FINAL BILL REPORT
E2SHB 1663

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Synopsis as Enacted

Brief Description: Reducing methane emissions from landfills.

Sponsors: House Committee on Appropriations (originally sponsored by Representatives Duerr, Fitzgibbon, Ryu, Berry, Leavitt, Ramel, Thai, Walen, Valdez, Goodman, Gregerson, Macri, Peterson, Slatter, Tharinger, Kloba, Pollet, Harris-Talley and Hackney).

House Committee on Environment & Energy
House Committee on Appropriations
Senate Committee on Environment, Energy & Technology
Senate Committee on Ways & Means

Background:

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

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place and a landfill gas heat input capacity of 3.0 million British thermal units (BTUs) 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. Landfill 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. Landfill 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, 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.

A person who owns or operates a landfill utilized by a county or city solid waste management program is a covered entity under the Climate Commitment Act 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:

Compliance Obligations.
Each owner or operator of an active municipal solid waste 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 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 either an active municipal solid waste landfill having greater than or equal to 450,000 tons of waste in place or a closed municipal solid waste landfill having greater than or equal to 750,000 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 BTUs 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 BTUs per hour recovered; or
- if the municipal solid waste 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 BTUs per hour recovered, the owner or operator must either:

- comply with the requirements of the act 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, comply with the requirements of the act;
- 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, 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, 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 that has a calculated landfill gas heat input capacity greater than or equal to 3.0 million BTUs per hour recovered and surface emissions of 200 parts per million or greater must install a gas collection and control system.

If a municipal solid waste landfill partners with a third party to operate all or a portion of the gas collection and control system or energy recovery device, the obligation to comply with the requirements of the act are the responsibility of the owner or operator of the relevant portion of the gas collection and control system or energy recovery device.

The gas collection and control system must handle the expected gas generation flow rate from the entire area of the municipal solid waste 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 achieve a methane destruction efficiency of at least 99 percent by weight and 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 applicable federal regulations; and
- an open flare installed and operating prior to December 31, 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 BTUs 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 route the collected gas either to an energy recovery device or devices, or 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 97 percent by weight, except for lean-burn internal combustion engines that were installed and operating prior to January 1, 2022, which must reduce the outlet methane concentration to less than 3,000 parts per million by volume, dry basis corrected to 15 percent oxygen. If a gas collection and control system routes the collected gas to a treatment system that processes the collected gas for subsequent sale or use, the treatment system must achieve a methane leak rate of three percent or less by weight.

The owner or operator of a municipal solid waste landfill must conduct a source test for any gas control device or devices subject to the requirements described above. If a gas control device is currently in compliance with source testing requirements as of the effective date of the bill, the owner or operator must conduct the source test no less frequently than once every five years. If a gas control device is currently not in compliance with source testing requirements, or if a subsequent source test shows the gas control device is out of compliance, the owner or operator must conduct the source test no less frequently than once per year until two subsequent consecutive tests both show compliance. Upon two subsequent consecutive compliant tests, the owner or operator may return to conducting the source test no less frequently than once every five years.

Methane Emissions Standards.

With certain specified exceptions, beginning on January 1 of the year following the year in which Ecology adopts its implementing rules, no location on a municipal solid waste landfill surface may exceed the following methane concentration limits, dependent upon whether the owner or operator conducts instantaneous monitoring or integrated monitoring:

- 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.

Ecology is authorized to provide for a longer compliance timeline than that established in the act, not to exceed two years after Ecology adopts rules, to accommodate significant technological improvements, which may include the installation of an energy recovery device or devices.

In the event of an exceedance, the owner or operator must record certain data regarding the exceedance, must take corrective actions, and must re-monitor the location or locations of any exceedance within 10 days.

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

The owner or operator of a municipal solid waste 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 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 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 must submit a gas collection and control system equipment removal report to Ecology or the local air pollution control authority within 30 days of 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, provided the following 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 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 may request alternatives to the compliance measures, monitoring requirements, and test methods and procedures set forth in the act, and Ecology's implementing rules. 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 act or Ecology's implementing rules.

Civil Penalties.
Any person who violates the provisions of the act or any rules that implement the act may incur a civil penalty pursuant to the Clean Air Act. Ecology must waive penalties in the event the owner or operator of the landfill is actively taking corrective actions to control any methane exceedances. Penalties collected must be deposited into the Air Pollution Control Account and may be used only to implement the provisions of the bill.

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 that are subject to, and in compliance with, the requirements of the act are exempt from coverage under the Climate Commitment Act.

Use of Funds in the Climate Commitment Account.
The scope of permissible uses of funds within the Climate Commitment Account is expanded to include the installation of gas collection devices and gas control systems, monitoring and reporting of methane emissions, with a prioritization on funding needed for any activities by local governments to comply with the requirements of the act.

Applicability.
The provisions of the act apply to all municipal solid waste landfills that received solid waste after January 1, 1992. The provisions of the act 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; and landfills that receive only inert waste or non-decomposable wastes.

Implementing Rules.
Ecology must adopt rules to implement the provisions of the act. 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.

Votes on Final Passage:

House	57	40	
Senate	30	17	(Senate amended)
House	58	38	(House concurred)

Effective: June 9, 2022