

UPDATED INFORMATIVE DIGEST

PUBLIC HEARING TO CONSIDER THE ADOPTION OF A PROPOSED REGULATION TO REDUCE GREENHOUSE GAS EMISSIONS FROM SEMICONDUCTOR OPERATIONS

Sections Affected: This action adds sections 95320 through 95326 to title 17, Subchapter 10, Article 4, California Code of Regulations (CCR) regarding greenhouse gas (GHG) emissions from semiconductor operations.

Background: The California Global Warming Solutions Act of 2006 (Assembly Bill 32, AB 32, Núñez, Ch. 486, Stats. 2006) creates a comprehensive, multi-year program to reduce Greenhouse Gas (GHG) emissions in California. AB 32 also requires the Air Resources Board (ARB or Board) to identify a list of discrete early action GHG reduction measures by June 30, 2007, and to adopt regulations to implement listed early action measures. These early action measures must be enforceable no later than January 1, 2010. Discrete early action measures must also achieve the maximum technologically feasible and cost-effective reductions in GHGs from sources or categories of sources. In June 2007, the Board approved a discrete early action measure to reduce emissions of GHGs from semiconductor operations.

Description of Proposed Regulatory Action: At the Board's February 26, 2009 public hearing for the proposed regulation, the Board adopted the regulation without modification, summarized below, as it was noticed on January 9, 2009 in the California Notice Register and as set forth in the staff report released on January 9, 2009 entitled *Initial Statement of Reasons for Proposed Regulation to Reduce Greenhouse Gas Emissions from Semiconductor Operations*.

The purpose of this regulation is to reduce GHG emissions from semiconductor operations. GHGs are used in cleaning chemical vapor deposition (CVD) tool chambers where thin films are deposited on wafers (thin semiconductor material from which integrated circuits or "chips" are made), and in etching integrated circuits into those thin films. The regulation requires an owner or operator of a semiconductor operation that emits more than 800 metric tons of carbon dioxide equivalent per year to comply with emission standards effective January 1, 2012, with one exception. Operators that are replacing 150 millimeter wafer process tools with newer 200 millimeter or larger wafer tools have until January 1, 2014 to comply. This provision prevents abatement expenses from being incurred for equipment that would soon be replaced.

The proposed semiconductor regulation sets new maximum allowable emission limits for semiconductor operations. The emission limits for semiconductor operations are tiered, and vary depending on the quantity of wafers processed at an operation. All new semiconductor operations established on or after January 1, 2010 are required to meet the most stringent emission standard, regardless of the quantity of wafers produced.

The regulation also specifies that an owner or operator must submit annual reports to the permitting agency for emissions occurring in the previous calendar year. The annual reports are to include the amount of GHGs used, wafer processing volume, emissions calculations, and other information.

Recordkeeping requirements specify that the owner or operator maintain records on emission control equipment malfunctions and failures.

Comparable Federal Regulations: There are no comparable federal regulations that reduce GHG emissions from semiconductor operations. However, GHG emission reductions from the semiconductor industry have occurred voluntarily, through agreements between the U.S. EPA and a small number of California operators.