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FLUIDRA Comments for Docket 23-FDAS-01 Flexible Demand Appliance Standards

Additional submitted attachment is included below.

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April 10th, 2023

California Energy Commission
Docket Unit
Re: Docket No. 23-FDAS-01, Docketed Date: 2/23/2023
715 P Street
Sacramento, CA 95814

Re: Pool Controls Rulemaking, TN # 248921, Docket 23-FDAS-01, Docketed Date: 2/23/2023

Esteemed California Energy Commission,

Fluidra appreciates the opportunity to participate in the rule making process for Flexible Demand Appliance Standards (FDAS) to meet the GHG reduction and electric grid resiliency goals of California Senate Bill SB 49. As a pool equipment manufacturer with U.S. Headquarters in California, Fluidra recognizes the importance and demand for energy efficient and environmentally sustainable swimming pool operation. Accordingly, continual efforts are made in the development of products that can meet the competitive goals of a sustainable future.

As a member of the Pool & Hot Tub Alliance Fluidra fully supports and endorses the comments jointly submitted by the Pool & Hot Tub Alliance (PHTA). In addition, we submit the following comments intended to assist the Energy Commission develop Flexible Demand regulation that can achieve and maximize the energy goals of the FDAS program, while sensibly minimizing negative impact to the consumer and the pool industry. Fluidra hopes to provide helpful insight into the possibilities, complexities, consumer engagement, and safety considerations for Flexible Demand Response in a swimming pool system.

DEFINITIONS

Fluidra proposes the following revision to the scope and definitions of the regulation to clarify the intent of what is in scope and out of scope, as well as to close any loopholes that may put manufacturers at a competitive disadvantage.

"**Pool control**" and "**pool controls**" mean any component or group of components, including software, that:

(1) For integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the time of day start and stop times of a pool filter pumps and other pool equipment, and uses single-phase AC power as input power.; **or**

(2) For other than integral dedicated purpose pool pump controls, has the capability to schedule the operation and/or control the start or stop times of a pool filter pump, and uses single-phase AC power as input power; **or**

(3) Includes, but not limited to, the following equipment - "pool timer", "pool pump switch", "heater switch", "direct load control switch" (see definitions).

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"Pool control" and "pool controls" exclude controls marketed exclusively for uses as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp.

We recommend adding the following critical definitions:

"**Integral dedicated purpose pool pump control**" and "**integral dedicated purpose pool pump controls**" means a pool pump control provided as an integral part of a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor, provided with a user interface or a user interface that is sold separately, that controls the pool pump motor. An integral dedicated purpose pool pump control that is capable of being removed from a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor for remote mounting is considered to be an integral dedicated purpose pool pump control.

"**Pool timer**" means a clock operated device that has the capability and used to start or stop the operation of a pool filter pump or electric pool heater, and uses single-phase AC power as input power.

"**Pool pump switch**" means a clock operated switch device that has the capability and used to start or stop the operation of a pool filter pump, and uses single-phase AC power as input power.

"**Heater switch**" means a clock operated switch device that has the capability and used to start or stop the operation of an electric pool heater, and uses single-phase AC power as input power.

"**Direct load control switches**" means a clock operated switch device that has the capability and used to start or stop the operation of a pool filter pump and/or electric pool heater, and uses single-phase AC power as input power.

"**Control other pool equipment**" means to provide independently programmable or preprogrammed time of day start and stop times of pool equipment other than the pool filter pump.

Reasoning –

Fluidra agrees with the CEC's intended In-Scope and Out-of-Scope devices as described in the 23-FDAS-01 "Final Staff Report for Pool Controls", summarized in Table 5-1 of that report (illustrated below). We feel that the proposed revisions, clarifications, and additional definitions more clearly define the Pool Control devices that CEC intends to

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be in scope of this regulation. For example, the original CEC proposed wording of the definition of "Pool controls" may have exempted "Pool timers" and "Pool Pump and Heater Switch" devices that can be used to only control the pool-filter pump, but are intended to be in scope of the regulation according to the CEC Final Staff Report. We agree these products should be in the scope of this regulation.

Integral Pool Pump Controls

Integral pool pump controls may include safety electrical interlocks that are integral onboard relays which allow power to be supplied to a device ONLY when the filtration pump is running and providing water flow. This is critical for equipment that may pose a safety hazard and/or damage to the equipment if operated without water flow – such as Chlorinators, Chemical Feeding Equipment, Pressure Cleaner Booster Pumps, and Heaters. These integral safety electrical interlocks only allow power to be supplied to the auxiliary device(s) when the filtration pump is operating at a specific speed or flow, and do not independently control the operation, output and/or scheduling of the auxiliary equipment, and should not be considered in-scope pool controls.

From CEC 23-FDAS-01 Final Draft Report

Table 5-1: Examples of In-Scope and Out-of-Scope Pool Control Devices

In-Scope Devices	Out-of-Scope Devices
Controls of pool automation systems Pool timers Pool pump and heater switches Integral pool pump controls on pool filter pumps capable of controlling other pool equipment Direct load control switches	Integral pool pump controls on pool filter pumps not capable of controlling other pool equipment Integral pool pump controls on replacement pool pump motors Pool controls with three-phase input power Pool controls intended for pool filter pumps greater than 2.5 hhp Solar only pool water heating control system

EFFECTIVE DATE

The proposed effective date of 12 months after rule publication is extremely aggressive and does not allow pool control manufacturer's the adequate time to comply. Although modern pool controls are generally connectable products, significant time and resources are needed to update -

- Product firmware
- Software
- IOT infrastructure
- Product testing and debugging

- to be in line with the proposed FDAS requirements. Unlike the telecommunications industry which may have next 5 generations of connected technology in development, the pool industry adopts but is not the driver of new IoT system development . In order to ensure a product

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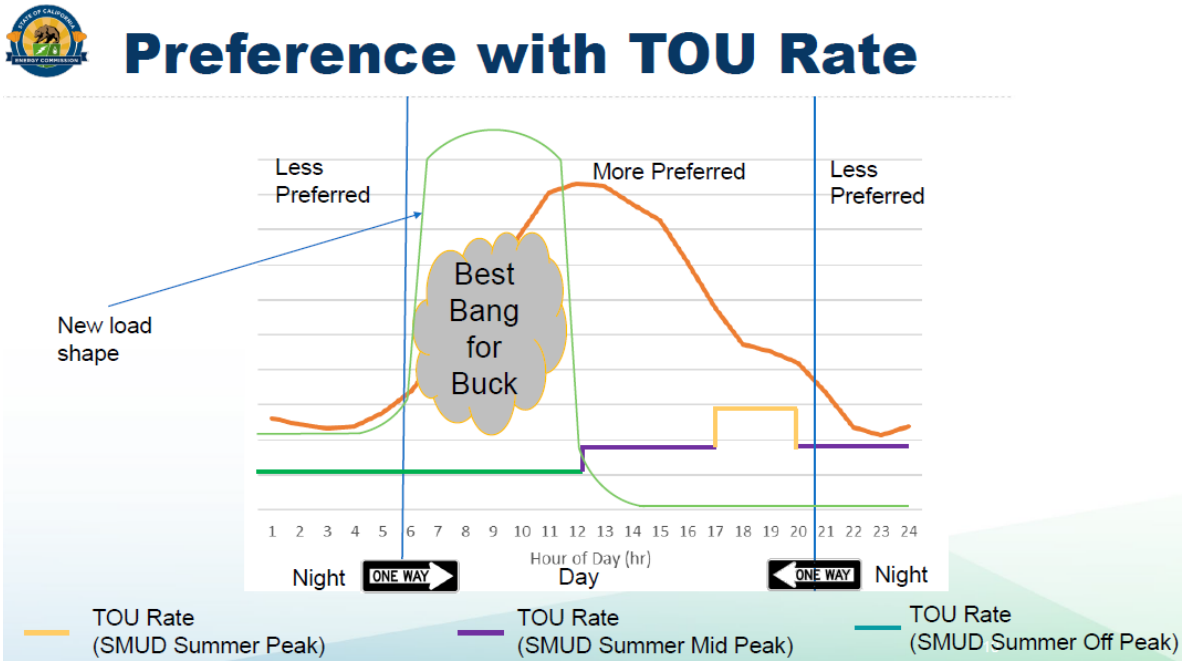
function properly, reliably, and safely when it launches into the market, responsible manufacturers must apply rigorous design verification testing, certification, quality control, manufacturer set-up, marketing/education, and launch. Spread across the various system platforms which a manufacturer may offer, the required time and resources grows exponentially. A 12-month enforcement date may create a gap in the availability of pool controls to the California consumer while pool control manufacturers try to catch up to the regulation. Fluidra can submit specific product development resources and timelines under confidentiality to the CEC for additional reference.

Based on historical enforcement dates for new Federal Department of Energy (DOE) efficiency regulation which is typically ranges between 3 to 5 years, we feel a minimum **3 to 5 years** is not unreasonable to allow the manufacturers the adequate time to develop pool controls that will be safe and reliable for the consumer, helping to ensure the sustainability of this program for the future.

Alternatively, CEC may want to consider a phased-in approach to this FDAS roll out. In early stages of this FDAS rule making, CEC had proposed simply a default schedule and a requirement that products be connectable. Our understanding from CEC presentations is that these simple updates got California most of the way there with regards to energy demand shift and GHG emissions reductions. These small changes can be achieved relatively quickly by manufacturers of modern pool controls. We would recommend making any required scheduling to be "selectable" and not the default. Or simply requiring the product instructions to include the recommended California Energy Commission scheduling requirements. Future updates to this rule can then focus on Flex Demand communication and connectivity to MIDAS, etc. See illustrative slides below from previous CEC presentations with regards to the effects of default scheduling to grid demand and GHG emissions.



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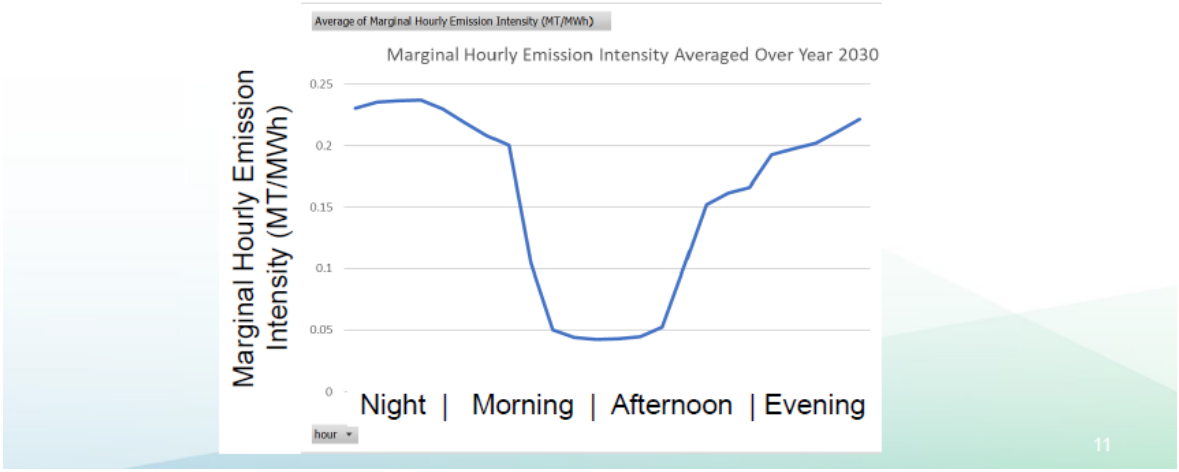
GHG Emission Intensity Data

- Staff plan to use GHG marginal emission intensity by hour data developed by the CEC
  - 2021 Preliminary IERP Mid Demand Scenario - HE PST



CONNECTIVITY

Fluidra agrees to keep the connectivity options open to the manufacturer and utility aggregators. We strongly recommend cloud to cloud (API) communication to connected equipment. Each manufacturer of connected products already has some sort of API infrastructure in place which would make this the easiest and fastest transition for the industry. Fluidra connected products can already receive commands from our cloud-based API systems.

External hardware devices such as CTA-2045 are not necessary and should not be made mandatory. Can be one of the options that a manufacturer may choose for connectivity, not a mandatory requirement.

Additionally, we suggest the following update to clarify that local set up includes the use of a smart device app via WiFi or BlueTooth or other connected means. Not all equipment and devices have user interfaces with full control of the settings, and require the user or pool professional to use a smart device app.

> **Section 16933 (b)(2)(B)2.**
> **Pool controls shall support both local and remote setup, selection, and update of its operating schedule. Local and remote setup, selection, and update shall be possible through a user interface** or a smart device application.

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We also suggest the following revision which addresses pool controls that are marketed to the pool professional and require full programming by the installation company. CEC may consider instead requiring the desired default schedule to part of the product literature.

> **Section 16933 (b)(2)(C) 1.**
> **(C) Default Operating Schedule.**
>
> 1. If pool control(s) are provided with factory default schedules, they **shall be preprogrammed with a preconfigured or default operation schedule that shall:**
> **…**

IOT and CYBER REQUIREMENTS

In general, we agree with the need to provide a level of cybersecurity protection to connected products. However, we feel the requirements set forth by this ruling are too prescriptive and should only indicate that a manufacturer have a policy for cybersecurity, data protection, and software update requirements that meet any Federal, State and/or Local codes. This can be left up to the individual manufacturer's connected products policies and user agreements.

For example, below are two suggested edits to the cybersecurity section:

> (4) **Passwords.** **The connected device shall contain a security feature that requires a user to generate a new means of authentication.** ~~before access is granted to the device for the first time, and shall support the use of passwords meeting the NERC password strength requirements listed below:~~
>
> ~~(A) Each password shall be a minimum of six characters.~~
>
> ~~(B) Each password shall consist of a combination of alpha, numeric, and special characters.~~
>
> (5) **Software Update.** **The manufacturer shall have an update policy that shall** include ~~informs the consumer how the manufacturer will support software updates and informs the consumer that~~ **the device** ~~is~~ being **capable of updates** ~~being updated~~ **whenever new vulnerabilities are discovered.**
> ~~(A) On initial connection to the internet, the connected device shall attempt to receive update notice from the manufacturer's update service and attempt to download, verify, and apply any available patches.~~ *(this is not always the best thing to do, should not require automatic download at startup).*
> ~~(B) The manufacturer shall provide an estimated security expiration date or end of life policy that informs the consumer when the manufacturer will be discontinuing the connected ready device support.~~

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Thank you for the opportunity to participate. We are open and welcome the opportunity to directly discuss any questions, concerns, and clarifications to our comments.

Respectfully,

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