

DOCKETED

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INITIAL STATEMENT OF REASONS

Residential Air Filters, Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors

California Energy Commission
Docket No. 2017-AAER-14
June 16, 2017

I. STATEMENT OF SPECIFIC PURPOSE AND RATIONALE – Government Code section 11346.2(b)(1).

INTRODUCTION

The California Energy Commission is required to reduce the inefficient consumption of energy by prescribing efficiency standards and other cost-effective measures for appliances that require a significant amount of energy to operate on a statewide basis. (Public Resources Code section 25402(c).) One of the ways the Energy Commission achieves this requirement is through the Appliance Efficiency Regulations (California Code of Regulations, title 20, sections 1601-1609), which contain definitions, test procedures, efficiency standards, marking, and certification requirements for state- and federally-regulated appliances. Further, the regulations require that appliance manufacturers certify to the Energy Commission that their products meet all applicable state and federal appliance efficiency regulations before their products can be included in the Energy Commission's database of approved appliances to be sold or offered for sale within California.

Through this rulemaking, the Energy Commission seeks to adopt existing emergency regulations that: (1) delay the date by which residential air filters must comply with testing, marking, and certification requirements, and (2) allow the certification of permanent magnet synchronous (PMS) motors found in residential pool pump and motor combinations or used as replacement residential pool pump motors. The Energy Commission adopted the emergency regulations found in California Code of Regulations, title 20, sections 1602(g), 1606, Table X, subsections C and G, and 1607(d)(12) through two separate emergency rulemaking actions approved by the Office of Administrative Law on March 27, 2017. (Cal. Reg. Notice Register 2017, No. 14-Z, OAL File No. 2017-0315-04-E and No. 2017-0315-03-E.) The emergency regulations will expire on September 26, 2017. Pursuant to Government Code section 11346.1(e), the Energy Commission is initiating this rulemaking to make permanent the emergency regulations that delay the date by which manufacturers must comply with testing, marking, and certification requirements for residential air filters and that allow manufacturers to sell and offer for sale PMS motors in California.

Residential Air Filters

PROBLEM STATEMENT

The problem the Energy Commission seeks to solve with the proposed regulations is the anticipated shortage of residential air filters for use in forced-air heating or forced-air cooling equipment. Air filters are a critical component of heating, ventilation, and air conditioning (HVAC) equipment for reducing energy use and expense, protecting HVAC equipment, and maintaining acceptable indoor air quality.

On May 13, 2015, the Energy Commission adopted regulations for residential air filters. The regulations require that residential air filters manufactured on or after July 1, 2016, comply with testing, certification, and marking requirements. The existing regulations do not set a specific efficiency or design standard for residential air filters, but instead seek to address the lack of labeling specifications on replacement residential air filters which may result in installing improper filters in HVAC equipment, wasting energy, and damaging equipment prematurely. The purpose of the regulations is to provide information to consumers regarding an air filter's ratings for metrics such as filter efficiency by particle size or initial resistance to airflow. This information allows consumers to better compare the rated performance of replacement air filters and to match a replacement air filter with the specific design requirements of the consumers' HVAC equipment.

In September 2016, the Energy Commission learned that manufacturers of residential air filters were concerned about testing requirements in California Code of Regulations, title 20, section 1604(c)(4). The existing regulations were meant to provide manufacturers flexibility when conducting the required test methods. However, manufacturers lack information on how to identify and select which of their residential air filters are required to be tested pursuant to the requirement to test a small, medium, and large air filter. Further, manufacturers are unclear how to apply the test results from the small, medium, and large air filters to the rest of the manufacturers' air filters in the same product family. It is now apparent that the regulations should be more specific with respect to identification and selection of a manufacturer's air filters to be tested and with respect to the application of the resulting test results to a manufacturer's air filters which are in the same product family but of a different size.

The lack of an industry standard or accurate methodology to extrapolate test results to different filter sizes has made it difficult for manufacturers to comply with the testing, marking, and certification requirements for residential air filters. If manufacturers use a dissimilar manner to choose air filters for testing or if they apply the test data to other air filters in a dissimilar manner, then marking information would not be comparable, as intended by the regulations. This will not be helpful to consumers, will introduce additional confusion to the market, and will contravene the purpose of the regulations.

Prior to the adoption of the emergency regulations delaying the compliance date of the existing regulations, most manufacturers had to choose either to supply the California market with non-compliant residential air filters or to remove all residential air filters manufactured on or after July 1, 2016, from the California market. Manufacturers that supplied non-compliant residential air filters to the California market could have been subject to penalties through an enforcement action by the Energy Commission. If manufacturers removed residential air filters manufactured on or after July 1, 2016, from the California market, there would have been an insufficient supply to meet the needs of consumers for replacement residential air filters.

With this rulemaking, the Energy Commission seeks to make permanent the emergency regulations located at California Code of Regulations, title 20, sections 1606, Table X, subsection C, and 1607(d)(12), that delay the date by which manufacturers must comply with existing regulations for residential air filters from July 1, 2016, to April 1, 2019. This will allow manufacturers to continue to sell and offer for sale residential air filters in California while the Energy Commission evaluates whether the testing requirements for residential air filters lack specificity and, if necessary, undertakes a separate rulemaking to adopt regulations that clarify and make specific the testing requirements for residential air filters.

BENEFITS

In general, the proposed regulations will help protect the health and welfare of California residents. The specific benefits from the proposed regulations are threefold. First, the proposed regulations will benefit California residents by preventing a shortage of residential air filters which are necessary to reduce energy use and expense, protect HVAC equipment, and remove particulate pollutants to help maintain acceptable indoor air quality. Second, the proposed regulations provide the Energy Commission adequate time to evaluate whether the existing regulations require clarity and, if necessary, to develop and adopt regulations in a separate rulemaking to provide clarity to the existing regulations. Third, the proposed regulations will benefit manufacturers by allowing them to sell and offer for sale residential air filters in California and avoid enforcement actions should they sell or offer for sale non-compliant air filters.

PURPOSE AND NECESSITY

Section 1606, Table X, subsection C

Purpose: To specify the date manufacturers of residential air filters sold or offered for sale in California must submit test results and other information to the Energy Commission to certify their products.

Necessity: The residential air filter regulations have three components: product testing, data submittal, and product marking. Unlike most appliance regulations, there are no specific efficiency or design standards. In order to comply with the data submittal and product marking components, manufacturers will need to test their products. Unless

otherwise specified in the regulatory text, the effective date for product certification is established in Section 1606(a). To ensure clarity as to when manufacturers of residential air filters are required to submit the data set forth in Section 1606, Table X, subsection C, the specific effective date has been added to the regulatory text.

April 1, 2019, has been chosen as the date the regulations are effective based on the time the Energy Commission needs to develop a scaling methodology for extrapolating testing results to different filter sizes, and to complete rulemaking to adopt and implement new regulations that incorporate the revised tests and scaling methodology.

Section 1607(d)(12)

Purpose: To change the date when manufacturers must comply with the marking requirements for residential air filters.

Necessity: This change is necessary to specify and clarify that manufacturers are not required to comply with the marking requirements for residential air filters until they are manufactured on or after April 1, 2019.

April 1, 2019, has been chosen as the date the regulations are effective based on the time the Energy Commission needs to develop a scaling methodology for extrapolating testing results to different filter sizes, and to complete rulemaking to adopt and implement new regulations that incorporate the revised tests and scaling methodology.

Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors

PROBLEM STATEMENT

The problem the Energy Commission seeks to solve regarding residential pool pump and motor combinations and replacement residential pool pump motors is the omission of PMS motors as a permissible motor construction type that may be sold or offered for sale in California. PMS motors are a type of motor typically sold in pump and motor sets for storable pools and are less costly and as efficient as other types of compliant pool pump motors.

On December 15, 2004, the Energy Commission adopted the existing regulations for residential pool pump motors. The regulations provide that residential pool pump motors manufactured on or after January 1, 2006 and sold or offered for sale in California must comply with testing, efficiency, marking, and certification requirements in the Appliance Efficiency Regulations. The regulations set design standards for residential pool pump and motor combinations and residential replacement pool pump motors. These design standards prohibit the sale or offer for sale of two types of inefficient residential pool pump motors – split phase and capacitor start-induction run type motors – to encourage the use of more efficient residential pool pump motors. The Energy Commission monitors compliance with this requirement by requiring manufacturers to certify the

motor construction type by choosing from a list of five motor construction types. The PMS motor was not included in this list of permissible motor construction types even though it is not otherwise a prohibited motor.

In November 2015, manufacturers communicated to Energy Commission staff that they were unable to certify PMS motors because they were not included in this list of permissible motor construction types. This means that PMS motors could not be sold or offered for sale in California. In February 2017, manufacturers informed Energy Commission staff that PMS motors are supplied with the vast majority of pump and motor sets for storable pools, and exclusively with storable pools that cost between \$149 and \$500; PMS motors sold separately as replacement pool pump motors cost between \$29 and \$69. Customers prefer this pump and motor set for storable pools because of its lower cost, and it is the most affordable option for low-income customers.

The storable pool pump industry uses two filtering technologies – cartridge filter and sand filter. The cartridge filter technology uses the PMS motor technology exclusively while the sand filter technology uses the capacitor start-capacitor run (CSCR) motor type. The PMS motor is as efficient as other compliant motor technologies, such as the CSCR motors, for the same capacity (size) pool. CSCR motors can be certified to the Energy Commission while PMS motors could not. This was not the intent of the regulations, which is to encourage the use of efficient residential pool pump motors. If the PMS motor is not included in this list of permissible motor construction types, manufacturers can choose not to sell small storable pools in California, to the disadvantage of lower-income consumers.

With this rulemaking, the Energy Commission seeks to make permanent the emergency regulations located at California Code of Regulations, title 20, sections 1602(g) and 1606, Table X, subsection G, to allow manufacturers to sell and offer for sale PMS motors found in residential pool pump and motor combinations or used as replacement residential pool pump motors to customers in California.

BENEFITS

In general, the proposed regulations will help protect the welfare of California's residents. The proposed regulations will particularly benefit low-income residents because they will have access to more affordable and equally efficient pump and motor sets that include PMS motors, which are often used for storable pools. The regulations will benefit manufacturers because they will be able to certify their products to the Energy Commission. The regulations will benefit manufacturers, distributors, and retailers by allowing them to sell and offer for sale in California, pump and motor sets that include PMS motors .

PURPOSE AND NECESSITY

Section 1602(g)

Purpose: To define the term permanent magnet synchronous (PMS) and distinguish it from other permissible pool pump motor construction types. In addition, two grammatical changes were made to the definition adopted in the emergency rulemaking – deleting the word “and” and adding a comma. These grammatical changes provide clarity to the definition without changing its meaning.

Necessity: This definition is necessary to provide a clear description of the PMS motor type and allow manufacturers to select the PMS construction type when submitting data to the Energy Commission to certify products that meet the definition.

Section 1606, Table X, subsection G

Purpose: To add permanent magnet synchronous as a permissible motor construction type for residential pool pump and motor combinations and replacement residential pool pump motors.

Necessity: This addition is necessary to allow manufacturers to select the PMS construction type when submitting data to the Energy Commission to certify residential pool pump and motor combinations and replacement residential pool pump motors that use PMS motor technology. This provision will allow manufacturers to sell or offer for sale residential pool pump and motor combinations and replacement residential pool pump motors that use PMS motor technology in California. California residents, especially low-income residents, will benefit by having access to lower cost and equally efficient pump and motors sets containing PMS motors, which are often used in storable pools.

II. DOCUMENTS AND REPORTS RELIED UPON – Government Code section 11346.2(b)(3).

Residential Air Filters

Email to Energy Commission from Bryan Gerhardt. 3M. November 16, 2016.

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Shimer, Dorothy, Peggy Jenkins, Thomas Phillips. 2005. *Indoor Air Pollution in California*. California Environmental Protection Agency, Air Resources Board.

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United States Environmental Protection Agency. 2009. *Residential Air Cleaners (Second Edition)*. EPA 402 F-09-002.

Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors

Email to Energy Commission from Matthew Vartola. Bestway. February 17, 2017.

Email to Energy Commission from Matthew Whalen. Intex Corp. February 16, 2017.

Email to Energy Commission from Matthew Vartola. Bestway. November 21, 2016.

Email to Energy Commission from Matthew Whalen. Intex Corp. November 15, 2016.

Draft Energy Commission Staff Report. *Revised Analysis of Efficiency Standards for Pool Pumps and Motors, and Spas*. Energy Commission Docket, TN 217979. June 16, 2016.

APSP workshop slides. Energy Commission Docket, TN 217978. February 18, 2016.

III. CONSIDERATION OF REASONABLE ALTERNATIVES, INCLUDING THOSE THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS – Government Code section 11346.2(b)(4).

Residential Air Filters

The objective of the proposed regulations is to prevent adverse effects to California residents by allowing manufacturers to supply residential air filters to the California market while the Energy Commission undertakes a separate rulemaking to establish regulations that clarify and make specific the testing requirements for residential air filters. The proposed regulations would make permanent emergency regulations that delayed the date by which residential air filters must comply with testing, marking, and certification requirements, from residential air filters manufactured on or after July 1, 2016, to on or after April 1, 2019. The Energy Commission considered not delaying the compliance date of the existing regulations. This alternative was rejected because it would have negatively affected the public's access to residential air filters and manufacturers' ability to supply the California market with compliant products. The Energy Commission also considered a later compliance date, but rejected this because it would result in loss of potential energy savings with no resulting benefit to manufacturers or small businesses.

In light of these facts, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulations are proposed, would lessen any adverse impact on small business, or would be less burdensome and equally effective in achieving the purposes of the regulations in a manner that achieves the purposes of the authorizing statute being implemented.

Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors

The objective of the proposed regulations is to prevent adverse effects to California residents by allowing manufacturers to supply PMS motors used in residential pool pump and motor combinations and as replacement residential pool pump motors to the California market. The proposed regulations would make permanent emergency regulations that amended California Code of Regulations, Title 20, section 1602(g) to define PMS motors and California Code of Regulations, Title 20, section 1606, Table X, subsection G to add PMS as a permissible motor construction type for residential pool pump and motor combinations and replacement residential pool pump motors. These amendments allow manufacturers to select the PMS motor construction type when certifying products that meet the definition. The Energy Commission considered two alternatives to the proposed regulations.

The first alternative would amend California Code of Regulations, title 20, section 1606, Table X, subsection G, to remove the request for construction type for residential pool pump and motor combinations and replacement residential pool pump motors. A new request would be added to declare that the pool pump motors are not split-phase or capacitor start-induction run motor types to verify manufacturers are complying with the prohibition on these motor types described in California Code of Regulations, title 20, section 1605.3(g)(5)(A). This alternative was rejected because it was not consistent with the approach of utilizing a list of permissible answers in the existing regulations for residential pool pump and motor combinations and replacement residential pool pump motors. Additionally, this alternative was rejected because it would provide less information about which motor types were being sold in California and their relative efficiency, important data points for understanding if the Energy Commission can move from prescriptive standards to performance standards in future rulemakings.

The second alternative the Energy Commission considered was to make no change to the existing regulations. The Energy Commission rejected this alternative because it would have negatively affected the public's access to affordable and equally efficient pump and motor sets that include PMS motors, which are often used for storable pools. Further, manufacturers estimated the value at retail of the affected PMS motors used in residential pool pump and motor combinations or as replacement residential pool pump motors at 40 million dollars. If manufacturers are unable to sell residential pool pumps powered by PMS motors to the California market due to barriers to compliance, then 40 million dollars in annual sales of pool products will not occur in California.

In light of these facts, no reasonable alternative considered would be more effective in carrying out the purpose for which the regulations are proposed, would lessen any adverse impact on small business, or would be less burdensome and equally effective in achieving the purposes of the regulations in a manner that achieves the purposes of the authorizing statute being implemented.

IV. SPECIFIC TECHNOLOGIES OR EQUIPMENT – Government Code section 11346.2(b)(1).

Residential Air Filters

The proposed regulations regarding residential air filters do not mandate a specific technology or equipment, and instead solely delay the date by which residential air filters must comply with testing, marking, and certification requirements in the appliance efficiency regulations.

Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors

The proposed regulations add a specific technology or equipment, PMS motors, to the existing list of permissible motor types because it is the best way to meet the specific needs of the problem the Energy Commission is trying to solve, which is to allow certification of residential pool pump and motor combinations and replacement residential pool pump motors that use PMS motor technology. The Energy Commission is considering replacing the existing prescriptive standards with performance based standards as part of a broader, more comprehensive review of all residential pool pump and motor combinations and replacement residential pool pump motors in a separate regular pre-rulemaking activity.

V. DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS – Government Code section 11346.2(b)(6).

The proposed regulations do not duplicate or conflict with any federal regulation contained in the Code of Federal Regulations. The Energy Commission has reviewed the federal regulations and confirmed that there are no federal requirements for residential air filters or replacement residential pool pump motors.

There are no currently effective federal regulations establishing requirements for residential pool pump and motor combinations; however, the U.S. Department of Energy has adopted regulations establishing efficiency standards for pool pump and motor combinations (referred to as dedicated-purpose pool pumps) with a compliance date of July 19, 2021. (82 Fed. Reg. 5650 (January 18, 2017).) Because these regulations are not yet effective, they do not preempt or affect current state efficiency standards for residential pool pump and motor combinations, including the existing efficiency standard prohibiting split-phase and capacitor start-induction run type motors. Moreover, federal appliance regulations do not preempt state certification requirements,

which is the purpose of this rulemaking – to modify existing regulations to allow the certification of PMS motors used in residential pool pump and motor combinations and used as replacement residential pool pump motors.

To the extent that changes to the regulations applicable to residential pool pump and motor combinations could be considered duplicative with the federal regulations, even though the timing of effectiveness would not overlap, the Energy Commission has determined that these regulations are authorized by law and the cost of implementing them prior to the effectiveness of the federal regulations is justified by the benefit to public welfare of having access to affordable, equally efficient pump and motors sets containing PMS motors, which are often used in storable pools.

VI. EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS – Government Code section 11346.2(b)(5)(A).

The Energy Commission has determined that the proposed regulations will not have a significant adverse economic impact on business.

For residential air filters, the proposed regulations only delay the date by which residential air filters for use in forced-air heating or forced-air cooling equipment must comply with the appliance efficiency regulations. There will be no costs as a result of this delay.

For residential pool pump and motor combinations and replacement residential pool pump motors, the proposed regulations will broaden the list of permissible residential pool pump motors. The proposed regulations do not affect existing compliant products. Manufacturers of residential pool pump PMS motors will be able to certify their products to the Energy Commission. Retailers and distributors of these products will be able to sell and offer for sale additional product types.

VII. ECONOMIC IMPACT ASSESSMENT – Government Code sections 11346.2(b)(2)(A) and 11346.3(b).

Creation or elimination of jobs within the state:

No new jobs will be created and no existing jobs will be eliminated by the proposed regulations. For residential air filters, the proposed regulations only delay the compliance date of an existing regulation. For residential pool pump and motor combinations and replacement residential pool pump motors, the affected retailers, distributors, and manufacturers have indicated that they do not anticipate any jobs to be created or eliminated due to the proposed regulations.

Creation of new businesses or the elimination of existing businesses within the state:

No new businesses will be created and no existing businesses will be eliminated by the proposed regulations. For residential air filters, the proposed regulations only delay the compliance date of an existing regulation. For residential pool pump and motor combinations and replacement residential pool pump motors, manufacturers and retailers currently sell a variety of pool products and the proposed regulations would allow for the sale of an additional type of residential pool pump motor. The proposed regulations do not affect existing compliant products.

Expansion of businesses currently doing business within the state:

The Energy Commission estimates that no new businesses will be created and no existing businesses will expand due to the proposed regulations. For residential air filters, the proposed regulations only delay the compliance date of an existing regulation. For residential pool pump and motor combinations and replacement residential pool pump motors, manufacturers and retailers currently sell a variety of pool products and the proposed regulations would allow for the sale of an additional type of residential pool pump motor. The proposed regulations do not affect existing compliant products.

Benefits of the regulation to the health and welfare of California residents:

The proposed regulations will benefit California residents by continuing to allow access to residential air filters which are necessary to reduce energy use and expense, protect HVAC equipment, and remove particulate pollutants to help maintain acceptable indoor air quality. In addition, the proposed regulations will benefit California residents by allowing access to lower cost and equally efficient pump and motor sets containing PMS motors, which are often used in storable pools.

Benefits of the regulation to worker safety:

The Energy Commission does not anticipate any benefits to worker safety as a result of the proposed regulations because this regulatory action will not impact working conditions or worker safety.

Benefits of the regulation to the state's environment:

The proposed regulations do not result in new benefits to the state's environment but improve the implementation of existing regulations which reduce energy consumption, and therefore lower emissions of air pollutants, including greenhouse gases.