ANNEX 5 Assessment of the Sources and Sinks of Greenhouse Gas Emissions Not Included

Although this report is intended to be a comprehensive assessment of anthropogenic[113] sources and sinks of greenhouse gas emissions for the United States, certain sources have been identified but not included in the estimates presented for various reasons. Before discussing these sources and sinks, it is important to note that processes or activities that are not *anthropogenic in origin* or do not result in a *net source or sink* of greenhouse gas emissions are intentionally excluded from a national inventory of anthropogenic greenhouse gas emissions, in line with guidance from the IPCC in their guidelines for national inventories.

The anthropogenic source and sink category of greenhouse gas emissions described in this annex are not included in the United States national inventory estimates. The reasons for not including that source in the national greenhouse gas Inventory include one or more of the following:

- Emissions are not likely to occur within the United States.
- A methodology for estimating emissions from a source does not currently exist.
- Though an estimating method has been developed, adequate data are not available to estimate emissions.
- Emissions are determined to be insignificant in terms of overall national emissions, as defined per UNFCCC reporting guidelines, based on available data or a preliminary assessment of significance. Further, data collection to estimate emissions would require disproportionate amount of effort (e.g., dependent on additional resources and impacting improvements to key categories, etc.).

In general, data availability remains the main constraint for estimating and including the emissions and removals from source and sink categories discussed below. Methods to estimate emissions and removals from these categories were introduced with *2006 IPCC Guidelines*. Also, many of the categories discussed are determined to be insignificant in terms of overall national emissions based on qualitative information on activity levels per national circumstances, expert judgment, and available proxy information, and not including them introduces a very minor bias.

Reporting of inventories to the UNFCCC under Decision 24/CP.19 requests "Where methodological or data gaps in inventories exist, information on these gaps should be presented in a transparent manner." Furthermore, these revised reporting guidelines allow a country to indicate that a disproportionate amount of effort would be required to collect data for a gas from a specific category that would be insignificant in terms of the overall level and trend in national emissions.[114] Specifically, where the notation key "NE," meaning not estimated, is used in the Common Reporting Format (CRF)[115] tables that accompany this Inventory report submission to the UNFCCC, countries are required to describe why such emissions or removals have not been estimated (UNFCCC 2013).

Based on the latest UNFCCC reporting guidance, the United States is providing more information on the significance of these excluded categories below and aims to update information on the significance to the extent feasible during the annual compilation cycle. Data constraints may impact the feasibility of undertaking a quantitative significance assessment. The United States is continually working to improve the understanding of such sources or sinks and seeking to find the data required to estimate related emissions, prioritizing efforts and resources for significant categories. As such improvements are implemented, new emission and removal categories will be quantified and included in the Inventory to enhance completeness of the Inventory.

The full list of sources and sink categories not estimated, along with explanations for their exclusion, is provided in Table 9 of the CRF submission. Information on coverage of activities within the United States and its territories is provided within the sectoral chapters and category-specific estimate discussions and will be updated in this Annex in the next Inventory (i.e., 2019 submission).

[113] The term "anthropogenic," in this context, refers to greenhouse gas emissions and removals that are a direct result of human activities or are the result of natural processes that have been affected by human activities (*2006 IPCC Guidelines for National Greenhouse Gas Inventories*).

[114] Paragraph 37(b) of Decision 24/CP.19 "Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention." See <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>.

[115] See <http://unfccc.int/national_reports/annex_i_ghg_inventories/reporting_requirements/items/2759.php>.

Source and Sink Categories Not Estimated – TO BE UPDATED FOR FINAL INVENTORY REPORT

The following section is arranged by sector and source or sink category, providing additional information on the reasons the category was not estimated.

Energy

CRF Category 1.A.3: CH_4 and N_2O Emissions from Transport Fuel Combustion—Biomass

Emissions from biomass fuel use in domestic aviation (1.A.3.a), motorcycles (1.A.3.b), railways (1.A.3.c), and domestic navigation (1.A.3.d) are not currently estimated. EPA has determined that the use of biodiesel in rail and navigation was likely insignificant, and there are not readily available data sources to estimate biodiesel consumption from these sources.

Emissions from ethanol mixed with gasoline in low blends are included in the on-road gasoline emissions for motorcycles. If there is any use of high blend ethanol fuel in motorcycles, it is likely insignificant.

Prior to 2011, no biobased jet fuel was assumed to be used for domestic aviation. Between 2011 and 2015, 22 airlines have performed over 2,500 commercial passenger flights with blends of up to 50 percent biojet fuel. Furthermore, several airlines have concluded long-term offtake agreements with biofuel suppliers.[116] An analysis was conducted based on the total annual volumes of fuels specified in the long-term agreements. Emissions of N_2O were estimated based on the factors for jet fuel combustion, and as for jet fuel use in commercial aircraft, contributions of methane (CH_4) emissions are reported as zero. It was determined that annual non-CO_2 greenhouse gas emissions from the volume of fuel used would be 16.4 kt CO_2 Eq. per year, well below 500 kt CO_2 Eq. per year and considered insignificant for the purposes of inventory reporting under the UNFCCC.

CRF Category 1.A.3.e.i: CO_2 Emissions from Liquid Fuels in Other Transportation—Pipeline Transport

Use of liquid fuels to power pipeline pumps is uncommon, but does occur. Data on use of these fuels are currently unavailable to characterize this activity. Data for fuel used in various activities including pipelines are based on survey data conducted by the U.S. Energy Information Association (EIA). In 1981, EIA eliminated the requirement to report crude oil use in pipelines or burned on leases as either distillate or residual fuel oil. It would require a disproportionate level of effort to change existing surveys to collect this data given this is not a significant activity.

CRF Category 1.A.3.e.ii: CH_4 and N_2O Emissions from Biomass in Other Transportation—Non-Transportation Mobile

Biomass based fuels used in non-transportation mobile applications are currently not estimated. The use of biofuels in non-transportation mobile applications is insignificant and there are no readily available data sources to estimate it.

CRF Category 1.A.5.a: CO_2 Emissions from Non-Hazardous Industrial Waste Incineration and Medical Waste Incineration

Waste incineration of the municipal waste stream and hazardous waste incineration of fossil fuel-derived materials are reported in two sections of the Energy chapter of the Inventory, specifically in the section on CO_2 emissions from waste incineration, and in the calculation of emissions and storage from non-energy uses of fossil fuels.

Two additional categories of waste incineration that are not directly included in our calculations are industrial non-hazardous waste and medical waste incineration. Data are not readily available for these sources.

In the calculation of emissions and storage from non-energy uses of fossil fuels, there is an energy recovery component that includes emissions from waste gas; waste oils, tars, and related materials from the industrial sector. While this is not a comprehensive inclusion of non-hazardous industrial waste, it does capture a subset.

Furthermore, a conservative analysis was conducted based on a study of hospital/medical/infectious waste incinerator (HMIWI) facilities in the United States[117] showing that medical waste incineration emissions could be considered insignificant. The analysis was based on assuming the total amount of annual waste throughput was of fossil origin and an

[116] See : <https://www.iata.org/pressroom/facts_figures/fact_sheets/Documents/fact-sheet-alternative-fuels.pdf>.
[117] RTI 2009. Updated Hospital/Medical/Infectious Waste Incinerator (HMIWI) Inventory Database.

assumption of 68.9 percent carbon composition of the waste. It was determined that annual greenhouse gas emissions for medical waste incineration are ~333 kt CO_2 Eq. per year, below 500 kt CO_2 Eq. per year and considered insignificant for the purposes of inventory reporting under the UNFCCC.[118]

CRF Category 1.A.5.a: CH_4 and N_2O Emissions from Stationary Fuel Combustion—Biomass in U.S. Territories

Data are not available to estimate emissions from biomass in U.S. Territories. However, biomass consumption is likely small in comparison with other fuel types, and therefore CH_4 and N_2O emissions are considered insignificant.

CRF Category 1.B.1.a.1.i: CO_2 from Fugitive Emissions from Underground Coal Mining Activities and Post-Mining Activities

A preliminary analysis by EPA determined that CO_2 emissions for active underground coal mining activities are negligible. Applying a CO_2 emission rate as a percentage of CH_4 emissions for active coal mines results in a national emission estimate below 500 kt CO_2 Eq. per year or 0.05 percent of national emissions. Future inventories may quantify these emissions, if it is deemed it will not require a disproportionate amount of effort.

CRF Category 1.B.1.a.1.iii: CO_2 from Fugitive Emissions from Abandoned Underground Coal Mines

A preliminary analysis by EPA determined that CO_2 emissions for abandoned underground coal mining activities are negligible. Applying a CO_2 emission rate as a percentage of CH_4 emissions for abandoned coal mines results in a national emission estimate below 500 kt CO_2 Eq. per year or 0.05 percent of national emissions. Future inventories may quantify these emissions, if it is deemed it will not require a disproportionate amount of effort.

CRF Category 1.B.1.a.2.i: CO_2 from Fugitive Emissions from Surface Coal Mining Activities

A preliminary analysis by EPA determined that CO_2 emissions for active surface coal mining activities are negligible. Applying a CO_2 emission rate as a percentage of CH_4 emissions for active coal mines results in a national emission estimate below 500 kt CO_2 Eq. per year or 0.05 percent of national emissions. Future inventories may quantify these emissions, if it is deemed it will not require a disproportionate amount of effort. While CH_4 recovery projects were operating at surface mines from 2006 to 2010, the avoided emissions were so small that they were not included in the Inventory estimates.

CRF Category 1.B.2.a.3: CO_2 from Fugitive Emissions from the Transport of Oil

Based on a preliminary analysis, EPA determined that CO_2 emissions from the transport of oil are negligible. Assuming the same CO_2 content as gas from post-separator whole crude and applying this to the CH_4 estimates from transport of oil results in a national emission estimate of 1.2 kt, significantly less than 0.05 percent of national emissions.

CRF Category 1.B.2.a.5: CO_2 and CH_4 from Fugitive Emissions from the Distribution of Oil

Emissions from the distribution of oil products are not currently estimated due to lack of available emission factors.

CRF Category 1.B.2.c.2: N_2O from Fugitive Emissions from Venting and Flaring

Data are currently not available to estimate N_2O emissions from venting and flaring from oil production, natural gas production, and combined oil and natural gas production. EPA is assessing whether data may be available to include this in future inventories.

Industrial Processes and Product Use

CRF Category 2.A.4.a: CO_2 Emissions from Process Uses of Carbonates–Ceramics

Data are not currently available to estimate emissions from this source. During the Expert Review Period of the current Inventory report, EPA sought expert solicitation on data for carbonate consumption in the ceramics industry but has yet to identify data sources to apply Tier 1 methods.

[118] Paragraph 37(b) of Decision 24/CP.19 "Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention." See <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>.

CRF Category 2.A.4.c: CO_2 Emissions from Process Uses of Carbonates–Non-metallurgical Magnesium Production

Data are not currently available to estimate emissions from this source. During the Expert Review Period of the current Inventory report, EPA sought expert solicitation on data for non-metallurgical magnesium production but has yet to identify data sources to apply Tier 1 methods.

CRF Category 2.B.4.b: CO_2 and N_2O Emissions from Glyoxal Production

Current and historical glyoxal production data are not readily available to estimate emissions from this source. EPA is conducting basic outreach to relevant trade associations and reviewing potential databases that can be purchased and contain the necessary data. Progress on outreach will be included in next Inventory (i.e., 1990 through 2017 report).

CRF Category 2.B.4.c: CO_2 and N_2O Emissions from Glyoxylic Acid Production

Current and historical glyoxylic adic production data are currently not available to estimate emissions from this source. EPA is conducting basic outreach to relevant trade associations reviewing potential databases that can be purchased and contain the necessary data. Progress on outreach will be included in next Inventory (i.e., 1990 through 2017 report).

CRF Category 2.C.1.c: CH_4 Emissions from Direct Reduced Iron (DRI) Production

Data on fuel consumption used in the production of DRI are not readily available to apply the IPCC default Tier 1 CH_4 emission factor or develop any proxy analysis. The emissions are assumed to be insignificant but this analysis will be updated in future Inventory submissions to quantitatively justify emissions reporting as "not estimated." These emissions are not reported to EPA through the facility-level mandatory Greenhouse Gas Reporting Program (GHGRP).

CRF Category 2.E.2, 2.E.3, and 2.E.4: Fluorinated Gas Emissions from Electronics Industry—TFT Flat Panel Displays, Photovoltaics, and Heat Transfer Fluid

In addition to requiring reporting of emissions from semiconductor manufacturing, EPA's GHGRP requires the reporting of emissions from other types of electronics manufacturing, including micro-electro-mechanical systems (MEMs), flat panel displays, and photovoltaic cells. There currently are seven MEMs manufacturers (most of which report emissions for semiconductor and MEMs manufacturing separately), one photovoltaic cell manufacturer, and no flat panel displays manufacturing facilities reporting to EPA's GHGRP. Emissions from MEMs and photovoltaic cell manufacturing could be included in totals in future Inventory reports – currently they are not represented in inventory emissions totals for electronics manufacturing. These emissions could be estimated for the full time series (including prior to the GHGRP) and for MEMS and photovoltaic cell manufacturers that are not reporting to the GHGRP; however, at this time the contribution to total emissions is not significant enough to warrant the development of the methodologies that would be necessary to backcast these emissions to 1990 and estimate emissions for non-reporters for 2011 through 2016. The emissions reported by facilities manufacturing MEMs ranged from 0.0045 to 0.0185 MMT CO_2 Eq. from 2011 to 2016; they were equivalent to 0.0001 percent to 0.0003 percent of U.S. total emissions in 2011 to 2016. Similarly, emissions from manufacturing of photovoltaic cells were equivalent to only 0.0001 percent and 0.0002 percent of U.S. total emissions in 2015 and 2016, respectively.

Agriculture

CRF Category 3.A.4: CH_4 Emissions from Enteric Fermentation—Camels

Enteric fermentation emissions from camels are not estimated because there is no significant population of camels in the United States. A Tier 1 estimate of enteric fermentation CH_4 emissions from camels results in a value of approximately 2.8 kt CO_2 Eq. per year from 1990 to 2016. Due to limited data availability (no population data is available from the Agricultural Census), the estimates are based on use of IPCC defaults and population data from Baum, Doug (2010).[119]

CRF Category 3.A.4: CH_4 Emissions from Enteric Fermentation—Poultry

No IPCC method has been developed for determining enteric fermentation CH_4 emissions from poultry. Based on expert input, developing of a country-specific method would require a disproportionate amount of resources given the magnitude of this source category.

[119] *The status of the camel in the United States and America*. Available online at: <https://www.soas.ac.uk/camelconference2011/file84331.pdf>.

CRF Category 3.B.4: CH_4 and N_2O Emissions from Manure Management—Camels

Manure management emissions from camels are not estimated because there is no significant population of camels in the United States.[120] A Tier 1 estimate of manure management CH_4 and N_2O emissions from camels results in values between approximately 0.14 kt CO_2 Eq. per year from 1990 to 2016. This is significantly less than 0.05 percent of national emissions. Due to limited data availability (i.e., no population data is available from the Agricultural Census), this estimate is based on population data from Baum, Doug (2010).[121]

CRF Category 3.F.1.2: CH_4 and N_2O Emissions from Field Burning of Agricultural Residues—Barley, Oats, Rye, Potatoes

There is no significant burning of barley, oats, rye, and potatoes in the United States, based on analysis of remote sensing data, and therefore emissions from field burning of agricultural residues from these crops are not currently estimated. Additional analyses will be conducted to quantitatively justify emissions reporting as "not estimated" and considered insignificant following a new analysis of fire products based on LandSat and MODIS imagery. These analyses are underway and will be completed for the next Inventory.

Land Use, Land-Use Change, and Forestry

CRF Category 4.A.1: Emissions from Rewetted Organic Soils in *Forest Land Remaining Forest Land*

Emissions from this source will be estimated in future Inventories when data necessary for classifying the area of rewetted organic soils become available. Work is underway to assemble these data in collaboration with the U.S. Geological Survey, which has developed a surface water layer remote sensing product spanning the inventory time series that can be combined with soil maps to identify areas where organic soils have been drained and then rewetted.

CRF Category 4.A.1: Direct N_2O Emissions from N mineralization/immobilization in *Forest Land Remaining Forest Land*

Direct N_2O emissions from N mineralization/immobilization will be estimated in a future Inventory. They are not estimated currently because resources have limited EPA's ability to utilize the available data on soil carbon stock changes on forest lands to estimate these emissions.

CRF Category 4.B.1: Carbon Stock Change in Living Biomass in *Cropland Remaining Cropland*

Carbon stock change in living biomass is not estimated because data are currently not available. The impact of management on biomass C is currently under investigation for agroforestry management and will be included in a future Inventory if stock changes are significant and activity data can be compiled for this source.

CRF Category 4.B.2: Carbon Stock Change in Living Biomass in *Grassland Converted to Cropland*

Carbon stock change in living biomass is not estimated because data are currently not available. Similar to CRF Category 4.B.1, the impact of biomass C is under investigation for agroforestry and will be included in a future Inventory if significant and activity data can be compiled.

CRF Category 4.C.1: Carbon Stock Change in Living Biomass in *Grassland Remaining Grassland*

Carbon stock change in living biomass is not estimated because data are currently not available. Woodlands occur in grasslands because these areas do not meet the definition of forest lands. A method is under development to estimate the C stock changes for these areas, particularly in the Western United States, and will be include in a future Inventory (see Planned Improvements of Section 6.6 of *Grassland Remaining Grassland* and Box 6-8).

[120] Paragraph 37(b) of Decision 24/CP.19 "Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention." See <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>.

[121] *The status of the camel in the United States and America*. Available online at: <https://www.soas.ac.uk/camelconference2011/file84331.pdf>.

Waste

CRF Category 5.D.2: N_2O Emissions from Wastewater Treatment and Discharge—Industrial Wastewater

Nitrous oxide emissions from stand-alone industrial wastewater treatment are not currently estimated. Per section 6.3.4 of *2006 IPCC Guidelines*: "The methodology does not include N_2O emissions from industrial sources, except for industrial wastewater that is co-discharged with domestic wastewater into the sewer system. The N_2O emissions from industrial sources are believed to be insignificant compared to emissions from domestic wastewater."

A summary of these exclusions, including the estimated level of emissions where feasible, is included in Table A-266.

Table A-266: Summary of Sources and Sinks Not Included in the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016 – TO BE UPDATED FOR FINAL INVENTORY REPORT

CRF Category Number	Source/Sink Category	Sub-Category	Gas(es)	Estimated 2016 Emissions (kt CO_2 Eq.)	Reason for Exclusion
Energy					
1.A Fossil Fuel Combustion					
1.A.3.a	Transport	Domestic Aviation-Biomass	CH_4 and N_2O	16.4	Data availability
1.A.3.b	Transport	Motorcycles-Biomass	CH_4 and N_2O	NA	Data availability
1.A.3.c	Transport	Railways-Biomass	CH_4 and N_2O	NA	Data availability
1.A.3.d	Transport	Domestic Navigation-Biomass	CH_4 and N_2O	NA	Data availability
1.A.3.e.i	Other Transportation	Pipeline Transport	CO_2, CH_4 and N_2O	NA	Data availability
1.A.3.e.ii	Other Transportation	Non-Transportation Mobile-Biomass	CH_4 and N_2O	NA	Data availability
1.A.5.a	Incineration of Waste	Non-Hazardous Industrial Waste Incineration and Medical Waste Incineration	CO_2	333	Data availability
1.A.5.a	Stationary Fuel Combustion	Biomass in U.S. Territories	CH_4 and N_2O	NA	Data availability
1.B Fugitive Emissions from Fuels					
1.B.1.a.1	Underground Mines	Fugitive Emissions from Underground Coal Mining Activities and Post-Mining Activities	CO_2	<500	Emissions negligible
1.B.1.a.1.iii	Abandoned Underground Coal Mines	Fugitive Emissions from Abandoned Underground Coal Mines	CO_2	<500	Emissions negligible
1.B.1.a.2	Surface Mines	Fugitive Emissions from Surface Coal Mining Activities and Post-Mining Activities	CO_2	<500	Emissions negligible
1.B.2.a.3	Oil and Natural Gas	Fugitive Emissions from the Transport of Oil	CO_2	1.2	Emissions negligible
1.B.2.a.5	Oil	Distribution of Oil Products	CH_4	NA	Lack of emission factor data
1.B.2.c.2	Venting and Flaring	Fugitive Emissions from Venting and Flaring from oil production, natural gas production, and combined oil and natural gas production	N_2O	NA	Data availability
Industrial Processes and Product Use					
2.A Mineral Industry					
2.A.4.a	Other Process Uses of Carbonates	Ceramics	CO_2	NA	Data availability
2.A.4.c	Other Process Uses of Carbonates	Non-metallurgical Magnesium Production	CO_2	NA	Data availability
2.B. Chemical Industry					
2.B.4.b	Glyoxal Production		CO_2 and N_2O	NA	Data availability
2.B.4.c	Glyoxylic Acid Production		CO_2 and CH_4	NA	Data availability
2.C. Metal Industry					
2.C.1.c	Iron and Steel Production	Direct Reduced Iron (DRI) Production	CH_4	NA	Data availability

2.E Electronics Industry					
2.E.2	Fluorinated Gas Emissions from Electronics Industry	TFT Flat Panel Displays	HFCs, PFCs, SF_6, and NF_3	NA	Data availability
2.E.3	Fluorinated Gas Emissions from Electronics Industry	Photovoltaics	HFCs, PFCs, SF_6, and NF_3	7	Data availability
2.E.5	Fluorinated Gas Emissions from Electronics Industry	MEMs	HFCs, PFCs, SF_6, and NF_3	19	Data availability
2.G Other					
2.G.2	Other Product Manufacture and Use	SF_6 and PFCs from Other Product Use	SF_6 and PFCs	NA	Data availability
Agriculture					
3.A Livestock					
3.A.4	Enteric Fermentation	Camels	CH_4	<2.8	No significant camel population in U.S.
3.A.4	Enteric Fermentation	Poultry	CH_4	NA	*2006 IPCC Guidelines* do not provide a method.
3.B.4	Manure Management	Camels	CH_4, N_2O	<0.14	No significant camel population in U.S.
3.F Field Burning of Agricultural Residues					
3.F.1.2	Field Burning of Agricultural Residues	Barley, Oats, Rye, Potatoes	CH_4, N_2O	NA	Data availability
Land Use, Land-Use Change, and Forestry					
4.A Forest Land					
4.A.1	Forest Land Remaining Forest Land	Emissions from Rewetted Organic Soils	CH_4	NA	Data availability
4.A.1	Forest Land Remaining Forest Land	N mineralization/immobilization	N_2O	NA	Data availability
4.A.2	Land Converted to Forest Land	Carbon Stock Change in Organic Soils	CO_2	NA	Data availability
4.B Cropland					
4.B.1	Cropland Remaining Cropland	Carbon Stock Change in Living Biomass	CO_2	NA	Data availability
4.B.2	Grassland Converted to Cropland	Carbon Stock Change in Living Biomass	CO_2	NA	Data availability
4.C Grassland					
4.C.1	Grassland Remaining Grassland	Biomass Burning: Controlled Burning, Wildfires	CO_2	NA	Emissions not estimated with the Tier 1 method.
4.C.2	Land Converted to Grassland	Biomass Burning: Controlled Burning, Wildfires	CO_2	NA	Emissions not estimated with the Tier 1 method.
4.D Wetlands					
4.D.1	Wetlands Remaining Wetlands	Biomass Burning: Controlled Burning, Wildfires	CO_2, CH_4, and N_2O	NA	Data availability

4.D.2	Land Converted to Wetlands	Biomass Burning: Controlled Burning, Wildfires	CO_2, CH_4, and N_2O	NA	Data availability
4.E Settlements					
4.E	Settlements	Biomass Burning Settlements	CO_2, CH_4, and N_2O	NA	Data availability
4.E.1	Settlements	Settlements Remaining Settlements	CH_4	NA	Data availability
4.E.1	Settlements Remaining Settlements	Direct N_2O Emissions from N Mineralization/Immobilization (Mineral Soils)	N_2O	NA	Data availability
4.E.2	Land Converted to Settlements	Direct N_2O Emissions from N Mineralization/Immobilization	N_2O	NA	Data availability
4.F Other Land					
4.F	Biomass Burning	Other Land	CO_2, CH_4, and N_2O	NA	Data availability
Waste					
5.D Wastewater Treatment					
5.D.2	Industrial Wastewater	Wastewater Treatment and Discharge	N_2O	NA	*2006 IPCC Guidelines* do not provide a method.

NA (Not Available)