

TITLE 17. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER THE ADOPTION OF A PROPOSED REGULATION TO REDUCE METHANE EMISSIONS FROM MUNICIPAL SOLID WASTE LANDFILLS

The Air Resources Board (ARB or the Board) will conduct a public hearing at the time and place noted below to consider adopting a regulation to reduce emissions of methane, a greenhouse gas (GHG), from municipal solid waste (MSW) landfills.

DATE: June 25-26, 2009

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., June 25, 2009, and may continue at 8:30 a.m., June 26, 2009. This item may not be considered until June 26, 2009. Please consult the agenda for the meeting, which will be available at least 10 days before June 25, 2009, to determine the day on which this item will be considered.

If you require special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by fax at (916) 322-3928 as soon as possible, but no later than 10 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed adoption of California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6. Methane Emissions from Municipal Solid Waste Landfills, sections 95460, 95461, 95462, 95463, 95464, 95465, 95466, 95467, 95468, 95469, 95470, 95471, 95472, 95473, 95474, 95475, and 95476.

Background: In 2006, the Legislature passed, and Governor Schwarzenegger signed, the California Global Warming Solutions Act of 2006 (Assembly Bill 32; Stats. 2006, chapter 488). In Assembly Bill (AB) 32, the Legislature declared that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The Legislature further declared that global warming will have detrimental effects on some of California's largest industries, including agriculture and tourism, and will increase the strain on electricity supplies. While national and

international actions are necessary to fully address the issue of global warming, the Legislature recognized that action taken by California to reduce GHG emissions will have far-reaching effects by encouraging other states, the federal government, and other countries to act. AB 32 creates a comprehensive, multi-year program to reduce GHG emissions in California, with the overall goal of restoring emissions to 1990 levels by the year 2020. AB 32 requires ARB to take actions that include:

- Establishing a statewide GHG emissions cap for 2020, based on 1990 emissions;
- Adopting a Scoping Plan by January 1, 2009, indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions;
- Adopting a list of Discrete Early Action GHG emission reduction measures by June 30, 2007, which can be implemented and enforced no later than January 1, 2010; and
- Adopting regulations by January 1, 2010, to implement the measures identified on the list of Discrete Early Action Measures.

In June 2007, the Board identified a measure to reduce methane emissions from MSW landfills as a discrete early action measure.

Methane is a major contributor to climate change, having a global warming potential of 21 times that of carbon dioxide. It has a relatively short atmospheric lifetime of about ten years. Changes in a methane source's emissions level can affect atmospheric concentrations in a relatively short time scale.

In California, MSW landfills are the second largest anthropogenic source of methane. The organic portion of solid waste disposed in MSW landfills decomposes to form landfill gas; methane typically accounts for about 50 percent of the total landfill gas composition. Approximately 1.2 billion tons of solid waste has accumulated in the State's landfills, with an additional 40 million tons being added each year. In 1990, GHG emissions from MSW landfills were estimated to be about 6.3 million metric tons of carbon dioxide equivalents (MMT CO_2E). These emissions are forecasted to increase to approximately 7.7 MMT CO_2E in 2020. Emissions from MSW landfills represent about one percent of the statewide GHG inventory. If not captured, combusted, or treated in control systems, landfill gas can either be released into the atmosphere as fugitive emissions or migrate underground to cause groundwater contamination.

In the 1990s, many local air districts adopted regulations to reduce emissions of volatile organic compounds, an ozone precursor, from landfills. These regulations resulted in landfill gas collection and control systems being installed at most large landfills. About 93 percent of the total statewide waste-in-place (the amount of waste in a landfill) is contained in landfills with gas collection and control systems.

Description of the Proposed Regulatory Action: The proposed regulation applies to active, inactive, and closed MSW landfills that received solid waste after January 1, 1977, and have at least 450,000 tons of waste-in-place. Currently uncontrolled landfills that meet these criteria will be required to install gas collection and control systems. All affected landfills will be required to maintain landfill gas collection and control systems to specified standards. Currently uncontrolled landfills that meet these criteria. Installation and proper operation of these systems will significantly reduce the emissions of methane and other volatile organic compounds produced as organic materials decompose in landfills. The proposed regulation contains performance standards for the gas collection and control system, and specifies monitoring requirements to ensure that the system is being maintained and operated in a manner to minimize methane emissions.

ARB staff estimates that there are 14 uncontrolled landfills with at least 450,000 tons of waste-in-place that may generate sufficient gas to support the installation of a gas collection and control system. Based on ARB staff's 2020 forecast of landfill emissions, if all 14 of those landfills were to install emission controls for methane, there would be a reduction of about 0.4 MMTCO₂E in 2020. The implementation and enforcement of the monitoring and performance requirements of the proposed regulation for the remaining estimated 298 affected MSW landfills with gas collections systems already installed is expected to result in an additional estimated emission reduction of 1.1 MMTCO₂E.

Surface Emission Standards

The proposed regulation includes monitoring requirements to ensure that gas collection and control systems are operating optimally and that fugitive emissions are minimized. Staff is proposing an instantaneous surface monitoring standard of 500 parts per million by volume (ppmv) and an integrated surface sampling standard of 25 ppmv to ensure that the gas collection system is adequately controlling emissions. Instantaneous surface monitoring is used to monitor integrity of the landfill surface and to identify point sources where methane may be escaping into the atmosphere (e.g., around cover penetrations, areas of distressed vegetation, cracks, or seeps in the landfill cover system). Integrated surface sampling accumulates and averages the instantaneous surface monitoring readings and provides a more direct means of revealing clusters of emissions that would indicate possible gas collection system problems. Landfill owners and operators are given the opportunity to repair leaks or make the appropriate adjustments to their gas collection and control systems before an exceedance of the standard is considered a violation.

Compliance Dates

The proposed regulation requires uncontrolled landfills with at least 450,000 tons of waste-in-place to submit a Design Plan prepared by a registered professional engineer. The Design Plan must provide for the control of the collected landfill gas through the use of a gas collection and control system and be designed to collect gas at a sufficient extraction rate to maintain negative pressure at all wellheads (except under specified

conditions). Within 18 months after approval of the Design Plan, active landfills must demonstrate installation of an active gas collection and control system. This compliance schedule should provide sufficient time for the operator to obtain the necessary local agency permits and for installation of the system. Closed and inactive landfills must also demonstrate installation of a gas collection and control system but have up to 30 months after approval of the Design Plan to comply. This compliance schedule provides an extra year for closed or inactive landfills to secure the necessary funds to comply.

Beginning January 1, 2011, owners and operators that are required to install a gas collection and control system, or are already operating a gas collection and control system, must monitor the surface of their landfills to ensure compliance with the surface methane emissions standards. This compliance schedule allows landfill owners or operators time to adjust their current practices to the surface standards and monitoring requirements.

Recordkeeping and Reporting

Under the proposed regulation, municipal solid waste landfill owners and operators will be subject to recordkeeping and reporting requirements. These requirements include maintaining records of the landfill's annual waste acceptance rate and current amount of waste-in-place, monitored operating parameters of the gas collection and control system, equipment downtime, and records of all component leak testing and surface emissions monitoring. These records, necessary to monitor methane emissions and track AB 32 performance objectives, must be submitted to ARB.

COMPARABLE FEDERAL REGULATIONS

Federal New Source Performance Standards and Emission Guidelines for Municipal Solid Waste Landfills

MSW landfills are regulated under local air district rules that implement the requirements of the New Source Performance Standards (NSPS) and Emission Guidelines (EG) (40 CFR Part 60 Subparts WWW and Cc) for MSW landfills. The NSPS applies to "new" MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991. The EG applies to "existing" MSW landfills that commenced construction, modification, or reconstruction before May 30, 1991, and that have accepted waste at any time since November 8, 1987, or have additional capacity for future waste deposition. The NSPS and EG require the installation of a landfill gas collection and control system when a MSW landfill reaches a design capacity of 2.75 million tons or greater and has a non-methane organic compound emission rate of 55 tons per year, or greater.

ARB and the local air districts were required to develop and submit a "State Plan" to the United States Environmental Protection Agency (U.S. EPA) for implementing and enforcing the requirements of the EG. Local air districts that elected not to adopt rules

to implement the EG were placed under a Federal Plan, which is directly enforced by U.S. EPA. In general, the larger California air districts adopted rules whereas several smaller districts are subject to the Federal Plan. U.S. EPA promulgated the NSPS and EG on March 12, 1996.

National Emission Standards for Hazardous Air Pollutants - Municipal Solid Waste Landfills

U.S. EPA promulgated the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for MSW landfills (40 CFR Part 63 Subpart AAAA) on January 16, 2003. The NESHAP has the same requirements as the NSPS, but also contains provisions for start-up, shut-down, and additional recordkeeping and reporting requirements. The proposed regulation differs from federal NSPS and NESHAP requirements in that it applies to smaller landfills (450,000 versus 2,750,000 tons of waste-in-place) and has more stringent requirements for methane collection and control, component leak testing and surface emissions monitoring, and compliance schedules. The more stringent requirements in the proposed regulation are needed to maximize GHG emission reductions. Since the requirements of the proposed regulation are more stringent, they do not conflict with or impede compliance with the existing federal requirements.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

ARB staff has prepared a staff report for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: Staff Report: Initial Statement of Reasons (ISOR) for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills, April 2009.

Copies of the ISOR and the full text of the proposed regulatory language may be accessed on ARB's website listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990, at least 45 days prior to the scheduled hearing on June 25, 2009.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on ARB's website listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Mr. Richard Boyd, Manager, Process Evaluation Section, at (916) 322-8285, or Mr. Renaldo Crooks, Air Pollution Specialist, at (916) 327-5618.

Further, the agency representative and designated back-up contact persons, to whom nonsubstantive inquiries concerning the proposed administrative action may be directed, are Ms. Lori Andreoni, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-4011, or Ms. Trini Balcazar, Regulations Coordinator,

(916) 445-9564. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR, and all subsequent regulatory documents, including the FSOR, when completed, are available on ARB's website for this rulemaking at www.arb.ca.gov/regact/2009/landfills09/landfills09.htm.

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulation are presented below.

Pursuant to Government Code section 11346.5(a)(5), the Executive Officer has determined that the proposed regulation would possibly impose a mandate on local agencies or school districts, which is not reimbursable under the Government Code because the proposed regulation applies to all entities that own or operate landfills and does not impose unique requirements. The Executive Officer has further determined pursuant to Government Code section 11346.5(a)(6) that the proposed regulation would result in some additional costs to ARB and other State agencies. In addition, the Executive Officer has also determined pursuant to Government Code Section 11346.5(a)(6) that the proposed regulatory action would possibly create a cost to any local agency or school district that is not required to be reimbursed under part 7 (commencing with section 17500) of division 4 of the Government Code, or may impose other nondiscretionary costs or savings on local agencies. The Executive Officer further determined that the proposed regulation would not result in costs or savings in federal funding to the State.

The proposed regulatory action may create costs to local air pollution control and air quality management districts (Districts). However, these costs are recoverable by fees that are within the Districts' authority to assess (see Health and Safety Code section 42311) and are also specifically provided for in the proposed regulation.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts that representative private persons or businesses might incur in reasonable compliance with the proposed regulation. The Executive Officer has initially assessed that there will be a potential cost impact on private persons or businesses directly affected as a result of the proposed regulatory action.

The cost to affected public agencies and to affected persons and businesses would be approximately \$27 million dollars in initial capital costs with about \$6 million to \$14 million dollars in annual recurring costs (in 2008 dollars). Over the 23-year life of the regulation, this corresponds to a total cost of approximately \$340 million dollars. The cost-effectiveness is estimated to be approximately \$9 per metric ton of carbon

dioxide equivalent reduced. Affected persons and businesses may also incur an additional cost for any fees Districts assess.

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code sections 11346.3 and 11346.5(a)(10), the Executive Officer has determined that the proposed regulatory action may lead to creation of some businesses. Due to the longer compliance lead-time for closed landfills, as well as the opportunity to delay control system installation through improved landfill surface maintenance, and multiple available funding mechanisms, ARB staff believes that landfill owners and operators will be able to meet the compliance costs. Businesses that may be created or expanded include those that design, furnish, install, monitor, and maintain landfill gas collection and control systems, as well as those that provide alternative compliance strategies (including waste-to-energy technologies). Existing businesses that provide the aforementioned scope of services and products are likely to see an increase in business due to the requirements of the proposed regulation. Additionally, the proposed regulation may lead to the creation or expansion of jobs in those sectors assisting facilities with compliance. The proposed regulation is not expected to result in the elimination of any jobs or businesses.

The Executive Officer has also determined, pursuant to California Code of Regulations, title 1, section 4, that the proposed regulatory action would not have an affect on small businesses. The businesses affected by the proposed regulation do not meet the definition of small business in Government Code section 11342.610.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements of the regulation which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

A detailed assessment of the economic impacts of the proposed regulation can be found in the ISOR.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by email before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon (Pacific Standard Time), June 24, 2009**, and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, California 95814

Electronic submittal: <http://www.arb.ca.gov/lispub/comm/bclist.php>

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Gov. Code § 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request. Additionally, this information may become available via Google, Yahoo, and other search engines.

The Board requests, but does not require, that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board members have time to fully consider each comment. The Board encourages members of the public to bring to the attention of staff, in advance of the hearing, any suggestions for modification of the proposed regulatory action.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under the authority granted to ARB under Health and Safety Code sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601. This action is proposed to implement, interpret, or make specific Health and Safety Code sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 38561, 38563, 38580, 39003, 39500, 39600, 39601, and 41511.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Government Code, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340).

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with non-substantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

/s/

James N. Goldstene
Executive Officer

Date: April 28, 2009

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.