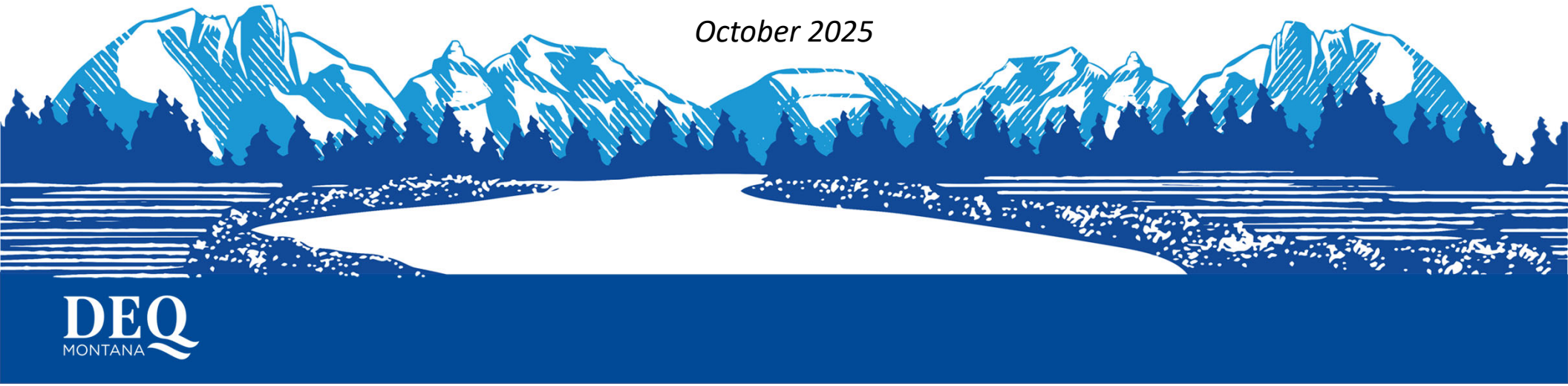
Greenhouse Gas Guidance Document

under the Montana Environmental Policy Act (MEPA)

October 2025

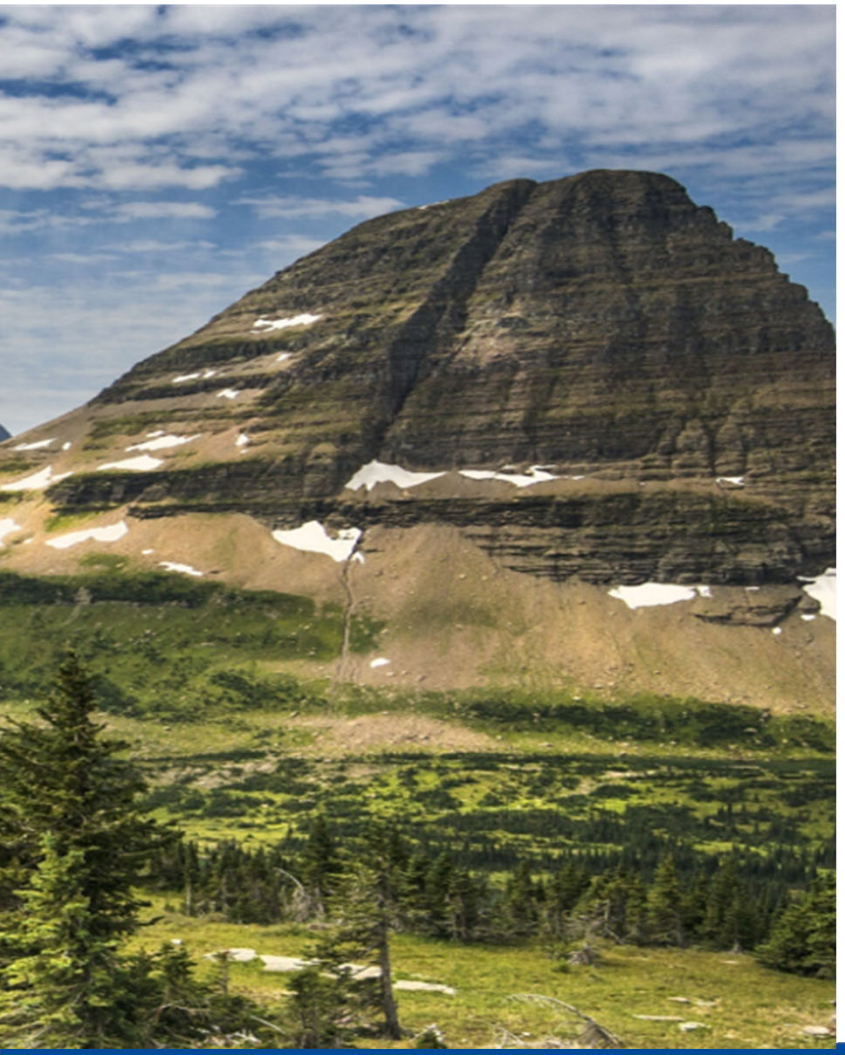


DEQ MONTANA

Purpose of MEPA

The **Montana Environmental Policy Act** (MEPA) requires an environmental review to be conducted for state actions that have the potential to impact the quality of the environment.

MEPA is procedural and disclosure of potential impacts.

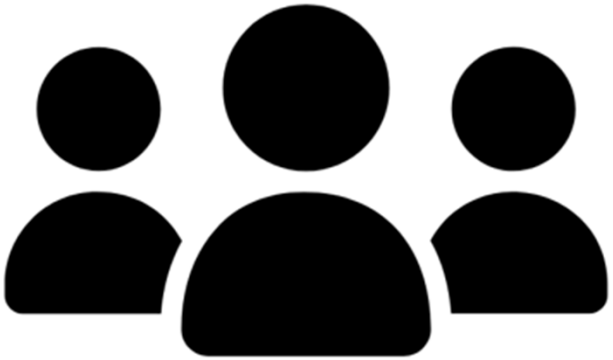


Background

As directed by SB221 and resulting changes to MEPA:

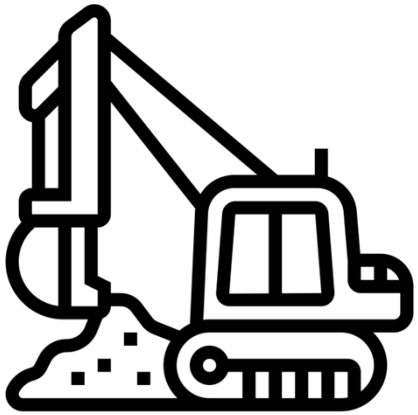
"The department of environmental quality shall **develop a guidance document** for use by state agencies to determine when a GHG assessment may be necessary. The guidance must include **direction on methodologies** for completing a GHG assessment."

Audience

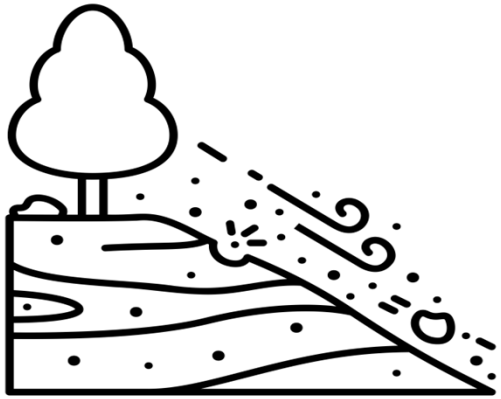


Montana State Agencies

Analysis of Impacts under MEPA



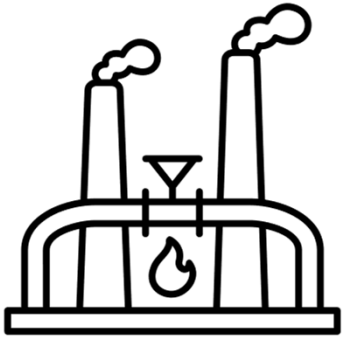
Direct impacts



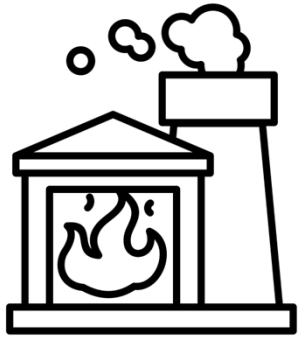
Secondary impacts

Cumulative impacts

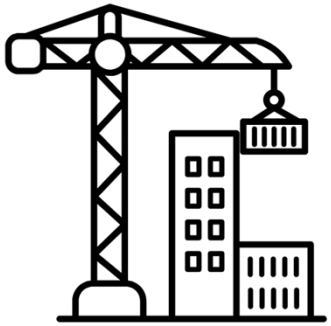
When to conduct a GHG assessment



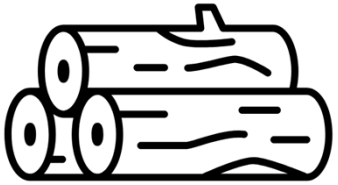
Fossil Fuels



Stationary Combustion



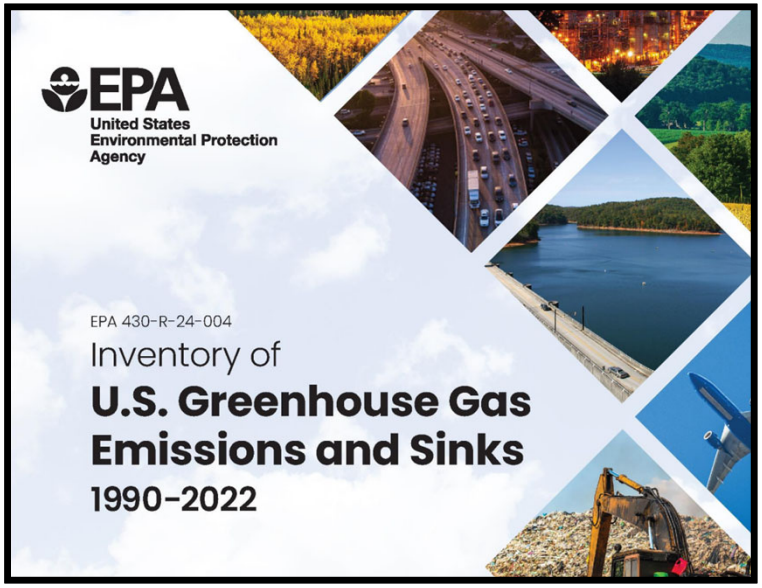
Construction and Mobile Engine Operation



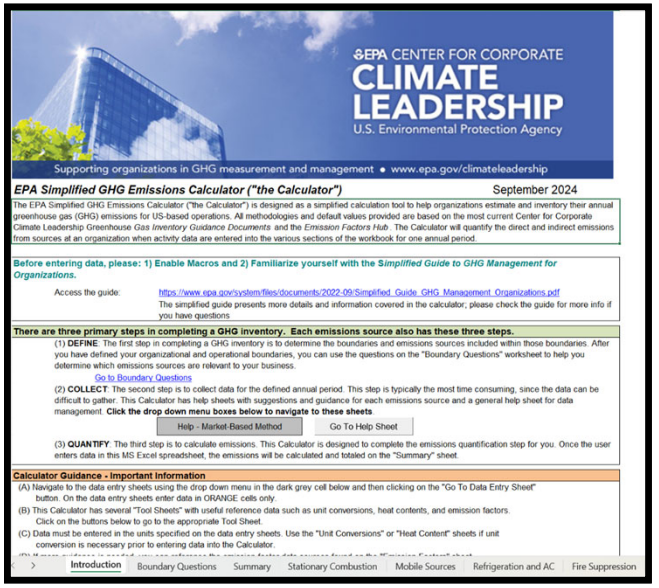
Land Management

Fossil Fuel Activity

A proposed action that authorizes the mining of coal, drilling for oil or natural gas, production of oil or natural gas, compression of oil or natural gas, or burning of coal, oil, or natural gas to generate energy for electricity.



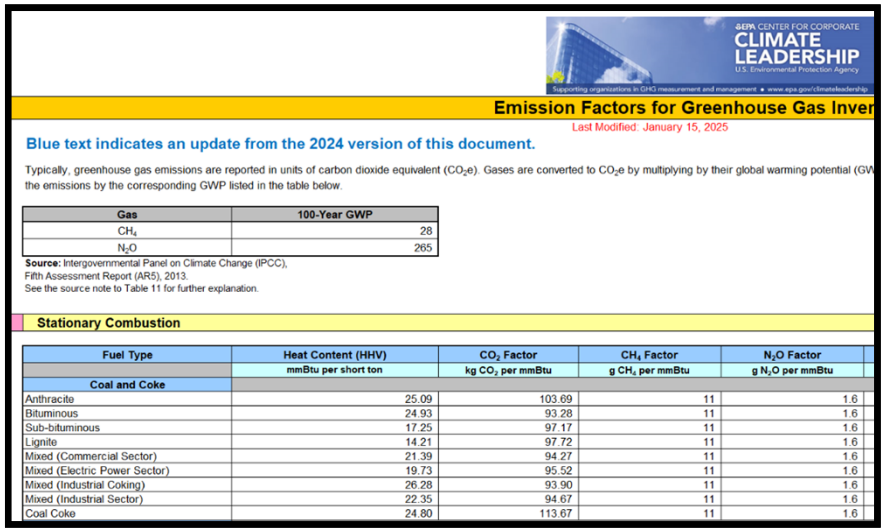
EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks



EPA Simplified GHG Emissions Calculator

Stationary Combustion

A proposed action that creates direct emissions from stationary combustion devices including those that combust solid, liquid, or gaseous fuel, generally for the purposes of producing electricity, generating steam, or providing useful heat or energy, or combust waste.



EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Emission Factors for Greenhouse Gas Inver

Last Modified: January 15, 2025

Blue text indicates an update from the 2024 version of this document.

Typically, greenhouse gas emissions are reported in units of carbon dioxide equivalent (CO_2e). Gases are converted to CO_2e by multiplying by their global warming potential (GW
the emissions by the corresponding GWP listed in the table below.

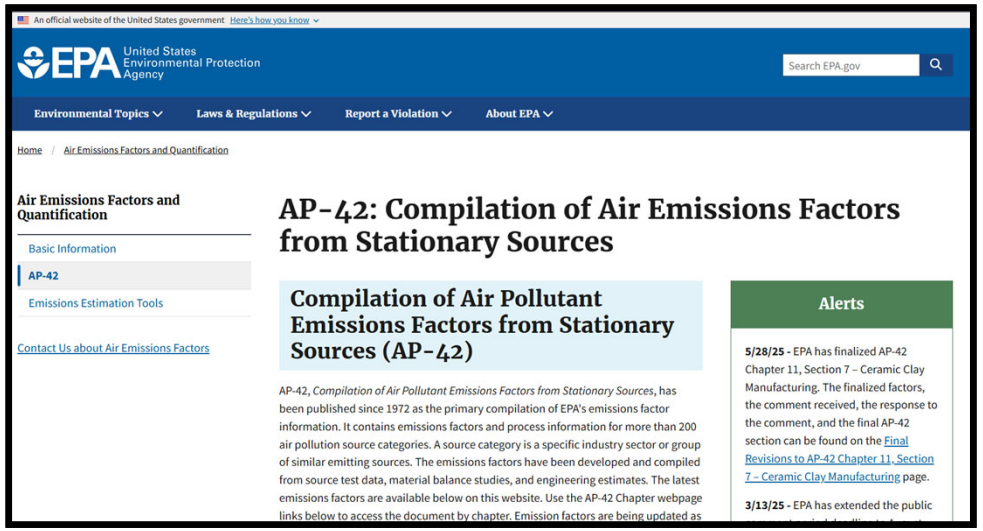
Gas	100-Year GWP
CH_4	28
N_2O	265

Source: Intergovernmental Panel on Climate Change (IPCC),
Fifth Assessment Report (AR5), 2013.
See the source note to Table 11 for further explanation.

Stationary Combustion

Fuel Type	Heat Content (HHV)	CO_2 Factor	CH_4 Factor	N_2O Factor
	mmBtu per short ton	kg CO_2 per mmBtu	g CH_4 per mmBtu	g N_2O per mmBtu
Coal and Coke				
Anthracite	25.09	103.69	11	1.6
Bituminous	24.93	93.28	11	1.6
Sub-bituminous	17.25	97.17	11	1.6
Lignite	14.21	97.72	11	1.6
Mixed (Commercial Sector)	21.39	94.27	11	1.6
Mixed (Electric Power Sector)	19.73	95.52	11	1.6
Mixed (Industrial Coking)	26.28	93.90	11	1.6
Mixed (Industrial Sector)	22.35	94.67	11	1.6
Coal Coke	24.80	113.67	11	1.6

EPA GHG Emission Factors Hub



An official website of the United States government Here's how you know

EPA United States Environmental Protection Agency

Search EPA.gov

Environmental Topics | Laws & Regulations | Report a Violation | About EPA

Home / Air Emissions Factors and Quantification

Air Emissions Factors and Quantification

- Basic Information
- AP-42
- Emissions Estimation Tools

Contact Us about Air Emissions Factors

AP-42: Compilation of Air Emissions Factors from Stationary Sources

Compilation of Air Pollutant Emissions Factors from Stationary Sources (AP-42)

AP-42, *Compilation of Air Pollutant Emissions Factors from Stationary Sources*, has been published since 1972 as the primary compilation of EPA's emissions factor information. It contains emissions factors and process information for more than 200 air pollution source categories. A source category is a specific industry sector or group of similar emitting sources. The emissions factors have been developed and compiled from source test data, material balance studies, and engineering estimates. The latest emissions factors are available below on this website. Use the AP-42 Chapter webpage links below to access the document by chapter. Emission factors are being updated as

Alerts

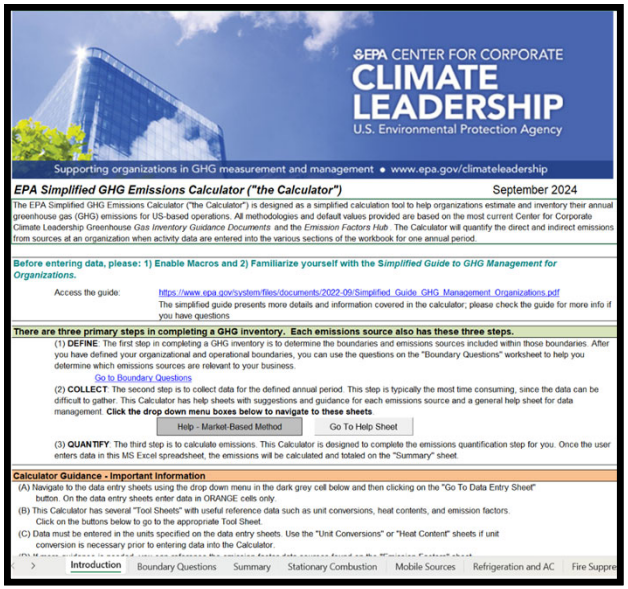
5/28/25 - EPA has finalized AP-42 Chapter 11, Section 7 – Ceramic Clay Manufacturing. The finalized factors, the comment received, the response to the comment, and the final AP-42 section can be found on the Final Revisions to AP-42 Chapter 11, Section 7 – Ceramic Clay Manufacturing page.

3/13/25 - EPA has extended the public

EPA AP-42

Construction and Mobile Engine Operation

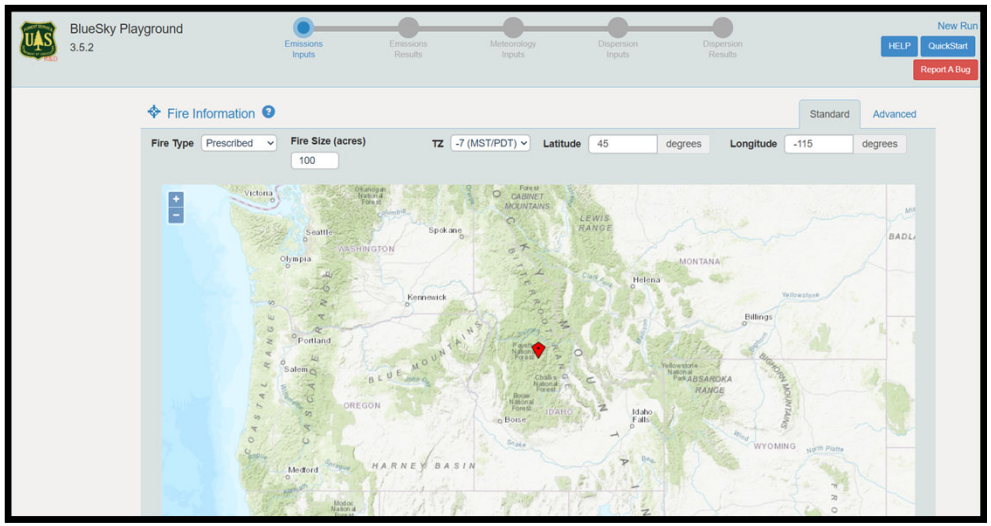
A proposed action that would require prolonged or continuous operation of GHG-emitting construction equipment or mobile engine.



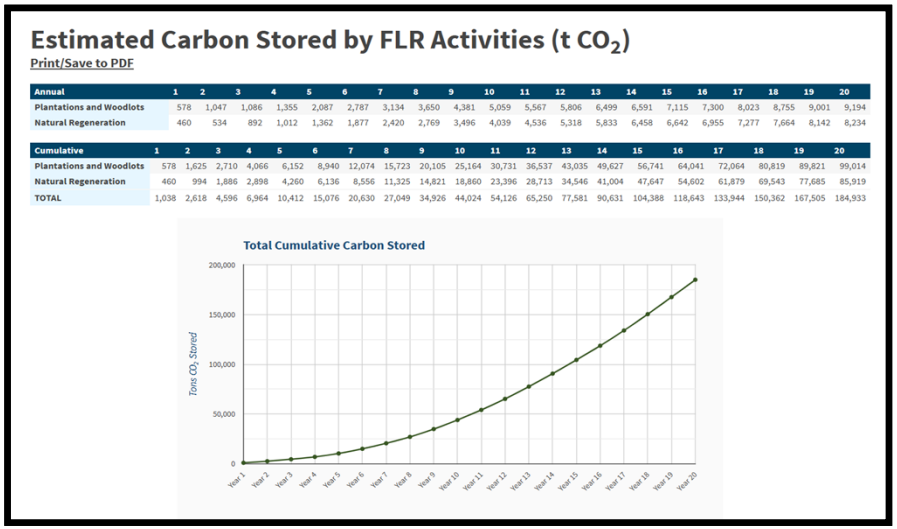
EPA Simplified GHG Emissions Calculator

Land Management

A proposed action that authorizes the sale of timber, controlled or prescribed burns, forest thinning, noxious weed management, and grazing management.



BlueSky Framework



Annual	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Plantations and Woodlots	578	1,047	1,086	1,355	2,087	2,787	3,134	3,650	4,381	5,059	5,567	5,806	6,499	6,591	7,115	7,300	8,023	8,755	9,001	9,194
Natural Regeneration	460	534	892	1,012	1,362	1,877	2,420	2,769	3,496	4,039	4,536	5,318	5,833	6,458	6,642	6,955	7,277	7,664	8,142	8,234

Cumulative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Plantations and Woodlots	578	1,625	2,710	4,066	6,152	8,940	12,074	15,723	20,105	25,164	30,731	36,537	43,035	49,627	56,741	64,041	72,064	80,819	89,821	99,014
Natural Regeneration	460	994	1,886	2,898	4,260	6,136	8,556	11,325	14,821	18,860	23,396	28,713	34,546	41,004	47,647	54,602	61,879	69,543	77,685	85,919
TOTAL	1,038	2,618	4,596	6,964	10,412	15,076	20,630	27,049	34,926	44,024	54,126	65,250	77,581	90,631	104,388	118,643	133,944	150,362	167,505	184,933

FLR Carbon Storage Calculator

Secondary Impacts

A further impact to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action.

Potential Secondary Impact tool to use:

- *Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC)*
- *Method to calculate projected global surface temperature change based on emissions scenarios*
- *Resulting temperature difference offers a physically based estimate of the project's marginal contribution to future global temperature change*

Cumulative Impacts – Social Cost of GHGs

Cumulative Impacts

The collective impacts on Montana's environment of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location or generic type.

Potential Cumulative Impact tool to use:

- *EPA State Inventory Tool (SIT)*
- *EPA Facility Level Information on Greenhouse Gases Tool (FLIGHT) database*
- *BLM's fossil-fuel emissions projections*
- *Intergovernmental Panel on Climate Change (IPCC) AR6*
- *5th U.S. National Climate Assessment or other MT specific reports*
- *Climate-viewer tools (i.e., National Climate Change Viewer, Climate Indicator Map Explorer)*

Replacement Table 2 (p.5). Summary of GHG Emissions by Gas in Montana, 2019

	Original	Updated
GHG Emission Sources by Gas	**2019 Emissions (MMT CO2e)***	**2019 Emissions (MMT CO2e)***
Carbon Dioxide (CO_2)	**38.14**	**37.45**
CO_2 from Fossil Fuel Combustion	29.26	28.4
Industrial Processes	0.87	0.87
Waste	0.01	0.01
Agriculture	--	0.25
Land Use, Land Use Change, and Forestry (LULUCF)	8.01	7.92
Methane (CH_4)	**9.09**	**9.12**
Stationary Combustion	0.15	0.15
Mobile Combustion	0.01	0.01
Coal Mining	0.56	0.56
Natural Gas and Oil Systems	1.96	1.78
Agriculture	5.78	5.99
Waste	0.56	0.55
Wastewater	0.08	0.08
Nitrous Oxide (N_2O)	**0.24**	**5.27**
Stationary Combustion	0.09	0.09
Mobile Combustion	0.08	0.09
Agriculture	0.04	4.96
LULUCF	--	0.09
Wastewater	0.03	0.03
HFC, PFC, SF_6 and NF_3 Emissions	**0.68**	**--**
Industrial Processes	0.68	--
Indirect CO_2 from Electricity Consumption**	**9.25**	**9.25**
Gross Emissions	**48.15**	**51.83**
Sinks	**0**	**0**
Net Emissions (Sources and Sinks)	**48.15**	**51.83**

* The data was obtained from EPA's Synthesis modules with the EPA's State Inventory Tool (SIT). Slight variations exist between EPA's Gas and Sector tables.

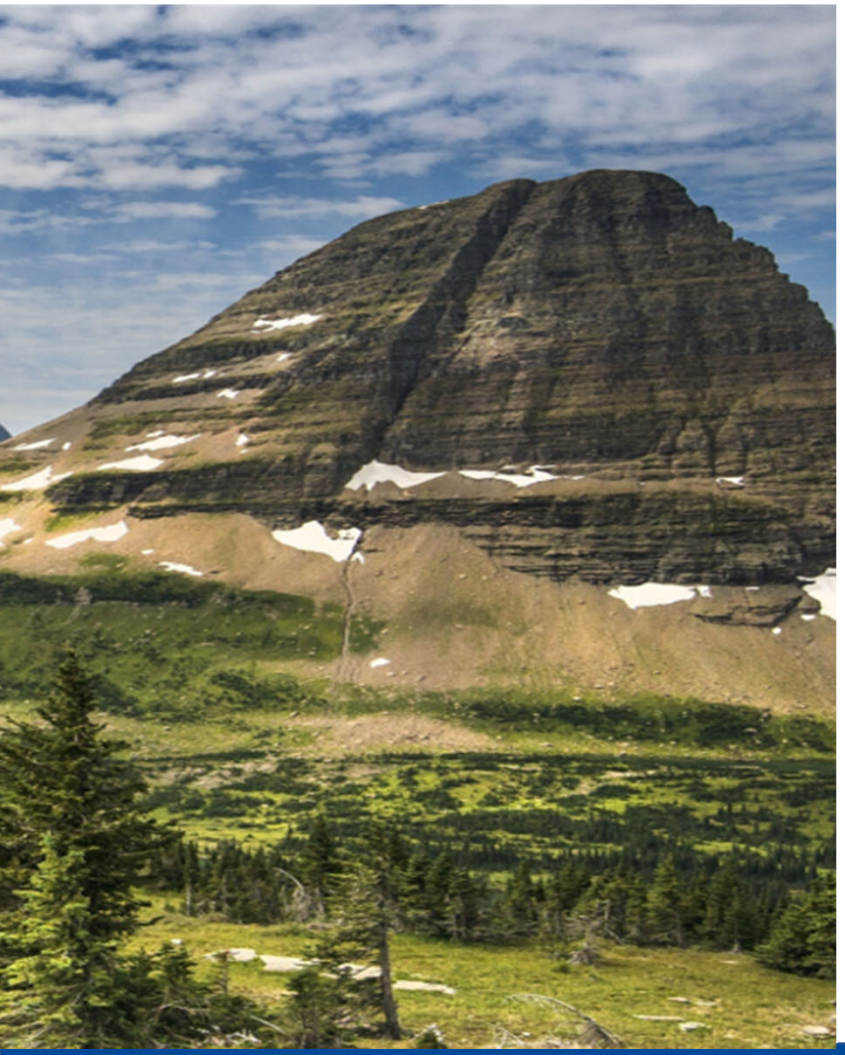
** Emissions from Electricity Consumption are not included in totals in order to avoid double counting with Fossil Fuel Combustion estimates.

Public Comment Period

Public comments were accepted from October 1-30, 2025.

DEQ held three public meetings in Billings, Helena, and Missoula.

Public comment were accepted in written and oral form at these meetings.



Final Document Changes Based on Public Comment

1. Includes mitigation and alternatives for GHG analysis

2. Refined the use of the model to impacts in aggregate instead of individual projects.

Final Greenhouse Gas Guidance Published

Published the Final Guidance on January 5, 2026

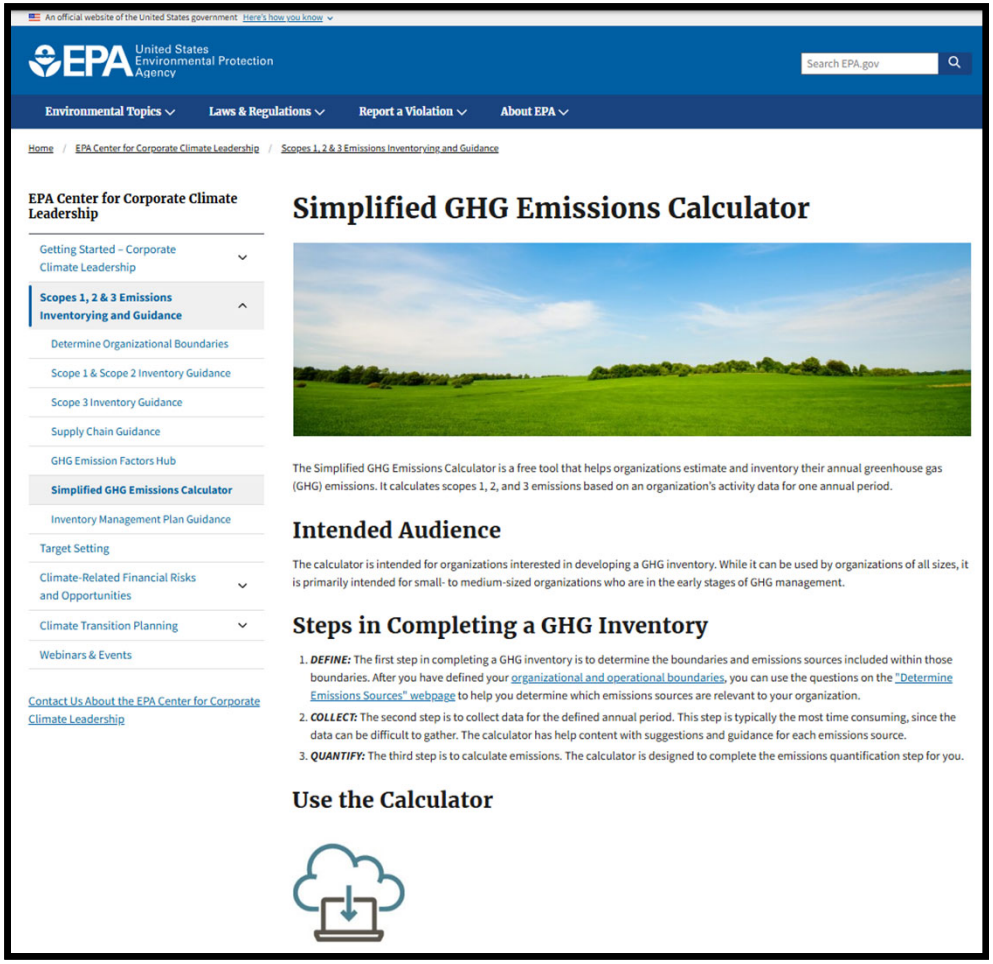
https://deq.mt.gov/News/publicnotices-folder/ghg-01-05-25

Direct Impacts

are those that occur at the same time and place as the action that triggers the effect

Potential Direct Impact tool to use:

- *EPA Simplified GHG Emissions Calculator*
- *EPA GHG Emission Factors Hub*
- *EPA AP-42 (Air Emissions)*
- *EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks*
- *Calculating GHG Emissions form Proposed Projects Related to Ecological Functions*
- *BlueSky Framework*
- *Carbon Budget Model of the Canadian Forest Sector*
- *Fuel and Fire Tools: Fire emission Projection Simulator*
- *COMET-Planner*
- *FLR Carbon Storage Calculator*



Draft Guidance Document

- Purpose and Introduction
- When to conduct a GHG Assessment in MEPA
- Methodologies for Conducting a GHG Assessment
- Appendices
  - Calculating GHG Emissions from Proposed Projects Related to Ecological Functions
  - Methods and Means of Quantifying Costs Related to GHG Emissions
  - Secondary Impacts from GHG
  - Cumulative Impacts from GHG

Analysis of Impacts under MEPA

Direct impacts *are impacts occur at the same time and place as the action that triggers the effect.*

Secondary impacts *are a further impact to the Montana environment that may be stimulated or induced by or otherwise result from a direct impact of the action.*

Cumulative impacts *are the collective impacts on Montana's environment of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location or generic type.*

Welcome!

SCAN

for Draft Greenhouse Gas Guidance Documents and information to submit comment.

https://deq.mt.gov/News/publiccomment-folder/ghg-guidance-10-01-25