Washington State
House of Representatives
Office of Program Research

BILL ANALYSIS

Environment & Energy Committee

HB 1663

Brief Description: Reducing methane emissions from landfills.

Sponsors: Representatives Duerr, Fitzgibbon, Ryu, Berry, Leavitt, Ramel, Thai, Walen and Valdez.

Brief Summary of Bill

- Establishes certain requirements related to methane emissions from municipal solid waste landfills and limited purpose landfills.
- Requires the owner or operator of a covered landfill with 450,000 tons or more of waste in place to calculate the quantity of gas generated by the landfill.
- Requires the owner or operator of a covered landfill with 450,000 tons or more of waste in place and gas generation equivalent to 3.0 million British thermal units per hour to install and operate a gas collection and control system unless certain exceptions apply.
- Establishes surface methane emissions standards for covered landfills of 500 parts per million, as determined by instantaneous surface emissions monitoring, and an average methane concentration limit of 25 parts per million by volume as determined by integrated surface emissions monitoring.

Hearing Date: 1/11/22

Staff: Robert Hatfield (786-7117).

Background:

This analysis was prepared by non-partisan legislative staff for the use of legislative members in their deliberations. This analysis is not part of the legislation nor does it constitute a statement of legislative intent.

The State and Federal Clean Air Acts.
The Department of Ecology (Ecology) and seven local air pollution control authorities have each received approval from the United States Environmental Protection Agency (EPA) to administer aspects of the federal Clean Air Act in Washington. In addition to the federal Clean Air Act, Washington has also enacted a state Clean Air Act.

Local air pollution control authorities have the primary responsibility for administering both the state and federal Clean Air Act programs in counties which have elected to activate a local air authority or to form a multicounty air authority. In other areas of the state, Ecology is responsible for administering state and federal Clean Air Act programs.

Civil penalties of up to $10,000 per violation are authorized by the state Clean Air Act.

California Air Resources Board—Methane Emissions from Municipal Solid Waste Landfills Regulation.
In 2010, the California Air Resources Board adopted rules to regulate methane emissions from municipal solid waste landfills. The rules apply to municipal solid waste landfills with 450,000 tons or more of waste in place. Landfills with 450,000 or more tons of waste in place and a landfill gas heat input capacity of 3.0 million British thermal units per hour or more must install and operate a gas collection and control system. Landfill gas heat input capacity is a measure of the thermal energy produced by the landfill based on the gas generated by the decomposition of materials deposited in the landfill.

Landfills with carbon adsorption systems must calculate their landfill gas heat input capacity by measuring the actual total landfill gas flow rate. Landfills without carbon adsorption systems must calculate their landfill gas heat input capacity according to an equation set forth in the rule that takes into account factors such as the total amount of waste in place, the amount of waste deposited during the previous year, and anaerobic decomposition rates. Surface methane emissions may not exceed 500 parts per million as determined by instantaneous monitoring and an average of 25 parts per million as determined by integrated monitoring.

Oregon Environmental Quality Commission—Landfill Gas Emissions Rulemaking.
In 2021, the Oregon Environmental Quality Commission adopted rules to regulate methane emissions from landfills. The rules apply to municipal solid waste landfills with 200,000 tons or more of waste in place. Landfills that generate 664 tons or more per year of methane are required to install gas control and collection systems. Surface methane emissions may not exceed 500 parts per million as determined by instantaneous monitoring and an average of 25 parts per million as determined by integrated monitoring.

Climate Commitment Act.
Under the Climate Commitment Act enacted in 2021, E2SSB 5126, Ecology must implement a cap on greenhouse gas emissions from covered entities and a program to track, verify, and enforce compliance through the use of compliance instruments (Cap and Invest Program, or Program), with the Program commencing by January 1, 2023.

The Program must consist of, among other things, annual allowance budgets that limit emissions from covered entities, and the creation of creating a Climate Investment Account for the deposit of receipts from the distribution of emission allowances.

A person that owns or operates a landfill utilized by a county or city solid waste management program is a covered entity beginning January 1, 2031, and in all subsequent compliance periods, if the landfill reported emissions for any calendar year from 2027 through 2029 and the facility's emissions equal or exceed 25,000 metric tons of carbon dioxide-equivalent.

Summary of Bill:

Applicability.
The provisions of the bill apply to all municipal solid waste landfills and limited purpose landfills that received solid waste after January 1, 1977.

The provisions of the bill do not apply to the following landfills:
- landfills that receive only hazardous waste, or are currently regulated under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. chapter 103; and
- landfills that receive only inert waste or nondecomposable wastes.

Implementing Rules.
Ecology must adopt rules to implement the provisions of the bill. The rules adopted by Ecology must be informed by landfill methane regulations adopted by the California Air Resources Board, the Oregon Environmental Quality Commission, and the EPA.

Definitions.
Multiple terms are defined, including:
- "gas collection system" means any system that employs various gas collection wells and connected piping, and mechanical blowers, fans, pumps, or compressors to create a pressure gradient and actively extract landfill gas;
- "gas control system" means any system that disposes of or treats collected landfill gas by one or more of the following means: combustion; gas treatment for subsequent sale, or sale for processing offsite, including for transportation fuel and injection into a natural gas pipeline;
- "limited purpose landfill" means a landfill that is not an inert waste landfill and receives or has received only solid wastes that are designated as nonhazardous and that are not municipal solid wastes; and
- "municipal solid waste landfill" means a discrete area of land or an excavation that receives household waste and that is not a land application site, surface impoundment, injection well, or pile.

Compliance Obligations.

Each owner or operator of an active municipal solid waste landfill or limited purpose landfill having fewer than 450,000 tons of waste in place must submit an annual waste in place report to Ecology or the local air pollution control authority. The waste in place report must be submitted annually until either:

- the municipal solid waste landfill or limited purpose landfill reaches a size greater than or equal to 450,000 tons of waste in place; or
- the owner or operator submits a closure notification.

Each owner or operator of a municipal solid waste landfill or limited purpose landfill having greater than or equal to 450,000 tons of waste in place must calculate the landfill gas heat input capacity and must submit a landfill gas heat input capacity report to Ecology or the local air pollution control authority.

If the calculated landfill gas heat input capacity is less than 3.0 million British thermal units per hour recovered, the owner or operator must recalculate the landfill gas heat input capacity annually and submit an annual landfill gas heat input capacity report to Ecology or the local air pollution control authority until either of the following conditions are met:

- the calculated landfill gas heat input capacity is greater than or equal to 3.0 million British thermal units per hour recovered; or
- if the municipal solid waste landfill or limited purpose landfill is active, the owner or operator submits a closure notification.

If the landfill gas heat input capacity is greater than or equal to 3.0 million British thermal units per hour recovered, the owner or operator must either:

- comply with the requirements of the bill and Ecology's implementing rules; or
- demonstrate to the satisfaction of Ecology or the local air pollution control authority that after four consecutive quarterly monitoring periods there is no measured concentration of methane of 200 parts per million by volume or greater using instantaneous surface monitoring procedures.

Based on the monitoring results, the owner or operator must do one of the following:

- if there is any measured concentration of methane of 200 parts per million by volume or greater from the surface of an active, inactive, or closed municipal solid waste landfill or limited purpose landfill, comply with the requirements of the bill;
- if there is no measured concentration of methane of 200 parts per million by volume or greater from the surface of an active municipal solid waste landfill or limited purpose landfill, recalculate the landfill gas heat input capacity annually until the owner or operator submits a closure notification; or
- if there is no measured concentration of methane of 200 parts per million by volume or greater from the surface of a closed or inactive municipal solid waste landfill or limited purpose landfill, the requirements of this bill no longer apply, provided that a waste in place report and all instantaneous surface monitoring records are submitted to and approved by Ecology or the local air pollution control authority.

Gas Collection and Control Systems.
The owner or operator of any municipal solid waste landfill or limited purpose landfill that has a calculated landfill gas heat input capacity greater than or equal to 3.0 million British thermal units per hour recovered must install a gas collection and control system, unless the owner or operator demonstrates to the satisfaction of Ecology or the local air pollution control authority that after four consecutive quarterly monitoring periods there is no measured concentration of methane of 200 parts per million by volume or greater using instantaneous surface monitoring procedures.

The gas collection and control system must handle the expected gas generation flow rate from the entire area of the municipal solid waste landfill or limited purpose landfill and must collect gas at an extraction rate to comply with the surface methane emission limits set forth below. The gas collection and control system must be designed and operated so that there is no landfill gas leak that exceeds 500 parts per million by volume, measured as methane, at any component under positive pressure.

If a gas collection and control system uses a flare, it must use either an enclosed flare or, if the system uses an open flare, the open flare must comply with the following requirements:

- the open flare must meet the requirements of 40 C.F.R. Sec. 60.18 (as last amended by 73 Fed. Reg. 78209, December 22, 2008); and
- an open flare installed and operating prior to August 1, 2022, may operate until January 1, 2032, unless the owner or operator demonstrates to the satisfaction of Ecology or the local air pollution control authority that the landfill gas heat input capacity is less than 3.0 million British thermal units per hour.

The owner or operator may temporarily operate an open flare during the repair or maintenance of the gas control system, or while awaiting the installation of an enclosed flare, or to address offsite gas migration issues. Any owner or operator seeking to temporarily operate an open flare must submit a written request to Ecology or the local air pollution control authority.

If the gas collection and control system does not use a flare, it must either route the collected gas to an energy recovery device or devices, or must route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. If a gas collection and control system routes the collected gas to an energy recovery device, the device must achieve a methane destruction efficiency of at least 99 percent by weight.

The owner or operator of a municipal solid waste landfill or limited purpose landfill must conduct an annual source test for any gas control device or devices subject to the requirements described above.

Methane Emissions Standards.
With certain specified exceptions, no location on a municipal solid waste landfill surface or limited purpose landfill surface may exceed either of the following methane concentration limits:

- 500 parts per million by volume, other than nonrepeatable, momentary readings, as

determined by instantaneous surface emissions monitoring; and
- an average methane concentration limit of 25 parts per million by volume as determined by integrated surface emissions monitoring.

Monitoring.
The owner or operator of a municipal solid waste landfill or limited purpose landfill with a gas collection and control system must conduct instantaneous and integrated surface monitoring of the landfill surface.

The owner or operator of a municipal solid waste landfill or limited purpose landfill with a gas collection and control system must monitor the gas control system and each individual wellhead according to the requirements specified in implementing rules adopted by Ecology.

Record-Keeping and Reporting.
The owner or operator of a municipal solid waste landfill or limited purpose landfill must maintain records related to monitoring, testing, landfill operations, and the operation of the gas control device, gas collection system, and gas control system. The records must be provided by the owner or operator to Ecology or the local air pollution control authority within five business days of a request from Ecology or the local air pollution control authority.

The owner or operator of a municipal solid waste landfill or limited purpose landfill that ceases to accept waste must submit a closure notification to Ecology or the local air pollution control authority within 30 days of ceasing to accept waste.

The owner or operator of a municipal solid waste landfill or limited purpose landfill must submit a gas collection and control system equipment removal report to Ecology or the local air pollution control authority 30 days prior to well capping or the removal or cessation of operation of the gas collection, treatment, or control system equipment.

Capping or Removal of the Gas Collection and Control System.
Ecology or the local air pollution control authority must allow the capping or removal of the gas collection and control system at a closed municipal solid waste landfill or limited purpose landfill, provided the following three requirements are met:
- the gas collection and control system was in operation for at least 15 years, unless the owner or operator demonstrates to the satisfaction of Ecology or the local air pollution control authority that due to declining methane rates, the municipal solid waste landfill or limited purpose landfill will be unable to operate the gas collection and control system for a 15 year period;
- surface methane concentration measurements do not exceed prescribed limits; and
- the owner or operator submits an equipment removal report to Ecology or the local air pollution control authority.

Compliance Alternatives.
The owner or operator of a municipal solid waste landfill or limited purpose landfill may request

alternatives to the compliance measures, monitoring requirements, and test methods and procedures set forth in the bill. Any alternatives requested by the owner or operator must be submitted in writing to Ecology. Ecology must deny a request for alternative compliance measures if the request does not provide levels of enforceability or methane emissions control that are equivalent to those set forth in the bill or Ecology's implementing rules.

Civil Penalties.
Any person who violates the provisions of the bill or any rules that implement the bill may incur a civil penalty pursuant to the Clean Air Act.

Fees.
Ecology and local air pollution control authorities may assess and collect such fees as may be necessary to recover the direct and indirect costs associated with the implementation of the requirements of the bill.

Exemption from Coverage under Climate Commitment Act.
Emissions from municipal solid waste landfills and limited purpose landfills that are subject to, and in compliance with, the requirements of the bill are exempt from coverage under the Cap and Invest Program.

Appropriation: None.

Fiscal Note: Requested on December 29, 2021.

Effective Date: The bill takes effect 90 days after adjournment of the session in which the bill is passed.