

Sources of GHG Emissions that SEPA Can Address

The following table lists various sources of GHG emissions and compares how each are considered in related policy forums.

GHG Emissions 6 Kyoto Gases (CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆) *	Definition and Examples	CAPCOA Guidance <i>CEQA</i>	King County Draft <i>SEPA</i>	MA <i>MEPA</i>	The Climate Registry <i>Reporting</i>	CAT Interim Report Feb. 2008 <i>Addressed in Recommendations</i>
D-1. Direct Construction	Generators and equipment exhaust, this includes off-site haul trucks during construction	Yes	Yes	?	Yes	Yes
D-2. On-Site Mobile Sources and Company- Owned VMT.	Mobile sources operating within the Proponent's facility. Company-owned vehicles traveling off-site.	Yes	Yes	Yes	Yes	Yes
D-3. Stationary Sources and Direct Facility Emissions	Space Heating and industrial emissions. On-site combustion processes from company-owned equipment.	Yes	Yes	Yes	Yes	Yes
D-4. Fugitive Emissions	GHG emitted from points other than tailpipes, vents, stacks, or other locations that can be collected. E.g., landfill gas emissions, gas pipeline fugitive losses, enteric emissions from livestock.	Yes	Yes	Yes	Yes	Yes

D-5. Direct Agricultural Emissions	Livestock methane, land clearing, planting, harvest, fertilizer application, and on-site manure handling.	Yes	maybe	?	No	Yes
D-6. Forestry Conversion and other land or Aquatic Vegetation Disturbance	One-time soil-carbon emissions during land clearing, and permanent annual loss of CO2 sink following removal of trees or vegetation.	?	Yes	?	No	Yes
D-7. Direct emissions from maintenance activities	Emissions from landscaping and maintenance equipment, chemicals	Yes	Yes	?	Yes	Yes
I-1. Extraction of Purchased Materials	Off-site mining, timber mining/extraction, petroleum products (e.g. fuel and plastic products) for products and materials that are purchased by the proposal.	Yes	Yes	?	Optional	Yes
I-2. Processing of Purchased Materials	Off-site energy used and emissions from processing raw materials or end products purchased by a proponent (e.g. cement, metals, plastics, wood, fuel).	Yes	Yes	?	Optional	Yes
I-3. Transportation of purchased materials by Non-Company Owned Transport	Delivery of purchased raw materials to the proposed facility by non-company-owned trucks, and shipment of produced product from the facility by non-company-owned trucks, trains and ships.	Yes	Yes	?	Yes, some	Yes

I-4. Employee Commute VMT	Tailpipe emissions from employee commuting	Yes	Yes	?	?	Yes
I-5. Other Indirect VMT	Traffic from associated development, indirect change in traffic pattern, customer VMT (vs. company owned), associated public services (parks, emergency response)	Yes	Yes	Maybe **	No	Yes
I-6. Purchased electricity	Off-site emissions from fossil-fuel power plants that provide electricity to the proponent.	Yes	Yes	Yes	Yes	Yes
I-7. Water Use and Wastewater Disposal.	Energy used to provide water and dispose of polluted water. GHG emitted from off-site pump stations and water treatment plants for water used by proposal. GHG emitted from off-site sewage lift stations and POTWs used to convey and treat wastewater from the proposed SEPA facility. This includes fugitive methane from POTWs. It does not include biogenic CO2 emitted from POTWs.	Yes	Yes	Possibly combined with Energy	Yes	Yes
I-8. Solid Waste	Off-site emissions from off-site solid waste disposal (construction, agriculture, general trash, food). Includes tailpipe emissions from trucks and trains used to collect refuse and haul it to the disposal site and off-site emissions from pre-processing of solid waste (e.g., transfer stations), and fugitive methane emissions from solid waste landfills. It does NOT include biogenic CO2 emissions from solid waste disposal facilities.	?	?	?	optional	Yes

I-9. End-use emissions from use of proponent's products sold to others	Use and disposal of products sold by the proponent to consumers, industry etc. This could include emissions generated from combustion of fuels manufactured or distributed by the proposed facility.	Yes	Yes	No	optional	Yes
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Greenhouse gas - a gas that contributes to the greenhouse effect by absorbing infrared radiation

CFC, chlorofluorocarbon - a fluorocarbon with chlorine; formerly used as a refrigerant and as a propellant in aerosol cans; "the chlorine in CFCs causes depletion of atmospheric ozone"

Carbon dioxide, CO2 - a heavy odorless colorless gas formed during respiration and by the decomposition of organic substances; absorbed from the air by plants in photosynthesis

N2O, nitrous oxide - naturally emitted by bacteria and also by agricultural practices, industrial processes and fossil fuel combustion

HFC, hydrofluorocarbon - a fluorocarbon emitted as a by-product of industrial manufacturing

Perfluorocarbon, PFC - a powerful greenhouse gas emitted during the production of aluminum

Sulfur hexafluoride, - a colorless gas that is soluble in alcohol and ether; a powerful greenhouse gas widely used in the electrical utility industry

"Direct" emissions generally means generated onsite

"Indirect" emissions are generally generated offsite and some are considered "embodied emissions"

Concept of "net emissions" (emissions minus offsets or creation of carbon dioxide sinks) is evaluated during consideration of mitigation options

** Massachusetts policy acknowledges that some projects will have sources of emissions not explicitly covered by transportation, stationary sources and energy consumption. They may require additional modeling of emissions on a case-by-case basis.