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CALIFORNIA ENERGY COMMISSION

In the matter of:

2025 CALGreen Rulemaking) Docket No. 24-BTSD-02
_____)

LEAD COMMISSIONER HEARING

PROPOSED CHANGES TO THE CALIFORNIA GREEN

BUILDING STANDARDS CODE

TITLE 24, PART 11 (CALGreen), APPENDICES A4.2 & A5.2

TRANSCRIPT OF PROCEEDINGS

HYBRID VIA IN-PERSON AND ZOOM

WEDNESDAY, JUNE 5, 2024

9:00 A.M.

Reported by:

Martha Nelson

APPEARANCES

COMMISSIONER

Andrew McAllister, Lead Commissioner

COMMISSIONER ADVISOR

Bill Pennington, Advisor to Commissioner McAllister

Hughson Garnier, Advisor to Commissioner McAllister

CEC STAFF

Payam Bozorgchami, Building Standards Development Unit

Michael Shewmaker, Building Standards Development Unit

Bach Tsan, Building Standards Development Unit

PUBLIC COMMENT

Meg Waltner, Energy 350 on behalf of the National Resources
Defense Council (NRDC)

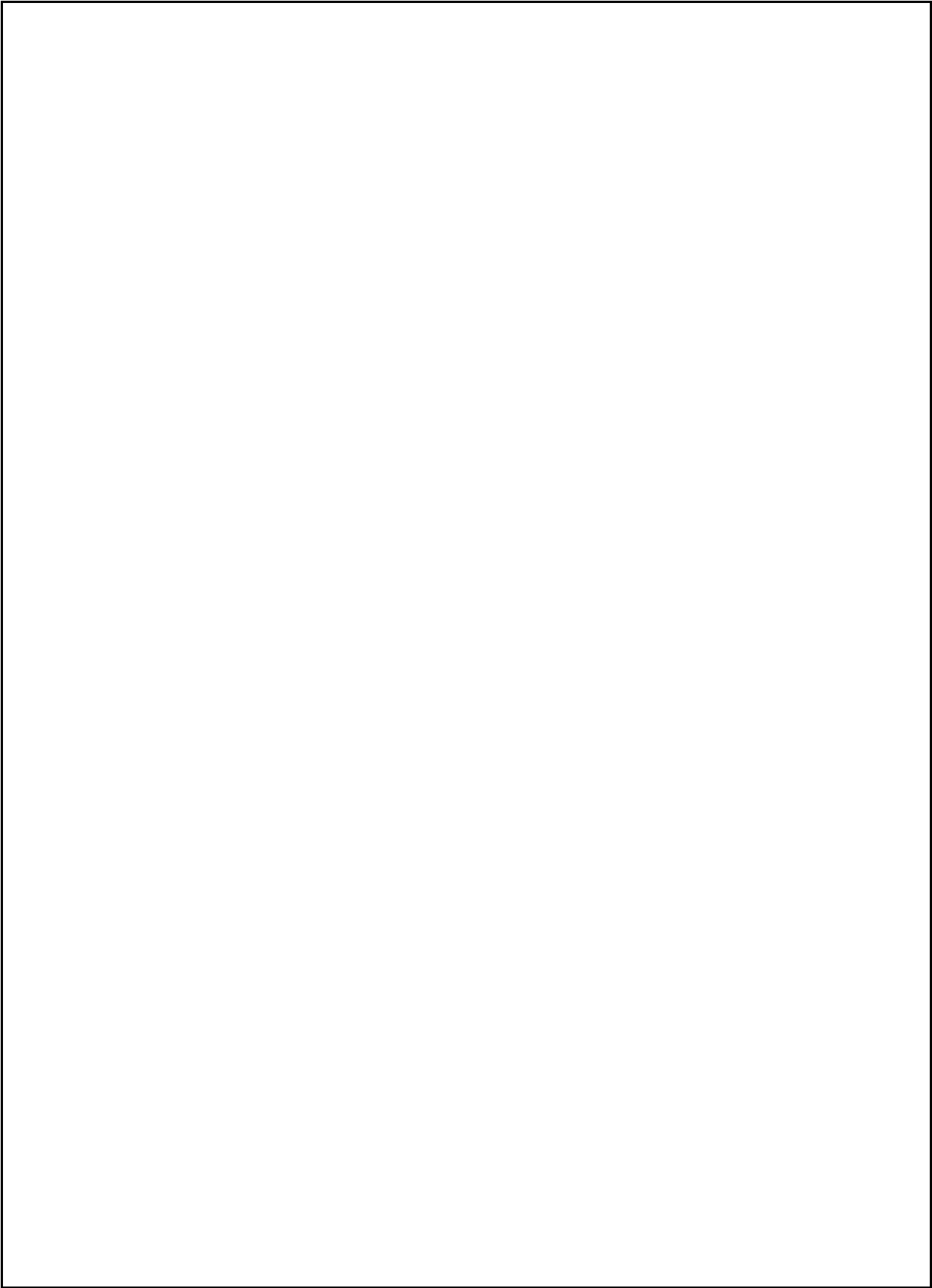
Kelly Cunningham, Pacific Gas & Electric Company

Bob Raymer, California Building Industry Association, and
California Apartment Association

Ted Tiffany, Building Decarbonization Coalition

Leora Radetsky, Design Lights Consortium

Claire Warshaw



1 P R O C E E D I N G S

2 9:05 a.m.

3 WEDNESDAY, JUNE 5, 2024

4 MR. BOZORGCHAMI: So good morning, everyone. My
5 name is Payam Bozorgchami again, one of the senior
6 engineers who works here in the Building Standards Branch
7 with the California Energy Commission.

8 Before we start, Commissioner McAllister is
9 running a little late. He had another conflicting meeting.
10 But since we have two of his advisors, Hughson Garnier,
11 here with us in person, and Bill Pennington, who's on the
12 phone with us, he's recommended that we start the hearings,
13 and he will join us here shortly. So we may do things out
14 of order a little bit, but that's -- it is what it is and
15 we'll just deal with it.

16 For the folks here with us in person, just a
17 little bit of direction on what's happening and where
18 everything is at. If you go out -- the restrooms are
19 located out of the two double doors to your right. And in
20 case of an emergency, if the fire alarm goes off, we will
21 exit the building to your right, and we will meet you up at
22 the Roosevelt Park kitty-corner from us. The security
23 guards will direct you to that location. Please don't go
24 home. We have to take account of who's here and make sure
25 everyone left the building peacefully and safely.

1 This workshop -- excuse me, this hearing is being
2 recorded. The transcript for this hearing will be
3 available as soon as we get a copy of it.

4 Am I missing anything? No. And so let's go
5 through some housekeeping rules.

6 This hearing is being recorded and transcripts
7 from this hearing will be posted on the docket as soon as
8 it becomes available. So to make it easy to follow the
9 transcript, we will have staff present their sections and
10 we will set time aside for comments. For people here in
11 person, please raise your hand or come up to the podium,
12 state your name, your affiliation. And we're giving about
13 two minutes per participant to provide comments.

14 If you're on the phone or on Zoom, please raise
15 your hand, and I will unmute you. State your name and
16 affiliation and, also, please spell your last name. This
17 is all for the record so we get the transcript done
18 properly. And if you're on the phone, please hit star nine
19 to raise your hand, and I will unmute you. You will have
20 to unmute yourself from your end, and by doing so, you
21 press star six.

22 Today's agenda. Let me give you a little bit of
23 a quick general structure of the hearing.

24 Commissioner McAllister was supposed to give the
25 opening remarks, but we will move that after either Michael

1 Shewmaker doing his rulemaking introduction or after
2 Chapter 2 of the residential voluntary measures. But he
3 will have time and the opportunity to speak.

4 We will have a break after our Senior Mechanical
5 Engineer, Bach Tsan, does his presentation on the
6 residential alterations for space conditioning systems.
7 We'll do about a 15-minute break, then we'll come back.

8 And Mikey -- Michael Shewmaker, I'm sorry, here
9 in the office we call him Mikey, he's our supervisor of the
10 Building Standards Development Team, he will do the
11 nonresidential voluntary measures, and we will close out
12 with closing comments from Commissioner McAllister and
13 we're good to go. We're hoping we'll be done by noon
14 today, but we'll go as far and as long as it takes and
15 we'll get everybody in.

16 Here are some websites and links to the
17 information for today's hearing. The first one will give
18 you all the information you need about the rulemaking
19 docket, the documents, and all the documents relied upon.
20 And we have -- the next site is our docket where you could
21 find the Notice of Proposed Action, the Environment Impact
22 Report, the Express Terms, and the other documents relied
23 upon.

24 For today's meeting, again, you will have an
25 opportunity to provide comments here verbally to us. But

1 if you feel that there's more comments or you have -- you
2 don't feel like presenting it in person to us, you can
3 submit it in writing to us by Monday, July 1st by 5:00 p.m.
4 Please, if you can, submit your comments sooner than later.
5 We ask this every time, and that's because we do need time
6 to really think about and go through the comments and
7 provide viable reasoning to really get a productive set of
8 codes out there for you.

9 If you're having a little bit of difficulties or
10 you have more concerns and questions, we put the contact
11 information for our Public Advisor, her phone number and
12 her email. If you have any questions or any assistance,
13 she is more than happy to help you. Mona Badie is our
14 Public Advisor.

15 And here's some contact information. Michael
16 Shewmaker is the supervisor of the Building Standards
17 Development Team. He's also the lead of the Part 11 Code.
18 Myself, I'm one of the senior engineers here at the
19 Building Standards. I'm overseeing Part 6 and Part 11. My
20 counterpart, Bach Tsan, is our senior mechanical engineer.
21 He deals with all mechanical systems. Danny Tam, our
22 assistant mechanical engineer, he's really the expert on
23 pool, solar pool pumps, solar heating, and water heating.
24 Simon Lee is our lead electrical engineer on outdoor
25 lighting requirements. And Stephen Becker is a mechanical

1 engineer responsible for the lifecycle compliance margin
2 and the contact information.

3 If you need to get a hold of other people, Gypsy
4 Achong is our lead for the Building Standards Branch. And
5 firstname.lastname@energy.ca.gov will get you to anybody
6 here at the Energy Commission, especially Gypsy, if we all
7 get in trouble.

8 With that, I'm going to pass the mic to Michael
9 Shewmaker, as Commissioner McAllister is not here yet.

10 And, Michael, would you like to do the authority,
11 metric, and timeline for us?

12 MR. SHEWMAKER: Yeah. Thank you, Payam. I am
13 going to share my screen. All right.

14 Good morning, everyone, and thank you for joining
15 us for today's Lead Commissioner Hearing on the 2025 update
16 to CALGreen. My name is Michael Shewmaker, and I'm the
17 supervisor of the Building Standards Development Unit.

18 Before we dive into the proposals, I would first
19 like to briefly go over the CEC's authority with respect to
20 CALGreen, as well as the underlying energy metrics and
21 timelines for the 2025 update.

22 So starting with the Energy Commission's
23 authority, in 1974, two California Assemblymen, Charles
24 Warren and Al Alquist, co-authored the Warren-Alquist Act.
25 This Act directed the Energy Commission to reduce the

1 wasteful, uneconomic, inefficient, or unnecessary
2 consumption of energy as it relates to buildings.

3 To help comply with this directive, the CEC has
4 the authority to update and maintain the state's mandatory
5 Building Energy Efficiency Standards under Title 24, Part
6 6, or otherwise known as the Energy Code.

7 This language also provides us with the authority
8 to update the voluntary building energy efficiency
9 requirements within the Green Building Standards Code,
10 known as Title 24, Part 11, or otherwise known as CALGreen.

11 Within CALGreen, the CEC is considered an
12 adopting agency, meaning we have the ability to adopt our
13 own regulations separate from the main rulemaking
14 proceedings led by the Building Standards Commission.
15 However, this authority to adopt is limited to just two
16 specific sections, Appendix A4.2, Residential Voluntary
17 Measures, Energy Efficiency, and Appendix A5.2,
18 Nonresidential Voluntary Measures, Energy Efficiency. Once
19 adopted by the CEC, these regulations are then approved
20 with Building Standards Commission for inclusion in Part
21 11.

22 Now let's go over our underlying energy metrics
23 that help us to determine energy savings and cost-
24 effectiveness.

25 For the 2025 Energy Code, we are pivoting away

1 from using the old time-dependent valuation, or TDV metric,
2 to using long-term system cost, or LSC. LSC is a cost-
3 effectiveness and energy valuation methodology used in
4 development and implementation of the Energy Code. LSC
5 factors are used to convert predicted energy use to long-
6 term dollar costs to California's energy system.

7 The underlying varying valuation of energy that
8 depends on the time of day and day of the year that was
9 used for TDV has not changed, but we have converted those
10 energy savings into long-term system cost savings to better
11 reflect the actual cost of energy to consumers, the utility
12 system, and to society. And the graph you see here
13 represents an average days dollar per megawatt hour and how
14 that cost varies by time of day and the different inputs
15 that go into that cost.

16 The source energy metric was introduced for newly
17 constructed buildings during the 2022 Energy Code and is
18 defined as the source energy of fossil fuels following the
19 long-term effects of any associated changes in resource
20 procurement. It focuses specifically on the amount of
21 fossil fuels that are combusted in association with demand-
22 side energy consumption and assists in aligning our Code
23 language with California's environmental goals.

24 To calculate source energy for a given hour, the
25 value in that hour for each forecasted year is averaged to

1 get a lifetime average source energy.

2 California's climate zones. This is not new to
3 this Code cycle, but hopefully it serves as a refresher if
4 you are already up to speed on California's Energy Code.

5 Because a building's energy use can vary
6 depending on weather conditions throughout the state, the
7 Energy Commission has established 16 individual climate
8 zones that represent the various distinct climates within
9 California. As a result of having these 16 climate zones,
10 requirements can vary significantly from climate zone to
11 climate zone as the energy savings will vary and measures
12 are found to be more or less cost-effective.

13 Now, let's go over how far we've come this Code
14 cycle.

15 From June 2021 to July of 2023, the Codes and
16 Standards Enhancement Team, or CASE Team, took in measure
17 proposals ideas, held 19 different public workshops on
18 those measure proposals, and finalized reports for those
19 proposals.

20 From March to November of 2022, the Energy
21 Commission updated weather data and LSC and source energy
22 metrics.

23 From March to September 2023, the CEC held nine
24 pre-rulemaking workshops on the proposals for the 2025
25 Code. This included the single-family heat pump

1 replacement item.

2 And then in March of this year, the CEC presented
3 our proposed changes to Part 11 in front of the Green Code
4 Advisory Committee.

5 And finally, we published our proposed regulatory
6 language on May 17th for the required 45-day public comment
7 period, which is currently ongoing.

8 And so, what comes next?

9 The 45-day public comment period runs through
10 July 1st. We are here today hosting our Lead Commissioner
11 Hearing, and following today's hearing and the conclusion
12 of the 45-day comment period, the CEC will then incorporate
13 any changes into the 15-day proposed regulatory language.

14 We will then hold the 15-day public comment
15 period sometime in late July or early August. And then we
16 hope to adopt our proposed changes to CALGreen at our
17 September 11th business meeting.

18 We will then submit our entire rulemaking package
19 at the Building Standards Commission in October with the
20 hope that they will then approve our updates in December.

21 And then finally, the 2025 Code will go into
22 effect on January 1st, 2026.

23 And that brings me to the end of our rulemaking
24 introduction.

25 So I'll pass it back to you, Payam.

1 MR. BOZORGCHAMI: Actually, since the
2 Commissioner is not here, I recommend you go ahead and keep
3 going into the body of Part 11.

4 MR. SHEWMAKER: Okay. Sounds good.

5 All right, so once again, my name is Michael
6 Shewmaker. I'm the supervisor of the Building Standards
7 Development Unit. And I, along with my colleague Bach
8 Tsan, am here this morning to present the CEC's proposals
9 for the 2025 update to the Green Building Standards Code,
10 known as Title 24, Part 11, and otherwise known as
11 CALGreen.

12 Before we dive into the proposed changes to
13 Appendices A4.2 and A5.2, I'd first like to quickly mention
14 our proposed changes to the definitions found in Chapter 2.

15 Now, as I just said moments ago, the CEC's
16 authority is specific to Appendices A4.2 and A5.2, so these
17 changes are being made in conjunction with the Building
18 Standards Commission and HCD (phonetic) as part of their
19 rulemaking. Now, diving into those definitions, as
20 part of the CEC's proposed changes to the 2025 Energy Code,
21 we will be pivoting away from the old energy accounting
22 methodologies of energy design rating and time-dependent
23 valuation, so we are proposing to remove the following
24 definitions from Chapter 2.

25 As I mentioned earlier, for the 2025 Energy Code,

1 we will be using long-term system cost as our primary
2 energy accounting methodology. Long-term system cost is
3 defined as the CEC's projected present value of costs over
4 a 30-year period for California's energy system. Note: LSC
5 does not represent a prediction of individual utility
6 bills.

7 Along with adding a new definition for long-term
8 system cost, we would also modify the existing definition
9 for energy budgets to reflect usage of the new LSC energy
10 accounting methodology. For newly constructed buildings,
11 the energy budget will be expressed in terms of long-term
12 system costs and source energy. And for additions and
13 alterations, the energy budget will be expressed in terms
14 of just LSC.

15 And finally, to go along with our solar pool or
16 spa heating proposal, which I will cover during my
17 presentation. We are proposing to add definitions for
18 recovered energy, on-site recovered energy, and solar pool
19 heating systems.

20 And that's it for our changes to definitions.

21 So, Payam, should we continue on to appendix --

22 MR. BOZORGCHAMI: I think we should, yeah.

23 MR. SHEWMAKER: All right. And so while we wait
24 for the Commissioner, we will continue on with our
25 presentation.

1 And so now that we've covered the relevant
2 definitions, I will dive into the residential voluntary
3 measure section, Appendix A4.2, Energy Efficiency.

4 So here you have an overview of all of what we're
5 proposing for the residential section. So I'll pause here
6 for a moment, and then I'll dive into each one of these
7 items individually in the coming slides.

8 But to help facilitate the conversation around
9 the single-family altered space conditioning systems
10 proposal, which I'm guessing is why most of you have tuned
11 in today, we will move that item to the end of this section
12 so that we can immediately take questions and comments
13 following.

14 So starting with the performance LSC compliance
15 margins proposal, as mentioned earlier, the Energy
16 Commission is moving away from the old energy design rating
17 energy accounting methodology and moving towards long-term
18 system cost. In addition to changing energy accounting
19 methodologies, we are also proposing to update the
20 performance compliance margins based on the proposed 2025
21 two heat pump baseline in Title 24, Part 6, plus verified
22 low-leakage ducts in conditioned space and/or compact hot
23 water distribution depending on the climate zone.

24 The proposed LSC compliance margins will offer
25 jurisdictions an option to increase energy efficiency

1 beyond the Energy Code by increasing the efficiency of
2 space conditioning and/or water heating distribution
3 systems within the building.

4 In climate zones where space heating and or space
5 cooling are the predominant energy and uses, we are
6 proposing verified low leakage ducts in conditioned space.
7 And we are proposing compact hot water distribution where
8 water heating energy usage is prominent.

9 For Climate Zones 1 through 5, 11, 12 and 14
10 through 16, the LSC compliance margins are based on the
11 proposed Title 24, Part 6, two heat pump baseline, which is
12 a heat pump space heater and a heat pump water heater plus
13 the verified low-leakage ducts in condition space and
14 compact hot water distribution. In Climate Zones 6 through
15 10 and 13, the LSC compliance margins are based on the
16 proposed Title 24, Part 6, two heat pump baseline, plus
17 compact hot water distribution only.

18 And so here you have the actual proposed LSC
19 compliance margins for each climate zone. And I should
20 emphasize that these LSC compliance margins can be met by
21 various means. You are not required to install a verified
22 low-leakage duct system or a compact hot water distribution
23 system if you choose not to, provided you meet or exceed
24 the proposed LSC compliance margin.

25 And now moving to our outdoor lighting proposal,

1 for 2025 we are proposing a new set of outdoor lighting
2 standards based on industry best practices. One standard
3 is to require the outdoor luminaires to shine the light to
4 where it is designed for. For the outdoor luminaires
5 designed for putting lights on freestanding surfaces, the
6 luminaire is required to direct the light onto the intended
7 surface and to be installed above the surface facing
8 downwards and be shielded to prevent upward light
9 pollution.

10 Another standard is to require pole-mounted
11 luminaires or arm-mounted luminaires to be installed so
12 that they are not tilted greater than ten degrees or that
13 the mounting hardware not be capable of tilting greater
14 than 10 degrees. With proper aiming and tilting to level
15 the luminaire, glare can be minimized and thereby ensure
16 the outdoor lighting is used efficiently.

17 And then exceptions are provided for luminaires
18 that are already exempted from the Energy Code.

19 And now moving to our alterations to pool or spa
20 heating systems proposal. This measure would apply only to
21 multifamily pool or spa heating system alterations and
22 allows for several different compliance pathways. A solar
23 thermal pool heating system with a collector surface area
24 equal to 65 percent of the pool surface area, or a primary
25 heat pump pool heater, meeting the sizing requirements in

1 the new reference Appendices section, JA.15, as well as
2 minimum efficiency requirements, or on-site renewable
3 energy or on-site recovered energy, providing at least 60
4 percent of the annual heating energy.

5 And then for the 15-day express terms, we are
6 planning to add options for a combination of solar pool
7 heating and heat pump pool heater without an additional
8 supplementary heater or an equivalent system as determined
9 by the CEC's executive director.

10 There are also a few exceptions to the standard
11 for portable electric spas compliant with the Appliance
12 Efficiency Regulations and a pool or spa that is heated
13 solely by a solar pool heating system.

14 And then for the 15-day express terms, we are
15 considering adding an exception for projects that have
16 inadequate solar access roof area.

17 And for this last item, I'm going to pause here
18 and pass the mic off to my colleague, Bach Tsan, who is one
19 of our senior mechanical engineers in the Building
20 Standards Branch, to walk us through the alterations to
21 space conditioning systems mechanical cooling proposal.

22 (Pause)

23 MR. TSAN: Oh, I'm sorry, there you go. So I'll
24 start over, but this is the alterations to air conditioning
25 systems in section A4.204.1.1-A.

1 So in this Code cycle, the Energy Commission has
2 proposed a voluntary measure in CALGreen, Title 24, Part
3 11, to make heat pumps a prescriptive standard when
4 replacing existing space conditioning systems. This
5 measure applies to single-family homes in California for
6 Climate Zones 1 through 14 and 16.

7 Exceptions are provided for instances where an
8 existing service panel is insufficient to service the
9 additional electrical capacity of heat pumps relative to
10 newer replacement air conditioner. And when the required
11 capacity of a heat pump is greater than or equal to 12,000
12 BTUs per hour, more than the required capacity of an air
13 conditioner, and for alterations to ACs in Climate Zone 15
14 due to the minimal heating load, which impacts cost
15 effectiveness. And compliance can also be met with the
16 performance approach. Okay.

17 So compliance can alternatively be met as an
18 alternative approach here, which allows the installation of
19 standard air conditioners if paired with additional energy
20 efficiency measures. Exceptions are also included where
21 the cases where the existing panel cannot be supported with
22 the 12,000 Btu or more greater of that for an air
23 conditioner exception. So this is a volunteer measure.
24 Only residents and locations where it has been adopted by a
25 local ordinance would need to comply.

1 So according to the CEC's 2025 Single-Family Heat
2 Pump Replacements Report, this measure was cost-effective
3 across all climate zones except for Climate Zone 15. The
4 CEC's cost-effectiveness test evaluates the long-term
5 system cost of a measure over 30 years. So considering a
6 measure cost-effective, if it's positive, has a positive
7 long-term savings, system savings.

8 All right, and we'll jump to this slide where we
9 describe the voluntary measure benefits.

10 So part 11 is being proposed for a number of
11 reasons.

12 First, the upfront costs of the initiative fall
13 on the residents rather than the builders or developers who
14 typically incur the upfront incremental costs of the
15 building standards for newly constructed buildings. As
16 shown in the previous slide, this measure has found -- was
17 found to be -- has been found to impose initial costs on
18 residents of existing single-family homes who may not be in
19 the same financial situation as home builders or
20 developers.

21 In this state, as large as and diverse as
22 California, this measure could affect residence enabling
23 due to varying home heating and cooling needs, the
24 condition of the existing homes, the electric rates, which
25 differ significantly across the state. Implementing a

1 statewide requirement prematurely could lead to undue costs
2 for some consumers and an increase in unpermitted
3 installations, which California aims to avoid.

4 This approach will allow the California Energy
5 Commission to establish heat pump partnerships with
6 manufacturers and rollout incentive programs that
7 prioritize benefiting low-income communities.

8 Furthermore, this proposal aligns with the
9 anticipated influx of public subsidies aimed at supporting
10 heat pump installations. It also provides installers with
11 the necessary time to become familiar with the heat pump
12 technology.

13 This measure will provide progressive local
14 governments with ready-to-adopt standards, encouraging the
15 market to transition from standard air conditioners to heat
16 pumps where it makes sense based on local conditions. This
17 measure is a critical step for decarbonization of existing
18 buildings.

19 So overall the benefits allow for a transition to
20 heat pumps that helps achieve California's energy and
21 greenhouse gas objectives by increasing energy efficiency
22 of space conditioning systems in existing buildings and
23 enhancing building decarbonization efforts.

24 So combined with the strong statewide heat pump
25 standards in the 2025 Energy Code, the measure aims to

1 accelerate the heat pump market and support the goal of
2 deploying 6 million heat pumps by 2030, while continuing
3 the tradition of reducing wasteful, uneconomic,
4 inefficient, or unnecessary consumption of energy.

5 And are there comments and questions or -- so
6 I'll hand it back to Payam.

7 MR. BOZORGCHAMI: Sorry. Thank you, Bach.

8 Now we're going to open up for comments and,
9 folks, it's your turn. So if you have any comments,
10 questions or clarifications that you need, please, this is
11 the time.

12 Give me one second and I'm putting this slide
13 back this slide back on just to remind everybody how to --
14 if you're in person, come up to the podium, and if you're
15 on call, please raise your hand and we will unmute you.

16 Unfortunately Commissioner McAllister still
17 running a little late. He has another, like I said
18 earlier, he has a conflicting meeting. As soon as he's
19 done there he's going to be -- actually, he's going to be
20 sprinting over in about, hopefully, ten minutes. So we
21 will get a chance to hear from him but it's just, it is
22 what it is and we'll deal with it.

23 We do have two of his Commissioners -- excuse me,
24 two of his advisors here and we do have legal present, so I
25 think we're good to move forward.

1 With that, I see Meg, you have your hand raised,
2 Please state your name and affiliation and, for the record,
3 spell your last name. Thank you.

4 MS. WALTNER: Can you hear me?

5 MR. BOZORGCHAMI: Yes, perfect.

6 MS. WALTNER: Great. Hi. Meg Waltner,
7 W-A-L-T-N-E-R, from Energy 350, speaking on behalf of the
8 Natural Resources Defense Council.

9 Yeah, I just want to voice my overall support for
10 the measures proposed today. As I know you all are aware,
11 we would have preferred to see both the pools and AC to
12 heat pump alterations measures in Part 6, but if they're
13 not going to be in Part 6, we're strongly supportive of
14 them being here in Part 11. And the AC to heat pump
15 measure in particular really leverages a key opportunity to
16 install heat pumps in the state when it makes the most
17 sense when you're already changing out that AC rather than
18 locking in an AC again for another 15 years and locking out
19 that heat pump technology.

20 And similarly, the pool alteration measures
21 results in significant emissions reduction, so happy to see
22 that in Part 11 if it wasn't going to be in Part 6.

23 I did just want to make a comment on the
24 incremental first costs that are in the report. Those are,
25 I think, based on the survey of a few contractors that you

1 all did last August or so, or last fall. And since then,
2 the TECH program with Opinion Dynamics did a much broader
3 contractor survey around costs and found lower incremental
4 first costs than what you all found in that initial survey.

5 And so I just recommend updating that report with
6 those Opinion Dynamics numbers. They just will enhance the
7 case for cost effectiveness and show a lower incremental
8 first cost, so I would recommend updating that for the
9 final report.

10 But, yeah, overall supportive and, you know,
11 thanks for all your hard work on all of this. Thanks.

12 MR. BOZORGCHAMI: Thank you, Meg. I'm not going
13 to take credit for the work that Bach and the team did, but
14 thank you for your comment.

15 I thought I saw one other raised hand but I think
16 I missed it.

17 If not I'm going to open up to people in the in
18 the room.

19 MS. CUNNINGHAM: Hi. Good morning. Kelly
20 Cunningham, Pacific Gas & Electric. Do I need to spell my
21 last name today?

22 MR. BOZORGCHAMI: No, we know you, Kelly.

23 MS. CUNNINGHAM: Thank you. Okay. So, just a
24 few comments.

25 First of all, thank you. I think this provides

1 some exciting voluntary options for our jurisdictions. I
2 am a program manager for the PG&E Local Energy Codes
3 Program, also known as Reach Codes, and encourage the
4 Commission to maybe extend additional support this cycle to
5 local jurisdictions wanting to really hear the cost
6 effectiveness and the options that are behind these
7 voluntary suggestions, and also how they could perhaps
8 customize them as they go through their ordinance process.

9 So although you've offered support in the past,
10 maybe expanded support, really an invitation to talk
11 through things for that climate zone and for that city.
12 Our program is also here to support with additional
13 resources for that city, but hearing it from the Commission
14 directly has a tremendous value, so encourage that.

15 So taking off that hat and putting on my PG&E
16 hat, we did make a comment back when this was in the
17 express terms last fall from Pacific Gas & Electric and not
18 through the Local Energy Codes Program, just noting that
19 new furnace allowed for backup does lock in that gas
20 technology for a long time.

21 So although we recognize that dual fuel systems
22 are a viable alternative in the meantime while the
23 decarbonization movement is taking place, allowing for that
24 new furnace, it does have a long lifetime, so referring
25 back to our letter from the fall. However, cities can

1 adjust these. They can take them wholesale or they could
2 adjust them. So in a way, having it in Part 11 allows for
3 more flexibility.

4 So thank you very much. And from the Codes and
5 Standards Enhancement Team, we will be filing our comments
6 via the docket in the next few weeks. Thank you so much.

7 MR. BOZORGCHAMI: Thank you, Kelly.

8 Mikey, do you want to comment on that?

9 MR. SHEWMAKER: Yeah, I'd like to respond.

10 Thank you, Kelly. This is Michael Shewmaker with
11 the California Energy Commission.

12 So in response to assistance for local
13 jurisdictions who are planning or intend to potentially
14 take up the single-family heat pump replacement item, we do
15 very much intend to provide what support we can to those
16 local jurisdictions. So already once, we have presented
17 this material to the IOU REACH Code Team monthly meeting.
18 And moving forward, we do plan to work closely with that
19 group to provide what information we can to local
20 jurisdictions to make it as easy as possible for them to
21 adopt.

22 MS. CUNNINGHAM: May I ask a follow-up?

23 MR. SHEWMAKER: Please.

24 MS. CUNNINGHAM: Does that include individual
25 jurisdictions? Could they reach to the Commission

1 directly, or would you -- or is it more in the public
2 format, maybe in multiple jurisdiction meetings?

3 MR. SHEWMAKER: If they would like to reach out
4 to us directly, they are more than welcome to. So in
5 addition to that outreach, we have made available the
6 Single-Family Heat Pump Replacements, not case report, but
7 Technical Report, so that is available. We are trying to
8 come up with what additional information we could put
9 together that would be helpful to the local jurisdictions.

10 So, yeah, any format, we're happy to participate.

11 MS. CUNNINGHAM: Thank you.

12 MR. BOZORGCHAMI: We have Bill Pennington. He
13 has his raised hand. He's our advisor to Commissioner.

14 Bill, did you want to --

15 MR. PENNINGTON: Yes. Can you hear me?

16 MR. BOZORGCHAMI: Perfect, thank you.

17 MR. PENNINGTON: Okay. Thank you. Bill
18 Pennington. I'm an advisor on building standards to the
19 Commissioner.

20 And just wanted to amplify Mikey's response to
21 Kelly. The Commissioner is extremely excited in engaging
22 with all parties who might be appropriate to try to pursue
23 local adoption of this measure. And the Commissioner is
24 interested in having the staff support all efforts to do
25 that, whether that be from the environmental advocates, the

1 building decarbonization advocates, the REACH Code Team,
2 the Air Quality Management Districts, the regional energy
3 networks. And, you know, not that the Energy Commission
4 necessarily needs to be point on doing all of this, but the
5 Commission is very interested in seeing it.

6 MR. BOZORGCHAMI: Thank you, Bill, for the
7 information.

8 I do have to say that Commissioner McAllister
9 just walked in.

10 Commissioner, if you don't mind, I'm going to
11 open it up for Bob Raymer to -- he's had his hand raised
12 for a while.

13 COMMISSIONER MCALLISTER: Yeah.

14 MR. BOZORGCHAMI: And then we'll have you.
15 Apologize.

16 Go ahead, Bob. State your name and affiliation
17 and spell your last name, sir.

18 MR. RAYMER: Thank you. This is Bob Raymer.
19 Last name is R-A-Y-M-E-R. I'm representing today the
20 California Building Industry Association and the California
21 Apartment Association.

22 And first, I'd like to start off with a question
23 for Mikey. Are we talking about just single-family homes
24 here or, given the way it's presented, it looks like it
25 would also apply to low rise multifamily. Am I reading

1 that correctly?

2 MR. SHEWMAKER: So, Bob, I assume you're talking
3 about the LSC compliance margins proposal?

4 MR. RAYMER: Well, the HVAC.

5 MR. SHEWMAKER: -- or the single --

6 MR. RAYMER: The HVAC.

7 MR. SHEWMAKER: So that measure in particular is
8 specific to single-family only; is that correct, Bach?

9 MR. TSAN: Yes, that is.

10 MR. RAYMER: Okay. That really takes care of a
11 lot of my concerns.

12 Yeah, we are definitely supporting the exceptions
13 that you've included for electrical capacity shortfalls.
14 Depending on what part of the state you're in and the
15 urbanized area, if it's infill or whatever, that's a real
16 concern these days. Hopefully that'll get corrected.

17 I would indicate that you might want to consider,
18 and we'll work with the staff before we get our comments in
19 by the July 1st deadline, but you may want to consider the
20 addition of a third exception dealing with space
21 constraints. If you go back three to four years when the
22 Commission was first considering this, we did recognize
23 that there were a number of sort of physical constraints
24 that have to be met with electric heat pump technology that
25 may not necessarily be the same for the gas, and we'll deal

1 with that.

2 Lastly, you know, I've looked at your either/or,
3 the A or the B, and you're characterizing it as a
4 prescriptive mandate. It seems a little bit more like more
5 of a performance where you either do the heat pump, or if
6 you don't do the heat pump, you do these other things with
7 a gas system. You know, once again, I'll be contacting CEC
8 staff offline to make sure we're reading this correctly.

9 But the big thing today is I wanted to confirm
10 that the HVAC change-out that you're discussing here did
11 not apply to multifamily. And Mikey just confirmed that.
12 So thank you very much.

13 MR. BOZORGCHAMI: Thank you, Bob. Bob, I'm going
14 to recommend, if you could submit that in writing to us,
15 and sooner than later, so we could actually get the
16 dialogue going with Bach and Mikey and other staff members
17 to resolve some of that concerns and evaluate this third
18 exception that you brought up to us.

19 MR. RAYMER: Yeah, I'll get it to you early next
20 week.

21 MR. BOZORGCHAMI: Thank you. Great.

22 With that, I have, Ted. Go ahead and state your
23 name, affiliation, and spell your last name, please, for
24 the record.

25 MR. TIFFANY: Yeah. Hi. Ted Tiffany, Building

1 Decarbonization Coalition. Tiffany is T-I-F-F-A-N-Y.

2 Bob, you bring up a good point, but I just want
3 to make sure that we're clear on the space constraint
4 issue. This is for AC replacements. And this is a
5 question to staff, I guess, to clarify with Bob, the space
6 constraint issue being space within the internal space?
7 Because if this is an AC replacement, the space for the air
8 conditioning on the external space is already existing.
9 And most of those concerns with were property line issues,
10 HOA issues with the external condenser that would already
11 be there in this constraint.

12 So we didn't see many internal constraints with
13 the AC replacement at all, even in keeping the remaining
14 furnace. So just make sure staff understands what the
15 space constraint is there.

16 So thank you for the comment, Bob, and I
17 appreciate your support on this.

18 MR. BOZORGCHAMI: Thank you, Ted. Yeah. Yeah,
19 we'll look into that and we'll have a dialogue with Bob as
20 soon as we get that comment in writing to us.

21 I don't see any Q&A. Let me check the chat, too.
22 I don't see any comments in the chat or in the Q&A. And I
23 don't see any more raised hands.

24 So with that, since Commissioner McAllister is
25 with us now, Commissioner, would you like to say a few

1 words?

2 COMMISSIONER MCALLISTER: Great. Well, thanks,
3 Payam, really appreciate it, and the team and everyone
4 who's both here in the room and online, and for the
5 comments. I just walked in about five or ten minutes ago
6 and heard some of the comments.

7 But I did want to just maybe drill in a little
8 bit or just expand upon what Bill Pennington talked about
9 with respect to the AC heat pump measure. As he said, I am
10 super excited to push this forward. You know, this measure
11 is key. It's critical for our decarbonization success.
12 And existing buildings are, you know, arguably the toughest
13 nut to crack in this transition. And we need to take
14 advantage of every opportunity to, you know, get as many
15 heat pumps installed and as we possibly can, get that
16 marketplace really truly transformed and up to scale.

17 And so I think the diversity of the state is such
18 that there will be, you know, hopefully many locales,
19 localities that will be ready to adopt this locally. And,
20 you know, in the past, the Energy Commission has been a
21 little bit arm's length with respect to local ordinances.
22 To the extent that local governments are adopting energy-
23 related ordinances that revolve around Title 24, they bring
24 them to us for kind of a confirmation that they've followed
25 the right process, essentially. And so we've sort of

1 waited until that point to receive those applications and
2 kind of make sure that we sort of go through our legal
3 responsibilities to vet and make sure that the localities,
4 the local jurisdictions have done it kind of correctly
5 within the letter of the law.

6 In this case, you know, I think we need to take a
7 more collaborative posture. And obviously, you know, we
8 don't want to be in the business of giving sort of firm
9 legal advice to local jurisdictions or playing sort of, you
10 know, a role of sort of directing in any way. But I think
11 this measure, there will be, you know, a number of
12 localities for which this measure really does comport well
13 with their near-term climate planning goals. And we want
14 to be as supportive as we possibly can.

15 And, you know, we've heard the local governments,
16 cities and counties, tell us that it's a lot of work for
17 them. It's a big lift for them to do these local
18 ordinances. And so we want to try to work with
19 stakeholders, whether that's the building decarbonization
20 community, the environmental community, the justice
21 communities across the state to try to sort of streamline a
22 process and figure out what the local governments need and
23 try to get them what they need to be -- to move forward
24 seamlessly and as sort of low touch as possible.

25 So, you know, super excited about that

1 collaborative approach and, you know, looking forward to
2 the dialogue to figure out exactly what it is we can do to
3 help. And we do have some staffing resources that we can
4 dedicate to this to sort of help determine that path
5 forward.

6 So, you know, again, there's -- you know, this is
7 not an easy measure necessarily. You know, you saw the
8 sort of incremental costs, and I understand there will be
9 some dialogue about that going forward. But it's not cost
10 free, but it is the sort of lowest touch of all the options
11 to get heat pumps in place in as many homes as possible.
12 across the state. So we really want to work to make that
13 happen and looking forward to a positive collaboration with
14 stakeholders.

15 And just more broadly, I just want to thank staff
16 for putting this together. You know, CALGreen is a key
17 part of how we do the Building Code. And Part 6 is further
18 down the road. And, you know, everybody should be looking
19 out for the 15-day language here in the coming days. The
20 team's been working hard on that.

21 CALGreen is, the energy piece of CALGreen that
22 we're talking about here today, is a really key complement
23 to the Part 6 piece of Title 24. And it really does create
24 the kind of flexibility and innovation drive that we need
25 to get measures that are more innovative deployed across

1 the state so that we can, you know, create sort of a
2 positive feedback loop and get the ones that really work
3 and really are proven into Part 6.

4 So I really appreciate everyone's engagement on
5 this. And we really want to open up pathways to push the
6 envelope and to innovate. And I know the stakeholders
7 involved in Title 24 really want to do that as well. So
8 appreciate everyone's attention.

9 MR. BOZORGCHAMI: Thank you, Commissioner. Thank
10 you so much.

11 I'm going to ask if there's any more raised hands
12 or anybody have any comments, questions, concerns?

13 If not, here's -- again, if you're not
14 comfortable talking or speaking today or commenting today,
15 please do so by July 1st, 5:00 p.m., that would be great.
16 The sooner the better. And there's some information here,
17 too, with websites and links.

18 And one thing we do recommend is if you could use
19 the docket and submit the comments yourself versus trying
20 to email it to our docket and have them docket it. And the
21 reason I say that is because I'd rather see who the comment
22 submitter is versus saying CEC staff. If, for example, if
23 I'm using Bob Raymer, if Bob Raymer submits it from CBI, I
24 know that docket came directly from Bob Raymer versus if
25 Bob sends that to our docket staff and our docketing team

1 submits it, it will say CEC staff and it doesn't really
2 help us too much.

3 So if you can docket the document yourself, it
4 would be much more helpful than sending -- emailing it to
5 us. But if you have no choice, you just don't have no
6 choice.

7 And again, the public advisor is also more than
8 happy to help you with that, and her contact information is
9 there. And the Public Advisor for the Energy Commission is
10 Mona Badie, and she's also very helpful.

11 More information.

12 And with that, we're going to take a quick 15-
13 minute break, and how about just coming back at 10:15, if
14 that works for everyone? So we'll take a ten-minute break
15 now, thank you.

16 (Off the record at 9:57 a.m.)

17 (On the record at 10:16 a.m.)

18 MR. BOZORGCHAMI: All right, folks, welcome back
19 again. We have one more section left, and Michael
20 Shewmaker is going to be presenting on that. That's the
21 nonresidential voluntary measures.

22 Mikey. Sorry. Michael?

23 MR. SHEWMAKER: Thank you, Payam. Okay, hello
24 again. My name is Michael Shewmaker, supervisor of the
25 Building Standards Development Unit.

1 And now switching gears to our nonresidential
2 voluntary measure proposals, most of the proposals here
3 mirror their residential counterparts. So I apologize in
4 advance for the repetition but, fortunately, this section
5 is short. So here you have an overview of all of what
6 we're proposing for the nonresidential section. So, again,
7 I'll pause here for a moment, and then I'll dive into each
8 one of these items individually.

9 Okay, so starting with outdoor lighting, these
10 proposed changes would modify the existing language to
11 mirror the standards being proposed for residential
12 buildings. And so, again, that means outdoor luminaires
13 designed for putting light on freestanding surfaces would
14 be required to direct the light onto the intended surface
15 and be installed above the surface facing downward and
16 require shielding. And pole-mounted or arm-mounted
17 luminaires shall not allow tilting greater than ten
18 degrees. And then there would be an exception for
19 luminaires that are already exempted from the Energy Code.

20 Next, we have the alterations to pool or spa
21 heating proposal, which again mirrors what was previously
22 discussed for residential multifamily buildings. This
23 measure would apply to nonresidential pool or spa heating
24 system alterations and allows for the same compliance
25 pathways mentioned earlier.

1 A solar thermal pool heating system with a
2 collector surface area equal to 65 percent of the pool
3 surface area, or a heat pump pool heater meeting the sizing
4 requirements in the new reference appendices section, JA-
5 15, as well as minimum efficiency requirements, or onsite
6 renewable energy or on-site recovered energy providing at
7 least 60 percent of the annual heating energy.

8 And then, again, for the 15-day express terms, we
9 are planning to add options for a combination of solar pool
10 heating and heat pump pool heater without an additional
11 supplementary heater or an equivalent system as determined
12 by the CEC's executive director.

13 And then just like in the residential section,
14 there will be exceptions for portable electric spas
15 compliant with the appliance efficiency regulations and a
16 pool or spa that is heated solely by a solar pool heating
17 system. And then for the 15-day express terms, we are
18 again considering an exception for projects with inadequate
19 solar access roof area.

20 And then finally, these last two items I'll cover
21 are a couple of minor changes that we are planning to make.

22 In section A5.211, we are proposing to strike the
23 entire section as this language has been superseded by the
24 prescriptive PV requirements within the Energy Code. And we
25 plan to mark it as reserved to avoid having to renumber the

1 subsequent sections.

2 In section A5.213, we are proposing to strike
3 steel from the section name to remove the limitation and
4 facilitate any potential expansion of this section to other
5 framing systems in the future.

6 And that concludes my presentation.

7 So now I'd like to open things up again for
8 comments and questions.

9 MR. BOZORGCHAMI: Thank you, Mikey. Mikey, can
10 you go to the next slide?

11 With that, I have one raised hand. Leora
12 Radetsky, if you could unmute yourself, and state your name
13 and affiliation and, please, spell your last name for the
14 record.

15 MS. RADETSKY: Sure. Thank you. Can you hear
16 me?

17 MR. BOZORGCHAMI: Perfect, thank you.

18 MS. RADETSKY: Great, my name is Leora Radetsky,
19 it's R-A-D-E-T-S-K-Y. I am Senior Lighting Scientist with
20 the Design Lights Consortium, or the DLC.

21 We would like to recognize CEC in California for
22 your leadership in energy and environmental protection. We
23 support your approach in the new CALGreen 2025 proposal to
24 limit sky glow and light trespass by applying a maximum of
25 ten degree tilt, as well as requiring shielding language in

1 your Code language.

2 We'll be submitting written comments, as well,
3 but I did want to make the comment that we have a program
4 that also optimizes energy efficiency and environmental
5 goals called LUNA. And our LUNA requirements will provide
6 a way for end-users to meet CALGreen's requirements in a
7 simple prescriptive manner for compliance with these new
8 proposals.

9 So thank you very much.

10 MR. BOZORGCHAMI: Thank you. Before you get off
11 the call, have you reached out to Simon Lee, our lead
12 electrical engineer, who's been really working on the
13 lighting?

14 MS. RADETSKY: Yes.

15 MR. BOZORGCHAMI: Okay. Good. As long as he's
16 aware of the program, we will take a look at it and
17 evaluate it. Thank you so much.

18 MS. RADETSKY: Yes. Yes, absolutely. Thank you.

19 MR. BOZORGCHAMI: I don't see any more raised
20 hands, and I don't see any questions in the Q&A.

21 Oh, we do have one person here in the Commission.
22 Apologize. Go ahead. State your name and affiliation.
23 Oh, hold on one second. You've got to press that button to
24 get the green light showing.

25 MS. WARSHAW: Hi. My name is Claire Warshaw. My

1 last name's spelled W-A-R-S-H-A-W. I don't have any
2 special affiliation. I'm just a member of the public. And
3 I wanted to say a couple things after listening.

4 I haven't followed these issues closely. So I'm
5 just kind of learning along with a couple of meetings,
6 because the last business meeting I attended, there was a
7 bunch of Sierra Club members during public comment that
8 came. I have participated a long time ago with the Sierra
9 Club, but not recently at all. I don't know why they
10 showed. I don't know why they're not here either.

11 But after listening to that, I kind of understand
12 their point of view a little bit. I kind of see where
13 they're coming from, and about pushing heat pumps and not
14 having more gas, but that not really a huge issue of mine.
15 I just kind of see it now more why they are concerned that
16 it isn't in the Energy Code and is here instead.

17 But that's my own perspective. I'm just sorry
18 they're not here, too, if they're listening, I hope they're
19 listening.

20 The other thing I wanted to say is to give hope
21 to more of these voluntary compliance measures, because I
22 live in an area that seems resistant to a lot of things
23 that are proposed. I'm near Rancho Cordova and in an
24 unincorporated part of Sacramento County. I would say, for
25 example, the pool standards, the spa and pool standards

1 pump things that you're suggesting I have not even seen or
2 heard of in terms of a solar thermal situation.

3 It would be really nice to see if there are
4 existing examples, see that in the information you provide
5 when you're sharing this today so that, you know, people
6 that just happen to, like me or Sierra Club, whoever they
7 are, happen to listen might think that it's possible
8 instead of having to, like, we have to insert ourselves
9 into a whole bunch of literature to find out what you're
10 talking about. So sharing some examples, current examples
11 that are existing might be nice.

12 Thanks. Thank you.

13 MR. BOZORGCHAMI: We did post the express terms
14 in our docket for public review. And what we do, we do
15 have an outreach program here at the Energy Commission
16 that, and then I know that there's the program called
17 Energy Code Ace that provides information, educational
18 information for the public. And we also have an Outreach
19 and Information Group ran by Chris Olvera, who does
20 training and provides educational information. All that
21 can be found on our website.

22 And the other one is energycodeace.org -- .com,
23 excuse me, energycodeace.com that has a slew of information
24 on not just pool heaters and solar but on everything energy
25 efficient related. So the information's out there, but

1 thank you.

2 I don't see any more raised hands or any comments
3 in the Q&A.

4 So I'm going to, Commissioner if it's okay, I'm
5 going to open it up for everyone for anything that you
6 heard today, not just on the nonresidential, but for both
7 res and nonres as related to CALGreen.

8 Bob, go ahead and state your name and affiliation
9 again for the record.

10 MR. RAYMER: Yeah, this is Bob Raymer, last name
11 is R-A-Y-M-E-R, representing California Building Industry
12 Association and the California Apartment Association.

13 And to the last speaker, you may be unfamiliar
14 with the Green Code Advisory Committee that the Building
15 Standards Commission has, but as we were going over the
16 Department of Housing and Building Standards Commission
17 changes to the Green Code earlier this year, the CEC
18 provided sort of an update. And the Sierra Club was
19 heavily represented during that hearing, and they seemed to
20 be quite aware of where the CEC was headed, and nobody
21 seemed to be having objections.

22 So for that, the CEC's done a pretty good
23 outreach program. Thank you.

24 MR. BOZORGCHAMI: Thank you, Bob. And I did
25 forget about the Green Code Advisory. I apologize. Yes.

1 That is another organization that people can participate,
2 partake with.

3 So again, please submit your comments to our
4 docket by or before -- hopefully sooner than later -- but
5 at least by July 1st, that's Monday, by 5:00 p.m. And
6 that, again, this information -- Mikey, next slide, please
7 -- this information will be available, our transcript --
8 and the presentation from today will be available on our
9 docket hopefully by tomorrow, if not sooner. And the
10 transcripts, as soon as we get a copy of it, we will post
11 those on our docket, too.

12 I think with that, this concludes our hearing for
13 today.

14 Commissioner, do you have any --

15 COMMISSIONER MCALLISTER: I just really want to
16 thank all the commenters, really appreciate the folks who
17 are paying attention to this.

18 And, also, really deep thanks to staff for what
19 is deceptively a huge amount of work to put together all
20 the parts of Title 24 that the Energy Commission takes the
21 lead on including CALGreen, which is so critical to our
22 decarbonized buildings future. So I really appreciate all
23 the effort and is a big, a nice step forward.

24 So looking forward to folks written comments on
25 the record. Thanks a lot.

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MR. BOZORGCHAMI: Thank you. With that, this concludes today's hearing. Thank you everyone.

(Off the record at 10:30 a.m.)

CERTIFICATE OF REPORTER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 10th day of July, 2024.



MARTHA L. NELSON, CERT**367

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I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.



MARTHA L. NELSON, CERT**367

July 10, 2024