



Department of
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Annual NYS GHG Emissions Report Overview

This webinar will start shortly.

Suzanne Hagell
NYSDEC Office of Climate Change
3pm 3/22/21

Public Outreach Events

Annual NYS GHG Emissions Report Overview

- 3/22/2021 3:00pm

Oil and Gas Accounting Technical Conference

- 3/26/2021 10:00am-1:00pm

Net Accounting

- 3/29/2021 3:00pm



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Today's Presentation:

- The Environmental Conservation Law (ECL) as amended by the Climate Leadership and Community Protection Act (CLCPA)
- DEC is developing the Statewide Greenhouse Gas Emissions Report ("Annual Emissions Report")



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The CLCPA requires the DEC to issue a Greenhouse Gas Emission Report

Article 75 of the Environmental Conservation Law

- ECL 75-0101 Definitions
- ECL 75-0103 Climate Action Council
- **ECL 75-0105 Statewide Greenhouse Gas Emission Report**
- ECL 75-0107 Statewide Greenhouse Gas Emission Limits

Please also see rulemaking documents for Part 496 for additional background.



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What's different between Part 496 and the Annual Report?

Part 496 established a 1990 baseline of gross, statewide GHG emissions, to determine the 2030 and 2050 statewide limits.

The annual report will include:

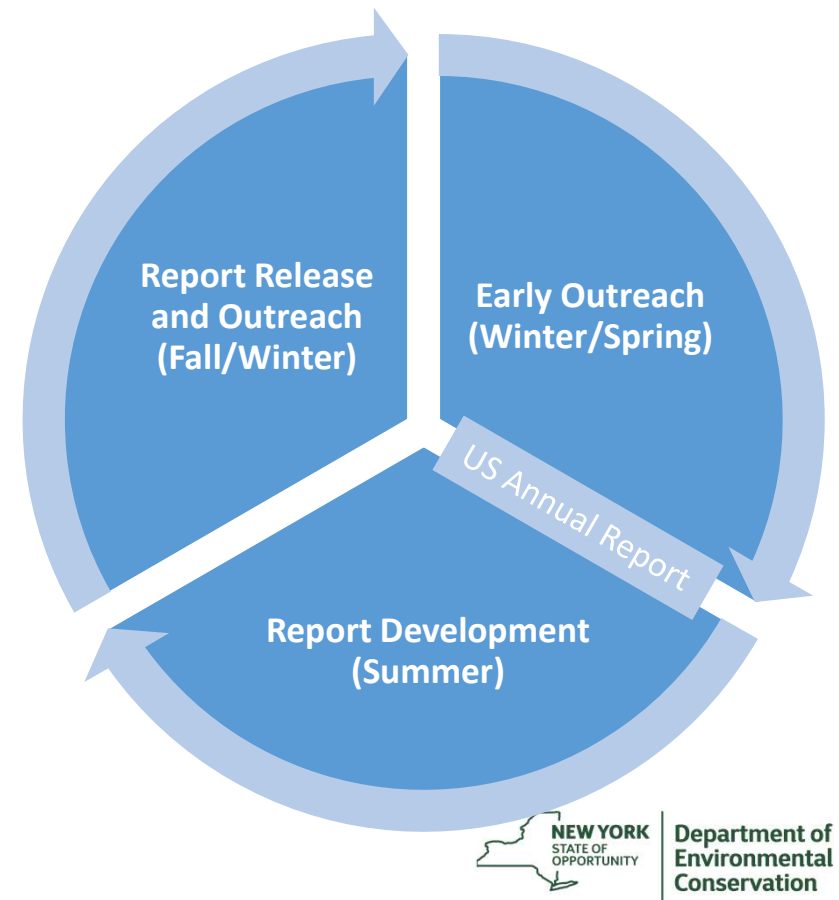
- An annual update of 1990-Current emissions on a gross and net basis. **Part 496 will remain unchanged unless and until DEC initiates a future rulemaking.**
- A description of methods, data, and trends.
- Additional information required by ECL 75-0105.
- Additional information that may be useful.



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Annual Report Process

- DEC will be issuing a report on an annual basis following this general schedule.
- DEC is taking input at any time and will be making continual improvements indefinitely.
- Today's public hearing addresses methodology and analysis used in initial report.



Early Outreach

Input on methods and analysis are most useful if they come early in the annual process. DEC's early outreach includes:

- Targeted outreach with experts
- Public events, including this public hearing for the initial report
- Broad invitation to provide recommendations or feedback at anytime to:

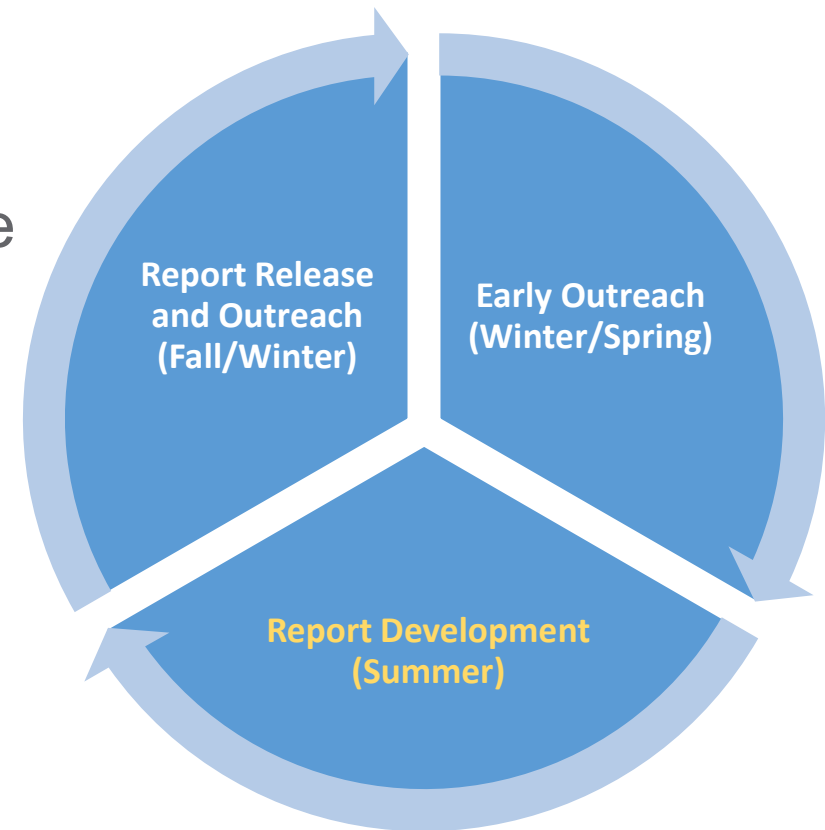
climate.regs@dec.ny.gov



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Report Development

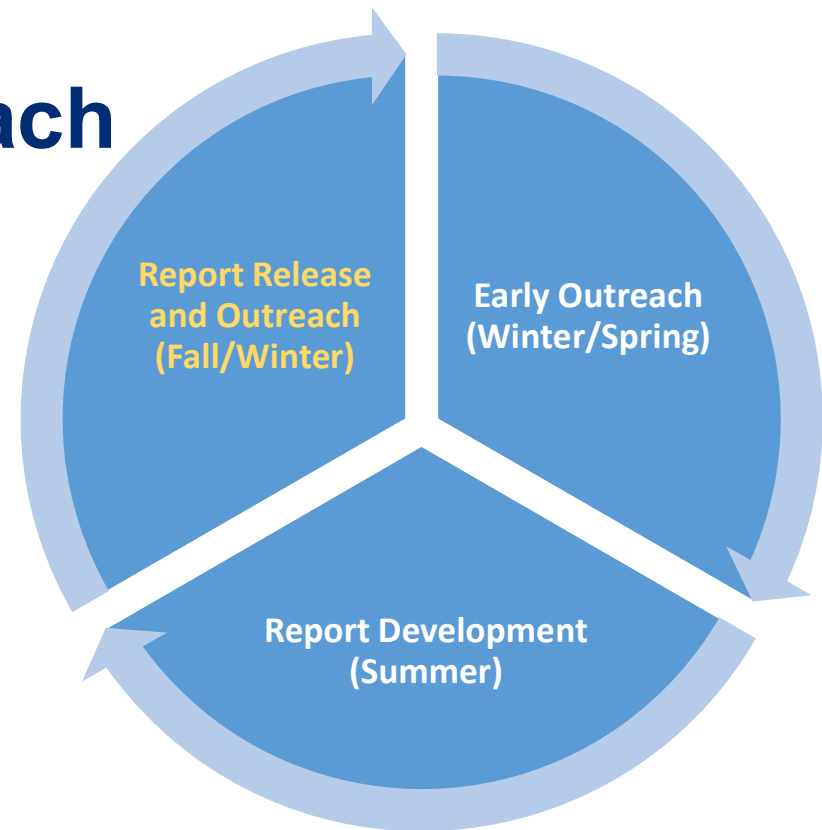
- This phase is timed to follow the release of the annual US national inventory, when updated datasets and analyses are available.
- DEC seeks to coordinate with other state agencies and expects to continue to receive public feedback during this period.



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Final Report and Outreach

- Once the report is issued, DEC will also invite comments on the report.
- These comments will inform the following year's report.



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Types of Greenhouse Gas Reports

There are multiple different types of reports.

- What is the boundary?
- What time frame does it cover?
- Does it include emissions and “removals”?
- Does it start with point sources (bottom-up) or emissions in the atmosphere (top-down)?



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Types of Greenhouse Gas Reports

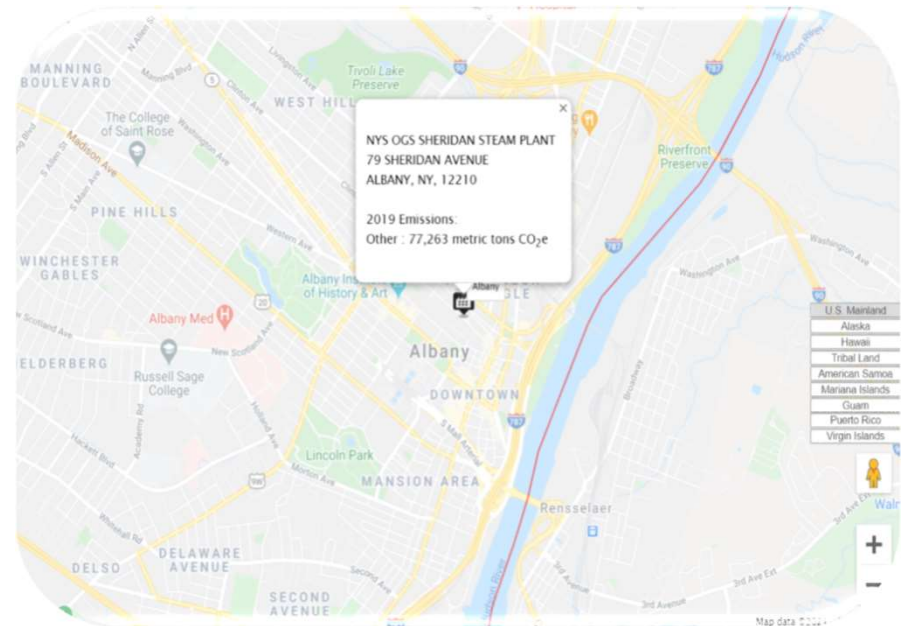
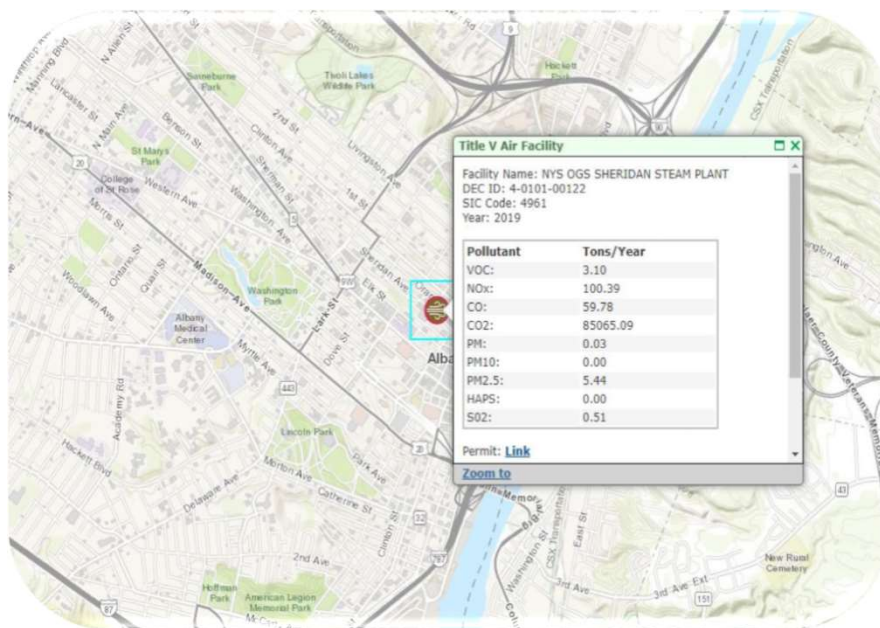
- All Governmental GHG Inventories use the United Nations IPCC “Kyoto Protocol” Guidance.
- Facility reporting and lifecycle analysis may be used to inform Governmental GHG Inventories, but they do not cover all relevant emissions.



<https://www.ipcc-nggip.iges.or.jp/>

Type	Time Period Covered	Gases Covered	Spatial Boundary	Emission Scope
Governmental GHG Inventory	One Year (Annual)	United Nations “Kyoto Gases”	Jurisdictional	All sources across the economy.
Operational GHG Inventory	One Year (Annual)	United Nations “Kyoto Gases”	Scope 1: Direct Emissions Scopes 2 and 3: Indirect Emissions	
Facility Reporting	Typically Annual	Specific, direct emissions at one local source.		
Lifecycle Analysis	Not specified	Not standardized	None	Supply chain

Example Facility Reporting Programs



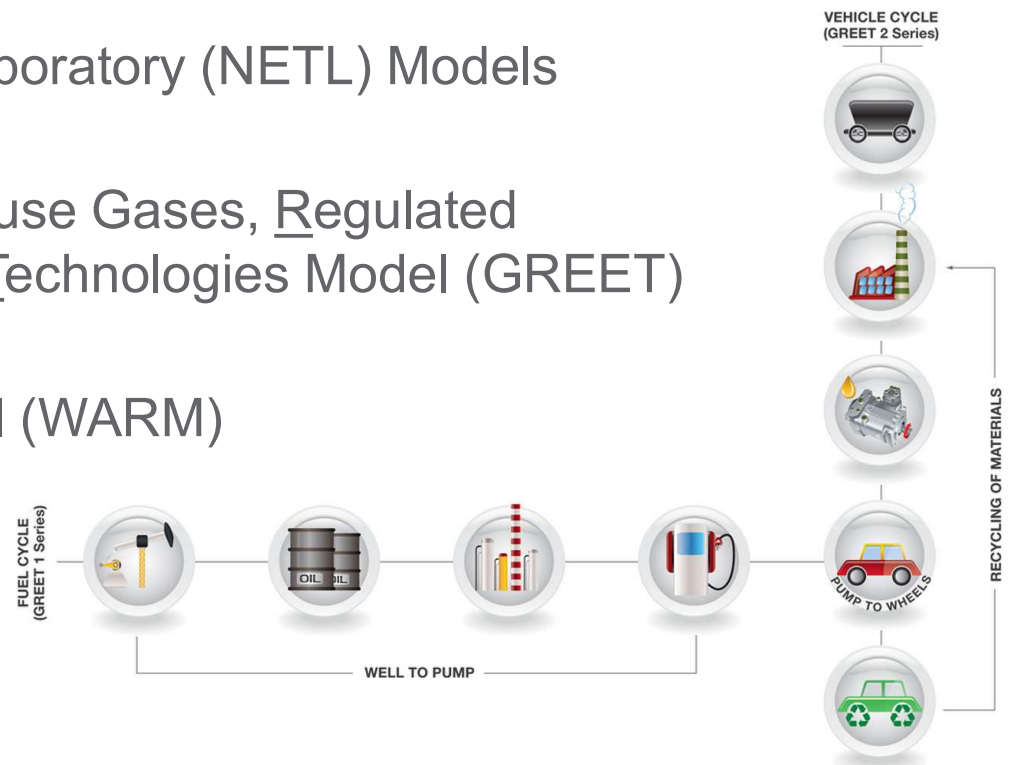
- Left: [DEC Info Locator](#) shows a Title V regulated facility in downtown Albany
- Right: the same facility is pictured in the [EPA GHG Reporting Program FLIGHT mapper](#)



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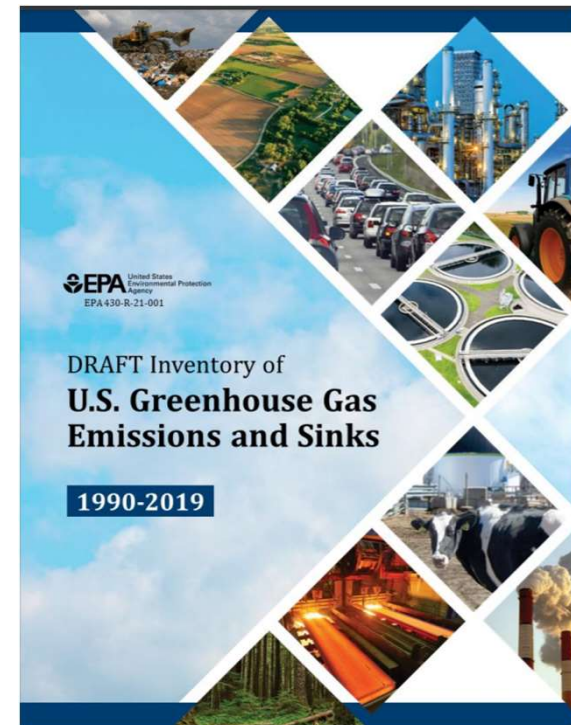
Example Lifecycle Models

- National Energy Technology Laboratory (NETL) Models
<https://www.netl.doe.gov/LCA>
- Argonne National Lab Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model (GREET)
<https://greet.es.anl.gov/>
- USEPA Waste Reduction Model (WARM)



Key EPA Resources

- “Inventory of U.S. Greenhouse Gas Emissions and Sinks” is the national governmental GHG report.
- The State Inventory Tool (“SIT”) collects state-level datasets and provides model calculations.



<https://www.epa.gov/ghgemissions>

What's in the report?

- DEC is using the US national inventory report as a model.
- This includes following the format provided by the IPCC for national governments:
 - Scope: IPCC emission sectors.
 - Analysis: Modeled after US report, previous NYS GHG Inventories, designed to follow IPCC guidance and meet CLCPA requirements.

CLCPA “Statewide GHG Emission” Scope

Fuel System Example

Within New York

Outside of New York

Combustion



Transmission and Distribution



Extraction and Processing



Governmental GHG Inventory

CLCPA Addition

Not in Scope



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Four IPCC Categories

Additional CLCPA Requirement
 Reorganized category
 New to this report

1. Energy

- A. Fuel Combustion
- B. Fugitive Emissions
- Imported Electricity
- Imported Fossil Fuels
- Electrical Equipment

2. Industrial Processes and Product Use

- A. Mineral Industry
- B. Chemical Industry
- C. Metal Industry
- D. Electronics Industry
- E. Ozone Depleting Substance Substitutes
(To be renamed: HFC Product Use)
- F. Other Product Use

3. Agriculture, Forestry and Other Land Use (AFOLU)

- A. Livestock
- B. Land Use
- C. Aggregate Sources

4. Waste

- A. Solid Waste Management
(Includes Exported Waste)
- B. Biologic Treatment of Solid Waste
- C. Waste Combustion (Including for Energy)
- D. Wastewater



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Methods Overview

1. Energy

Standard Emission Factors are applied to fuel data, except where noted. Primary data source is EIA SEDS.

A. Fuel Combustion

- NY “MOVES” model for on-road emissions

B. Fugitive Emissions

- NYSERDA/Abt NYS Oil and Gas Methane Inventory*

Imported Electricity

- Generation data from Regional Transmission Organizations

Imported Fossil Fuels

- New: NYSERDA/ERG Imported Fuels Analysis*

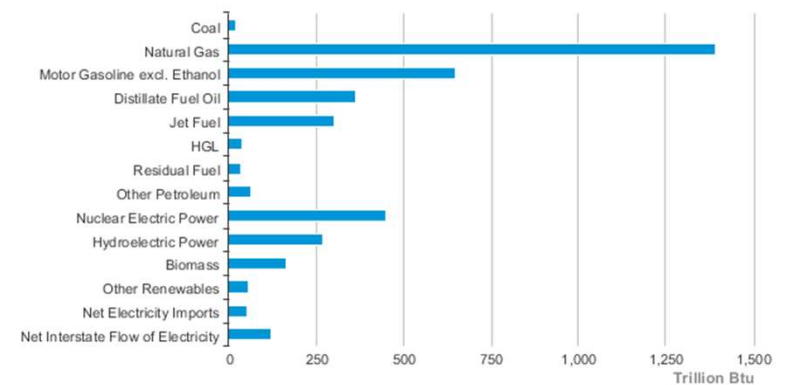
Electrical Equipment

- Incorporates utility reporting and electricity sales

Additional CLCPA Requirement
Reorganized category
New to this report

*3/26/21 Technical Conference

US Energy Information Authority
“State Energy Data System” (EIA SEDS)
New York Energy Consumption Estimates, 2018



eia Source: Energy Information Administration, State Energy Data System

<https://www.eia.gov/state/>

Methods Overview

Additional CLCPA Requirement
 Reorganized category
 New to this report

2. Industrial Processes and Product Use (IPPU)

USEPA's State Inventory Tool (SIT) methods used for historical emissions and USEPA Greenhouse Gas Reporting Program (GHGRP) used for recent years, except where noted. Additional input on data sources is welcome.

A. Mineral Industry

- Minor reallocation of carbonates, per Part 496

B. Chemical Industry

- Not included in SIT and few facilities in GHGRP. Area of future improvement.

C. Metal Industry

- 9-year GHGRP Average used for historical Iron and Steel, Lead and Ferroalloys emissions

D. Electronics Industry

- SIT method amended with Economic Census Data for historical emissions

E. Ozone Depleting Substance Substitutes (Hydrofluorocarbon/HFC Product Use)

- New: NYSERDA/Guidehouse NYS HFC Inventory

F. Other Product Use

- Not included in SIT. Area of future improvement.



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Methods Overview

Additional CLCPA Requirement

Reorganized category

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3. Agriculture, Forestry and Other Land Use (AFOLU)

USEPA's State Inventory Tool (SIT) methods used for historical emissions and US National GHG Inventory provides state-level estimates of emissions for recent years and emission removals (carbon sequestration), except where noted.

A. Livestock

- Anaerobic digestion on farms is an area for future improvement

B. Land Use (for Net Accounting)

- Not available for all years, except Forest lands*
- Area for future improvement

C. Aggregate Sources (e.g., soil management, Harvested Wood Products)

- Improved emission factors and input data are being developed
- Potential removal of Urea Application
- SUNY ESF has provided preliminary estimates of HWP based on DEC reporting*

*3/29 Public Webinar on Net Accounting



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Additional CLCPA Requirement
Reorganized category
New to this report

Methods Overview

4. Waste

The USEPA State Inventory Tool (SIT) methods are used with NYSDEC data, except where noted.

A. Solid Waste Management

B. Biologic Treatment of Waste

- SIT does not include composting or anaerobic digestion. Area of future improvement.

C. Waste Combustion

- NYS has always included exported waste. IPCC would assign any waste combustion used to generate electricity to Energy.

D. Wastewater

- SIT does not include septic, estimated using standard emission factors.

For Discussion

Please provide input on:

- Methods, analysis, and data sources
- The annual process for continual improvement

You can send comments anytime to:

climate.regs@dec.ny.gov

Thanks for Joining!



Suzanne Hagell, PhD

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Subject line: "Annual GHG Emissions Report"

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Additional Reference Slides

- A. Text of the CLCPA
- B. Details on upcoming public events

ECL 75-0105 Statewide Greenhouse Gas Emission Report

1. No later than **two years after the effective date of this article**, and each year thereafter, the department shall issue a report on statewide greenhouse gas emissions, expressed in tons of carbon dioxide equivalents, from all greenhouse gas emission sources in the state, including the relative contribution of each type of greenhouse gas and each type of source to the statewide total.

ECL 75-0105 Statewide Greenhouse Gas Emission Report

2. The statewide greenhouse gas emissions report shall be a comprehensive evaluation, informed by a variety of data, including but not limited to:
- a. information relating to the use of fossil fuels by sector, including for electricity generation, transportation, heating, and other combustion purposes;
 - b. information relating to fugitive and vented emissions from systems associated with the production, processing, transport, distribution, storage, and consumption of fossil fuels, including natural gas;
 - c. information relating to emissions from non-fossil fuel sources, including, but not limited to, garbage incinerators, biomass combustion, landfills and landfill gas generators, and anaerobic digesters;
 - d. information relating to emissions associated with manufacturing, chemical production, cement plants, and other processes that produce non-combustion emissions; and
 - e. information from sources that may be required to participate in the registration and reporting system pursuant to subdivision four of this section.

ECL 75-0105 Statewide Greenhouse Gas Emission Report

3. The statewide greenhouse gas emissions report shall also include an estimate of greenhouse gas emissions associated with the generation of imported electricity and with the extraction and transmission of fossil fuels imported into the state which shall be counted as part of the statewide total.
4. Within one year after the effective date of this article, the department shall consider establishing a mandatory registry and reporting system from individual sources to obtain data on greenhouse gas emissions exceeding a particular threshold. If established, such registry and reporting system shall apply a consistent reporting threshold to ensure the unbiased collection of data.
5. The statewide greenhouse gas emissions report shall also include an estimate of what the statewide greenhouse gas emissions level was in 1990.

ECL 75-0105 Statewide Greenhouse Gas Emission Report

6. The statewide greenhouse gas emissions report shall utilize best available science and methods of analysis, including the comparison and reconciliation of emission estimates from all sources, fuel consumption, field data, and peer-reviewed research.
7. The statewide greenhouse gas emissions report shall clearly explain the methodology and analysis used in the department's determination of greenhouse gas emissions and shall include a detailed explanation of any changes in methodology or analysis, adjustments made to prior estimates, as needed, and any other information necessary to establish a scientifically credible account of change.
8. The department shall hold at least two public hearings to seek public input regarding the methodology and analysis used in the determination of statewide greenhouse gas emissions, and periodically thereafter.

Example CLCPA Requirements

ECL 75-0101 Definitions

2. “Carbon dioxide equivalent” means the amount of carbon dioxide by mass that would produce the same global warming impact as a given mass of another greenhouse gas over an integrated twenty-year time frame after emission.
7. “Greenhouse gas” means carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and any other substance emitted into the air that may be reasonably anticipated to cause or contribute to anthropogenic climate change.
8. “Greenhouse gas emission limit” means the maximum allowable level of statewide greenhouse gas emissions, in a specified year, expressed in tons of carbon dioxide equivalent, as determined by the department pursuant to this article.
13. “Statewide greenhouse gas emissions” means the total annual emissions of greenhouse gases produced within the state from anthropogenic sources and greenhouse gases produced outside of the state that are associated with the generation of electricity imported into the state and the extraction and transmission of fossil fuels imported into the state. Statewide emissions shall be expressed in tons of carbon dioxide equivalents.
14. “Statewide greenhouse gas emissions limit” or “Statewide emissions limit” means the maximum allowable level of statewide greenhouse gas emissions in a specified year, as determined by the department pursuant to this article.

3/26 Technical Conference

- The CLCPA requires that NYS include fugitive emissions that occur inside as well as outside of the state.
- Estimating the emissions associated with imported fuels requires a different style of analysis than in-state sources.
- We will hold a Technical Conference with speakers from Environmental Defense Fund, Abt, and Eastern Research Group on 3/26.

<https://www.dec.ny.gov/energy/99223.html>



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3/29 Public Webinar: Net Emissions

- Plants remove carbon dioxide from the system
- How we manage our land and waste affects the contribution of plants to greenhouse gas levels
- Statewide greenhouse gas emissions can be calculated as Gross (emissions only) vs. Net (emissions minus removals)
- DEC seeks input on the options for estimating carbon sequestration as well as for treating bio and waste-based fuels. **Please join the webinar on 3/29.**

<https://www.dec.ny.gov/energy/99223.html>



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