

<b>DOCKETED</b>	
<b>Docket Number:</b>	19-AAER-02
<b>Project Title:</b>	Replacement Pool Pump Motors
<b>TN #:</b>	232672
<b>Document Title:</b>	Replacement Pool Pump Motors
<b>Description:</b>	April 7, 2020 Public Hearing Sean Steffensen, P.E., Efficiency Division
<b>Filer:</b>	Cody Goldthrite
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	4/6/2020 12:00:48 PM
<b>Docketed Date:</b>	4/6/2020



# Replacement Pool Pump Motors

Efficiency Division

Sean Steffensen, P.E.

Public Hearing

April 7, 2020



# Participation Today

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- Public Hearing is online only due to COVID-19 public health order
- Pursuant to California Administrative Procedure Act, Government Code §11346.8
- No decisions will be made
- Copies of the Initial Statement of Reasons, Notice of Proposed Action, Proposed Text, and Documents Incorporated by Reference are available for review on the [CEC website, Docket 19-AAER-02](#)
- Public comment on proposed regulatory language and proposed negative declaration
- This public hearing is being recorded by a court reporter, and on WebEx
- All statements today become part of the public record.



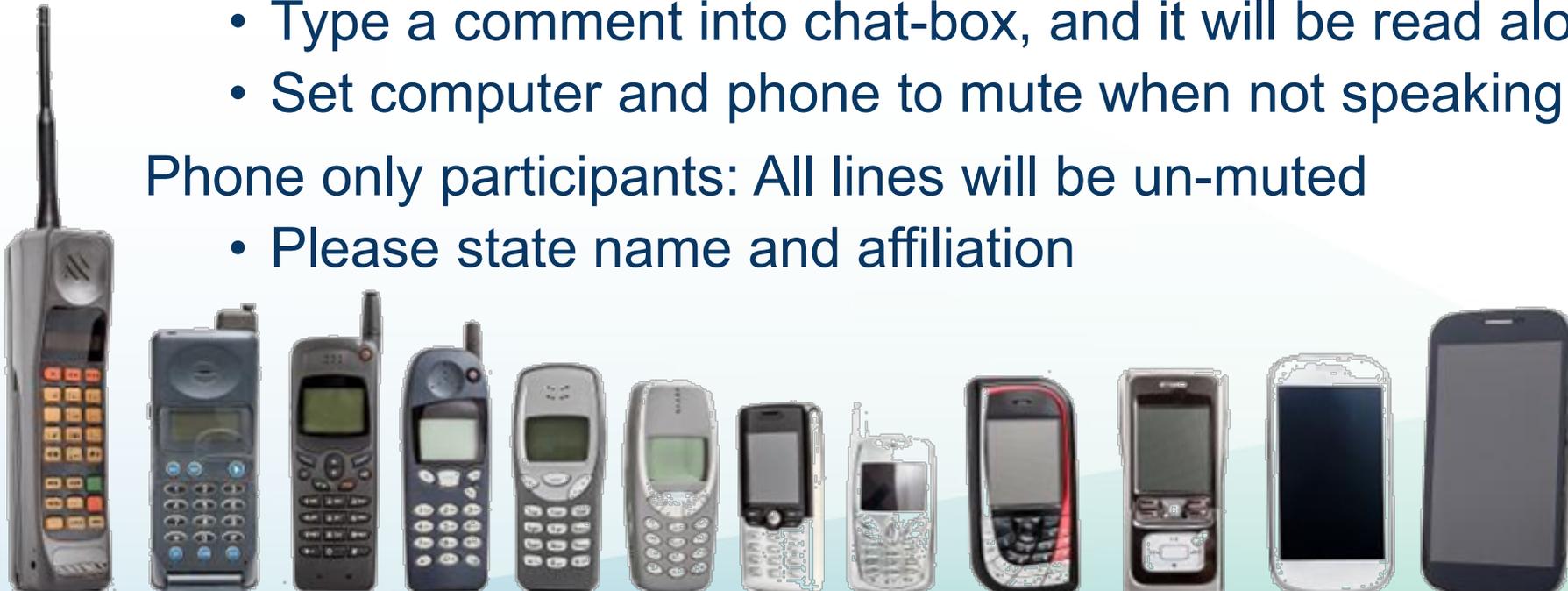
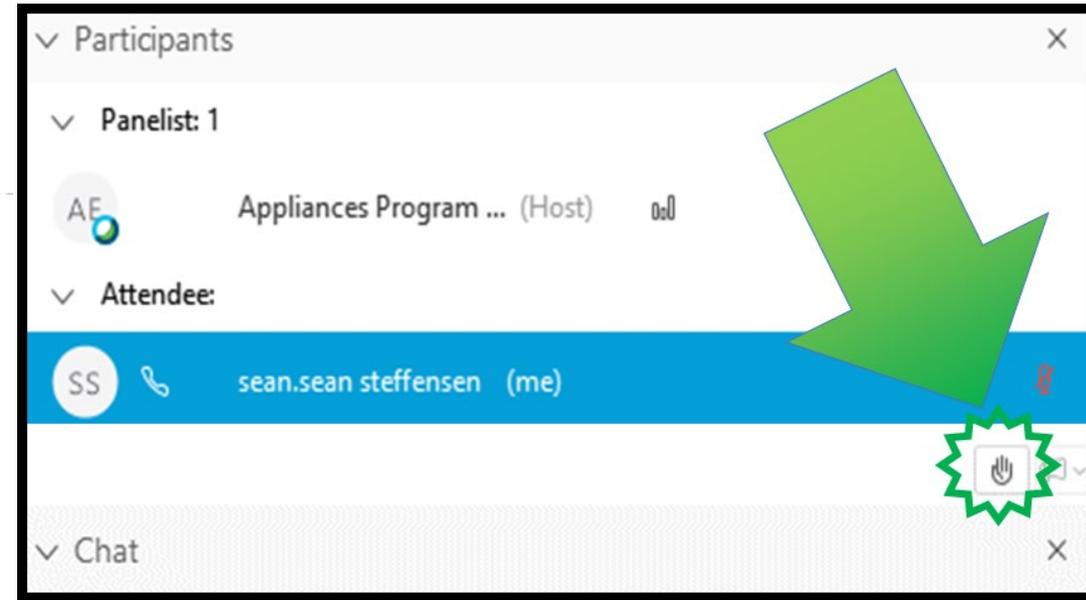
# Participation

## Public comments from WebEx:

- Use raise-hand feature
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# Agenda

Our  
Process

California  
Environmental  
Quality Act (CEQA)

1

2

3

4

5

The  
Problem

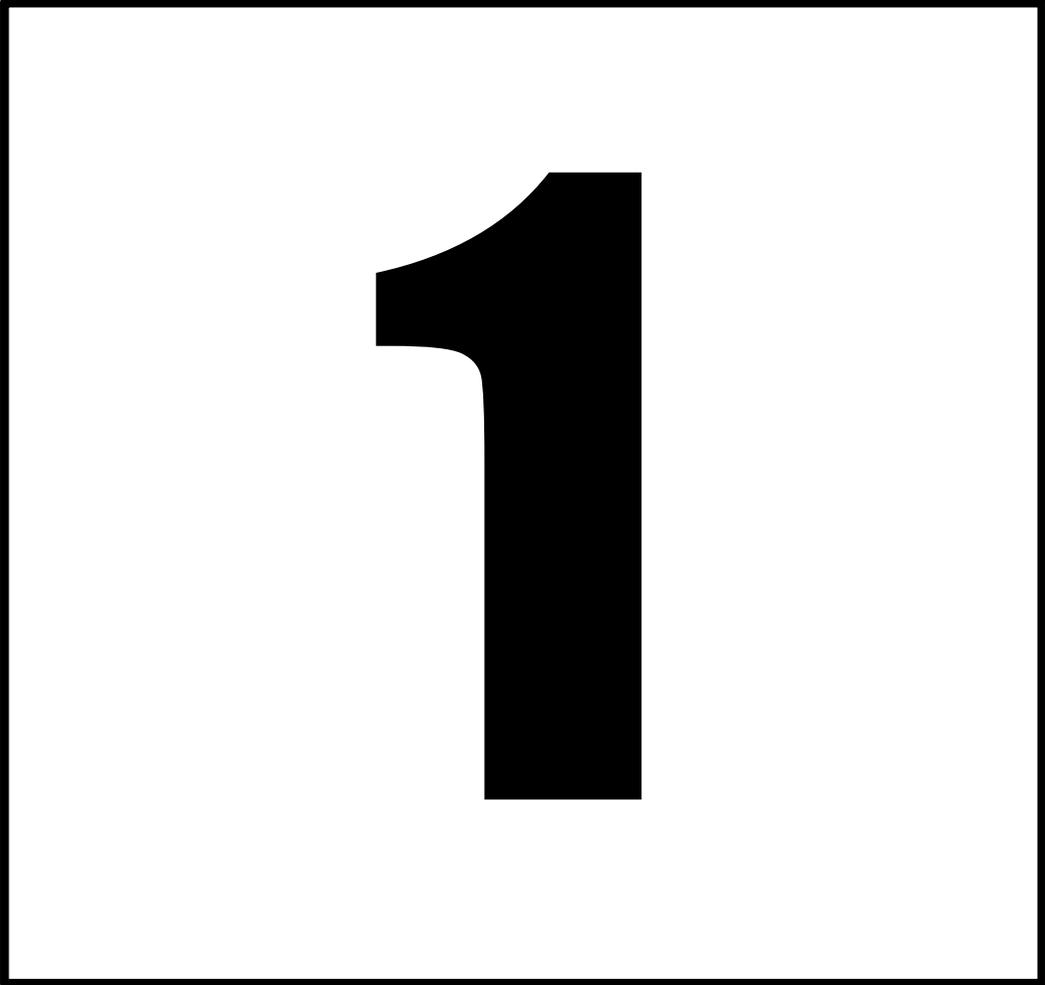
What Staff  
Proposes

Public  
Comments

Welcome!



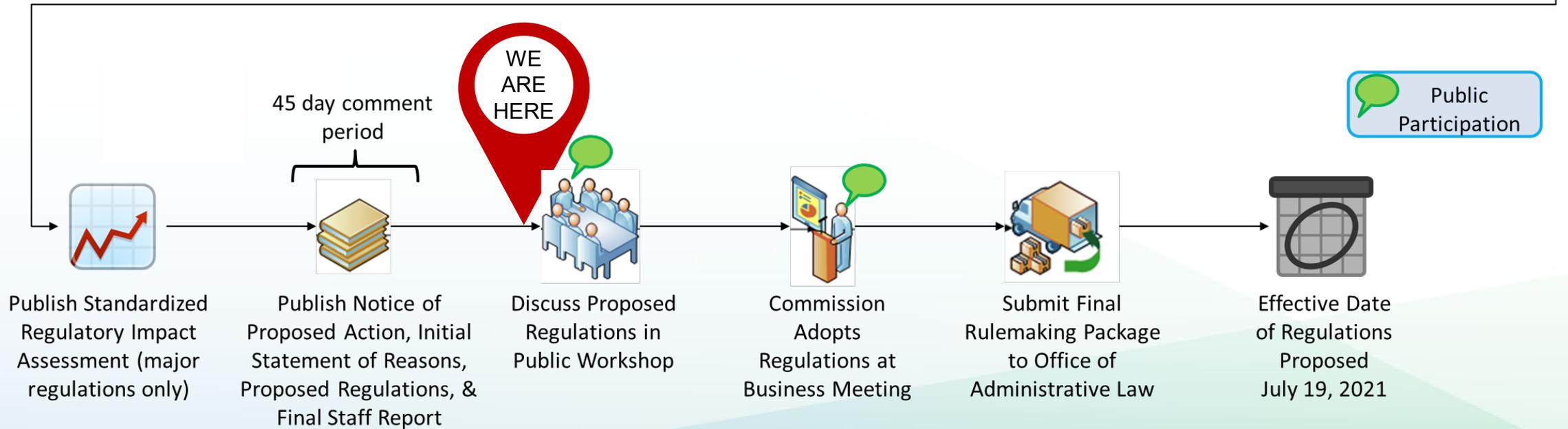
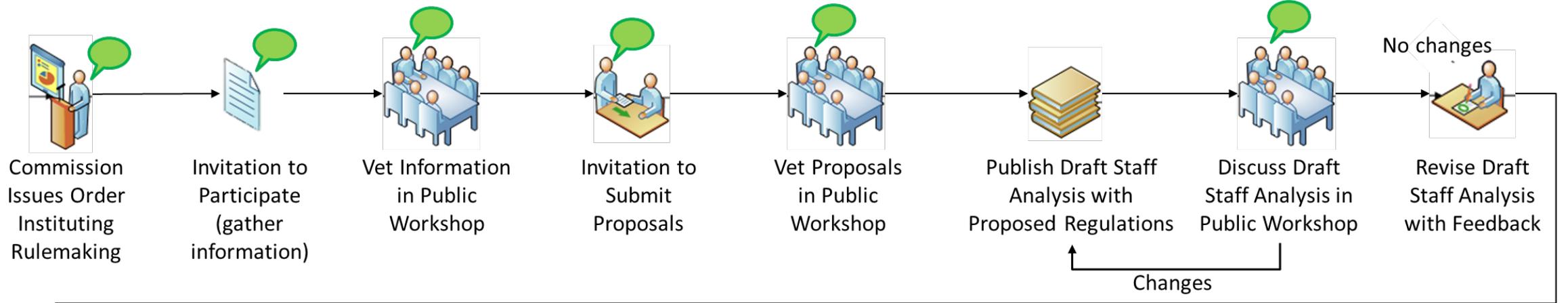
# Our Process



1



# Summary of Events





# Pre-Rulemaking Timeline (1 of 2)

March 14, 2012	Issued Order Instituting Rulemaking
March 25, 2013	Released Invitation to Participate (ITP)
May 28-31, 2013	Workshops on ITP
June 13, 2013	Released Invitation to Submit Proposals
May 28, 2014	Requested additional information on pool pumps and motors
January 28, 2016	Published draft staff report
February 18, 2016	First workshop
June 16, 2016	Published revised staff report
July 13, 2016	Second workshop
January 18, 2017	U.S. DOE publishes Direct Final Rule setting standards for dedicated-purpose pool pumps (DPPP)



# Pre-Rulemaking Timeline (2 of 2)

July 12, 2017	Published second revised analysis for replacement dedicated-purpose pool pump motors (RDPPPM)
August 3, 2017	Third workshop
November 14, 2018	Published third revised analysis
November 28, 2018	Fourth workshop



# Rulemaking Timeline

February 21, 2020	Rulemaking documents posted
March 6, 2020	California Environmental Quality Act (CEQA) document posted
April 6, 2020	45-day (rulemaking) and 30-day (CEQA) public comment periods end
April 7, 2020	Public hearing
April 8, 2020	Proposed adoption hearing
July 19, 2021	Proposed effective date

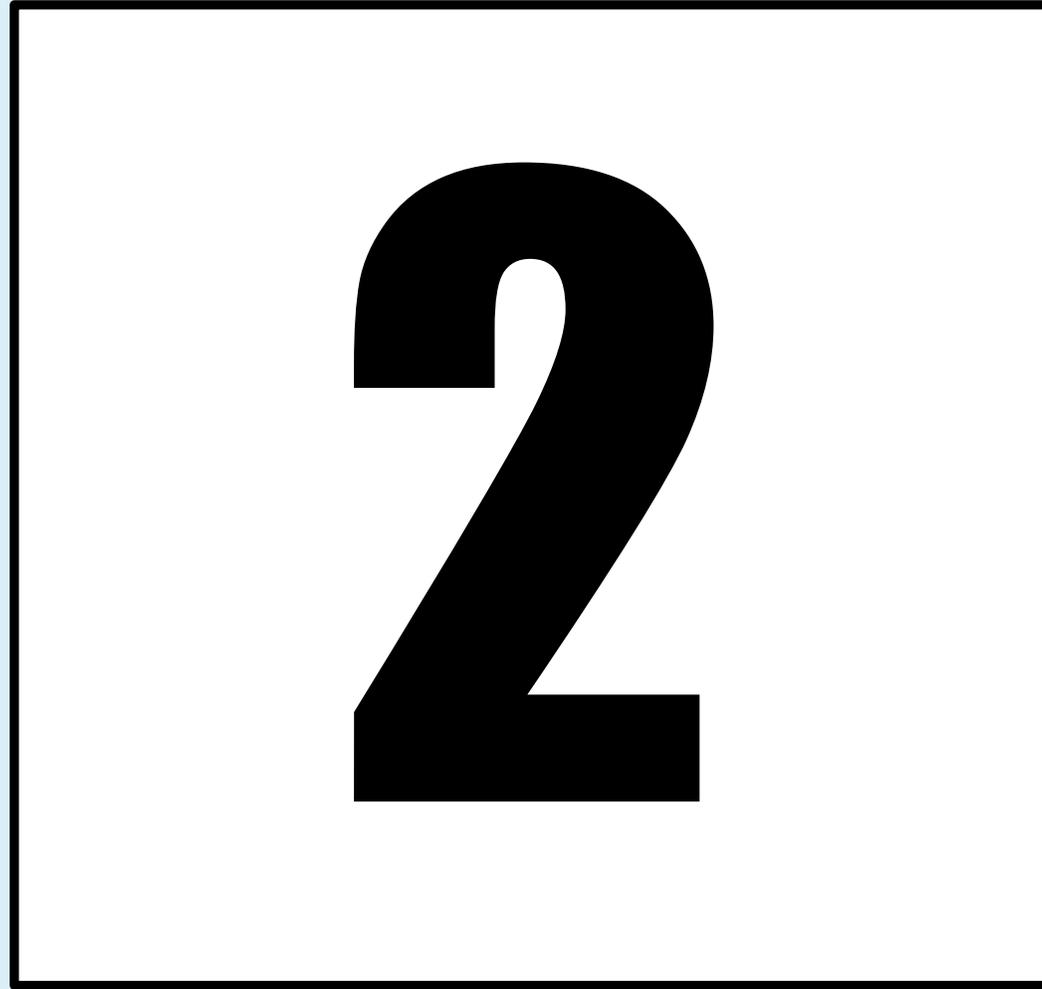


# Summary and Next Steps

- Staff finds the proposed standards are technically feasible and cost-effective to the consumer
- Staff will consider comments from the public hearing and from the public comment period
- Staff will propose 15-day language, if any changes are proposed
- Staff will seek adoption at a future CEC Business Meeting



# The Problem



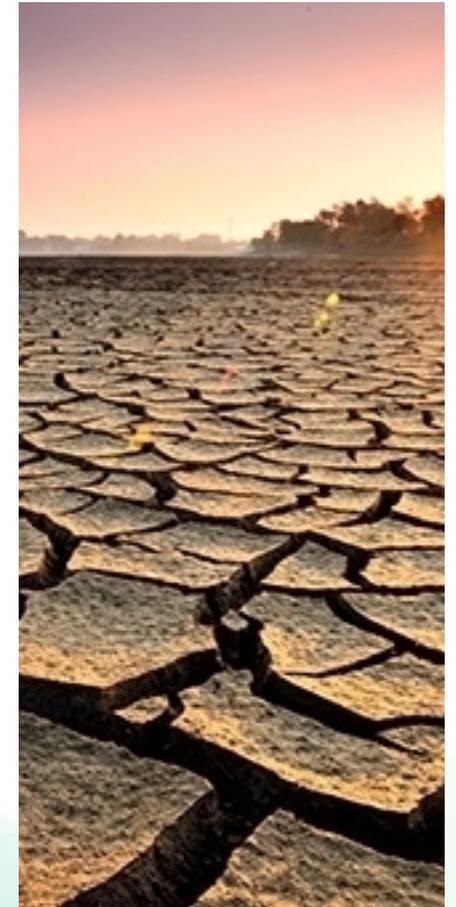


# Protecting Our California Way of Life



*After fifteen of the most destructive wildfires just in the last ten years. A state with historic droughts. A state with historic floods. Mother Nature has joined the conversation. This is not an intellectual exercise for us. ... This is not an abstract issue.*

**Governor Gavin Newsom**



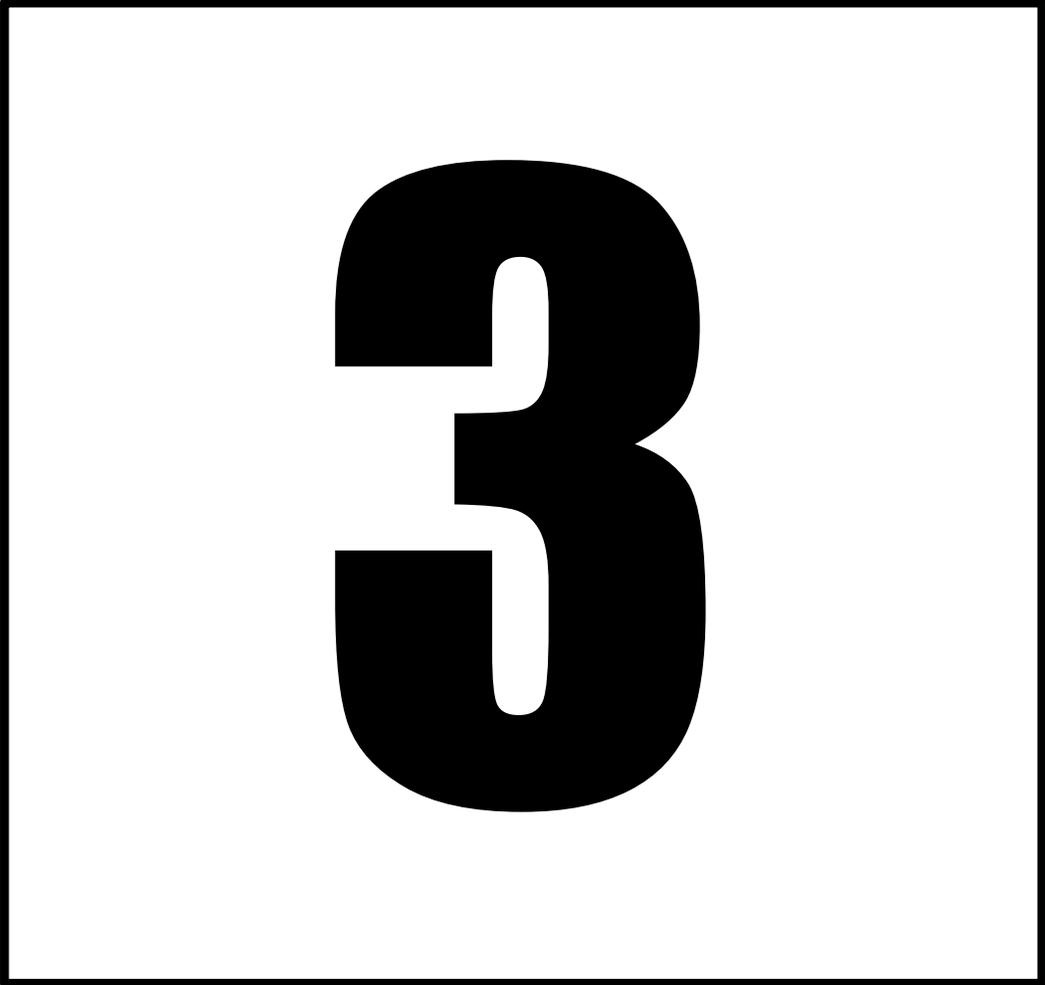


# Modernize Existing Pool Pump Motor Rule

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- Current rule leaves out of scope many pool pump motors with cost-effective savings
  - Commercial pool applications
  - Non-filtration applications
- Current rule needs modernization to reflect innovation
  - Prescriptive rather than performance standards
  - Variable-speed control technology has matured
  - Freeze protection features not addressed
- Modernizing and expanding the pool pump motor rule will create significant cost and environmental benefits for Californians

# California Environmental Quality Act



3



# CEQA Project Description

- Project – statewide minimum efficiency levels and speed control capabilities for RDPPPM and DPPP
- Energy impacts – reduce future electricity consumption
- Environmental impacts
  - No significant change to materials or manufacturing
  - No change to product lifetime
  - Reduced criteria pollutants, greenhouse gases, and other particulates due to lower consumption of electricity





# CEQA Findings

- Staff find that the proposed efficiency standards will not have any significant adverse effect on the environment
- No written comments received by deadline on April 6, 2020
- Staff will recommend the CEC adopt the proposed negative declaration



# What Staff Proposes

**4**



# Staff Proposal

- Expand scope to include residential and commercial replacement pool pump motors
- Update motor test method
- Set minimum motor efficiency and remove prescriptive motor type prohibition
- Set prescriptive variable speed motor control
- Incorporate DOE pool pump test methods and standards
- The [final staff report](#) contains details of the proposed regulation

Building on previous proposals and negotiations



# Proposal Aligns and Updates

- Scope covers all types of pools



- Aligns with recent US DOE Pool Pump Rule



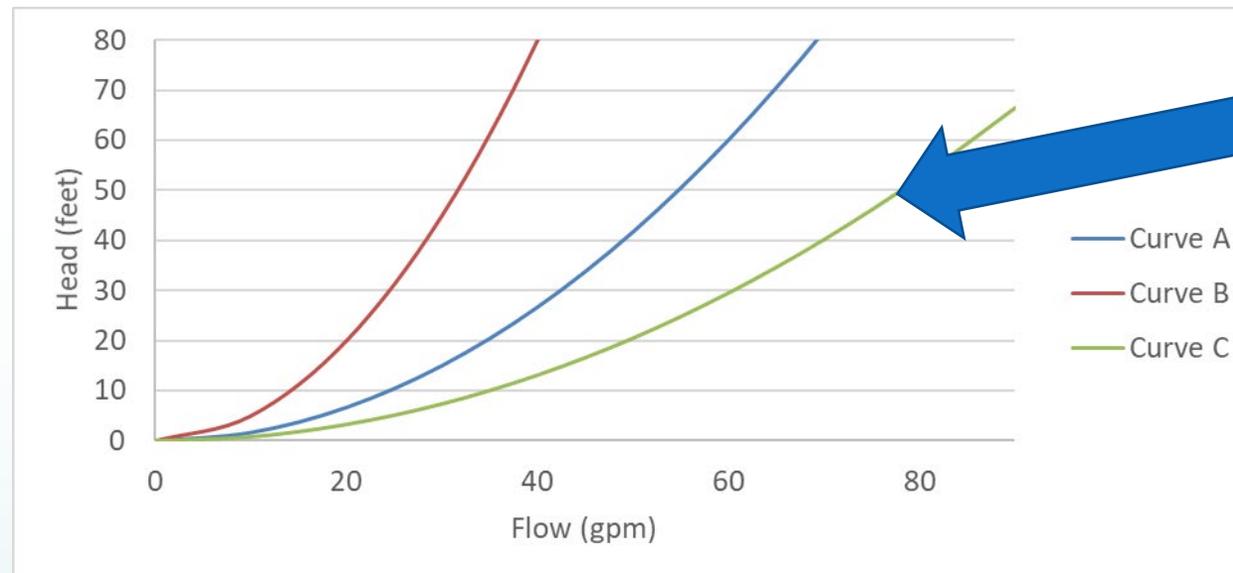
- Updates and expands CA Replacement Pool Pump Motor Rule





# Proposed Test Point

- Measure performance at motor maximum speed and full load
- Consistent with a pool pump operating on pool system curve C



Proposal is aligned with US DOE pool pump test point



# Proposed Standard

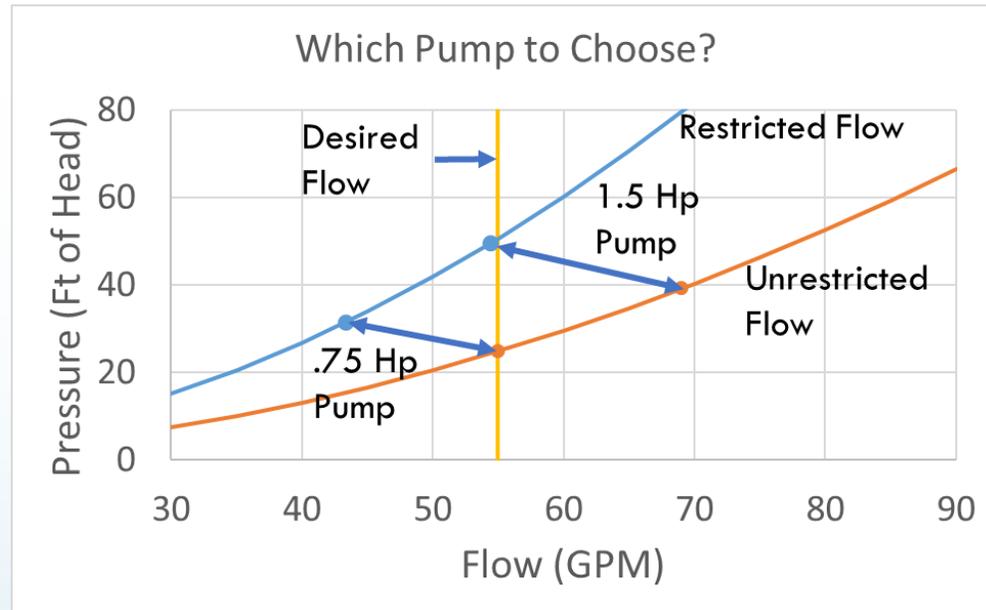
- Motor efficiency levels follow recommendation by Association of Pool and Spa Professionals
- Variable speed provides significant savings at smaller motor size

<b>Total Motor Capacity</b>	<b>Prescriptive Requirements</b>	<b>Minimum Motor Efficiency</b>
Motor hp < 0.5 hp	None	66%
0.5 hp ≤ Motor hp < 1.0 hp	Variable Speed	72%
1.0 hp ≤ Motor hp < 5.0 hp	Variable Speed	80%



# Why Variable Speed?

- Pool users and contractors often oversize pool pump motors to ensure sufficient flow and filtering
- Variable speed allows user to find the most efficient setting



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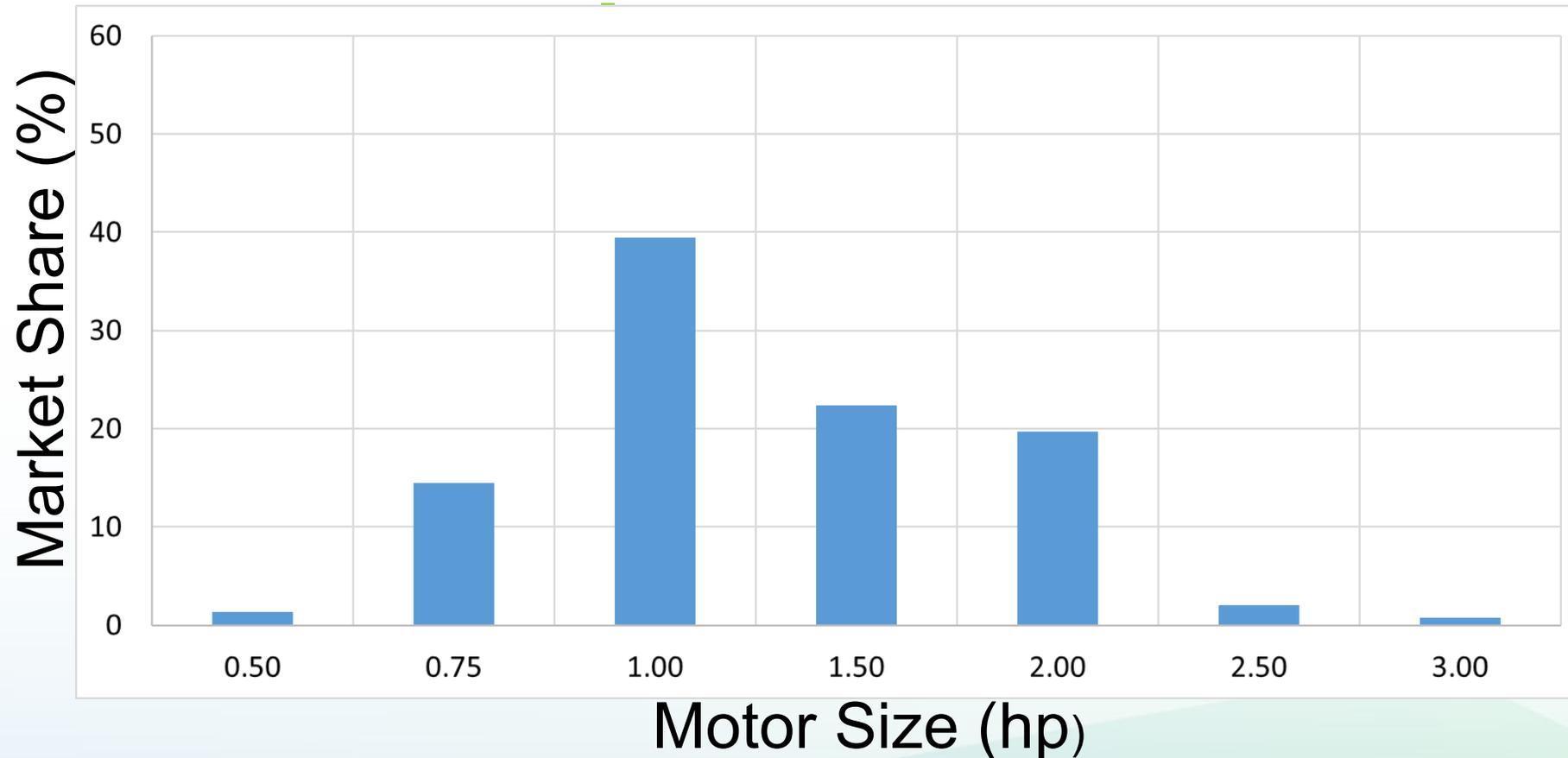
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Every pool deserves a motor that is the right size



# Expand Variable Speed to Transform the Market



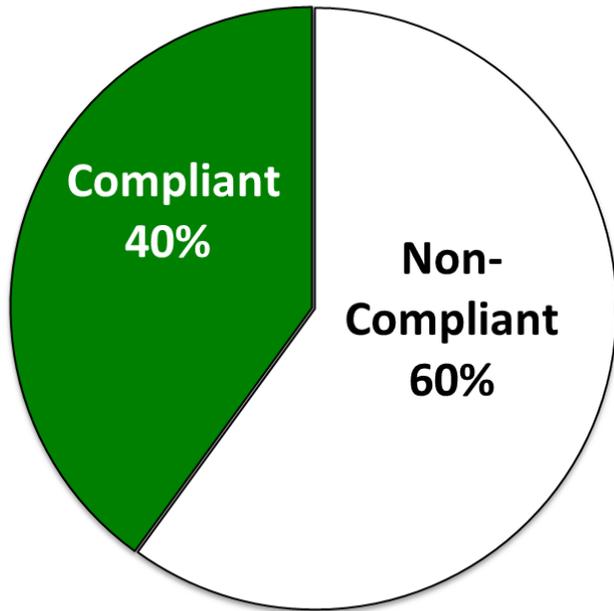
Expand threshold to lower horsepower to cover most sales



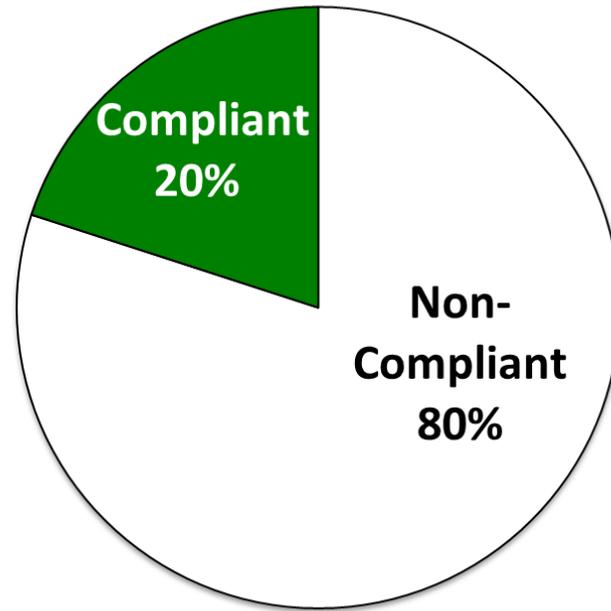
# Standard is Technically Feasible (1/2)

## Pool Pump Certifications

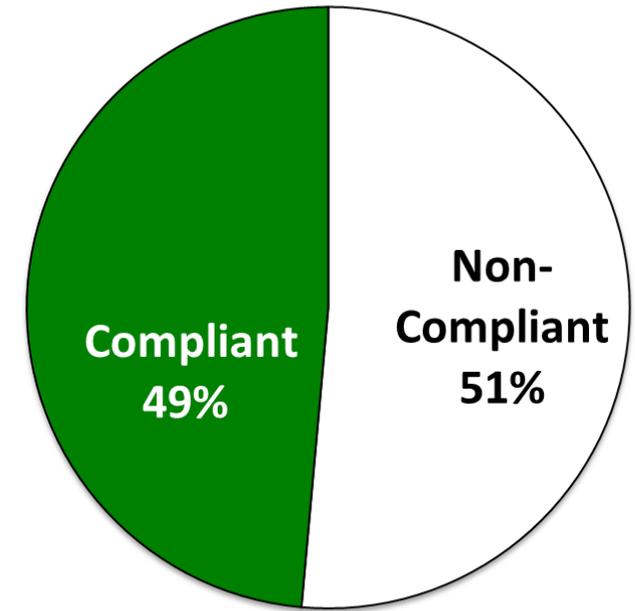
Motor Size  
0 hp to < 0.5 hp



Motor Size  
0.5 hp to < 1.0 hp



Motor Size  
1.0 hp to < 5.0 hp





# Standard is Technically Feasible (2/2)

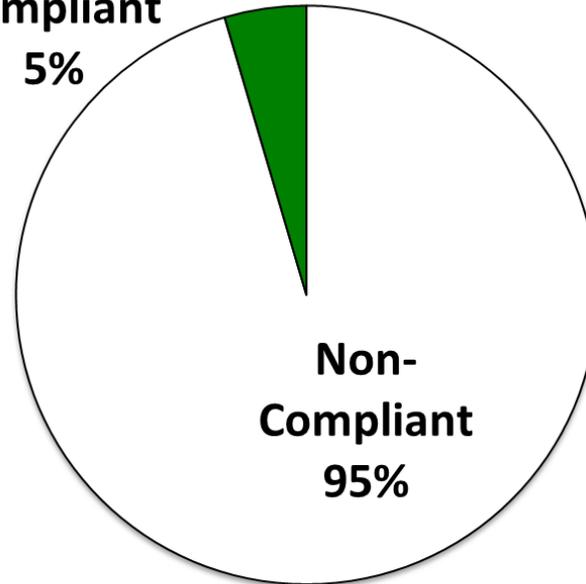
## Replacement Motor Certifications

**Motor Size**  
0 hp to < 0.5 hp

**No models certified in this range.**

**Motor Size**  
0.5 hp to < 1.0 hp

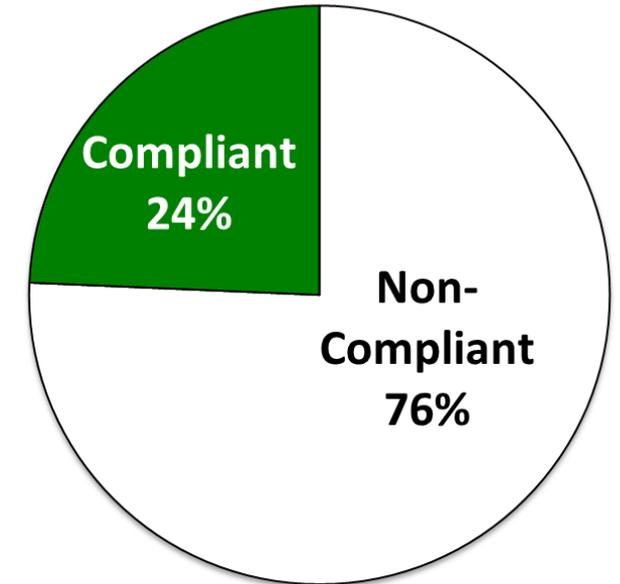
**Compliant**  
5%



**Non-Compliant**  
95%

**Motor Size**  
1.0 hp to < 5.0 hp

**Compliant**  
24%



**Non-Compliant**  
76%



# Standard is Cost-Effective

## *Residential* Replacement Pool Pump Motor

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SAVINGS	\$89
COST	-\$19

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BENEFIT \$70

## *Commercial* Replacement Pool Pump Motor

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SAVINGS	\$6,294
COST	-\$ 424

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BENEFIT \$5,870

Staff examined 8 applications and found all cost-effective



# Significant Statewide Savings

Application	First Year Electricity Savings (GWh/yr)	First Year Savings (\$M)	Full Stock Electricity Savings (GWh/yr)	Full Stock Savings (\$M)
Residential	39.9	\$7.7	291	\$56.2
Commercial	22.0	\$3.6	160	\$26.3
Total Savings	61.9	\$11.3	451	\$82.5

**\$82 million is about the cost of a Falcon Heavy Launch**





# Electricity Savings



451 GWh/yr equals the electricity consumed by Bay Area Rapid Transit

# Public Comments

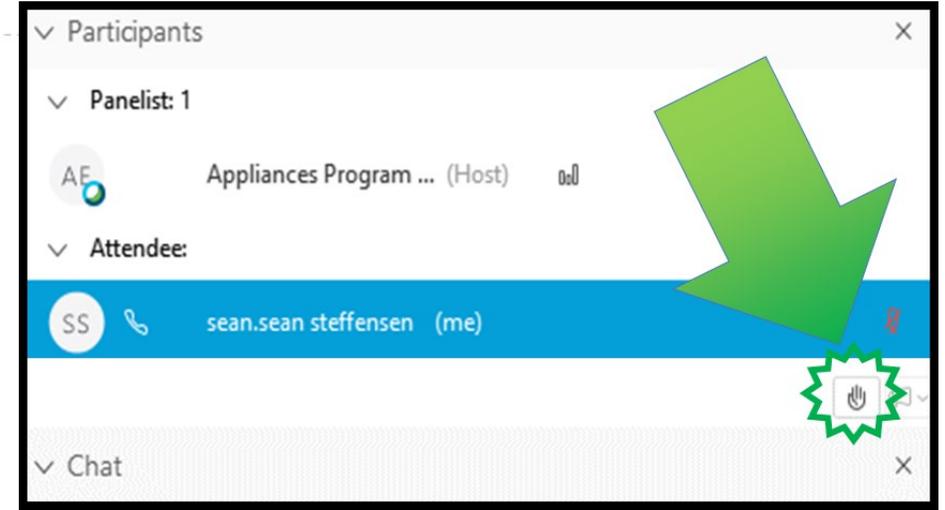
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# Contact Information

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- DOCKET # 19-AAER-02