

Annexes to the Inventory of U.S. GHG Emissions and Sinks

The following eight annexes provide additional information related to the material presented in the main body of this report as directed in the *UNFCCC Guidelines on Reporting and Review* (UNFCCC 2014). Annex I contains an analysis of the key categories of emissions discussed in this report and a review of the methodology used to identify those key categories. Annex 2 describes the methodologies used to estimate CO₂ emissions from fossil fuel combustion, the carbon content of fossil fuels, and the amount of carbon stored in products from non-energy uses of fossil fuels. Annex 3 discusses the methodologies used for a number of individual source categories in greater detail than was presented in the main body of the report and includes explicit activity data and emission factor tables. Annex 4 presents the IPCC reference approach for estimating CO₂ emissions from fossil fuel combustion. Annex 5 addresses the criteria for the inclusion of an emission source or sink category and discusses some of the sources that are excluded from U.S. estimates. Annex 6 provides a range of additional information that is relevant to the contents of this report. Annex 7 provides data on the uncertainty of the emission estimates included in this report. Finally, Annex 8 provides information on the QA/QC methods and procedures used in the development of the Inventory.

Annexes to the Inventory of U.S. GHG Emissions and Sinks	1
ANNEX 1 Key Category Analysis	3
ANNEX 2 Methodology and Data for Estimating CO ₂ Emissions from Fossil Fuel Combustion	37
2.1. Methodology for Estimating Emissions of CO ₂ from Fossil Fuel Combustion	37
2.2. Methodology for Estimating the Carbon Content of Fossil Fuels	75
2.3. Methodology for Estimating Carbon Emitted from Non-Energy Uses of Fossil Fuels	112
ANNEX 3 Methodological Descriptions for Additional Source or Sink Categories	139
3.1. Methodology for Estimating Emissions of CH ₄ , N ₂ O, and Indirect Greenhouse Gases from Stationary Combustion	139
3.2. Methodology for Estimating Emissions of CH ₄ , N ₂ O, and Indirect Greenhouse Gases from Mobile Combustion and Methodology for and Supplemental Information on Transportation-Related Greenhouse Gas Emissions	147
3.3. Methodology for Estimating Emissions from Commercial Aircraft Jet Fuel Consumption	189
3.4. Methodology for Estimating CH ₄ Emissions from Coal Mining	194
3.5. Methodology for Estimating CH ₄ , CO ₂ , and N ₂ O Emissions from Petroleum Systems	202
3.6. Methodology for Estimating CH ₄ , CO ₂ , and N ₂ O Emissions from Natural Gas Systems	207
3.7. Methodology for Estimating CO ₂ , CH ₄ , and N ₂ O Emissions from the Incineration of Waste	214
3.8. Methodology for Estimating Emissions from International Bunker Fuels used by the U.S. Military	221
3.9. Methodology for Estimating HFC and PFC Emissions from Substitution of Ozone Depleting Substances	227
3.10. Methodology for Estimating CH ₄ Emissions from Enteric Fermentation	251
3.11. Methodology for Estimating CH ₄ and N ₂ O Emissions from Manure Management	275
3.12. Methodologies for Estimating Soil Organic C Stock Changes, Soil N ₂ O Emissions, and CH ₄ Emissions and from Agricultural Lands (Cropland and Grassland)	308
3.13. Methodology for Estimating Net Carbon Stock Changes in <i>Forest Land Remaining Forest Land</i> and <i>Land Converted to Forest Land</i>	352
3.14. Methodology for Estimating CH ₄ Emissions from Landfills	385
ANNEX 4 IPCC Reference Approach for Estimating CO ₂ Emissions from Fossil Fuel Combustion	398
ANNEX 5 Assessment of the Sources and Sinks of Greenhouse Gas Emissions Not Included	408
ANNEX 6 Additional Information	419
6.1. Global Warming Potential Values	419
6.2. Ozone Depleting Substance Emissions	430
6.3. Sulfur Dioxide Emissions	432
6.4. Complete List of Source Categories	434
6.5. Constants, Units, and Conversions	436
6.6. Abbreviations	439
6.7. Chemical Formulas	446
ANNEX 7 Uncertainty	449
7.1. Overview	449
7.2. Methodology and Results	449
7.3. Reducing Uncertainty	456
7.4. Planned Improvements	456
7.5. Summary Information on Uncertainty Analyses by Source and Sink Category	457
ANNEX 8 QA/QC Procedures	458
8.1. Background	458

8.2.	Purpose.....	458
8.3.	Assessment Factors	459
8.4.	Responses During the Review Process	461