



Virginia Department of Planning and Budget **Economic Impact Analysis**

9 VAC 5-40 – Existing Stationary Sources
Department of Environmental Quality
August 4, 2014

Summary of the Proposed Amendments to Regulation

The proposed changes will no longer require gas stations in Northern Virginia (effective immediately) and Richmond (effective January 1, 2017) ozone nonattainment areas to employ Stage II vapor recovery systems.

Result of Analysis

The benefits likely exceed the costs for all proposed changes.

Estimated Economic Impact

The proposed changes will no longer require gas stations in Northern Virginia (effective immediately) and Richmond (effective January 1, 2017) ozone nonattainment areas to employ Stage II vapor recovery systems. A Stage II system is made of special nozzles and hoses that capture vapors from the vehicles fuel tank during refueling process and route them to an underground ground storage tank (UST). Simply put, the system replaces the volume of dispensed gas in UST with the commensurate amount of incoming vapors from the vehicles gas tank preventing emission of the vapors into the atmosphere.

The proposed change is prompted by the determination of the U.S. Environmental Protection Agency that the onboard refueling vapor recovery (ORVR) system is in widespread use throughout the country. In an ORVR system, the gas tank and the fill pipe are designed so that when refueling the vehicle, fuel vapors in the gas tank travel to an activated carbon packed canister, which absorbs the vapor. When the engine is in operation, the system feeds vapors into the engine intake manifold to be used as fuel.

Both Stage II and ORVR try to accomplish the same goal. However, they do not always work together properly. When refueling an ORVR-vehicle with a vacuum assist-type Stage II equipped dispenser, compatibility problems may result in an increase in emissions from the UST vent pipe and other system fugitive emissions. In an ORVR-equipped vehicle, the liquid seal in the fill pipe blocks the vapor flow from the vehicle fuel tank, and fresh air drawn into the UST enhances gasoline evaporation in the UST. This additional evaporation increases pressure in the UST, and as tank pressure exceeds the rating of the pressure/vacuum valve, the valve allows vapor to escape. According to the Department of Environmental Quality (DEQ), EPA recognizes this incompatibility problem, and the Clean Air Act has always contemplated Stage II becoming superseded by ORVR in some circumstances; hence, EPA's determination of widespread use and waiver of the Stage II requirement.

Two Virginia areas have been subject to Stage II requirements: the Richmond ozone maintenance area, and the northern Virginia ozone nonattainment area. DEQ examined whether Stage II is still necessary for ozone control purposes and has determined that ORVR will be in widespread use in the Richmond area by January 1, 2017, and became in widespread use in northern Virginia/OTR as of January 1, 2014. Because Stage II is no longer needed for the control of ozone in these areas, Virginia submitted amendments to effect its removal from the state implementation plan (SIP). These SIP revisions satisfy all Clean Air Act and EPA requirements regarding the removal of Stage II vapor recovery system requirements.

The determination of widespread use is critical. In the absence of a Stage II system, older vehicles not equipped with ORVR will cause emissions of vapors during the refueling process. On the other hand, newer vehicles equipped with ORVR will not cause emissions of vapors during the refueling process due to elimination of the incompatibility of the two systems. If ORVR system is in widespread use, avoidance of vapor emissions from newer cars would balance out or exceed the emissions of vapors from older vehicles. Thus, the determination of widespread use of ORVR implies that elimination of Stage II system would reduce or would not increase emissions of vapors at the aggregate during the refueling process. If a reduction in emissions of gasoline vapor is achieved, it would reduce ozone pollution and would be environmentally beneficial for the Commonwealth.

The proposed change will eliminate installation and maintenance costs associated with Stage II systems for future gas stations that would have otherwise been required to install a Stage II vapor recovery system.

In addition, approximately 1,174 gasoline stations currently in Richmond and northern Virginia areas will no longer have to incur maintenance costs for their Stage II systems if they choose to decommission their system. While decommissioning of Stage II would present a onetime expense to the gas stations, they would no longer incur ongoing maintenance costs. EPA estimates that removal of Stage II systems will produce \$333 savings per gas station in the first year, \$1,323 in the second year, \$2,316 in the third year, and \$2,973 per year in the longer term.¹

Since the use of ORVR is already determined to be widespread in northern Virginia, 681 gas stations will start realizing savings immediately after the proposed changes go in effect. These savings are estimated to be cumulatively \$227,000 in the first year after the proposed change become effective, \$901,323 in the second year, \$1.5 million the third year, and \$2 million every year thereafter. The use of ORVR will be widespread in 2017 in Richmond area. Thus, 493 gas stations in Richmond area will start realizing cumulatively \$164,133 savings in 2017, \$652,500 savings in 2018, \$1.1 million savings in 2019, and \$1.4 million savings annually thereafter based on EPA's cost estimates.

Additional administrative cost savings are also expected. DEQ expects \$92,980 savings annually after implementation based on the assumptions that a routine Stage II inspection takes approximately 2 hours to conduct, inspectors are paid approximately \$39.60 per hour, and there are 1,174 gas stations affected. Similarly, gas stations will likely experience some administrative cost savings associated with no longer having Stage II system inspections conducted by DEQ.

Businesses and Entities Affected

The proposed change will no longer require approximately 681 gasoline stations in the northern Virginia ozone nonattainment area effective immediately and 493 gas stations in the Richmond ozone maintenance area effective January 1, 2017 to operate a Stage II vapor recovery system.

¹ Federal Register/Vol. 77, No.95/Page 28772/May 16, 2012.

Localities Particularly Affected

The portions of the Richmond ozone maintenance area subject to Stage II are the counties of Charles City, Chesterfield, Henrico, and Hanover and the cities of Colonial Heights, Hopewell, and Richmond; Prince George County and Petersburg City are exempt from Stage II.

The northern Virginia ozone nonattainment area consists of the counties of Stafford, Arlington, Fairfax, Loudoun, and Prince William, and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

Projected Impact on Employment

The proposed change will likely create some demand for labor to decommission Stage II vapor recovery system in the first few years while reducing demand for labor to install new Stage II systems that would have otherwise been taking place. In the longer term, the proposed change should reduce demand for labor associated with maintenance of Stage II systems.

Effects on the Use and Value of Private Property

The proposed change will provide savings to gas station owners and should have a positive impact on their asset values. However, a reduction in demand for Stage II systems is expected. A reduction in demand for these systems would have a negative revenue impact on their manufacturers, distributors, and installers.

Small Businesses: Costs and Other Effects

Most if not all of the affected 1,174 gas stations are believed to be small businesses. The costs and other effects on them are the same as discussed above. Similarly, some of the manufacturers, distributors, and installers of Stage II systems may be small businesses and may experience a reduction in their revenues.

Small Businesses: Alternative Method that Minimizes Adverse Impact

There is no known alternative that minimize the adverse impact while accomplishing the same goals.

Real Estate Development Costs

No longer requiring a Stage II vapor recovery system, may make it easier for entrepreneurs to start a gas station business and may promote development of real estate for that purpose.

Legal Mandate

General: The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007.04 of the Code of Virginia and Executive Order Number 17 (2014). Section 2.2-4007.04 requires that such economic impact analyses determine the public benefits and costs of the proposed amendments. Further the report should include but not be limited to:

- the projected number of businesses or other entities to whom the proposed regulation would apply,
- the identity of any localities and types of businesses or other entities particularly affected,
- the projected number of persons and employment positions to be affected,
- the projected costs to affected businesses or entities to implement or comply with the regulation, and
- the impact on the use and value of private property.

Small Businesses: If the proposed regulation will have an adverse effect on small businesses, § 2.2-4007.04 requires that such economic impact analyses include:

- an identification and estimate of the number of small businesses subject to the proposed regulation,
- the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the proposed regulation, including the type of professional skills necessary for preparing required reports and other documents,
- a statement of the probable effect of the proposed regulation on affected small businesses, and
- a description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

Additionally, pursuant to § 2.2-4007.1, if there is a finding that a proposed regulation may have an adverse impact on small business, the Joint Commission on Administrative Rules (JCAR) is notified at the time the proposed regulation is submitted to the *Virginia Register of Regulations* for publication. This analysis shall represent DPB's best estimate for the purposes of public review and comment on the proposed regulation.

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