

**Background Document C:
Review Process for the Report
*Greenhouse Gas Emissions from
Management of Selected Materials
in the Municipal Solid Wastestream***

The report *Greenhouse Gas Emissions from Management of Selected Materials in Municipal Solid Waste* has undergone several review cycles. This background document briefly describes each of the review cycles.

The first draft of the report, prepared in 1995, was reviewed by the following specialists at EPA and other federal agencies:

EPA Reviewers

- Dana Arnold, Office of Solid Waste (OSW)
- Truett DeGeare, OSW
- Bob Dellinger, OSW
- George Garland, OSW
- Terry Grist, OSW
- Richard Haynes, USDA, Forest Service
- Linda Heath, USDA, Forest Service
- Kathleen Hogan, Office of Air and Radiation (OAR)
- Bill Hohenstein, OPPE
- Peter Ince, USDA, Forest Service
- Cindy Jacobs, OAR
- Rich Kashmanian, OPPE
- Steve Levy, OSW
- Susan Thorneloe, Office of Research and Development (ORD)
- Steven Winnett, OPPE

Other Federal Agency Reviewers

- Linda Gaines, Argonne National Laboratory
- Frank Stodolsky, Argonne National Laboratory
- Carleton Wiles, DOE-National Renewable Energy Laboratory

In addition to the federal agency reviewers, Richard Denison of the Environmental Defense Fund and Ralph Torrie of Torrie Smith Associates provided review comments on specific sections of the draft report.

The comments received from the reviewers were incorporated in the next draft of the report, which was completed in May 1996.

Among the changes made as a result of this review, EPA

- refined terminology and definitions for commodity materials and management practices;
- revised estimates for methane recovery from landfill gas collection systems;
- reassessed landfill methane emissions data (experimental vs. field values);
- discussed the utility of the report's results for decision-making, by noting that GHG emissions are but one of many factors that decision-makers can use in evaluating solid waste management options, and by referring to the MSW hierarchy;

- conducted more sensitivity analyses of carbon sequestration scenarios; and
- limited the discussion of non-climate benefits, particularly in the chapter on composting.

The May 1996 draft was peer reviewed by the following four researchers, none of whom was involved in preparing the report:

- Richard McClimans, Environmental and Resource Engineering Consultants
- William Seitz, H. John Heinz Center for Science, Economics, and the Environment
- Michael Cole, University of Illinois at Urbana-Champaign
- Reid Lifset, Yale University

The comments received from these peer reviewers were addressed in the next draft of the report, which was completed in March 1997.

Among the changes made as a result of this peer review, EPA

- added a discussion of purpose in the beginning of the report;
- added a more detailed explanation of the treatment of biogenic carbon in the report;
- reevaluated transportation GHG emissions from materials recovery;
- included explanation of how models used in the chapter on forest carbon sequestration were chosen;
- investigated the fate and GHG implications of paper mill sludge for both recycled and virgin input manufacturing processes;
- revised assumptions used in the chapter on composting, based on references identified by Dr. Cole; and
- added discussions of the limitations of the analysis.

The March 1997 draft was made available to the public, and comments were received from the following organizations and individuals:

- American Plastics Council, Washington, D.C.
- Steve Apotheker, Resource Recycling
- Morton Barlaz, North Carolina State University
- Art Dunn, Director, Minnesota Office of Environmental Assistance
- Scott Chubbs, American Iron and Steel Institute Representative, Viterro Inc.
- Gregory Crawford, Vice President, Operations, Steel Recycling Institute
- Martin Felker, Senior Environmental Engineer, Waste Management, Oak Brook, Illinois
- Karen Harrington, Principal Planner, Minnesota Office of Environmental Assistance
- Judy Hicks, American Forest and Paper Association, Washington, D.C. (Including comments from Ecobalance, Rockville, MD submitted on behalf of the American Forest and Paper Association)
- Jim Hull, Chief, Engineering and Planning Section, Missouri Department of Natural Resources
- Tom Kerr, EPA Office of Air and Radiation, Atmospheric Pollution Prevention Division
- Peder Larson, Commissioner, Minnesota Pollution Control Agency
- Paul McCarron, Chair, Minnesota Solid Waste Management Coordinating Board
- Gene Mossing, Solid Waste Director, Olmsted County, Minnesota, Public Works Department

- Steven Pomper, Alcan, Montreal
- Victoria Reinhardt, Chair, Ramsey/Washington County, Minnesota, Resource Recovery Project
- Trudy Richter, Executive Director, Minnesota Resource Recovery Association
- Clark Row, Row Associates
- John Ryan, Research Director, Northwest Environment Watch
- John Stutz, The Tellus Institute
- David Sussman, President, Poubelle Associates
- Michelle Swanson, Northern States Power Company
- Maria Zannes, President, Integrated Waste Services Association

Each comment pertaining to the 1997 draft, and an explanation of how the comment was taken into account in this report, is specifically addressed in a comment response document (Background Document D).

Among the changes made as a result of this review, EPA

- added two materials to the analysis—mixed paper and glass;
- revised system efficiencies for waste combustors, and provided a separate characterization of refuse-derived fuel (RDF) as a category of combustion;
- based GHG reductions from displaced electricity on GHGs from fossil-fuel-fired generation, rather than from the national average mix of fuels; and
- added a “waste generation” reference point for GHG accounting, where before only a “raw material extraction” reference point was provided.

In addition, the final report updates many of the inputs to the calculations (such as the global warming potential for various greenhouse gases), and uses more recent information on waste composition and recycling rates.