

APPENDIX D

**Socioeconomic Analysis
For Proposed Amendments to Rule 4905**

November 18, 2014

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**SOCIOECONOMIC ANALYSIS
FOR PROPOSED AMENDMENTS TO RULE 4905**

I. INTRODUCTION

Pursuant to California Health and Safety Code (CH&SC) Section 40728.5 as well as the *2011 Economic Analysis Process Recommendations*,¹ the San Joaquin Valley Air Pollution Control District (District) conducts a socioeconomic analysis of a proposed rule or rule amendment that will significantly affect air quality or emission limitations prior to rule adoption. A socioeconomic analysis examines how a rule project may impact industries, businesses, employment rates, and the economy in the San Joaquin Valley (Valley).

The proposed rule amendments would achieve emission reductions by lowering the NOx emission limit for natural gas-fired, fan-type residential central furnaces (residential units) with a rated heat input of less than 175,000 British thermal units per hour (Btu/hr), and for combination heating and cooling units, a rated cooling capacity of less than 65,000 Btu/hr, from 0.093 pounds per million Btu (lb/MMBtu) heat output (or 55 parts per million by volume (ppmv)) to 0.0325 lb/MMBtu (or 20 ppmv). Proposed amendments would also expand applicability to include units installed in commercial buildings (commercial units) and units installed in manufactured homes.

The CH&SC requires discussion of the necessity of adopting, amending, or repealing a rule to attain state and federal ambient air quality standards; this requirement is met through the discussion in the body of the Final Draft Staff Report. The other five CH&SC requirements for a socioeconomic analysis are satisfied through this appendix, which examines the following items:

- Type of industries or businesses affected by the proposed rule amendments
- Range of probable costs for the proposed rule amendments (full discussion contained in Appendix C)
- Emission reduction potential of the proposed rule amendments (full discussion contained in Appendix B)
- Availability and cost effectiveness of alternatives to the proposed rule amendments
- How the proposed rule amendments impact the Valley's employment and economy

The District also evaluated two additional items in this socioeconomic analysis, per the District's *2011 Economic Analysis Process Recommendations*:

¹ San Joaquin Valley Air Pollution Control District (SJVAPCD). (2011, October 20). *Enhancements to District Economic Analysis of Regulations*. Fresno, CA. Retrieved 12/17/13 from http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2011/October/GB_Agenda_Item_13_Oct_20_2011.pdf.

- Costs and socioeconomic impacts from previous versions of the rule
- Impacts of proposed rule amendments to small businesses, municipalities, and at-risk communities

II. AFFECTED INDUSTRIES AND BUSINESSES

Natural gas-fired, fan-type central furnaces are utilized in a variety of settings, including, but not limited to, the following areas:

- Residential buildings (houses, apartments, etc.)
- Small commercial buildings (offices, manufacturing facilities, hotels, restaurants, hospitals, educational and religious organizations, etc.)
- Manufactured homes (mobile homes, etc.)

End-users of natural gas-fired, fan-type central furnaces would be affected by the proposed rule amendments, as they would not be allowed to purchase 0.093 lb/MMBtu (or 55 ppmv) compliant units and could potentially pay more for 0.0325 lb/MMBtu (or 20 ppmv) compliant units.

Manufacturers of natural gas-fired, fan-type central furnaces would be affected by the rule amendments, but there are currently no furnace manufacturers in the District. There are Valley wholesalers, suppliers, and contractors who purchase units from manufacturers to sell in the Valley that would be affected by the rule amendments. These businesses would no longer be allowed to sell, distribute, or install units meeting a NOx emission limit of 0.093 lb/MMBtu (or 55 ppmv).

III. COSTS AND SOCIOECONOMIC IMPACTS FROM PREVIOUS VERSIONS OF RULE 4905

Rule 4905 was adopted in October 2005. These proposed amendments represent the second generation of this rule. In order to account for the cumulative impact of multiple generations of rules on this source category, the *2011 Economic Analysis Process Recommendations* advises that staff reports include descriptions and cost estimates for previous generations of air pollution controls and reference previous socioeconomic analyses as each rule is amended.

The *Final Draft Staff Report* from the October 20, 2005 adoption of Rule 4905 determined that there was no significant cost difference between noncompliant units and compliant units.²

² SJVAPCD. (2005, October 20). *Adopt Proposed Rule 4905 (Natural Gas-Fired, Fan-type Residential Central Furnaces)*. Retrieved 12/17/13 from http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2005/2005-Oct-20/Item-10/GB_Agenda_2005_Oct_20_Item-10.pdf.

IV. COSTS AND EMISSION REDUCTION POTENTIAL FROM PROPOSED RULE 4905

The proposed amendments to Rule 4905 are expected to result in 2.12 tons per day (tpd) of NO_x emission reductions upon full rule implementation (see Appendix B), and the average annual cost of a 0.0325 lb/MMBtu (or 20 ppmv) compliant unit is expected to range from \$18.73 to \$24.94 per year (see Appendix C).

V. ALTERNATIVES TO RULE AMENDMENT

The proposed NO_x emission limit is considered the lowest achievable NO_x emission limit in practice. Therefore, there are no alternatives to this proposed rule amendment that would be more stringent or achieve additional emissions reductions.

VI. SOCIOECONOMIC IMPACTS

A socioeconomic impact is an effect on the Valley's employment or economy due to a regulatory action. There are no socioeconomic impacts anticipated for these rule amendments because there are no significant impacts to the following three groups that could potentially be affected by this rule-amending project:

- The end-users of units;
- Manufacturers of units; and
- Wholesalers, suppliers, and/or contractors who supply or install units.

End-Users

Rule 4905 is a point-of-sale rule that does not require end-users to replace existing units within a certain time frame; rather, as units meeting the 0.093 lb/MMBtu (or 55 ppmv) NO_x emission limit reach the end of their life and the users replace them, they would purchase a unit that meets the proposed 0.0325 lb/MMBtu (or 20 ppmv) proposed NO_x emission limit, thus ensuring that end-users are not forced to incur additional costs when their current units are still operable. The price differential between 0.093 lb/MMBtu (or 55 ppmv) and 0.0325 lb/MMBtu (or 20 ppmv) compliant units is expected to range from \$160.12 to \$213.49 in 2017. This price increase is relatively minor when compared to the total cost of approximately \$800 to \$2,500, with most units costing \$1,000 to \$1,500. New units are also expected to be more efficient than the units they replace, which will help mitigate the price increase over the life of the unit.

Manufacturers

Manufacturers build natural gas-fired, fan-type central furnaces and sell them to wholesalers, suppliers, or contractors for distribution to the end-users. These rule amendments would have a minimal impact to furnace manufacturers, because any

additional costs to manufacture the 0.0325 lb/MMBtu (or 20 ppmv) compliant units would be passed on to the consumer.

District staff has not identified any furnace manufacturers that have manufacturing facilities located in the Valley. During the October 16, 2014 workshop for the draft rule amendment, the District solicited information regarding furnace manufacturers in the Valley.

Wholesalers, Suppliers, and/or Contractors

Wholesalers, suppliers, and contractors are the medium between the manufacturing facilities and the end-users, as these parties purchase units from the manufacturers to sell and distribute to users. These businesses would no longer be allowed to sell, distribute, or install units meeting a NO_x emission limit of 0.093 lb/MMBtu (or 55 ppmv). The proposed amendments provide these wholesalers and suppliers with a 300-day period after the effective compliance dates to sell through existing inventory. Units meeting the NO_x emission limit of 0.0325 lb/MMBtu (or 20 ppmv) will be commercially available by the end of 2015. Also, as discussed in Appendix C (Cost Effectiveness Analysis), the price differential between a 0.093 lb/MMBtu (or 55 ppmv) and 0.0325 lb/MMBtu (or 20 ppmv) compliant unit is \$160.12 to \$213.49. Contractors', suppliers', and wholesalers' sales volumes would not be adversely impacted. Profit margins would remain the same as the cost would be passed on to the consumer.

VII. IMPACTS TO SMALL BUSINESSES, MUNICIPALITIES, AND AT-RISK COMMUNITIES

Per the *2011 Economic Analysis Process Recommendations* document, District staff is advised to evaluate how new rules or rule amendments may impact small businesses, municipalities, and at-risk communities where the major employer may respond to additional compliance costs by laying off workers. As discussed in Section VI above, these proposed rule amendments are not expected to result in any significant socioeconomic impacts, nor any decreased employment for small businesses and industries in the Valley. As such, municipalities and at-risk communities are not expected to incur any economic or employment effects from these rule amendments.