

DOCKETED

Docket Number:	17-AAER-03
Project Title:	Appliance Efficiency Standards Emergency Rulemaking for Residential Pool Pump and Motor Combinations
TN #:	216298
Document Title:	Notice of Consideration and Possible Adoption of Emergency Regulations to Amend the Appliance Efficiency Regulations
Description:	Combined Notice of Consideration and Possible Adoption of Emergency Rulemaking, Proposed Express Terms, and Proposed Finding of Emergency for Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors in California Code of Regulations
Filer:	Patrick Saxton
Organization:	California Energy Commission
Submitter Role:	Commission Staff
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CALIFORNIA ENERGY COMMISSION

1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov

CEC-70 (Revised 10/16)



In the matter of:)	Docket No. 17-AAER-03
)	
Appliance Efficiency Regulations for)	RE: Emergency Regulations to
Residential Pool Pump and Motor)	Amend the Appliance Efficiency
Combinations)	Regulations for Residential Pool
)	Pump and Motor Combinations

**Notice of Consideration and Possible Adoption of
Emergency Regulations to Amend the Appliance
Efficiency Regulations for Residential Pool Pump and
Motor Combinations and Replacement Residential
Pool Pump Motors in California Code of Regulations,
Title 20, Sections 1602 (g), and 1606, Table X and
Finding of Emergency Pursuant to
Government Code Section 11346.1**

The California Energy Commission will conduct a hearing to consider adoption of the proposed *Emergency Regulations to Amend the Appliance Efficiency Regulations for Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors in California Code of Regulations, Title 20, Sections 1602 (g), and 1606, Table X*, attached hereto as Attachment A, and the proposed *Finding of Emergency Pursuant to Government Code Section 11346.1*, attached hereto as Attachment B.

Wednesday, March 8, 2017
10 a.m.
CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
First Floor, Arthur Rosenfeld Hearing Room
Sacramento, California
Wheelchair Accessible

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Background

Staff proposes to allow the certification of permanent magnet synchronous motors (“PMSM” or “PMSM motor”), found in residential pool pump and motor combinations or used as replacement residential pool pump motors, to the Commission. Specifically, staff proposes to amend California Code of Regulations, Title 20, section 1602(g) to define PMSM motors and to amend California Code of Regulations, Title 20, section 1606, Table X, subsection G, to add “permanent magnet synchronous” as a permissible motor construction type for residential pool pump motors. These proposed changes would allow pool pumps powered by PMSM motors to be certified and appear in the California Appliance Efficiency Database and to be sold or offered for sale in California.

The Commission may adopt these amendments to the appliance efficiency regulations pursuant to the authority granted by Public Resources Code sections 25213, 25218(e), and 25402(a)-25402(c). Public Resources Code sections 25402(a)-25402(c) require the Commission to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy, including prescribing, by regulation, standards for minimum levels of operating efficiency and other cost-effective measures that are found to reduce a significant amount of energy consumption on a statewide basis, to be feasible, and to be cost-effective for California consumers and businesses.

Residential pool pump motors manufactured on or after January 1, 2006 and sold or offered for sale in California are subject to appliance efficiency regulations that require mandatory testing, certification, and marking requirements. The regulations set design standards for pool pump and motor combinations and 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 appliance efficiency regulations monitor compliance with this requirement by requiring manufacturers to certify the motor construction type by choosing from a list of five motor construction types. PMSM motors are not included in this list of motor construction types. In November 2015, manufacturers notified the Commission about their inability to certify residential pool pumps powered by PMSM motors to comply with the appliance efficiency regulations. As a result, residential pool pumps powered by PMSM motors cannot be sold or offered for sale in California.

In February 2017, Commission staff learned that the barriers to compliance with the residential pool pump motor regulations has created emergency conditions that impact the public and stakeholders affected by the existing regulations. Commission staff believes that it is necessary to define PMSM and to update the list of permissible motor construction types to allow the certification of PMSM found in residential pool pump and motor combinations or used as replacement residential pool pump motors. These changes will prevent the unavailability of storable pools containing residential pool pumps powered by PMSM motors, and provide the public with affordable, less energy consuming, residential pool pump motors.

Public Comment

Oral comments. The Commission will accept oral comments during the hearing. Comments may be limited to three minutes per speaker. Any comments will become part of the public record in this proceeding.

Written comments. Written comments should be submitted to the Dockets Unit by 5:00 p.m. on March 7, 2017. Written comments will be also accepted at the hearing, however, the Commission may not have time to review them before the conclusion of the meeting.

Please note that your written and oral comments, attachments, and associated contact information (e.g. your address, phone, email, etc.) become part of the viewable public record. This information may become available via Google, Yahoo, and other search engines.

The Energy Commission encourages use of its electronic commenting system. Visit the website at <https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=17-AAER-03>.

This will take you to the page for adding comments to this docket. Please enter your contact information, any organization name, and a comment title describing the subject of your comments. You may include comments in the box titled "Comment Text" or attach a file in a downloadable, **searchable format** in Microsoft® Word (.doc, .docx) or Adobe® Acrobat® (.pdf). Maximum file size is 10 MB.

Written comments may also be submitted by e-mailing them (include the docket number 17-AAER-03 and Pool Pump Motors in the subject line) to the Docket Unit at:

docket@energy.ca.gov

If you prefer, you may send a paper copy of your comments to:

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 17-AAER-03
1516 Ninth Street
Sacramento, CA 95814-5512

Public Adviser and Other Commission Contacts

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Availability of Documents

Documents for this hearing will be available online at:

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-AAER-03>.

February 28, 2017

Robert P. Oglesby
Executive Director

Mail Lists:

Listserv: appliances; efficiency; agendas

**[Proposed] Express Terms to Amend the
Appliance Efficiency Regulations for Residential Pool Pump and Motor
Combinations and Replacement Residential Pool Pump Motors**

**California Code of Regulations
Title 20. Public Utilities and Energy
Division 2. State Energy Resources Conservation and Development Commission
Chapter 4. Energy Conservation
Article 4. Appliance Efficiency Regulations
Sections 1602(g) and 1606, Table X, Subsection G**

February 28, 2017

Proposed new language appears as underline (example) and proposed deletions appear as strikeout (~~example~~). Existing language appears as plain text. Three dots or “...” represents the substance of the regulations that exists between the proposed language and current language.

Section 1602(g) Pool Heater, Portable Electric Spas, Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors

...[skipping “Capacitor start-capacitor run” to “Nameplate HP”]

“Permanent magnet synchronous” means a motor that has a permanent magnet rotor, and windings on the stator and is controlled by single-phase or multi-phase sinusoidal alternating current.

...[skipping remaining text of 1602(g)]

...[skipping rest of 1602]

Note: Authority cited: Sections 25213, 25218(e), 25402(a)-25402(c) and 25960, Public Resources Code; and sections 16, 26 and 30, Governor’s Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25402(a)- 25402(c), 25402.5.4 and 25960, Public Resources Code; and section 16, Governor’s Exec. Order No. B-29-15 (April 1, 2015).

Section 1606. Filing by Manufacturers; Listing of Appliances in Database

... [skipping (a)(1)]

... [skipping (a)(2)]

... [skipping (a)(3)]

...[skipping “All Appliances” to “Portable Electric Spas”]

**Table X
Data Submittal Requirements**

	Appliance	Required Information	Permissible Answers
G	Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors	Motor Construction	PSC, Capacitor Start-Capacitor Run, ECM, Capacitor Start-induction run, split-phase, Permanent Magnet <u>Synchronous</u>
		Motor Design	Single-speed, dual-speed, multi-speed, variable-speed
		Frame	
		Speed (in RPM)	
		Motor has Capability of Operating at Two or More Speeds with the Low Speed having a Rotation Rate that is No More than One-Half of the Motor's Maximum Rotation Rate	Yes, no
		Unit Type	Residential Pool Pump and Motor Combination, Replacement Residential Pool Pump Motor
		Pool Pump Motor Capacity	
		Motor Service Factor	
		Motor Efficiency (%)	
		Nameplate Horsepower	
		Pump Control Speed (compliance with Section 1605.3(g)(5)(B)2.)	Yes, no
		Flow for Curve 'A' (in gpm)	
		Power for Curve 'A' (in watts)	
		Energy Factor for Curve 'A' (in gallons per watt-hour)	
		Flow for Curve 'B' (in gpm)	
		Power for Curve 'B' (in watts)	
		Energy Factor for Curve 'B' (in gallons per watt-hour)	
		Flow for Curve 'C' (in gpm)	
		Power for Curve 'C' (in watts)	
Energy Factor for Curve 'C' (in gallons per watt-hour)			

... [skipping remaining text on Table X]

...[skipping remaining text of the section]

Note: Authority cited: Sections 25213, 25218(e), 25402(a)-25402(c) and 25960, Public Resources Code; and sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25402(a)- 25402(c), 25402.5.4 and 25960, Public Resources Code; and section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

**[PROPOSED] FINDING OF EMERGENCY
PURSUANT TO GOVERNMENT CODE SECTION 11346.1
FOR
PROPOSED REGULATIONS TO AMEND THE APPLIANCE EFFICIENCY
REGULATIONS FOR RESIDENTIAL POOL PUMP MOTORS COMBINATIONS
AND REPLACEMENT RESIDENTIAL POOL PUMP MOTORS
OF THE
CALIFORNIA ENERGY COMMISSION**

Pursuant to Government Code Section 11346.1, subdivision (b)(1), a state agency may adopt an emergency regulation if it makes a finding that the adoption of the regulation is necessary to address an emergency. Government Code Section 11346.1, subdivision (b)(2), states that any finding of emergency shall include a written statement that contains the information required by paragraphs (2) to (6), inclusive, of subsection (a) of Section 11346.5 and a description of the specific facts demonstrating the existence of an emergency and the need for immediate action.

The California Energy Commission (Energy Commission) finds that the amendments proposed herein are necessary to address a situation that calls for immediate action to avoid serious harm to the general welfare of the public. Specifically, the Commission finds that amending California Code of Regulations, Title 20, section 1602(g) and section 1606, Table X, subsection G, to define permanent magnet synchronous motors (hereinafter “PMSM” or “PMSM motor”), found in residential pool pump and motor combinations or used as replacement residential pool pump motors, and to allow the certification of residential pool pumps powered by PMSM, is necessary to avoid hardship to the public and the stakeholders affected by these regulations. This modification will prevent the unavailability of storable pools containing residential pool pumps powered by PMSM motors, and provide the public with affordable and less energy consuming residential pool pump motors that would not otherwise be available in California. PMSM pool pump motors use less energy and cost less than compliant sand filters pool pumps powered with capacitor-start capacitor-run motor types. Further, the sand filter motor combination is not available in smaller sizes appropriate for storable pools.

SPECIFIC FACTS DEMONSTRATING THE EXISTENCE OF AN EMERGENCY AND NEED FOR IMMEDIATE ACTION (Government Code Section 11346.1(b)(2))

Background

A pool pump and motor combination circulates pool water through a filter and ensures adequate chlorination to maintain clarity and sanitation. The filter removes dirt, leaves, hair, insects, and

other debris.¹ A PMSM motor is one type of motor used to power residential pool pumps. Alternating current (AC) induction motor and electronically commutated motor are two other motors commonly used in residential pool pumps.² The PMSM motor differs in design from the AC induction motor and electronically commutated motor. PMSM motors are favored for storable pools over other types of motors because PMSM motors can be engineered to meet the small motor capacities required by the small storable pools and are easier to maintain.³ Industry stakeholders have communicated to the Commission that the PMSM motor is the exclusive motor used for storable pools, pump and motor sets costing between \$149 and \$500.⁴ Consumers purchase storable pools with PMSM pool pump motors because they are low cost.⁵

The appliance efficiency regulations (California Code of Regulations, Title 20, sections 1601-1607) provide definitions, test procedures, energy efficiency standards, and certification and marking requirements for a variety of appliances, including residential pool pump and motor combinations and replacement residential pool pump motors. The Energy Commission adopted the original pool pump motor regulations on December 15, 2004 with the regulations becoming effective on January 1, 2006.⁶ The regulations prohibit the sale and offer for sale of two types of residential pool pump motors, split phase and capacitor-start/induction-run type motors, to encourage the use of more efficient residential pool pump motors in California. To verify compliance with this, the regulations require manufacturers to certify that their products meet the efficiency standards and to choose the motor construction type from a list of five motor types provided in the regulatory text.

In November 2015, Commission staff learned that manufacturers were unable to certify their residential pool pumps powered by PMSM motors to the Energy Commission because the PMSM motor construction type was not included in the list of permissible answers in subsection G, Table X, section 1606, Title 20 of the California Code of Regulations. Manufacturers use the list of permissible answers to declare the motor construction type of a residential pool pump motor. The omission of PMSM motors as a permissible answer prevents manufacturers from certifying residential pool pump and motor combinations and replacement residential pool pump motors with the PMSM motor construction type to the Commission. By not providing the ability to certify, the regulations prevent residential pool pumps powered by PMSM motors from being sold or offered for sale in California. In February 2017, through discussions with stakeholders, Commission staff learned of the effects on consumers and business as discussed below and found

¹ Draft Commission Staff Report Revised Analysis of Efficiency Standards for Pool Pumps and Motors, and Spas, Commission Docket 15-AAER-02, TN211842, dated June 16, 2016, pg. 11.

² Draft Commission Staff Report Revised Analysis of Efficiency Standards for Pool Pumps and Motors, and Spas, Commission Docket 15-AAER-02, TN211842, dated June 16, 2016, pg. 17.

³ Matthew Vartola, Comment to the Docket 15-AAER-02, TN 210550, February 29, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN210391_20160218T074140_APSP_Storable_Pool_Pumps_Workshop_Slides.pdf.

⁴ California Energy Commission Staff research of available storable pool prices gathered February 27, 2017. .

⁵ Email from Matthew Vartola, Bestway Corp., dated 2/17/2017.

⁶ Express Terms of Adopted Amendments, adopted December 15, 2004, available at http://www.energy.ca.gov/appliances/archive/2004rulemaking/documents/2005-03-01_EXPRESS_TERMS.PDF.

that the appliance efficiency regulations must be modified to allow certification of residential pool pumps powered by PMSM motors to avoid harm to the public and the stakeholders affected by these regulations.

The unavailability of affordable storable pools containing pool pumps powered by PMSM motors will adversely affect low-income residents.

Storable pools are designed to be used in the summer, then taken down and stored for the winter. The storable pool consists of a pool packaged with a pump and motor and is sold to major retailers across the country. As noted above, the PMSM motor is the exclusive motor used for storable pools, with pump and motor sets costing between \$149 and \$500.⁷ Manufacturers also provide PMSM motors as a replacement residential pool pump motor, sold separately from the pool at a cost between \$29 and \$69. Low income residents, rural residents and residents living in rental properties purchase low cost storable pools to stay cool during high heat events. A storable pool sold with a residential pool pump powered by a PMSM motor is one of a few options available to lower-income residents to stay cool when they do not have access to air-conditioning, a community pool or a community cooling center.

The Commission finds that an emergency exists because low-income residents will be adversely affected by the unavailability of storable pools containing pool pumps powered by PMSM motors. If manufacturers do not sell residential pool pumps powered by PMSM motors to the California market, there will be a shortage of an affordable product, and this shortage will disproportionately impact low-income residents in California.

The continued prohibition of PMSM motors would force manufacturers to sell pool pump motors that consume more energy.

The storable pool pump industry uses two filtering technologies: cartridge filter and sand filter. The cartridge filter technology uses the PMSM motor technology exclusively while the sand filter technology uses the capacitor-start/capacitor-run (CSCR) motor type. CSCR motors comply with the regulation while PMSM motors do not. CSCR motor technology requires that motors be designed to be a minimum capacity that exceeds the capacity required by small storable pools. Manufacturers have estimated that energy consumption would increase by 160 percent if the industry replaced PMSM motors with CSCR motors in pool pump and motor combinations.⁸ The substitution would increase statewide energy consumption by 9 GWh per year and cost consumers

⁷ California Energy Commission Staff research of available storable pool prices gathered February 27, 2017. .

⁸ Matthew Vartola, Comment to the Docket 15-AAER-02, TN 210391, February 29, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN210391_20160218T074140_APSP_Storable_Pool_Pumps_Workshop_Slides.pdf

\$1.4 million dollars per year.⁹ The extra energy consumption would cause more than 3,000 tons of additional carbon dioxide emissions per year.¹⁰

The Commission finds that an emergency exists because the continued application of the existing regulation forces manufacturers to sell storable pools with higher energy-consuming pump motors than needed to comply with the regulation. The potential increased energy consumption due to the inability to choose PMSM as an eligible pool pump motor type is contrary to the intent of the appliance efficiency regulations to reduce the wasteful and inefficient consumption of energy.¹¹ Rather, the intent of the certification and disclosure requirements for pool pump motors in the appliance efficiency regulations is simply to ensure that the two prohibited motor types – capacitor-start/induction-run and split phase motors – are not sold in California. PMSM motors are not one of these expressly prohibited motor types. Thus, the appliance efficiency regulations must be modified to allow certification of pool pumps powered by PMSM motors to realize energy savings and prevent unnecessary wasteful consumption of energy.

Immediate action is needed to allow the sale of storable pools containing pool pumps powered by PMSM motors in the spring and summer of 2017 and to avoid adverse economic impacts on stakeholders affected by the existing regulations.

Immediate action is needed to allow the sale of storable pools containing pool pumps powered by PMSM motors. The sale of storable pools is seasonal as sales occur during the spring and early summer. Most sales occur in March and April so that consumers can maximize the value of their purchase by having the pool available for most of the summer.¹² Storable pools have already been ordered and shipped to warehouses and await shipment to retailers.¹³ If barriers to compliance with existing regulations are not addressed, these products must be shipped to other states to be sold, at significant cost to manufacturers and to the detriment of California consumers who will not be able to purchase these pool types. Thus, the Commission must take action in March to ensure that storable pools are available for sale in the spring and summer of 2017.

Immediate action is also needed to avoid adverse economic impacts on stakeholders affected by the existing regulations. If manufacturers and retailers supply non-compliant residential pool pumps powered by PMSM motors to the California market, they could be subject to penalties through an enforcement action by the Commission. Since manufacturers and retailers seek to comply with the regulations and not be subject to penalties for supplying non-compliant products, they will not sell or offer for sale storable pools containing pool pump powered by PMSM motors.

⁹ Matthew Vartola, Comment to the Docket 15-AAER-02, TN 210391, February 29, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN210391_20160218T074140_APSP_Storable_Pool_Pumps_Workshop_Slides.pdf.

¹⁰ Energy Commission Staff calculation based upon 690 lbs. of avoided CO₂e per MWh of electricity saved.

¹¹ The Warren-Alquist State Energy Resources Conservation and Development Act, Division 15 of the Public Resources Code, § 25000 et seq., available at <http://www.energy.ca.gov/2015publications/CEC-140-2015-002/CEC-140-2015-002.pdf>.

¹² Email from Matthew Whalen, Intex Corp., dated 2/16/2017.

¹³ Email from Matthew Vartola, Bestway Corp., dated 2/17/2017.

Manufacturers have estimated that storable pools equipped with pool pumps powered by PMSM motors represent a significant percentage of their yearly sales. The supply chain requires a year long lead time to manufacture and assemble storable pools with pool pumps powered by PMSM motors. Because of the length of the supply chain, manufacturers and retailers cannot shift product offerings from non-compliant to compliant products and maintain product availability for this year. If the Commission does not address the barriers to compliance with existing regulations, manufacturers and retailers will not stock or sell the non-compliant products leading to a near unavailability of storable pools on store shelves and an industry loss of more than 40 million for this year.¹⁴ Thus, immediate action is needed to allow the sale of storable pools containing pool pumps powered by PMSM motors and to avoid adverse economic impacts on manufacturers and retailers impacted by the existing regulations.

INSUFFICIENT TIME FOR NON-EMERGENCY RULEMAKING (Government Code Section 11346.1 (b)(2))

Commission staff learned that manufacturers were unable to certify residential pool pumps powered by PMSM motors in November 2015. However, Commission staff did not learn that barriers to compliance with the residential pool pump motor regulations had created the emergency conditions discussed above until February 2017, when Commission staff received extensive information from manufacturers and retailers of residential pool pump motors about the extent of the effect on manufacturers, retailers, and consumers of affordable, less energy consuming pool pump motors.

If the Commission were to undertake a non-emergency rulemaking to study, address, and resolve the concerns with the existing residential pool pump motor regulations, and to adopt appropriate amended regulations to overcome barriers to compliance, the Commission would not be able to complete the non-emergency rulemaking on a time frame that avoids harm to the public and the stakeholders affected by these regulations. Specifically, the Commission would not be able to avoid adverse impacts to low-income residents who would be unable to purchase low-cost storable pools or to the electricity system from the use of pool pump motors that consume more energy, and adverse economic impacts on stakeholders affected by the existing regulations. Accordingly, there is insufficient time for a non-emergency rulemaking to avoid serious harm to the general welfare of the public.

Residential Pool Pump Motor Regulatory History

On December 15, 2004, the Commission adopted appliance efficiency regulations for residential pool pump motors. On and after January 1, 2006, residential pool pump motors, sold or offered for sale in California, were subject to mandatory testing, efficiency standards, and certification and marking requirements. The regulations also require that pool pump motors sold and offered for sale in California not be split-phase or capacitor-start/induction-run type. This prohibition

¹⁴ Email from Matthew Vartola, Bestway Corp., dated 2/17/2017.

removed two types of inefficient pool pump motors from the California market and encouraged the use of more efficient pool pump motors.

All residential pool pump and motor combinations and replacement residential pool pump motors, including those for use with in-ground, above-ground, and portable pools, must be certified and appear in the California Appliance Efficiency Database to be sold or offered for sale in California. The appliance efficiency regulations require the manufacturer to certify the motor construction as one of five types: permanent split capacitor (PSC), capacitor-start/capacitor-run, electrically commutated motor (ECM), capacitor-start/induction-run, or split-phase. No other motor construction types are provided. The Intex Corporation has requested to certify PMSM motors. A PMSM motor is not expressly included as permissible motor construction type in the appliance efficiency regulations and cannot be certified to the Commission (California Code of Regulations, Title 20, Section 1606, Table X, subsection G).¹⁵

In November 2015, the Commission began to receive inquiries from the manufacturers of storable pool equipment, Bestway and Intex, about the testing and certification requirements for pool pump motors intended for sale or sold with storable pools. Commission staff advised the manufacturers of the requirements to test and certify their residential pool pump motors. Manufacturers raised concerns because the PMSM motor type is not a permissible answer in subsection G, Table X, section 1606, Title 20 of California Code of Regulations, which manufacturers could choose to declare the motor construction type of a residential pool pump motor.

Manufacturers participated in Commission pre-rulemaking workshop on pool pump motors and portable electric spas in February 2016.¹⁶ The manufacturers provided comments to indicate that nearly 52,000 storable pools were sold in California in 2015 and about 46,000 pool pumps using the PMSM motor type were sold. The manufacturers requested that the pool pumps with the PMSM motors be exempt from the regulations.¹⁷

Commission staff reviewed comments received in the Commission docket and during the February 2016 workshop. Staff proposed the PMSM motor type as a permissible answer as part of a wider effort to modernize the pool pump motor regulations to move to a performance standard based upon motor efficiency. Under this proposal, manufacturers would be able to certify any pool pump motor, as long as the motor met a minimum efficiency standard. Staff published the proposal in a revised staff report published on June 16, 2016.¹⁸

¹⁵ 2016 Appliance Efficiency Regulations, available at <http://www.energy.ca.gov/2017publications/CEC-400-2017-002/CEC-400-2017-002.pdf>.

¹⁶ Notice of Staff Workshop: Pool Pumps and Motors, and Portable Electric Spas, posted 1/28/2016, available at http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN210067_20160128T103313_Notice_of_Staff_Workshop_Pool_Pumps_and_Motors_and_Portable_Ele.pdf.

¹⁷ Matthew Vartola, Comment to the Docket 15-AAER-02, TN 210550, February 29, 2016, http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN210391_20160218T074140_APSP_Storable_Pool_Pumps_Workshop_Slides.pdf.

¹⁸ Draft Commission Staff Report Revised Analysis of Efficiency Standards for Pool Pumps and Motors, and Spas, Commission Docket 15-AAER-02, TN211842, dated June 16, 2016, pg. 39-40.

At the same time, the U.S. Department of Energy (U.S. DOE) held negotiations on a national standard for pool pump and motor combinations. The Commission participated in these negotiations that led to consensus on efficiency standard for pool pump and motor combinations. The negotiation concluded on June 23, 2016.¹⁹

The Commission held a second workshop in July 2016 where staff discussed the proposed changes to the regulations and the process for the proposal to become law.²⁰ No comments were received regarding PMSM motors. Staff received inquiries in November 2016 from Bestway²¹ and Intex²² regarding the status of the proposed change. Staff explained that the Commission sought to coordinate the update to the California residential pool pump and motor combination regulations with anticipated release of dedicated purpose pool pump regulations from the U.S. DOE. The U.S. DOE's rule was published and is open for comments until May 8, 2017, at which point the U.S. DOE would decide whether to finalize the rule.²³ Staff advised Intex and Bestway that the California residential pool pump motor regulations had not changed and that there would be additional steps, including a formal rulemaking process, before the regulations would be presented to the Commission for consideration.

In February 2017, after contacting Bestway and Intex, staff learned the nature and extent of the emergency. Staff determined through all the information provided that an emergency rulemaking was required to reduce the impacts on manufacturers, retailers, and consumers of affordable, less energy consuming storable pools containing pool pumps powered by PMSM motors.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDIES, REPORTS, OR DOCUMENTS RELIED UPON (Government Code Section 11346.1 (b)(2))

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

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

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

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

¹⁹ Appliance Standards and Rulemaking Federal Advisory Committee, Dedicated Purpose Pool Pumps Working Group, Term Sheet – Energy Conservation Standards, June 23, 2016 available at http://www.appliance-standards.org/sites/default/files/DPPP_Draft_Term_Sheet_2016-06-23_FINAL.pdf.

²⁰ Notice of Staff Workshop: Pool Pumps and Motors, and Portable Electric Spas, posted 6/27/2016, available at http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-02/TN211993_20160627T162744_Notice_of_Staff_Workshop_Appliance_Efficiency_Regulations_Pool.pdf.

²¹ Email from Matthew Vartola, Bestway Corp., dated November 21, 2016.

²² Email from Matthew Whalen, Intex Corp., dated 2/16/2017.

²³ Energy Conservation Program: Energy Conservation Standards for Dedicated-Purpose Pool Pumps, Direct Final Rule available at: https://energy.gov/sites/prod/files/2016/12/f34/DPPP_ECS_Direct_Final_Rule.pdf.

Draft Commission Staff Report, *Revised Analysis of Efficiency Standards for Pool Pumps and Motors, and Spas*, Commission Docket 15-AAER-02, TN211842, dated June 16, 2016.

APSP workshop slides, Commission Docket 15-AAER-02, TN 210391, dated February 18, 2016.

Appliance Standards and Rulemaking Federal Advisory Committee, Dedicated Purpose Pool Pumps Working Group, Term Sheet – Energy Conservation Standards, June 23, 2016.

Notice of Staff Workshop: Pool Pumps and Motors, and Portable Electric Spas, posted June 27, 2016.

U.S. Department of Energy, Energy Conservation Program: Energy Conservation Standards for Dedicated-Purpose Pool Pumps, Direct Final Rule.

<https://energy.gov/eere/buildings/downloads/issuance-2016-12-28-energy-conservation-program-energy-conservation-4>

AUTHORITY AND REFERENCE (Government Code Section, 11346.5(a)(2))

The Commission has authority to adopt these amendments to the appliance efficiency regulations pursuant to Public Resources Code sections 25213, 25218(e) and 25402(a)-25402(c). The amendments to the appliance efficiency regulations implement, interpret, and make specific Public Resources Code sections 25402(a)-25402(c).

Authority: Public Resources Code sections 25213, 25218(e) and 25402(c).

Reference: Public Resources Code section 25402(c).

SPECIFIC LANGUAGE PROPOSED (Government Code Section 11346.1(a)(2)(A))

Proposed new language appears as underline (example) and proposed deletions appear as strikeout (~~example~~). Existing language appears as plain text. Three dots or “...” represents the substance of the regulations that exists between the proposed language and current language:

The Commission proposes to modify California Code of Regulations, Title 20, section 1602 (g) and section 1606, Table X, subsection G to read as follows:

Section 1602 Definitions

...[skipping (a)-(f)]

(g) Pool Heaters, Portable Electric Spas, Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors.

...[skipping “Capacitor start-capacitor run” through “Nameplate HP”]

“Permanent magnet synchronous” means a motor that has a permanent magnet rotor and windings on the stator, and is controlled by single-phase or multi-phase sinusoidal alternating current.

... skipping “Permanent split capacitor (PSC)” to end of section 1602]

Section 1606. Filing by Manufacturers; Listing of Appliances in Database

... [skipping (a)(1)]

... [skipping (a)(2)]

... [skipping (a)(3)]

...[skipping “All Appliances” to “Portable Electric Spas”]

	<i>Appliance</i>	<i>Required Information</i>	<i>Permissible Answers</i>
G	Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors	Motor Construction	PSC, Capacitor Start-Capacitor Run, ECM, Capacitor Start-induction run, split-phase, <u>Permanent Magnet Synchronous</u>
		Motor Design	Single-speed, dual-speed, multi-speed, variable-speed
		Frame	
		Speed (in RPM)	
		Motor has Capability of Operating at Two or More Speeds with the Low Speed having a Rotation Rate that is No More than One-Half of the Motor's Maximum Rotation Rate	Yes, no
		Unit Type	Residential Pool Pump and Motor Combination, Replacement Residential Pool Pump Motor
		Pool Pump Motor Capacity	
		Motor Service Factor	
		Motor Efficiency (%)	
		Nameplate Horsepower	
		Pump Control Speed (compliance with Section 1605.3(g)(5)(B)2.)	Yes, no

	Flow for Curve 'A' (in gpm)	
	Power for Curve 'A' (in watts)	
	Energy Factor for Curve 'A' (in gallons per watt-hour)	
	Flow for Curve 'B' (in gpm)	
	Power for Curve 'B' (in watts)	
	Energy Factor for Curve 'B' (in gallons per watt-hour)	
	Flow for Curve 'C' (in gpm)	
	Power for Curve 'C' (in watts)	
	Energy Factor for Curve 'C' (in gallons per watt-hour)	

... [skipping remaining text on Table X]

...[skipping remaining text of the section]

EXISTING LAWS AND REGULATIONS DIRECTLY RELATED TO THE PROPOSED REGULATION (Government Code Section 11346.5(a)(3)(A))

Public Resources Code sections 25402(a)-25402(c) require the Commission to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy, including prescribing, by regulation, standards for minimum levels of operating efficiency and other cost-effective measures, such as labeling requirements, that are found to reduce a significant amount of energy consumption on a statewide basis, to be feasible and to be cost-effective for California consumers and businesses.

California Code of Regulations, Title 20, sections 1601-1607, contain definitions, test procedures, efficiency standards for state- and federally regulated appliances, and certification and marking requirements. Appliance manufacturers are required to certify to the Commission that their products meet all applicable state and federal regulations pertaining to efficiency before their products can be included in the Commission’s database of approved appliances to be sold or offered for sale within California.

The Commission has adopted regulations that established definitions, testing methods, efficiency standards, and certification and marking requirements for residential pool pump and motor combinations and replacement residential pool pump motors that are sold or offered for sale in California pursuant to Public Resources Code sections 25402(a)-25402(c), codified as the California

Code of Regulations, Title 20, division 2, chapter 4, article 4, sections 1601-1607. Specifically, Section 1602(g) provides definitions to describe the motor construction types for residential pool pump and motor combinations and replacement residential pool pump motors. Section 1604(g)(3) sets forth the test method for residential pool pumps. Section 1605.3(g)(5) establishes the motor efficiency standard for residential pool pump and motor combinations and replacement residential pool pump motors. Section 1606, Table X, subsection G, requires that manufacturers certify residential pool pump and motor combinations and replacement motors sold or offered for sale in California by reporting the following data into the Commission's database: motor construction type, motor design, frame, speed, motor capability, unit type, pool pump motor capacity, motor service factor, motor efficiency, nameplate horsepower, pump control speed, and flow power and energy factors for curves A, B and C. Sections 1607(a), 1607(b) and 1607(d)(9)(B) provide marking requirements for residential pool pump and motor combinations and replacement residential pool pump motors.

The proposed emergency regulations would allow residential pool pumps powered by PMSM motors to be certified with the Commission and sold or offered for sale in California. Specifically, the proposed emergency regulations would amend California Code of Regulations, Title 20, section 1602(g) to define PMSM motors and amend California Code of Regulations, Title 20, section 1606, Table X, subsection G to add permanent magnet synchronous as a permissible motor construction type for residential pool pump motors combinations and replacement residential pool pump motors.

COMPARABLE FEDERAL STATUTE OR REGULATION (Government Code Section 11346.5(a)(3)(B))

The Commission has determined that there are not comparable federal regulations or statutes that address the specific provision proposed in California Code of Regulations, Title 20, section 1602(g) and section 1606, Table X, subsection G.

POLICY STATEMENT OVERVIEW AND SPECIFIC BENEFITS OF THE PROPOSED AMENDMENTS (Government Code Section 11346.5(a)(3)(C))

The Commission believes it is necessary to allow the certification of residential pool pumps and motor combinations and replacement residential pool pump motors consisting of PMSM motor construction type to avoid harm to the public and stakeholders affected by these regulations. Failing to allow certification will cause manufacturers to incur significant penalties through an enforcement action if they continue to supply the California market with noncompliant residential pool pump and motor combinations or will cause the unavailability of a product predominantly used by low-income consumers.

This emergency rulemaking will allow the certification of residential pool pumps powered by PMSM motors in California until a regular rulemaking to amend the regulations is completed. The proposed emergency regulations would amend California Code of Regulations, Title 20, section

1602(g) to define PMSM motors. The proposed definition for PMSM motors will provide a clear description of the PMSM motor type and allow manufacturers to select the PMSM motor construction type when certifying products that meet the definition.

The proposed emergency regulations would amend California Code of Regulations, Title 20, section 1606, Table X, subsection G, to add permanent magnet synchronous as a permissible motor construction type for residential pool pump motors combinations and replacement residential pool pump motors. Adding PMSM as a permissible answer to the motor construction type will benefit manufacturers because it will allow them to certify their products to the Commission to comply with the regulations and to sell and offer for sale their products in California. Low-income consumers will benefit by having access to affordable, less energy consuming storable pools containing pool pumps powered by PMSM motors.

CONSISTENCY AND COMPATIBILITY WITH EXISTING STATE REGULATIONS (Government Code Section 11346.5(a)(3)(D))

This proposed emergency rulemaking is consistent and compatible with existing state regulations. This emergency rulemaking solely proposes to add a definition for PMSM and to add PMSM as a permissible motor construction type.

OTHER MATTERS PRESCRIBED BY STATUTE (Government Code sections 1346.5(a)(4))

None.

LOCAL MANDATE DETERMINATION (Government Code sections 11346.5(a)(5))

The proposed emergency rulemaking would not impose an additional mandate on local agencies or school districts.

FISCAL IMPACTS (Government Code sections 11346.5(a)(6))

Costs or Savings for State Agencies: None. This proposed emergency rulemaking would only affect the Commission, which does not anticipate any budgetary impact from adding a definition to California Code of Regulations, Title 20, section 1602(g) and expanding the list of permissible motor construction types in California Code of Regulations, Title 20, section 1606, Table X, subsection G.

Costs to Any Local Agency or School District Requiring Reimbursement Pursuant to Section 17500 et seq.: None. This emergency rulemaking would add only a definition and expand the list of permissible motor construction types. There will be no costs to any local agency as a result of these additions.

Other Non-Discretionary Costs or Savings on Local Agencies: None. This emergency rulemaking would add only a definition and expand the list of permissible motor construction types. There will be no costs to any local agency as a result of these additions.

Costs or Savings in Federal Funding to the State: None. Federal funding to the State is not affected by the appliance efficiency standards.