tier 2 methodologies and the Solid Waste Model {developed by the Intergovernmental Panel on Climate Change, IPCC). The data sources and values of the emission factors and activity data used in the Model were described, followed by a question and answer session specific to the methodology and data sources.

The final section of the webinar summarized how the Subpart HH annual waste disposal data were incorporated into the 1990-2014 draft Inventory and why the EPA reverted to the prior year's methodology for the final 1990-2014 published in April 2016. In short, in the public review draft Inventory report, the EPA directly used the annual waste acceptance rates from the NSPS/EG dataset for MSW landfills developed by OAQPS to replace the now infrequently updated State of Garbage (SOG) Survey waste generation data. The quantity of waste disposed from the NSPS/EG dataset is larger than the SOG Survey data for the years 1982 to date, which, without increases in methane recovery, resulted in larger net methane emissions compared to the previous Inventory year. The EPA reverted to the previously used approach (i.e., the SOG survey) for the 1990-2014 final Inventory report after receiving public comments on the draft Inventory report.

EPA then opened the webinar to questions, asking webinar participants for input (e.g., ideas, data, reports) on how to improve the MSW landfill methane emissions Inventory using existing data.

3. Summary of the Questions and Answers

A summary of the question and answer portion of the webinar is provided below.

What is the process for identifying new data sources and getting them approved for use by the EPA?

The EPA considers all publicly available data sources with respect to MSW landfills. Preferred data sources may be peer-reviewed, nationally representative, of high quality, transparent, and/or frequently updated. Many data sources are used and references for these sources can be found in the Waste chapter of the U.S. GHG Inventory (https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014).

The EPA will review the data sources mentioned by the stakeholders during the webinar, including data on the methane potential for organic fractions of waste to be landfilled (prepared by Tim Townsend); a national inventory of waste composition studies across the US that will compile sample-sort study data from all states, counties and cities (prepared by EREF), and a third report on MSW Management in the U.S.: 2010 & 2013 (prepared by EREF).

What was the reasoning behind back-calculating DOC value from Lo, rather than using the Tier1/Composition-based DOC calculation?

The decision to use the back-calculated DOC value from the methane generation potential of 100 m^3/Mg of waste (as published in EPA AP-42) versus the IPCC 2006 default weighted average DOC value was based on the desire to use higher tier data as recommended by the IPCC good practice guidance. The Lo value is based on a set of 52 U.S. MSW landfills, whereas the IPCC default weighted average DOC value is for North America and may include non-U.S. landfills.

What percentage of states were responding to SOG surveys?

The SOG survey is voluntary and the percentage of non-reporting states varies by year. For example, the 2004 SOG Survey (for the year 2002) does not include MSW generation data for three states; the 2006 SOG Survey (for the year 2004) is missing 11 states; the 2008 SOG Survey (for the year 2006) is missing 13 states; and the 2014 SOG Survey (for the year 2011) is missing 10 states. In general, the non-reporting states differ for each of the survey years.

In the next Inventory report, do you think you will separate the Recovered amount into: Energy and Flaring instead of a single line item (e.g., Table 7-3)?

After we incorporated the Subpart HH data, we were no longer able to separately report the quantity of methane recovered into Landfill Gas-to-Energy and Flaring because this level of detail is not required to be reported under the GHGRP. In previous years, we were able to separately report these values because the data sources used reported data in this format.

In the NSPS/EG dataset, what percentage of facilities relied on the LMOP waste acceptance rates?

The majority of the NSPS/EG dataset consists of facilities reporting under the GHGRP Subpart HH (62%). The remaining facility data came from the July 2014 LMOP database (38%). The larger facilities in terms of methane emissions are captured by the GHGRP Subpart HH data.

Is EPA examining DOCf value(s) and the choice to use one uniform value of DOCf = 0.5?

The EPA has not specifically considered modifying the use of a uniform DOCf value to date. However, we will include discussion of this suggestion in the January 2017 webinar.

Is the full national GHGRP database available for download?

The data can be found on the EPA FLIGHT (https://ghgdata.epa.gov/ghgp/main.do) and through Envirofacts (https://www.epa.gov/enviro/greenhouse-gas-customized-search). The entire GHGRP HH dataset can be downloaded through Envirofacts and clicking on the *Municipal Solid Waste Landfills* link, which will allow you to run a custom query and export the data as a csv file.

4. Next Steps

In advance of the next webinar, EPA is requesting input on the following items:

   a. Use of the GHGRP annual waste disposal data in methane generation equation
   b. Use of the methane generation equation with respect to the DOC value
   c. Proper way to account for annual waste disposal data for facilities not reporting to the GHGRP.

Input includes, but is not limited to, data on:

- Quantities of waste types disposed at individual or groups of landfills
- How the waste composition has changed over time in a landfill or group of landfills
- Tipping receipts documenting the fraction of inerts in a landfill or group of landfills
- Statistics on the changing waste composition.

The input can be provided in written format and the aggregated feedback will be shared in the January 2017 webinar. Following the next webinar, EPA will make a decision on how to improve the Inventory and anticipates including the draft emissions estimates in the Public Review draft.

5. How to Submit Input

Stakeholders should provide input by December 23, 2016 via e-mail to Rachel Schmeltz (Schmeltz.Rachel@epa.gov) and Kate Bronstein (kbronstein@rti.org).