

**DOCKETED**

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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of: )  
 ) 21-BUSMTG-01  
*Business Meeting* )  
 \_\_\_\_\_ )

REMOTE ACCESS ONLY

*As of June 9, 2021, public comment will be accepted solely through the Zoom platform.*

*The California Energy Commission's (CEC) August 11, 2021 Business Meeting will be held remotely, consistent with Executive Order N-08-21 to continue to help California respond to, recover from, and mitigate the impacts of the COVID-19 pandemic. The public may participate consistent with the direction in the Executive Order.*

*Pursuant to California Code of Regulations Title 20 section 1104(e), any person may make oral comment on any agenda item. To ensure the orderly conduct of business, such comments will be limited to three minutes or less per person. Any person wishing to comment on information items or reports (non-voting items) shall speak during the general public comment portion of the meeting and have three minutes or less to address all remaining comments.*

WEDNESDAY, AUGUST 11, 2021

10:00 A.M.

Reported by:  
Peter Petty

APPEARANCES

Commissioners (Via Remote)

David Hochschild, Chair  
Karen Douglas  
Andrew McAllister  
Patricia Monahan  
Siva Gunda

Staff Present: (Via Remote)

Drew Bohan, Executive Director  
Linda Barrera, Chief Counsel  
Noemi Gallardo, Public Advisor  
Geoff Lesh, Engineering Office Manager  
Brett Fooks, Senior Mechanical Engineer  
Tim Smith, Mechanical Engineer  
Kerry Willis, Assistant Chief Counsel

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a. Pursuant to Government Code Section 11126(e), the CEC may adjourn to closed session with its legal counsel to discuss any of the following matters to which the CEC is a party:	
i. <i>In the Matter of U.S. Department of Energy (High Level Waste Repository) (Atomic Safety Licensing Board, CAB-04, 63-001-HLW); State of California v. United States Department of Energy (9th Cir. Docket No. 09-71014)</i>	
ii. <i>State Energy Resources Conservation and Development Commission v. HyGen Industries, Inc. (Sacramento County Superior Court, Case No. 34-2019-00252543-CU-BC-GDS)</i>	

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iv. <i>Southern California Gas Company v. California State Energy Resources Conservation and Development Commission (Sacramento County Superior Court Case No. 34-2021-80003576-CU-WM-GDS).</i>	
v. <i>Certification of Final Environmental Impact Report and Adoption of the 2022 California Energy Code (Docket # 21-BSTD-02 and Docket #21-BSTD-01)</i>	
iii. <i>State Energy Resources Conservation and Development Commission v. Electricore, Inc. and ZeroTruck (Sacramento County Superior Court, Case No. 34-2016-00204586-CU-BC-GDS)</i>	
b. Pursuant to Government Code, section 11126, subdivisions (a) and (e), the CEC may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and circumstances exist that warrant the initiation of litigation, or constitute a significant exposure to litigation against the CEC, which might include personnel matters.	
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1 P R O C E E D I N G S

2 AUGUST 11, 2021

10:02 a.m.

3 MS. MURIMI: The California Energy Commission's  
4 Business Meeting will begin shortly. Thank you for your  
5 patience.

6 (Start of Introductory Video.)

7 Today's Business Meeting is being held remotely.  
8 Please note the public comment will now be conducted via  
9 Zoom. When the public comment period is announced press  
10 the raise-hand feature to indicate you would like to make a  
11 comment.

12 If you are participating by phone to indicate  
13 you'd like to make a comment please raise your hand by  
14 pressing \*9 and then press \*6 to unmute. Again, that is \*9  
15 to raise your hand and \*6 to unmute.

16 For public comment, please note that comments are  
17 limited to three minutes or less per person and one  
18 representative for organization. Depending on the number  
19 of commenters we may adjust the time for public comment to  
20 be fair to everyone who'd like to speak.

21 After you raise your hand the Public Advisor will  
22 announce you using the listed Zoom name or with the last  
23 three digits of the phone number used to call into the  
24 meeting. The Public Advisor will then open your line.  
25 Before making your comment state and spell your name and

10

1 indicate your affiliation, if any.

2           Finally, to help ensure you're heard clearly  
3 speak closely and clearly into the device, do not use the  
4 speakerphone feature.

5           Welcome to the California Energy Commission  
6 Business Meeting. The meeting will now begin.

7           (End of Introductory Video.)

8           CHAIR HOCHSCHILD: Well good morning, friends,  
9 and welcome to the California Energy Commission's August  
10 Business Meeting. Let's begin, if we could, with the  
11 Pledge of Allegiance led by Commissioner Gunda.

12           (Whereupon the Pledge of Allegiance was recited.)

13           CHAIR HOCHSCHILD: Thank you so much.

14           So once again, our Flex Alert notification urging  
15 everyone to sign up at flexalert.org and stay informed. As  
16 I have mentioned, I think, at an earlier meeting we have  
17 averaged about two Flex Alerts a year for the last decade,  
18 this year we've had six already given the climate  
19 conditions we're in. And we need everybody to be part of  
20 the solution, so please take action and sign up to  
21 participate to reduce energy demand during these critical  
22 peak periods.

23           Now for the instructions, today's Business  
24 Meeting is being held remotely consistent with Executive  
25 Order N-08-21 to continue to help California respond to,

1 recover from, and mitigate the impact of the COVID-19  
2 pandemic. The public can participate in this Business  
3 Meeting consistent with the direction in this executive  
4 order.

5 Zoom is the platform we are using to conduct  
6 Business Meetings. Instructions for remote participation  
7 can be found in the notice for this meeting and is set  
8 forth on the agenda posted on the Commission's website.

9 If Zoom were to shut down we will switch to the  
10 Verizon phone line at 888-823-5065, the pass code is  
11 "Business Meeting." Public comment would then be accepted  
12 through Verizon.

13 And pursuant to California Code of Regulations  
14 Title 20, section 1104(e) any person may make oral comment  
15 on any agenda item. To ensure the orderly conduct of  
16 business public comment will be limited to three minutes or  
17 less per person for each agenda item voted on today.

18 Any person wishing to comment on information  
19 items or reports, which are non-voting items, shall reserve  
20 their comments for the general public comment portion of  
21 the meeting agenda and shall have the total of three  
22 minutes or less to state all remaining comments.

23 We are now solely using Zoom for public comment.  
24 Once the public comment period begins if you would like to  
25 speak please raise your hand by clicking on the hand icon

1 at the bottom of your screen.

2 If you're joining by phone press \*9 to raise your  
3 hand and \*6 to unmute.

4 After the Public Advisor calls on you to speak  
5 spell your name and state your affiliation, if any.

6 Before turning to the agenda items I am excited  
7 to announce that during today's Business Meeting the  
8 Commission is seeking to approve over \$15 million in  
9 grants. That is contributing to our state's economic  
10 recovery.

11 And then one final note I would make is obviously  
12 we are seeing a surge again in the form of this Delta  
13 variant. And a number of counties including Sacramento  
14 County have implemented an indoor mask requirement. I just  
15 wanted to urge everyone to please use caution. I  
16 personally know three people in my life who were vaccinated  
17 and have gotten COVID. But the Delta variant in the last  
18 few weeks, this is according to the CDC, is significantly  
19 more contagious than the common cold. Obviously the  
20 impacts and the symptoms are significantly less if you're  
21 vaccinated, but nonetheless we all need to exercise caution  
22 until this is under control. So thank you for all being a  
23 part of the solution there.

24 Let's turn now to Item 1 the Consent Calendar.  
25 Madam Public Advisor do we have public comment on Item 1?

13

1 MS. GALLARDO: This is Noemi Gallardo, the Public  
2 Advisor. I do see hands raised. So this period is for  
3 public comment on Item Number 1 of the Consent Calendar  
4 only. So if you are wanting to make a comment for Item  
5 Number 1 please keep your hand up. If your comment is for  
6 a different item, please lower your hand.

7 So I still see a couple of hands raised, so I'm  
8 going to call on the first one, which is from a phone line  
9 ending in 813. I will open your line. You have three  
10 minutes. You may begin. And a reminder, please indicate  
11 your name and affiliation if any. Yes, the person whose  
12 phone number ends in 813 your line is open. Do you have a  
13 comment on Item Number 1, the Consent Calendar?

14 (No audible response.)

15 MS. GALLARDO: All right, we're not hearing from  
16 that person, so I am going to close that line. And then I  
17 see another hand raised. This is Leah -- it looks like  
18 Leah Pressman. (phonetic) Leah, I'm going to open your  
19 line, please restate and spell your name and indicate your  
20 affiliation, if any. Your line is open, Leah, you may  
21 begin your comment on Item Number 1, the Consent Calendar.

22 MS. PRESSMAN: I'm sorry. I wanted to comment on  
23 Item 4.

24 MS. GALLARDO: Okay we will close your line.  
25 Thank you, Leah, for clarifying.

1 All right Chair, I do not see any other hands.

2 CHAIR HOCHSCHILD: Okay, thank you. Unless there  
3 is Commissioner discussion, Commissioner McAllister, would  
4 you be willing to move Item 1?

5 COMMISSIONER MCALLISTER: Indeed. I'll move the  
6 Consent Calendar.

7 CHAIR HOCHSCHILD: And Commissioner Monahan would  
8 you be willing to second?

9 COMMISSIONER MONAHAN: I second that item.

10 CHAIR HOCHSCHILD: All in favor say aye.

11 Commissioner McAllister?

12 COMMISSIONER MCALLISTER: Aye.

13 CHAIR HOCHSCHILD: Commissioner Monahan?

14 COMMISSIONER MONAHAN: Aye.

15 CHAIR HOCHSCHILD: Commissioner Gunda?

16 COMMISSIONER GUNDA: Aye.

17 CHAIR HOCHSCHILD: And Commissioner Douglas?

18 COMMISSIONER DOUGLAS: Aye.

19 CHAIR HOCHSCHILD: And I vote aye as well. Item  
20 1 passes unanimously.

21 Let's turn now to Item 2, Update on Russell City  
22 Energy Center.

23 MS. HUBER: Good morning, Chair and  
24 Commissioners. My name is Elizabeth Huber and I manage the  
25 Office of Compliance Monitoring & Enforcement in the



1 Siting, Transmission, and Environmental Protection  
2 Division. With me this morning to present on this item is  
3 Kelly McAdoo, City Manager for the City of Hayward. We  
4 also have here from staff's Engineering Office Manager  
5 Geoff Lesh, Senior Mechanical Engineer Brett Fooks,  
6 Mechanical Engineer Tim Smith and our Division's Lead  
7 Counsel, Assistant Chief Counsel Kerry Willis.

8           We're here in response to your July 15th, 2021,  
9 Directive for CEC staff to provide updates on the upcoming  
10 investigation at the Russell City Energy Center and  
11 interagency communication and coordination to ensure the  
12 City of Hayward receives pertinent, real-time health and  
13 safety information.

14           Together City Manager McAdoo and I will present  
15 this non-voting informational item about the formation and  
16 activities of the Russell City Energy Center Joint Agency  
17 Working Group in preparation of the facility's restart in a  
18 temporary simple-cycle mode as a peaker supporting grid  
19 reliability only when called upon by the California  
20 Independent System Operator. Next slide, please.

21           To refresh your recollection, I'd like to provide  
22 background and context for today's update.

23           On May 27, 2021, Russell City Energy Center  
24 experienced a mechanical failure of the steam turbine  
25 generator that resulted in an explosion and fire. The

1 steam turbine generator was damaged beyond repair. As a  
2 result, Russell City Energy Center submitted a petition for  
3 Temporary Safety Modifications. That was approved by an  
4 order of the Commission at the July 15, 2021 Business  
5 Meeting.

6 In addition to approving the requested changes,  
7 the order required that within 30 days after approval of  
8 the Petition of the Temporary Safety Modifications the  
9 Project Owner shall meet with CEC staff and the Hayward  
10 City Fire Department to discuss any needed modifications to  
11 Russell City Energy Center's standard operating procedures,  
12 for first responders to implement when responding to  
13 incidents on the site.

14 The order also required the establishment of a  
15 process for reimbursement of reasonable expenses incurred  
16 by the City in responding to an incident at the facility.  
17 Next slide, please.

18 In response to the order, the very next day on  
19 July 16, 2021 Hayward City Manager McAdoo and I met and  
20 established the Joint Agency Working Group, a state and  
21 local cooperative with the common goal of building a  
22 communication framework between the City, the Project Owner  
23 Calpine and the relative state agencies. With public  
24 safety, the highest priority as the facility prepares to  
25 restart.

1           The Joint Agency Working Group membership  
2 consists of staff leadership and technical experts from the  
3 City of Hayward including representatives from their Legal  
4 and Public Works Departments, Hayward Fire Department,  
5 California Public Utilities Commission, Calpine, and the  
6 CEC.

7           On July 22nd, 2021 we launched our weekly Joint  
8 Agency Working Group meetings and have held three to date.  
9 These meetings are on Thursday afternoons and we continue  
10 to meet through the end of October. At that time, we will  
11 determine the frequency of the meetings moving forward.

12           On August 3rd, 2021 the respective inspection  
13 agencies and first responders met at Russell City Energy  
14 Center to review the standard operating procedures when  
15 responding to incidents on site and towards the completed  
16 construction site. Protocols were agreed upon including  
17 when and how Calpine will notify to city management and the  
18 Fire Chief when the facility is called upon to restart.

19           On August 5th, 2021 we held our third weekly  
20 meeting in person at the facility. During this meeting,  
21 the CPUC debriefed the group on their 2019 audit findings  
22 and observations. And then Calpine presented the  
23 corrective actions taken on each of the CPUC's 14 findings  
24 and 2 observations.

25           These meetings have provided an opportunity for

1 the CEC and CPUC to explain their processes, and for the  
2 CPUC to help city officials better understand their audit  
3 process, and how audit findings are shared and addressed.

4 The group concluded the meeting discussing  
5 opportunities for enhanced coordination efforts and  
6 community outreach.

7 Now I'd like to turn this part of the  
8 presentation over to Hayward City Manager McAdoo, who will  
9 brief you on the recent outcomes and future opportunities  
10 because of the July 15th approved order and subsequent  
11 Joint Agency Working Group meetings. Next slide, please.

12 MS. MCADOO: Thank you, Elizabeth.

13 And for the record, good morning. I'm Kelly  
14 McAdoo, City Manager for the City of Hayward. First I  
15 wanted to start by thanking the Energy Commission for their  
16 thoughtful review of this restart application and also for  
17 deeply considering the City's concerns during this process.  
18 I want to just do a particular acknowledgement of Elizabeth  
19 Huber for her leadership of these coordination efforts.

20 And I also want to express my appreciation to the  
21 other Energy Commission and CPUC staff, as well as to the  
22 Calpine staff who have been very willing to partner and  
23 cooperate with us as we have proceeded, following the July  
24 15th approval of the restart order. This has greatly  
25 increased our comfort level that we'll all move forward in

1 a transparent and collaborative manner.

2 I also want to acknowledge that Hayward Mayor  
3 Barbara Halliday and Hayward Fire Chief Garrett Contreras  
4 have also joined this meeting and are available for  
5 questions should the Commission have any.

6 As Elizabeth mentioned, we have had a number of  
7 meetings now, but three stand out for us as the most  
8 beneficial to date. The August 3rd onsite meeting and walk  
9 through with the owner Calpine, the Fire Department, CEC  
10 and CPUC staff. The August 4th meeting that the City held  
11 with key CPUC leaders, including President Marybel Batjer,  
12 Mayor Barbara Halliday, the CPUC Executive Director Rachel  
13 Peterson and other key staff. And then the August 5th  
14 Joint Working Group meeting onsite to review the 2019 audit  
15 finding, CPUC audit findings and responsive actions.

16 And the August 3rd onsite meeting I think really  
17 allowed the City and the Energy Commission and CPUC staff  
18 an understanding of the facility's annual operations and  
19 maintenance plan as well as their safe work permit  
20 protocols and control room. I think it also reassured our  
21 Fire Chief Contreras about Calpine's commitment to the  
22 partnership moving forward. And allowed for a good  
23 dialogue about safety protocols, response drills, and other  
24 key safety-related topics.

25 On August 4th, we did meet with the CPUC

1 President and some other key staff. That really allowed us  
2 to understand the CPUC audit process and to discuss  
3 opportunities for improvement and communications with local  
4 regulatory agencies during these processes, gave us an  
5 understanding of that process, and the inspections that  
6 really ensure maintenance of the energy facilities in the  
7 state. As well as an understanding of Section 15.4 of  
8 General Order 167, which allows a project owner the ability  
9 to make a claim of confidentiality covering any of the  
10 information in an audit report by submitting a  
11 confidentiality claim under that general order and that is  
12 submitted to the CPUC's Legal Department.

13           Lastly, the August 5th onsite meeting really  
14 allowed the CPUC inspection team to present on their 2019  
15 audit findings, as well as Calpine's corrective actions  
16 taken. They also included a clear action plan for response  
17 to the recommendation for regular drills with the Hayward  
18 Fire Department. The action plan currently will include  
19 the following, which includes:

20           Notifying the Fire Department in advance, at  
21 least two weeks' notice, of any planned emergency drills or  
22 tabletop exercises related to site emergencies that would  
23 be performed in compliance with its emergency action plan.

24           Coordinating with the Fire Department on at least  
25 two general emergency drills and one mock-rescue drill

1 annually.

2           Inviting the Fire Department to participate in  
3 any roundtable discussions that take place following the  
4 drills.

5           Providing notice to the Fire Department of any  
6 site management changes within RCEC and making appropriate  
7 introductions to the Fire Department.

8           And then also meeting annually with the Fire  
9 Department to review information for the Knox Box facility  
10 access and providing any necessary updates.

11           In addition, our Fire Department and Water  
12 Department staff have been interviewed by the CEC and CPUC  
13 investigators. And we look forward to learning more as the  
14 root cause analysis of the May 27th explosion is completed.

15           I want to express my appreciation for the  
16 diligence and thoroughness of these investigators. Next  
17 slide, please.

18           As we have held these meetings there's been a  
19 number of opportunities for further partnership and  
20 collaboration and we look forward to continuing these  
21 discussions. As Elizabeth mentioned in terms of local  
22 coordination efforts, when Calpine is called upon by CAISO,  
23 Calpine will notify the City Manager's Office and the Fire  
24 Chief that they will be ramping up to come online. And  
25 they've already followed through on that earlier this week.

22

1           And then we look forward to hosting the Energy  
2 Commission and CPUC Commissioners during upcoming tours of  
3 the site in August.

4           And then annually during the plant's maintenance  
5 season, we will work to coordinate community outreach and  
6 tours.

7           And as I mentioned during my comments on the  
8 previous slide, the Fire Department will be working closely  
9 with Calpine to coordinate several annual drills and  
10 increase safety measures.

11           We did also identify during our discussions with  
12 Calpine and the working group there's an opportunity for  
13 further community partnerships. There is a potential to  
14 acknowledge the history behind the name of Russell City.  
15 For those who aren't aware Russell City was a thriving  
16 African-American Community in Hayward that was forcibly  
17 displaced for redevelopment purposes, many of those  
18 families lost their properties. And while they do have a  
19 legacy of providing a thriving blues music scene, that has  
20 sometimes -- the blues scene has overshadowed some of the  
21 really tragic things that happened in the past with respect  
22 to that community. And so we acknowledge that Calpine  
23 named the plant in order to acknowledge the music scene.  
24 And we really want to meet with some of those descendants  
25 of those families to figure out if there's other ways that



1 we can partner and collaborate to acknowledge the history  
2 of Russell City and what that means to our community. And  
3 we will be working with Calpine staff to further discuss  
4 that.

5           And then lastly, just really contemplating some  
6 legislative and regulatory fixes to the confidentiality  
7 clause of the General Order that would really allow access  
8 to any state or local agency that may have regulatory  
9 jurisdiction over a plant subject to a CPUC audit, really  
10 creating more transparency for those regulatory agencies.

11           And then also we are interested in exploring  
12 whether the CPUC could perform an audit once the combined  
13 cycle restarts on a more frequent schedule than their  
14 current five-year inspection cycle. We'll obviously know  
15 more about the need for this once the root cause analysis  
16 is completed.

17           So with that I want to hand it back over to  
18 Elizabeth, and again thank the Commission for their really  
19 thoughtful consideration, and consideration of our  
20 community safety during this process. It's greatly  
21 appreciated. Next slide, please.

22           MS. HUBER: Thank you, Kelly.

23           As you are aware the CEC's Siting, Transmission  
24 and Environmental Protection Division staff is responsible,  
25 among other duties, to interpret and enforce the California

1 Building Standards Codes on all project change petitions to  
2 a power plant's design, operation, or performance  
3 requirements.

4           When we authorize a project owner to proceed at a  
5 facility that is regulated by the building code, CEC staff  
6 will typically initiate a contract with a qualified third-  
7 party firm to act on behalf of the CEC as our Delegate  
8 Chief Building Official, also known as the DCBO. In this  
9 capacity the DCBO assists CEC staff in ensuring that all  
10 appropriate laws, ordinances, regulations, and standards  
11 are being met. As would typically be done by a local  
12 jurisdiction's building department the DCBO will review and  
13 comment on the detailed design plans and then issue  
14 approvals to construct once all requirements have been met.  
15 As approved construction progresses, the DCBO performs  
16 periodic code-required inspections verifying that the  
17 construction is being done per the approved plans.

18           During the construction, CEC staff has access to  
19 all plans, reviews, construction inspections, special  
20 inspections, certificates of completion, and any other  
21 close-out paperwork as all project change documents are  
22 submitted via a secure online document management system.

23           Finally, once construction is complete and  
24 verified by inspections, the DCBO will issue a certificate  
25 of completion deeming the project change complete.

1           For this specific project change enabling the  
2 facility to run in simple-cycle mode, the DCBO assigned to  
3 Russell City Energy Center performs inspections specific to  
4 both Section V of the American Society of Mechanical  
5 Engineers, or ASME, codes and Chapter 17 of the California  
6 Building Codes.

7           With design plans approved, the blanking plate  
8 was installed to reseal the steam condenser after removal  
9 of the steam turbine generator from the steam loop. The  
10 blanking plate was designed as a pressure vessel to resist  
11 up to 15 pounds per square inch gauge, ambient air pressure  
12 conforming to the ASME Boiler and Pressure Vessel Code.

13           Next was the installation of the burst rupture  
14 discs, which were designed at a set pressure of only 10  
15 psig, so that the blanking plate will be able to withstand  
16 an increase in pressure beyond what the rupture discs would  
17 be activated at, and venting will occur. These discs were  
18 designed in accordance with ASME Boiler & Pressure Vessel  
19 Code Section VIII, Division 1. When installation was  
20 completed another third-party special inspections team  
21 certified all welds and associated vent piping systems.

22           Finally, on August 4th, 2021 the DCBO verified  
23 the completed work complied with all building codes and  
24 issued the Certificate of Completion, allowing the facility  
25 to operate. CEC's inspections team also did a final tour

1 of the site on August 5th, 2021.

2 Then on August 10, 2021 Russell City Energy  
3 Center notified CAISO that they would be ready for restart  
4 as a 350-megawatt peaker in simple-cycle mode when called  
5 upon during peak demand, or as a black start. They also  
6 communicated their CAISO correspondence as Kelly already  
7 indicated with the city and with the CEC.

8 This concludes our presentation. The team is  
9 available to answer any questions. Thank you.

10 CHAIR HOCHSCHILD: Thank you so much, Elizabeth.

11 And City Manager McAdoo, let me thank you for  
12 your professionalism and dedication. I was very impressed  
13 when we met at the last meeting to discuss this unfortunate  
14 issue at length together with the Mayor and Chief  
15 Contreras.

16 And I also appreciate your reckoning with the  
17 history of displacement, something that we are -- needs to  
18 happen across the state. So thank you for all that.

19 I will just say again, what happened -- and I  
20 expressed this directly to Calpine in our last discussion -  
21 - what happened in your community is unacceptable. And we  
22 are just fortunate that nobody was killed or injured, which  
23 very, very likely could have been the case. And we have to  
24 do better collectively and especially on preventive  
25 maintenance -- unacceptable -- so thank you for all the

1 engagement.

2 We're not going to take public comment on this  
3 item until the end of the meeting, because this is a non-  
4 voting item, but we do have Mayor Halliday and Chief  
5 Contreras with us. And before we turn to Commissioner  
6 discussion I just wanted to open the line for them to see  
7 if they had anything to add to City Manager McAdoo's  
8 comments.

9 MR. CONTRERAS: I don't have anything to add  
10 other than appreciation for the professionalism and  
11 collegial approach to this effort and I'm very comfortable  
12 and confident in the direction that we're headed. And as  
13 usual my boss summed it up rather well, so that's all I  
14 have to add, but I'm available for any questions.

15 CHAIR HOCHSCHILD: Thank you, Chief.

16 Mayor Halliday?

17 MAYOR HALLIDAY: Yes, I also just want to add my  
18 gratitude to the Commission. To all of you for crafting an  
19 order that makes us much more reassured about being a  
20 participant now in making sure that the plant, if it does  
21 have to start operations again under this limited way is  
22 that it's going to be safe. I mean, as unfortunate as the  
23 incident was and we wouldn't want it repeated and wish it  
24 hadn't happened, it's still I believe has ushered in a much  
25 better cooperative working relationship for all of us, so

28

1 for that I appreciate it. And I just really appreciate the  
2 attention that you've given to this matter.

3 CHAIR HOCHSCHILD: Thank you, Mayor, appreciate  
4 that.

5 Any Commissioner discussion, starting with  
6 Commissioner Douglas?

7 COMMISSIONER DOUGLAS: Yes, thank you, Chair.

8 I just wanted to thank really the City, first of  
9 all for your engagement and your highly professional,  
10 highly substantive work with our staff and more for the  
11 Project Owner, to build up the collaboration that we need  
12 to see through the safe restart in single-cycle mode of the  
13 facility and further operation.

14 I think that I want to thank Elizabeth Huber and  
15 the STEP team. I want to thank Calpine for stepping up as  
16 well into this much higher level of engagement. I have the  
17 visit and a tour scheduled to the City and to the facility,  
18 I'm looking forward to that. And I hope that the level of  
19 seriousness with which we take this at the Commission comes  
20 through, and also our strong desire to build upon this  
21 collaborative relationship and work very closely with the  
22 City going forward. So those are my comments, thank you.

23 CHAIR HOCHSCHILD: Thank you, Commissioner.

24 Any other comments from other Commissioners,  
25 Commissioner McAllister?

1           COMMISSIONER MCALLISTER: Yeah, just briefly. I  
2 also wanted to thank Mayor Halliday and City Manager McAdoo  
3 and Chief Contreras as well, thank you all for your  
4 engagement. I agree with Commissioner Douglas, so I won't  
5 repeat her comments. Absolutely agree, looking forward to  
6 visiting next Thursday the 19th and sort of chatting in  
7 person. And yeah, just continuing to keep track of what's  
8 going on.

9           And we take our oversight role very seriously and  
10 certainly want to make sure to follow through with the  
11 discussion that we had last meeting. And again, really  
12 appreciate your commitment to your communities and in all  
13 ways that we've heard today and in the last meeting. And  
14 your leadership is really inspirational for us as well, so  
15 we want to support you in any way we can. So thank you.

16           CHAIR HOCHSCHILD: Thank you, Commissioner.

17           Any other Commissioners wishing to make a  
18 comment, Commissioner Gunda.

19           COMMISSIONER GUNDA: Yeah, thank you, Chair.

20           Thank you Elizabeth, and City Manager McAdoo, for  
21 your presentation. It was incredibly gratifying to hear  
22 with the process, we were collectively able to develop,  
23 help improve transparency, coordination and trust. I think  
24 from the last Business Meeting that was one of the core  
25 issues that I was hoping that we would achieve and I'm

1 really, really grateful that it happened.

2 I want to thank all the Siting staff and Division  
3 staff, CPUC staff as well as Calpine for helping foster the  
4 process that was conducive to those goals of the spirit of  
5 trust building and also kind of helping develop next steps  
6 to sustain an ongoing collaboration and accountability. So  
7 I want to thank everybody for that.

8 Thanks to you, Mayor Halliday. I don't want to  
9 repeat exactly what the Chair and Commissioner McAllister  
10 and Commissioner Douglas said. But your contribution to  
11 this process, you and Fire Chief Contreras, is incredible  
12 and I want to thank on behalf of the state. It was an  
13 important, collaborative resource. And thank you for  
14 helping not only raise the concerns for your community and  
15 making sure those were heard and reasonably addressed, but  
16 also helping the state at a critical time, so I just wanted  
17 to extend my thanks on behalf of the state.

18 CHAIR HOCHSCHILD: Thank you, Commissioner.

19 Unless there's -- oh, Commissioner Monahan,  
20 please.

21 COMMISSIONER MONAHAN: Yeah, just really briefly.  
22 Well I can't say how reassured I am by hearing all the  
23 comments today. I'm guessing I speak on behalf of all the  
24 Commissioners that this was a really hard decision for us  
25 to make. And these days as California struggles with



1 energy reliability issues, this is even more important that  
2 we make hard decisions, but we want to set up a process  
3 that works, especially for the City.

4           And I just want to thank Mayor Halliday, Fire  
5 Chief Contreras, City Manager McAdoo that your willingness  
6 to engage despite your trepidations and the concerns you  
7 have about public safety, I just really appreciate that you  
8 were able to engage fully and that this process is working,  
9 or working at least better. As Commissioner Gunda said  
10 that I'm sure there's a lot of trust building to be had and  
11 I just wanted to thank you for your willingness to engage  
12 in this process.

13           And of course the staff, Elizabeth, and others in  
14 the Siting group, their work to really help usher in a new  
15 era in terms of accountability and trust. So thanks to all  
16 of you.

17           CHAIR HOCHSCHILD: Well said, Commissioner.

18           And I would just add my thanks to all of you,  
19 Mayor Halliday and Fire Chief Contreras and City Manager  
20 McAdoo, thank you for your professionalism. I think  
21 Hayward is fortunate to have public servants like yourself,  
22 so look forward to meeting you all in person.

23           With that what we're going to do next we have  
24 426 people on the line. I think a significant number of  
25 those are for this next item. We're going to be

1 considering for adoption a very, very significant energy  
2 code and so we're going to do is switch Items 3 and 4.

3 And by the way, I should say for this item we  
4 just discussed anyone wishing to make a public comment, we  
5 will take public comment on that item on Russell City at  
6 the end of this meeting.

7 But we're going to turn now to Item 4. And what  
8 we're going to do, given the significant number of people  
9 wanting to make public comment, in fairness to everybody we  
10 will shorten public comment to one minute per speaker when  
11 we get to that, so that everyone has a chance to speak.  
12 And then we'll move to Item 4 and take up Item 3 after  
13 that. So let's turn now to Item 4.

14 MR. VICENT: Good morning Chair and  
15 Commissioners, hopefully, you can hear me okay?

16 Chair HOCHSCHILD: Yeah, we can hear you well.

17 MR. VICENT: Great, great. Wonderful, I was  
18 having a little snafu there. My name is Will Vicent. I'm  
19 the Manager of the Building Standards Office, in the  
20 Efficiency Division at the CEC humbly representing the work  
21 of a large inter-divisional team.

22 We are here to request approval of the 2022  
23 Building Energy Efficiency Standards, also referred to as  
24 the Energy Code once adopted, in two sequential parts.  
25 First, we request certification of the CEC's final

1 Environmental Impact Report, EIR, prepared for the 2022  
2 Energy Code, completed in compliance with the California  
3 Environmental Quality Act, or CEQA. Second, we request  
4 adoption of the 2022 Energy Code itself, with an effective  
5 date of January 1st, 2023.

6 I'll start by presenting the content of the  
7 Energy Code itself, as it is the basis for the EIR. Next  
8 slide, please.

9 Roughly every three years the CEC makes updates  
10 to the Energy Code to reduce wasteful, inefficient,  
11 uneconomic, and unnecessary energy consumption in newly  
12 constructed buildings, additions and alterations. After  
13 the CEC adopts these standards they are submitted to the  
14 California Building Standards Commission for approval and  
15 inclusion in the California Building Standards Code, also  
16 known as Title 24.

17 The Energy Code provides substantial long-term  
18 benefits to California since the 1970s, together with the  
19 Appliances Standards, have saved consumers more than \$100  
20 billion dollars in utility bills. Updates to these  
21 standards are technologically feasible and cost-effective  
22 in their entirety, making the Energy Code itself a consumer  
23 protection mechanism.

24 Homes and businesses are responsible for a  
25 quarter of California's greenhouse gas emissions. Energy

1 efficiency as exemplified by the Energy Code has been  
2 identified by the state as an essential, least-cost means  
3 to achieve California's climate action goals.

4           The Energy Code also encourages load flexibility  
5 and responsible use of an increasingly clean electrical  
6 grid. And it does all of this while providing compliance  
7 flexibility by allowing for trade-offs through the  
8 performance modeling approach. Next slide, please.

9           For each Energy Code update the CEC reports  
10 estimates of statewide impacts, looking at the greenhouse  
11 gas emissions savings from 2006 onward, gives a sense of  
12 the substantial statewide environmental benefits attributed  
13 to the Energy Code. Estimated emissions reductions  
14 resulting from the 2022 Energy Code can be seen in the  
15 green rectangle on the right from 2023 through 2025. Next  
16 slide, please.

17           To develop the 2022 Energy Code the CEC conducted  
18 an extensive transparent public process. Between April  
19 2019 and today the CEC held and participated in 45  
20 stakeholder meetings and public workshops, with support  
21 from the Public Utilities Commission and statewide Codes &  
22 Standards program; held 3 Lead Commissioner hearings;  
23 considered over 300 formal public comments; and committed  
24 countless hours of collaboration with a spectrum of public  
25 stakeholders. Next slide, please.

1           The 2022 Energy Code builds on decades of  
2 meticulous work and leverages California's market-ready  
3 technology innovations. Some select highlights include  
4 prescriptive baselines that encourage the use of cost-  
5 effective, efficient heat pumps, cost-effective behind-the-  
6 meter solar electric and battery storage standards for  
7 select non-residential building types. It also includes  
8 electric-ready requirements for single family and  
9 multifamily buildings, some code restructuring that makes  
10 it easier to interpret how the energy code applies to  
11 multifamily projects, and also pursues stronger ventilation  
12 requirements. Next slide, please.

13           Without a doubt the star of the proposed 2022  
14 Energy Code is heat pumps, which is a standout electric  
15 technology used for water heating and space heating. Used  
16 in the right applications, electric heat pumps provide  
17 substantial increases in energy efficiency, drastic  
18 reductions in greenhouse gas emissions and provide  
19 opportunities for low flexibility, all while being cost-  
20 comparable to other prevalent systems in the market.

21           Currently there are relatively low heat pump  
22 installation rates in California, less than 6 percent in  
23 all newly constructed buildings. However, in some  
24 circumstances such as space heating for newly constructed  
25 multifamily heat pump installation rates are closer to 50

1 percent.

2 To help encourage the installation of cost-  
3 effective heat pumps the proposed amendments include heat  
4 pumps as the performance standards baseline for single-  
5 family homes; water or space heating; multifamily space  
6 heating; select commercial buildings such as schools,  
7 offices, banks, libraries, retail and groceries.

8 And I should mention that heat pump measures are  
9 not mandatory, and can be traded off using approved  
10 computer modeling software by increasing energy efficiency  
11 and other aspects of the building. Next slide, please.

12 This update also includes solar electric systems,  
13 plus battery systems as the performance standards baseline  
14 for select non-residential building types. These building  
15 types include high-rise multifamily, hotel, motel and  
16 tenant spaces, office, medical office and clinic spaces,  
17 retail and grocery stores, restaurants, schools and civic  
18 spaces.

19 For the purposes of the standards, solar-plus  
20 battery systems are sized modestly to help ensure that  
21 nearly all the electricity that's generated on site is used  
22 on site, thereby helping to ensure cost-effectiveness of  
23 the systems over time. Next slide, please.

24 Another key area of this update includes  
25 additional electric-ready requirements for residential

1 buildings. Electric-ready means having dedicated circuits  
2 and panel accommodations to easily enable the installation  
3 of electric appliances in the future.

4           The Energy Code will require dedicated electric  
5 circuits for space heating, cooking and clothes drying for  
6 both single family and multifamily homes. Additionally,  
7 dedicated electrical circuits for water heating are  
8 required for single-family homes and multifamily units  
9 served by individual water heaters.

10           For single-family homes, energy storage-ready  
11 requirements will be included and mean minimum electrical  
12 panel- sized requirements of 225 amps to accommodate future  
13 electrical load and help anticipate the growing market for  
14 electric homes and electric vehicles. Next slide, please.

15           Overall, the 2022 Update to the Energy Code  
16 improves clarity and consistency for all lighting  
17 provisions. Default outdoor lighting zones have been  
18 updated, which more closely aligns the Energy Code with  
19 model language recommendations of the Illuminating  
20 Engineering Society and the International Dark-sky  
21 Association. We've updated the non-residential lighting  
22 power allowance tables to keep pace with Illuminating  
23 Engineering Society practices and recommendations. And on  
24 the residential side we've removed the lumen maintenance  
25 test from Joint Appendix 8. Next slide, please.

1           Indoor air quality and air ventilation, the most  
2 significant update relating to indoor air quality is the  
3 reevaluation of minimum standards for kitchen ventilation.  
4 The new standards recognize the differences and pollutants  
5 created by natural gas and electric cooking as well as the  
6 role of indoor air volume in pollution concentrations.

7           Other notable changes include updates to duct  
8 sealing and installation requirements. Most notably, the  
9 2022 update adds duct sealing requirements for central  
10 shaft ventilation systems used typically in large  
11 multifamily buildings. And it also relaxes installation  
12 requirements for ducts in conditioned space. Next slide,  
13 please.

14           Today the 2019 Energy Code has multifamily code  
15 language in two separate places. The 2022 Energy Code is  
16 proposing to consolidate and relocate multifamily  
17 provisions into a set of dedicated chapters in the energy  
18 code, making it easier to interpret how the energy code  
19 applies to multifamily projects. This is a big deal.  
20 Energy compliance software for multifamily and mixed-use  
21 projects will also be consolidated. Next slide please.

22           That was the summary of the 2022 Energy Code  
23 that's being proposed.

24           Moving back to the Environmental Impact Report,  
25 the EIR was prepared for the 2022 Energy Code to comply



1 with the requirements of CEQA. Accordingly, a public  
2 scoping meeting was held before a draft EIR was circulated  
3 for a 45-day public comment period.

4 The CEC received six comment letters on the draft  
5 EIR during the public review period. Including two  
6 comments that supported certification of the draft EIR; one  
7 comment that provided information about California's  
8 housing production, which the CEC considered in revisions;  
9 one comment that stated that the draft EIR was deficient  
10 and should be revised; and two comments that were not  
11 directed at the draft EIR.

12 So accordingly on August 4, 2021 the CEC  
13 published the final EIR, which includes responses to  
14 comments, references, and a full copy of the draft EIR with  
15 revisions noted in underline/strikethrough format.

16 The final EIR explains that the 15-day project  
17 changes to the Energy Code do not alter the conclusions of  
18 the EIR. Staff has considered all comments and concludes  
19 that the analysis of the project in the final EIR has been  
20 completed in compliance with CEQA. Next slide, please.

21 As far as the process for EIR, the CEC is the  
22 lead agency for this environmental impact report. Before  
23 approving the 2022 Energy Code, the CEC as lead agency must  
24 certify that the final EIR has been completed in compliance  
25 with CEQA, was presented to the decision-making body of the

1 lead agency, and that the decision-making body reviewed and  
2 considered the information contained in the final EIR. And  
3 reflects the lead agency's independent judgment and  
4 analysis. Next slide please.

5 So this is the sort of bottom line. In summary,  
6 staff's analysis concludes that the 2022 Energy Code will  
7 have no significant adverse impacts to the environment.

8 This table illustrates that the 2022 Energy Code  
9 is anticipated to save Californians nearly 10 million  
10 metric tons of CO2 equivalent, shown in the rectangle on  
11 the left. And will provide California with over \$1.5  
12 billion of an environmental benefit shown in the rectangle  
13 on the right. Next slide, please.

14 With this staff's recommendations, first based  
15 on the conclusions of the final EIR, staff recommends the  
16 certification of the final EIR in accordance with CEQA.  
17 Secondly, staff recommends adoption of the 2022 Energy Code  
18 with an effective date of January 1st, 2023. This includes  
19 updates to Title 24, Part 6, including errata; associated  
20 administrative regulations in Title 24, Part 1; the  
21 Alternative Calculation Methods Approval Manual; and  
22 Reference Appendices. Errata to the 15-day language have  
23 been posted on the CEC's Public Docket, 21-BSTD-01 under TN  
24 No. 239242, Appendix A. Next slide, please.

25 Lastly, I'd like to quickly acknowledge and thank

1 the interdivisional all-star team who contributed to this  
2 agenda item. I am joined by Efficiency Division Deputy  
3 Director Michael J. Sokol, CEC Chief Counsel Linda Barrera,  
4 and subject matter staff to answer any questions you may  
5 have. Thank you very, very much.

6 CHAIR HOCHSCHILD: Thank you so much, Will, and  
7 to you and your team for all your hard work and  
8 professionalism to get us to this very significant  
9 milestone.

10 With that let's turn now to public comment on  
11 Item 4. What we're going to do, given the number of  
12 speakers that are interested we're going to move to one  
13 minute per comment. I would ask folks as you're speaking  
14 if the points you're making have already been made it's  
15 fine to just state you're in support. You don't need to go  
16 through the whole thing, but you have the full minute and  
17 you're free to make use of it. We want to just be fair to  
18 everyone and give a chance for us to hear from everyone  
19 wishing to speak.

20 So with that, Madam Public Advisor, let's turn to  
21 public comment.

22 MS. GALLARDO: Thank you, Chair. This is Noemi  
23 Gallardo, Public Advisor for the record. I want to also  
24 remind people who want to make a public comment to please  
25 restate your name, spell your name, and indicate your

1 affiliation if you have one. So we will begin the public  
2 comment now.

3 The first person is Rick Brown. Rick, I am  
4 opening your line. You may begin and do not forget to  
5 unmute on your end.

6 MR. BROWN: Yes, this is Rick Brown. That's R-i-  
7 c-k B-r-o-w-n. Good morning, Commissioners. I'm calling  
8 in support of the staff recommendation. As many of you  
9 know, TerraVerde helped a very low-income K school district  
10 in the Central Valley install solar-plus storage in 2014,  
11 one of the very first schools to do so. This district has  
12 reaped significant energy savings over the years, dollars  
13 that have reduced energy bills, and dollars delivered to  
14 the classroom.

15 Since then we have developed solar and storage at  
16 over 100 schools and other public facilities throughout the  
17 state, actually that's 300. In total, our clients have  
18 saved over \$50 million during the past 10 years and these  
19 savings continue to grow.

20 Examples of how these savings have been used  
21 include bringing back a music program at Firebaugh Unified  
22 School District where over 97 percent of children are  
23 eligible for free and reduced lunch.

24 That said, only a fraction of schools in  
25 California have solar and even a smaller fraction of solar

1 storage, so I urge you to support this measure. It's going  
2 to be great for the communities where these measures will  
3 be instituted. And thanks for your time.

4 MS. GALLARDO: All right, thank you.

5 Next is Courtney Corda. Courtney, Your line is  
6 open. You may begin.

7 MS. CORDA: Hi I'm Courtney Corda, that's C-o-r-  
8 d-a. I am a mom-and-pop installer of residential solar  
9 thermal, solar PV, battery backup and natural gas  
10 generators in Contra Costa County. I've been in business  
11 for 14 years. I support the 2022 Building Standards for  
12 new construction, including the electrical changes that  
13 will make it easier for us to install battery backups.

14 I know we don't have a lot of time, and we're  
15 just a small business. And we're kind of a small sample  
16 size in the bigger scheme of things, but I have to tell you  
17 that the changes that we're experiencing in consumer  
18 interest and behavior it's huge, it's shocking actually.  
19 It's like an explosion. In the last year or so we've gone  
20 from 0 to 60 with every customer now asking about battery  
21 backup and electric vehicles, talking about how they're  
22 getting one or they just got one. Most of the customers  
23 are desperately interested in having resiliency and in also  
24 helping the community with clean air and the state with its  
25 energy needs.

1 I think the average customer has a much better  
2 understanding now of the challenges that our state faces in  
3 meeting our energy needs. Like with the drought causing  
4 hydro power to be depressed and with the grid stability  
5 being affected by fires, people are thinking about not just  
6 themselves but their communities. So anything we can do to  
7 get any little bit more electricity and storage in our  
8 state is wholly supported by me.

9 And the storage-ready requirements are going to  
10 make it a lot easier for installing batteries. It's too  
11 late for a lot of homes that are older homes, but it's not  
12 too late for new buildings. We can solve this problem and  
13 I think it's the right time. I'm sympathetic to builders  
14 who are going to have to deal with the changes, but like  
15 with adding (indiscernible) --

16 MS. GALLARDO: Courtney, your time is up.

17 MS. CORDA: Thank you.

18 MS. GALLARDO: This is the Public Advisor. Thank  
19 you.

20 All right next person to speak is Nicole Kemeny.  
21 Nicole, apologies if I mispronounced your name. A reminder  
22 to spell your name, indicate your affiliation, if any.  
23 Your line is open and you may begin.

24 MS. KEMENY: Thank you so much. My name is  
25 Nicole Kemeny. You pronounced it right, N-i-c-o-l-e K-e-m-

1 e-n-y. I'm the President of 350 Silicon Valley, we  
2 currently have 5,866 people on our list of supporters who  
3 receive our newsletter and take action with us and are  
4 concerned about the climate.

5 I hope that you will vote to adopt the staff  
6 recommendation for the 2022 code. I think there are going  
7 to be many speakers who will give you all of the good  
8 technical and economic arguments for doing so and it seems  
9 that we have nothing, but advantages here.

10 The one objection I can see is that some workers  
11 could be affected negatively. And we all feel strongly  
12 that we must look out for those people and we can't simply  
13 ignore their predicament. But I'd like to propose a  
14 metaphor that imagine you live in a treehouse and all your  
15 neighbors live in a treehouse and you all live in a forest.  
16 You're not going to encourage employment programs for  
17 lumberjacks, I don't think, because your house will be  
18 chopped down, your neighbors' houses will all be chopped  
19 down. The lumberjack himself will live in a devastated  
20 environment with no more trees. This is precisely the  
21 situation that we're in. And I'd like you to think about  
22 it like that. Thank you so much.

23 MS. GALLARDO: Thank you.

24 The next commenter is Al Rich. A reminder to  
25 spell your name, indicate your affiliation, if any. Al,

1 your line is open and you may begin.

2 MR. RICH: Thank you. Yes, this is Al Rich. A-  
3 l, first name, last name is Rich, R-i-c-h. And I want to  
4 thank the Commission for the wonderful landmark solar and  
5 storage policies for commercial and residential  
6 construction in the 2022 Building Standards.

7 As a solar water-heating manufacturer in  
8 Carmichael, California with 42 years in solar only I want  
9 to especially thank the Commission for increasing the  
10 amount of residential, prescriptive compliance incentives  
11 for solar water heaters. Solar water heaters and solar  
12 electric can do so much to cost-effectively reduce  
13 greenhouse gases, a vital need in today's world for our  
14 children's future and clean employment. Thank you again.

15 MS. GALLARDO: Thank you.

16 Next is, let's see, Mark Roest. Mark, a reminder  
17 to spell your name, indicate your affiliation if any, and  
18 your line is open.

19 MR. ROEST: There we go, thank you. So I am Mark  
20 Roest, M-a-r-k R-o-e-as in Edward-s-as in Sam-T-as in Tom,  
21 with Sustainable Energy, Inc. We are a battery and solar  
22 thin film and other technology startup and we're doing non-  
23 lithium batteries, which will not catch fire. It's best to  
24 switch everything to solar and battery storage. And we do  
25 not need to run plumbing for gas anymore. There is still

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1 plumbing work to be done in terms of the heat exchanges for  
2 heat pumps. But it's time to switch. No more buggy whips,  
3 it's time for cars basically.

4 And I think the thing to do with the natural gas  
5 peaker plant is to replace it with batteries and to restore  
6 that to the black community.

7 MS. GALLARDO: All right, that time's up for  
8 Mark.

9 The next person is Gary Gerber. Gary, please  
10 spell your name, indicate your affiliation, if any. Your  
11 line is open and you may begin.

12 Mr. Gerber: Thank you very much. My name is Gary  
13 Gerber, G-e-r-b-e-r. I'm a CEO and founder of Sun Light &  
14 Power Company, a 45-year-old solar company in Berkeley, 76  
15 employees. I want to voice my strong support for the  
16 mandated changes in the code that will lead the state and  
17 country towards reversing climate change that's threatening  
18 all life on the planet.

19 As Commissioner Hochschild mentioned at the  
20 beginning of this meeting, we all need to be part of the  
21 solution. It's time for bold action and eliminate the  
22 burning of fossil fuels. That's exactly what the  
23 Commission is doing and I strongly recommend that you not  
24 water down any of your actions, which would just lead to  
25 halfhearted, ineffective stutter steps.

1           Regarding concern about battery storage has come  
2 up. I'm confident markets will continue to respond  
3 robustly to market forces as I've seen markets do many  
4 times over the last 45 years. And keep in mind, there are  
5 many developing battery technologies, it's not just  
6 lithium-ion as was mentioned earlier, that will step in and  
7 fill the gap.

8           The only concern I have is that there was no  
9 provision made for space for the batteries and the battery-  
10 switching equipment in this provision. I think that's an  
11 oversight. Thank you very much.

12           MS. GALLARDO: Thank you.

13           Next person is Gina Rodda. Gina, a reminder to  
14 state your name, spell it, and indicate your affiliation.  
15 Your line is open. You may begin.

16           MS. RODDA: Hello, this is Gina Rodda, G-i-n-a R-  
17 o-d-d-a and I own Gabel Energy, but I'm also representing  
18 Energy Code Ace and CABEC, California Association Of  
19 Building Energy Consultants today.

20           I've been privileged to see California's public  
21 code adoption process in action over this last couple of  
22 years. And I strongly encourage others to join us as we do  
23 this, yet again, starting very soon for 2025. Having  
24 participated I see that the outcome supports the enormous  
25 steps forward that we must take to help mitigate our

1 climate crisis.

2           Additionally, I see the authors were very careful  
3 to maintain the design flexibility essential to the various  
4 construction practices and project scopes we see in our  
5 state. The new multifamily chapters in the 2022 Energy  
6 Code are designed to provide regulations specific to this  
7 very unique construction type. And I look forward to  
8 seeing the software and compliance documents to help  
9 support that enforceability.

10           Requiring swift action to mitigate climate change  
11 also allows those design flexibilities can lead to  
12 complexity, of which we at CABEC with our certified energy  
13 analyst program are there to support.

14           The compliance improvement team at Energy Code  
15 Ace looks forward to updating our trainings, resources and  
16 tools to help the market actors support this 2022 Code  
17 cycle.

18           MS. GALLARDO: Gina, your time is up. We want to  
19 be fair to others.

20           MS. RODDA: Sure, thank you.

21           MS. GALLARDO: Thank you.

22           All right next is Igor Tregub, apologies if I  
23 mispronounced your name. Your line is open and you may  
24 begin.

25           MR. TREGUB: Good morning Commissioners and Chair

1 Hochschild, my name is Igor Tregub. You got it perfectly.  
2 For the record I am speaking in my individual capacity, but  
3 serve as Chair of the California Democratic Party  
4 Environmental Caucus and Sierra Club SF Bay Chapter Energy  
5 and Climate Committee Co-Chair.

6 I would like to thank the Commission and your  
7 staff for this bold step. Once again, California is  
8 leading the way in addressing climate change. I remember  
9 when not that long ago my hometown of Berkeley was the  
10 first city in the nation to electrify its buildings. And I  
11 actually remember Chair Hochschild coming to the dais and  
12 speaking in support and thank you so much for your  
13 supportive comments.

14 And now this is an opportunity for other  
15 jurisdictions throughout the state to follow suit. This is  
16 a landmark step in creating affordable and energy-efficient  
17 housing that enables Californians to be more resilient to  
18 the impacts of climate change. This code does what  
19 California does best, it sets in motion major market trends  
20 and taps ingenuity to advance a clean economy and adjust  
21 transition. And it's the fifth largest economy in the  
22 world with incredible --

23 MS. GALLARDO: Igor, your time is up. We want to  
24 be fair to everybody else. We have a lot of hands raised.

25 MR. TREGUB: Thanks.

1 MS. GALLARDO: Next is Brian Ballek. A reminder  
2 to spell your name, indicate your affiliation. Brian, your  
3 line is open.

4 MR. BALLEK: Hi, my name is Brian Ballek, B-r-i-  
5 a-n, last name B-a-l-l-e-k. I am a commercial analyst for  
6 Invinity Energy Systems, a non-lithium battery manufacturer  
7 and I am speaking in favor of the commercial energy code.

8 For the record, I want to state that contrary to  
9 objections made by some parties the battery industry is  
10 more than able to meet any demand that will result from the  
11 new rules. The Energy Information Association reported 40  
12 percent annual year-on-year growth from 2010 to 2018 in the  
13 battery industry. This is driven by our ability to deliver  
14 value to end customers. We personally at Invinity  
15 routinely see products that deliver payback in less than 10  
16 years and project returns on investment of over 10 percent.

17 Another objection made is that there will be a  
18 constraint in materials. That is not the case. There is  
19 an ample supply of domestically available lithium and for  
20 manufacturers like us, vanadium. The issue has been the  
21 ability to receive the materials in sufficient purity and  
22 that is now being addressed by companies like General  
23 Motors and Invinity in cooperation with the Department of  
24 Energy.

25 So thank you again for this forward-looking

1 initiative. We're ready to meet the demand.

2 MS. GALLARDO: Thank you.

3 Next comment is Matthew Vasilakis. Matthew,  
4 apologies if I mispronounced that. Please spell your name  
5 and state your affiliation, if any. Your line is open and  
6 you may begin.

7 MR. VASILAKIS: Hello, this is Matthew Vasilakis,  
8 M-a-t-t-h-e-w V as in Victor-a-s-i-l-a-k-i-s, dialing in  
9 representing Climate Action Campaign in San Diego  
10 supporting the staff recommendation to move forward. We  
11 commend staff and the CEC for moving forward with bold  
12 policies that can address the very serious and dire threat  
13 that the climate emergency presents to us. Thank you.

14 MS. GALLARDO: Thank you. Next is it looks like  
15 Tang El. Please state your name, spell it and indicate  
16 your affiliation, if any. Your line is open and you may  
17 begin.

18 All right, I see it's spelled T-a-n-g-l. Your  
19 line is open and you may begin. And don't forget to unmute  
20 on your end.

21 MS. TANG: Hi, my name is Genesis Tang, G-e-n-e-  
22 s-i-s T-a-n-g. And I'm CPUC's Lead staff on the Codes and  
23 Standards Program.

24 Today I want to express support of the Energy  
25 Commission's adoption of the 2022 California Energy Code,

1 as this is a major milestone towards the state's greenhouse  
2 gas reduction goals.

3           The proposed amendments are essential to the  
4 State of California in that they support the state's clean  
5 energy goals, policies and mandates. The amendments will  
6 increase the deployment of onsite renewable energy  
7 generation, reduce greenhouse gas emissions from new  
8 buildings, reduce growth in energy demand, increase energy  
9 demand flexibility, and ensure that California buildings  
10 are as energy efficient as is found to be technically  
11 feasible and cost-effective.

12           We want to thank the Commission for their  
13 continued leadership and commitment in adopting strong and  
14 robust building codes, focus on efforts to achieve zero-  
15 emission buildings in a way that will accelerate social  
16 equity, economic, environmental and health benefits. Thank  
17 you.

18           Ms. Gallardo: Thank you.

19           The next person is Stacey Reineccius, apologies  
20 if I mispronounced that. Please restate your name, spell  
21 it, indicate your affiliation if any. Your line is open  
22 and you may begin.

23           MR. REINECCIUS: Thank you. Stacey Reineccius,  
24 S-t-a-c-e-y R-e-i-n-e-c-c-i-u-s. I'm the CEO and founder  
25 of Powertree Services. We manufacturer and design

1 equipment, specifically for multifamily residential  
2 properties.

3 In general, I want to say that I applaud and  
4 support the revisions to the code and the increasing focus  
5 on the needs of multifamily, which constitutes a resource  
6 base of over \$3.2 trillion worth of mobilizable finance to  
7 help in climate remediation activities.

8 And in the code I want to say that there are a  
9 few tweaks that could be improved. One is that the  
10 exemption for non-VNEM utilities is counterproductive and  
11 will result in less deployments that could otherwise  
12 happen.

13 Two is that the individual rights for homeowners,  
14 tenants and property owners should be enabled, so that  
15 those properties enrolled in community solar can un-enroll  
16 and that the residents can un-enroll. That's going to be  
17 key for successful adoptions of new technologies.

18 MS. GALLARDO: Stacey, your time is up. We want  
19 to be fair to everyone else who's in the queue.

20 Next up is Paul Wermer. Paul, a reminder to  
21 spell your name, indicate your affiliation if any. Your  
22 line is open and you may begin.

23 MR. WERMER: Good morning, my name is Paul  
24 Wermer. That's P-a-u-l W-e-r-m as in Mary-e-r. I fully  
25 endorse the staff recommendation. This is an essential



1 improvement to the Building Code, the Energy Code. It also  
2 does not go far enough and needs to be extended and  
3 strengthened in the next revision, but for the moment this  
4 is essential.

5 I say this in part, because of my experience  
6 working with some construction projects, remodels and such.  
7 And in particular in 2019 working with a neighbor who was  
8 building elsewhere and was told by the building code  
9 officials no, he could not go all-electric. He had to put  
10 in gas of some sort. This is a mistake, and this action  
11 passing this forward will help prevent that. Thank you.

12 MS. GALLARDO: Thank you.

13 Next is Bob Raymer, a reminder to spell your  
14 name, indicate your affiliation if any. Your line is open,  
15 Bob. You may begin.

16 MR. RAYMER: Thank you, Mr. Chairman and  
17 Commissioners. I'm Bob Raymer, that's R-a-y-m-e-r. I'm  
18 representing the California Building Industry Association.  
19 And while we have a neutral position on the overall  
20 standards we strongly support the 15-day language that  
21 tweak the rules for community solar and clarified  
22 application of the rules regarding the ducts and  
23 conditioned space.

24 And now what we plan to do is to focus our  
25 attention on education and training of builders and

1 building officials, getting the conservation manual and  
2 updated CEBC program certified. And, of course, working  
3 with the CEC, NRDC and others to implement an incentive  
4 program that will encourage all electric construction.

5 And I have to say a special thanks to  
6 Commissioner McAllister and Bill Pennington his advisor,  
7 and especially Commission staffers Mazi, Payam, Will, Peter  
8 and Danny for all the long hours they put into this. Thank  
9 you very much.

10 MS. GALLARDO: Thank you.

11 Next is a -- this is a phone number ending in  
12 813. Please state your name, spell it and indicate your  
13 affiliation, if any. And your line is open. You may  
14 begin. (Silence on the line.) The person with the phone  
15 number ending in 813, your line is open. You may begin.  
16 Press \*6 to unmute.

17 MS. WESTON: Hi, this is Lauren Weston. I'm the  
18 Executive Director of Acterra: Action for a Healthy Planet.  
19 I am also a mom and I'm probably calling more so, because I  
20 am a mom wanting to really support the staff recommendation  
21 for approval of the 2022 Code. There is really nothing  
22 more urgent that we are facing right now. And those that  
23 have the ability to make changes that promote a healthy  
24 planet, this is all that matters. And I really want to  
25 implore you to act with strength and courage to pass this

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1 code. I know that there can be fear in making these  
2 decisions, and a lot of pressure from a lot of different  
3 sides. But we honor the work that you guys have been doing  
4 and we're so grateful that you're having this conversation.

5 And again I just want to express my support from  
6 Acterra for the staff recommendation. Thank you.

7 MS. GALLARDO: Thank you. Next is I see Jay B.  
8 Please state your name, spell it and indicate your  
9 affiliation, if any. Your line is open and you may begin.

10 MR. BROOKS: Hello, my name is John Brooks, J-o-  
11 h-n B-r-o-o-k-s. And though I'm a member of 350 Silicon  
12 Valley, and since the representative has already spoken, so  
13 I'm speaking in my individual capacity as a California  
14 citizen.

15 First, I just want to say as for grid stability  
16 and ensuring fully adequate demand response, all  
17 contributions made by these updates are all very welcome.  
18 And as has been made abundantly clear in peer-reviewed  
19 publications by Professor Mark Jacobson of Stanford  
20 University, who's an expert in the field of clean energy  
21 technology and its various social benefits, there is no  
22 problem with ensuring grid stability with 100 percent wind,  
23 water and solar towards which this code is robustly helping  
24 to move us.

25 Once again California is leading the way and

1 addressing climate change. This year's Title 24 Building  
2 Code update is a landmark step in creating affordable and  
3 energy-efficient housing that enables Californians to be  
4 more resilient to the impacts of climate change, and this  
5 is with particular respect to electric heat pumps. And so  
6 thank you very much, thank you.

7 MS. GALLARDO: Thank you.

8 Next is Lauren Cullum. Lauren, a reminder to  
9 spell your name, indicate your affiliation if any. Your  
10 line is open and you may begin.

11 MS. CULLUM: Hi, I'm Lauren Cullum, L-a-u-r-e-n  
12 C-u-l-l-u-m on behalf of Sierra Club, California. We  
13 support the CEC's adoption of the 2022 Energy Code, which  
14 includes strong provisions, which will incentivize all-  
15 electric new construction. That will protect the health of  
16 the people who live and work in those buildings and puts  
17 California in a better position to hit its climate targets.

18 This code is a huge step for California and the  
19 rest of the nation. It will be the first in the nation to  
20 include highly efficient heat-pump technology as a baseline  
21 for new homes. With this code, California will not only be  
22 setting in motion major market trends, but it will be  
23 validating the building occupant code for other states to  
24 model after as they're looking for ways to transition to a  
25 cleaner economy.

1           We also support the revisions on the community  
2 solar and storage mandate and changing the community solar  
3 program to allow homes to un-enroll and install rooftop  
4 solar. The transition to clean energy resources and an  
5 all-electric buildings cannot come soon enough. So, so  
6 much to do in order to reduce our reliance on fossil fuels  
7 and transition to a 100 percent clean economy without  
8 delay.

9           We recognize that this Building Code Update is a  
10 landmark step towards addressing climate change by  
11 prioritizing cleaner, more affordable energy-efficient  
12 housing that will result in healthier air and reductions in  
13 climate pollution. Therefore, Sierra Club California  
14 thanks the CEC for its adoption of the Energy Code.

15           MS. GALLARDO: Thank you.

16           Next is Leah Pressman. Leah, a reminder to spell  
17 your name, indicate your affiliation. Your line is open  
18 and you may begin.

19           MS. PRESSMAN: Hello. Good morning,  
20 Commissioners. My name is Leah Pressman, L-e-a-h P-r-e-s-  
21 s-m-a-n and I'm from Culver City, California. I'm an  
22 elected delegate to the California Democratic Party and a  
23 member of the Democratic Party Environmental Caucus. I  
24 speak in favor of the proposed changes to building codes.  
25 If the Commission moves forward, it will be nothing short

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1 of monumental making California, the first in this country,  
2 the first state in this country to develop these standards.

3           As the fifth largest economy in the world with  
4 incredible sway over global markets, California's shift  
5 towards highly efficient, clean energy technologies like  
6 heat pumps has the potential to accelerate the adoption of  
7 these critical technologies nationwide. The new code makes  
8 clean energy the simple, most affordable choice to power  
9 our homes. That means cleaner air indoors and out,  
10 affordable building costs and energy bills, and cuts the  
11 climate pollution.

12           The transition to clean electric and heat pumps  
13 cannot come soon enough in California and across the  
14 country as record-breaking heat waves in areas with  
15 historically cooler climates have left millions of families  
16 sweltering in unsafe temperatures.

17           My cousin Ben Santer would approve. Ben Santer  
18 is a physicist, climate-change scientist and the lead  
19 author of a paper published 26 years ago in '95 at the IPCC  
20 Conference in Madrid.

21           MS. GALLARDO: Leah, your time is up. Apologies,  
22 we need to be fair to everybody else.

23           Next is Amy Wong. Amy, a reminder to spell your  
24 name, indicate your affiliation if any. Your line is open  
25 and you may begin. (Silence on the line.) Your line is

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1 open. You may begin.

2 MS. WONG: Hi, can you hear me?

3 MS. GALLARDO: Yes.

4 MS. WONG: Great. Good morning, my name is Amy  
5 Wong, A-m-y W-o-n-g. I'm a program specialist at Active  
6 San Gabriel Valley, a community-based nonprofit in El  
7 Monte. We support adopting the 2022 Energy Code.

8 According to the new IPCC report, we've delayed  
9 curbing our fossil fuel emissions for so long that we can  
10 no longer stop global warming from intensifying over the  
11 next 30 years. But there's still a short window to prevent  
12 these impacts and we need to act now before it's too late.  
13 The 2022 Energy Code is a part of the solution. We still  
14 need to do more to reduce greenhouse gases overall, but  
15 this will help California become a national leader on  
16 building electrification and create affordable and energy-  
17 efficient housing

18 Here in the San Gabriel Valley our working-class  
19 communities of color are suffering from record-breaking  
20 heat waves, amidst the COVID pandemic. People are  
21 literally dying because of the climate crisis and its  
22 impacts, so we must take bold steps forward today. We urge  
23 you to adopt the 2022 Energy Code. Thank you.

24 MS. GALLARDO: Thank you.

25 Next is David Asti. David, a reminder to spell

1 your name, indicate your affiliation if any, and -- let's  
2 see, I just lost you. So David, your line is open. You  
3 may begin.

4 MR. ASTI: Am I unmuted, Noemi?

5 MS. GALLARDO: Yes, you are.

6 MR. ASTI: Excellent, good morning, everyone. My  
7 name is David Asti, last name spelled A-s-t-i like the  
8 wine, Asti Spumante. I am with Southern California  
9 Edison's agency relations. We did in fact submit a letter  
10 of support for this item. I just want to reiterate that we  
11 are fully supportive of these proposed standards. And we  
12 appreciate that the CEC is including prescriptive heat-pump  
13 baselines, electric readiness requirements for residential  
14 buildings, and expanded solar and better requirements of  
15 non-residential buildings.

16 SCE looks forward to a 2025 Energy Code that will  
17 fully electrify new construction. An all-electric code of  
18 course will help ensure that low-income and vulnerable  
19 communities are not just proportionately burdened by fossil  
20 fuel emissions and stranded assets.

21 We are committed to a clean energy future and we  
22 are investing in its distribution, our distribution system  
23 to make the grid more reliable and resilient towards  
24 climate change. Thank you very much for the opportunity to  
25 speak.



1 MS. GALLARDO: Thank you.

2 Next is Maren Mahoney. Maren, a reminder to  
3 spell your name, indicate your affiliation if any. Your  
4 line is open and you may begin.

5 MS. MAHONEY: Yes, hello. Good morning,  
6 Commissioners, and thank you for your time today. My name  
7 is Maren Mahoney, M-a-r-e-n M-a-h-o-n-e-y. And I'm  
8 speaking on behalf of Ceres, a nonprofit sustainability  
9 advocacy organization. Ceres runs the Business for  
10 Innovative Climate and Energy Policy or BICEP Network, a  
11 coalition of nearly 70 major businesses, many of whom have  
12 substantial operations or are headquartered in California.

13 Given the immediacy of the climate crisis and the  
14 benefits of timely action, Ceres strongly encourages the  
15 California Energy Commission to adopt the draft 2022 Title  
16 24 Energy Code Update as-is. The current proposal  
17 includes important updates to the code that will help move  
18 the building market toward all-electric new construction.

19 I

20 In December of 2020 and then again in January of  
21 2021 we submitted two letters regarding California building  
22 decarbonization into the Title 24 docket. The first letter  
23 is signed by 55 businesses and institutions, calling on  
24 California to pursue ambitious building department  
25 policies. Signatories of this letter include JLL, a

1 Fortune 500 commercial real-estate services company; Adobe;  
2 Dignity Health; PayPal; Ikea and VF Corporation. A  
3 commitment to an all-electric construction in --

4 MS. GALLARDO: Maren, your time is up, apologies.

5 MS. MAHONEY: Okay, thank you.

6 MS. GALLARDO: Next is Robin Muller. Robin, a  
7 reminder to spell your name, indicate your affiliation, if  
8 any. And you only have one minute, so please keep it  
9 short. Your line is open. You may begin.

10 MR. MOLLER: Can you hear me okay?

11 MS. GALLARDO: Yes, we can, go ahead. (Silence on  
12 the line.) Maren, are you there?

13 MR. MOLLER: Can you hear me?

14 MS. GALLARDO: Okay, sorry. Yes Robin, go ahead.

15 MR. MOLLER: Okay, I'm sorry. Good morning,  
16 Commissioners my name is David Moller, it's spelled D-a-v-  
17 i-d M-o-l-l-e-r and I'm speaking on behalf of the 1,200  
18 members of the Climate Reality Project Bay Area Chapter, as  
19 well as the Marin-Sonoma Building Electrification Squad.

20 I have spoken at numerous CEC meetings and  
21 workshops over the past two years, urging you to adopt an  
22 all-electric baseline for all building types in the 2022  
23 code cycle.

24 You and your staff have listened. And while you  
25 have not yet fully embraced an all-electric baseline you've

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1 come a long way from your initial thinking and I want to  
2 recognize and thank you for that.

3 I also want to urge you to resist requests to go  
4 slow. First among the rationale for going slow is jobs and  
5 in fact, some future jobs in the gas and plumbing sectors  
6 may be lost. But an equal number of comparable jobs in the  
7 electric sector will be gained. This transition from using  
8 gas to using electricity to heat our buildings and our  
9 water is inevitable. It's only a matter of time. And it's  
10 highlighted in the UN IPCC Report issued just two days ago,  
11 our time is quickly running out.

12 We support the proposed 2022 code regulations,  
13 especially regarding heat pumps and electric-ready. And we  
14 urge you to adopt an all-electric baseline for all building  
15 types as soon as possible, and will be for the next code  
16 cycle. Thank you very much.

17 MS. GALLARDO: Thank you.

18 Next is Sara Greenwald. A reminder to spell your  
19 name and indicate your affiliation, if any. Sara, your  
20 line is open and you may begin.

21 MS. GREENWALD: Hello my name is Sara Greenwald,  
22 that's S-a-r-a G-r-e-e-n-w-a-l-d. I'm a Californian. I  
23 support this code, because I love California. This  
24 building code helps us move fast in a planned way to deal  
25 with the climate crisis and keep our beautiful state and

1 our people as healthy and safe as we can. And yes, this  
2 needs to apply to all building types. Thank you.

3 MS. GALLARDO: Thank you.

4 Next is Jonny Kocher. A reminder to spell your  
5 name, indicate your affiliation if any. Your line is open,  
6 Jonny, and you may begin. Jonny, go ahead.

7 MR. KOCHER: Sorry, can you hear me now?

8 MS. GALLARDO: Yes, we can.

9 MR. KOCHER: Thank you. Johnny Kocher, J-o-n-n-y  
10 K-o-c-h-e-r. Thank you for the opportunity to comment. I  
11 work in the Oakland office of RMI, an independent nonprofit  
12 working to shift towards a low-carbon future.

13 The Energy Commission should pass the 2022 Energy  
14 Code as proposed, as it is a major step forward in moving  
15 new construction away from gas and towards safer, cleaner  
16 and more efficient buildings. As over 230 organizations  
17 and 4,000 advocates have made clear the urgency of the  
18 climate crisis demands and immediate end to the gas system  
19 expansion.

20 In addition to passing this code we urge the  
21 Commission to also commit to ensuring that in the 2025  
22 update to the Building Code both heat pump, space heating,  
23 and water heater are in the performance baseline for new  
24 construction in all building types, as well as for  
25 additions and alterations. Thank you.

1 MS. GALLARDO: Thank you.

2 Next is Robert Whitehair. A reminder to spell  
3 your name and indicate your affiliation, if any, your line  
4 is open and you may begin.

5 MR. WHITEHAIR: Good afternoon, my name is Robert  
6 wide here, R-o-b-e-r-t W-h-i-t-e-h-a-i-r. I'm Vice Chair  
7 of Sustainable San Mateo County. I thank you for this  
8 opportunity to address the Commission today. And I'm  
9 speaking from the viewpoint of hundreds of members from our  
10 organization who are dedicated to the threes: the  
11 environment, social equity, and the economy. I strongly  
12 support adoption of Title 24 for new construction.

13 I want to emphasize the difficulty of  
14 retrofitting the 70-year-old home in which my wife and I  
15 live and the opportunity for local trades people for more  
16 work as we retrofit. We replaced the gas water heater, we  
17 have replaced the -- about to replace the gas furnace. We  
18 have installed a battery. We've installed solar panels.  
19 All of these have resulted in work for the trades people in  
20 plumbing, heating, sheet metal and other work.

21 We thank you for the opportunity to speak. We  
22 think that by removing gas in the requirement for new  
23 construction you will avoid the problems that we've been  
24 facing. I urge you to adopt the strong Title 24 as  
25 proposed. Thank you.

1 MS. GALLARDO: Thank you.

2 Next is Jenny Green, a reminder to spell your  
3 name, state your affiliation if any. Jenny, your line is  
4 open and you may begin.

5 MS. GREEN: Hi. My name is Jenny Green, J-e-n-n-  
6 y G-r-e-e-n. I'm from San Jose and I'm a volunteer with  
7 Mothers Out Front, a national movement of mothers who are  
8 mobilizing to ensure a livable climate for all children.  
9 We have more than 6,000 members in California. And on  
10 behalf of those more than 6,000 California moms I'm asking  
11 you to please pass the code as strong as possible, a strong  
12 possible electric code. We need to show California -- we  
13 need Californians to show bold leadership in moving our  
14 society off fossil fuels. If California won't lead the  
15 way, who will?

16 I know there are people who asked you to weaken  
17 the code for the sake of their jobs. Mothers are asking  
18 you to pass a strong code for the sake of our children's  
19 lives. I could talk about how much money this is going to  
20 save families, because building all-electric means they  
21 won't have to have the expense of retrofitting later, but  
22 that's not the main point and I think you know that. We  
23 are in Code Red for humanity. We're facing the worst  
24 possible disasters, including the possible end of our own  
25 species eventually. For the sake of our children please,

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1 please do the right thing, please pass the strongest  
2 possible code.

3 MS. GALLARDO: Thank you.

4 Next is Laura Petrillo-Groh. Laura, apologies if  
5 I mispronounced that, a reminder to spell your name,  
6 indicate your affiliation if any. Your line is open,  
7 Laura, you may begin.

8 MS. PETRILLO-GROH: Good morning Commissioners,  
9 my name is Laura Petrillo-Groh, L-a-u-r-a P-e-t-r-i-l-l-o-  
10 G-r-o-h, representing the Air Conditioning, Heating &  
11 Refrigeration Institute. AHRI is the national trade  
12 association of 333 manufacturers of residential and  
13 commercial HVACR and water-heating equipment.

14 AHRI flagged issues relating to proposed changes  
15 to single-family, multifamily and nonresidential sections  
16 regarding space and water heating systems, aka the heat  
17 pump baselines.

18 These proposed revisions removed certain types of  
19 equipment covered by the Energy Policy and Conservation Act  
20 from the prescriptive compliance path and pose  
21 impermissible barriers to installing the same equipment  
22 under the performance compliance path.

23 EPCA expressly preempts the proposed revisions  
24 because they constitute regulations concerning the energy  
25 use of a covered product under the law and do not meet all

1 seven requirements that a building code must meet in order  
2 to avoid preemption under EPCA. If CEC moves forward with  
3 the adoption of 15-day language of Title 24, Part 6,  
4 California will be in violation of federal law.

5 We hope to work with CEC staff to address these  
6 issues and urge the Commissioners to reconsider the  
7 adoption of Energy Code as written. I would like to  
8 recognize CEC staff for all their hard work this co-cycle.  
9 Thank you for the opportunity to comment here today.

10 MS. GALLARDO: Thank you.

11 Next is someone on the phone with a phone number  
12 ending in 903. Please state your name, spell it and  
13 indicate your affiliation, if any. A reminder to unmute  
14 your line using \*6. Your line is open, person whose phone  
15 number ends in 903 please begin.

16 MS. HARVEY: Hi, my name is Ann Harvey. I am in  
17 Oakland. And I'm a member of Climate Health Now, an  
18 organization of over 500 healthcare professionals across  
19 the state dedicated to protecting and improving the health  
20 of all people by advocating for urgent, equitable climate  
21 solutions.

22 We advocated for a stronger all-electric  
23 baseline. However, you developed an energy code by an open  
24 public process, and we really appreciate that. And it  
25 includes significant steps towards new building



1 electrification. We strongly support its adoption.

2 I also want to express my respect and compassion  
3 for workers concerned about job displacement. While you're  
4 not individually responsible for the disaster of global  
5 warming and you should not bear a disproportionate brunt of  
6 the cost we must leave nothing behind. This is necessary  
7 for you and your families as well as everybody else. And I  
8 invite you and your unions to join with climate justice  
9 organizations to push for equity in the necessary  
10 transition. Thank you.

11 MS. GALLARDO: Thank you.

12 Next is Sasan Saadat, apologies if I  
13 mispronounced that. Please spell your name, indicate your  
14 affiliation if any. Your line is open and you may begin.

15 MR. SAADAT: Hi, Sasan Saadat with Earthjustice.  
16 My name is spelled S-a-s-a-n, last name, S-a-a-d-a-t.

17 I'm 26 years old and more than half of all  
18 greenhouse gases were emitted during my lifetime. We have  
19 less than half of that time to remake the world again so  
20 that it can withstand and hopefully avert something far  
21 worse than we're seeing today.

22 And most of my adult life I've been advocating  
23 for climate action here in California, which is a strange  
24 disillusion that pushing a state that lauds itself as a  
25 climate leader even while our targets, much less our

1 actions, are still not aligned with the minimum demanded  
2 from the IPCC's 1.5 scenario. Committed emissions from  
3 existing fossil fuel infrastructure already carry us past  
4 the 1.5-degree mark, which I and many of our children will  
5 be left with.

6 Each time I read the news about new fossil fuel  
7 projects around the globe, it feels like a cold hand on my  
8 heart. But knowing it's still happening here in  
9 California, it gives me genuine anger. There's no excuse  
10 for California to continue adding fuel to the flames its  
11 residents are being evacuated from. And avoiding gas in  
12 new buildings is our lowest cost-mitigation option. At  
13 this juncture, the most effective thing for the Commission  
14 to do is not delay and build on this momentum with more  
15 steps forward. So I urge the Commission to pass this new  
16 code and continue the urgent and somber work ahead. Thank  
17 you.

18 MS. GALLARDO: And your time is up, thank you.

19 Next is Dennis Peters. Dennis, a reminder to  
20 spell your name, indicate your affiliation if any. Your  
21 line is open. You may begin.

22 MR. PETERS: Good morning, Chair Hochschild and  
23 Commissioners, Dennis Peters, D-e-n-n-i-s P-e-t-e-r-s. And  
24 I'm speaking on behalf of the Sacramento Municipal Utility  
25 District. I just want to appreciate the CEC's leadership in

1 prioritizing decarbonization in the 2022 Energy Code.

2           The inclusion of updated space and water heating  
3 in the electric baselines is a move in the right direction.  
4 SMUD joins the dozens of stakeholders who have advocated  
5 throughout the rulemaking for strong building  
6 decarbonization standards, including an all-electric  
7 baseline.

8           With respect to community solar, SMUD appreciates  
9 staff collaboration and thoughtful revisions, including  
10 clarification that administrators are not responsible for  
11 code compliance and enforcement.

12           I would like to highlight two recommendations  
13 detailed in SMUD's written comments. First of all SMUD did  
14 (indiscernible) an opt-out provision, and we're concerned  
15 it will discourage new entrants. A large utility may have  
16 the ability to balance and repurpose utility scale  
17 resources without significant risks of stranding new  
18 community solar assets. However, an opt-out provision will  
19 likely discourage new solar developers and administrators,  
20 especially smaller non-utility administrators from entering  
21 the market.

22           Second, SMUD believes that participant opt-out  
23 should be conditioned on the compliance with the current  
24 code. Requiring compliance with vintage codes creates  
25 significant hurdles for building owners and administrators.

1 And could generate confusion among customers, onsite solar  
2 installers, and building officials. From an  
3 administrator's perspective it complicates the opt-out  
4 process and requires otherwise unnecessary documentation.

5 MS. GALLARDO: Dennis, your time is up. I  
6 apologize for interrupting.

7 MR. PETERS: Okay. Thank you.

8 MS. GALLARDO: Thank you.

9 Next is Catherine von Berg. Catherine, a  
10 reminder to spell your name, indicate your affiliation if  
11 any. Your line is open and you may begin. (Silence on the  
12 line.) Catherine, you may need to unmute on your end.

13 MS. VON BURG: Oh, apologies, Catherine von Berg,  
14 V-o-n B-e-r-g, CEO of Simpliphi Power. We are a company in  
15 California that designs and manufacturers cobalt-free  
16 lithium ferrous phosphate batteries that are safe and  
17 efficient and integrate any generation source grid, solar,  
18 wind generators.

19 It is important to point out that not all  
20 lithium-ion batteries are hazardous or catch fire or blow  
21 up. And those are the batteries that we manufacture, iron  
22 phosphate batteries that are safe, have gone through 9540A  
23 and other extreme testing.

24 It's important, energy storage. Without it  
25 renewable powers are intermittent, but so too is top-down

1 centralized delivery of power. Without the power outages  
2 and unplanned outages in California the state would not be  
3 losing billions of dollars. As a company, we can  
4 demonstrate multiple projects that provide energy security,  
5 economic stability, and remove duck curve and other  
6 advantages just using energy storage.

7           The last point to make is while there's concern  
8 about just supply chain constraints, mandates serve to  
9 create market signals that in turn support global supply  
10 chains to rally and drive down costs and constraints.

11           MS. GALLARDO: Catherine, your time is up.  
12 Apologies for interrupting, we want to be fair to everybody  
13 else.

14           Next is Dan Brotman. A reminder to spell your  
15 name, indicate your affiliation if any. And you only have  
16 one minute, so please keep it short. Your line is open,  
17 Dan, you may begin.

18           COUNCIL MEMBER BROTMAN: Thank you. My name is  
19 Dan Brotman, that's D-a-n last name B-r-o-t-m-a-n. I am a  
20 Council Member for the beautiful City of Glendale  
21 California, although I'm speaking not for the Council as a  
22 whole but on my own behalf. I want to thank the Commission  
23 and the CEC staff for their hard work and thoughtful work.  
24 And I urge you to adopt the energy code changes recommended  
25 by staff and to adopt them as-is without revisions that

1 would weaken it.

2           The IPCC Report makes it abundantly clear that we  
3 must act now and act aggressively to avoid utterly  
4 catastrophic changes to our fragile climate.

5           I personally wish the CEC would have gone  
6 further, but the current proposal is still a major step  
7 forward and I support it wholeheartedly. Thank you.

8           MS. GALLARDO: Thank you.

9           Next is Jennifer Elwell. A reminder to spell  
10 your name, indicate your affiliation if any. You have one  
11 minute, please keep it short. Your line is open and you  
12 may begin.

13           MS. ELWELL: Hi, my name is Jennifer Elwell,  
14 spelled J-e-n-n-i-f-e-r E-l-w-e-l-l and I'm a senior air  
15 quality engineer at the Bay Area Air Quality Management  
16 District.

17           I'm commenting in support of staff's  
18 recommendation. We appreciate the hard work and  
19 flexibility of CEC staff who listened to an enormous amount  
20 of input by stakeholders throughout this process and  
21 developed a building code update that as a landmark step  
22 towards reducing emissions from the building sector. The  
23 CEC can be proud of this proposed energy code update and  
24 the work done by its staff.

25           The Bay Area Air District is currently working

1 with 100-plus local governments in our region on this  
2 issue, as well as developing our own rule update to limit  
3 NOx emissions from indoor appliances. Throughout these  
4 processes, we will continue to engage collaboratively with  
5 CEC staff on this important issue. We encourage the Energy  
6 Commission to support and adopt the proposed 2022 Energy  
7 Code. Thank you.

8 MS. GALLARDO: Thank you.

9 Next is Michael Rochmes, and apologies for that  
10 if I mispronounce your name. A reminder to spell your  
11 name, indicate your affiliation if any. Michael, your line  
12 is open and you may begin.

13 MR. ROCHMES: Hi. Thank you this is Michael  
14 Rochmes, it's spelled R-o-c-h-m-e-s, and I'm a member of  
15 350 Southland Legislative Alliance, as well as Climate  
16 Reality Los Angeles Chapter. And I'm speaking in favor of  
17 the draft code today. I want to thank you in advance for  
18 passing the draft 2022 Energy Code that will reduce fossil  
19 fuel pollution from new buildings and make sure all new  
20 homes are electric-ready.

21 I was really struck by the AB 3232 report  
22 developed by the CEC, which found that while we're making  
23 progress on system-wide greenhouse gas emissions it's  
24 really only due to the decarbonization of the grid and not  
25 to any decline in direct emissions. So the current code is

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1 not really doing the job, and so I think that this is a  
2 great improvement to move forward with the new code.

3 I would have hoped for fully electric standard,  
4 but I think this is, like I said, a great step forward. So  
5 thank you very much.

6 MS. GALLARDO: Thank you.

7 Next is Laura, it looks like it says 350 BA.  
8 Laura, a reminder to state your name, spell it, indicate  
9 your affiliation any. Your line is open and you may begin.

10 MS. NEISH: Hi, this is Laura Neish, N-e-i-s-h  
11 and I'm the Executive Director with 350 Bay Area, a  
12 regional climate change group with over 25,000 supporters.

13 We urge you to pass this building code update,  
14 which is a solid step towards getting dangerous methane out  
15 of our buildings. This move will keep California in the  
16 lead on substantive action to address climate change and  
17 help build the market for super-efficient heat pumps and  
18 batteries, driving prices down while familiarizing  
19 contractors and the public with these new, exciting  
20 technologies. Again, we ask that you pass the 2022  
21 building update as proposed. And then immediately shift  
22 planning to an all-electric requirement for the next code  
23 update. Thank you very much.

24 MS. GALLARDO: Thank you.

25 Next is Sean Armstrong. Sean, a reminder to



1 state your affiliation if any. Your line is open and you  
2 may begin.

3 MR. ARMSTRONG: Hello, I'm Sean Armstrong, S-e-a-  
4 n A-r- m-s-t-r-o-n-g with Redwood Energy in Arcata,  
5 California.

6 So I wanted to speak to the fact that this will  
7 be a huge benefit, this code proposal, to builders and  
8 developers. I've been building affordable housing since  
9 2005, one of the top 10 builders in the nation.

10 What we found after working on 10,000 units of  
11 affordable housing now is that ground-source heat pumps,  
12 they were never cost-effective. Air source heat pumps were  
13 cost-effective when I started working on them in 2007.  
14 2007, and at that point we also discovered that it took \$2  
15 to \$3,000 more per apartment if we had to put in gas  
16 infrastructure, so I can say cost-effective compared to  
17 furnaces and in air conditioners.

18 So what we saw that in 2012 is that with  
19 incentives and the cost drop in PV that zero-net energy was  
20 cost-effective. Over a 15-year period, the loan period,  
21 they actually made money using zero-net energy. And so now  
22 we've worked on more than 50 of 100 percent solar-offset  
23 projects.

24 If this code works we'll get to that same heat-  
25 pump adoption rate that the South had in 2017, 80 percent.

80

1 So I'm glad we're catching up with the South. Thanks very  
2 much for your help.

3 MS. GALLARDO: Thank you.

4 Next is Jonathan, there is no last name there.

5 So Jonathan, please state your name, indicate your  
6 affiliation if any. Your line is open and you may begin.

7 (Silence on the line.) Jonathan, you may need to unmute on  
8 your end.

9 Okay, Jonathan is not responding, so we will move  
10 forward with the next person.

11 Next, it looks like EBCE Programs. Please state  
12 your name, spell it for the record, indicate your  
13 affiliation just to make sure we have that correct. And  
14 your line is open. You may begin.

15 MS. MENTEN: Good morning, Commissioners. My  
16 name is Beckie Menten, spelled B-e-c-k-i-e M-e-n-t-e-n.  
17 I'm a program manager for building electrification and  
18 energy efficiency here at East Bay Community Energy. East  
19 Bay Community Energy is a CCA serving Alameda County in the  
20 city of Tracy with a commitment to reducing energy-related  
21 greenhouse gas emissions.

22 I'm calling to support the adoption of this  
23 important code update and really to applaud staff for their  
24 thoughtful and monumental efforts in developing this  
25 important code.

1 EBCE has supported 8 jurisdictions in our service  
2 area as they pursue reach codes focused on promoting all-  
3 electric construction. These agencies have pursued these  
4 reach codes because they see that all-electric construction  
5 is safer, performs better and is cost-competitive with  
6 mixed-fuel buildings.

7 This code update will reinforce California's  
8 position as a leader in climate-change mitigation while  
9 sending important market signals to manufacturers,  
10 distributors and installers providing a crucial boost to an  
11 emerging market.

12 I thank you all for your time and consideration  
13 and urge you again to adopt this new code.

14 MS. GALLARDO: Thank you.

15 Next is Braxton Bridgers. A reminder to spell  
16 your name, indicate your affiliation if any. Braxton,  
17 your line is open and you may begin.

18 MR. BRIDGERS: Hi. Good morning, my name is  
19 Braxton Bridgers, spelled B-r-a-x-t-o-n B-r-i-d-g-e-r-s and  
20 I'm with the Association for Energy Affordability, also  
21 known as AEA. I'm calling on support of the staff  
22 recommendation. The 2022 Title 24 Energy Code illustrates  
23 California's commitment to providing energy-efficient  
24 housing that enhances residential resilience to the impacts  
25 of the climate crisis.

1           And the code is the first in the nation to  
2 include highly efficient heat pump technology as a baseline  
3 for new homes. Through our various programs, such as the  
4 Low-Income Weatherization Program, LIWP, AEA has witnessed  
5 firsthand the efficacy of deploying heat pump technology to  
6 mitigate greenhouse gas emissions, boost resiliency and  
7 improve efficiency in the residential building sector. And  
8 this most recent iteration of the Title 24 Energy Code is a  
9 significant step towards decarbonization of the building  
10 sector.

11           However, there are still challenges that we must  
12 overcome to address the environmental impacts caused by  
13 fossil fuels in buildings. And the CEC's proposed building  
14 decarbonization assessment offer strategies to advance  
15 energy efficient and healthy homes for all Californians.  
16 And AEA is committed to continuing this work.

17           We look forward to supporting the State of  
18 California in its energy and climate goals and thank you  
19 very much for the opportunity to comment.

20           MS. GALLARDO: Thank you.

21           Next is Woody Hastings. A reminder to spell your  
22 name, indicate your affiliation, if any. Your line is  
23 open, Woody, you may begin.

24           MR. HASTINGS: Good morning, my name is what he  
25 Hastings that's W-o-o-d-y H-a-s-t-i-n-g-s. I'm

1 representing the Climate Center. Thank you for the  
2 opportunity to speak. I'm here today to also urge you to  
3 adopt the resolution certifying the final EIR and adopting  
4 the 2022 Energy Code. The code revision is consistent with  
5 the Climate Center's mission to reduce greenhouse gas  
6 emissions in alignment with the latest science and in  
7 accord with the Climate Center's planetary California  
8 campaign that aims to advance this state's climate goals to  
9 2030 from 2045.

10 If you do propose any amendments today to the  
11 code that's before you, we urge that any such amendments be  
12 for the purpose of strengthening the code not weakening it.  
13 And we are hopeful that in the next revision the Commission  
14 will adopt an all-electric baseline. Thank you.

15 MS. GALLARDO: Thank you.

16 Next is Allison Hilliard. A reminder to spell  
17 your name, indicate your affiliation if any. Allison, your  
18 line is open and you may begin.

19 MS. HILLIARD: Thank you, can you all hear me?

20 MS. GALLARDO: Yes, we can.

21 MS. HILLIARD: Hi, my name is Allison Hilliard,  
22 spelled A-l-l-i-s-o-n, last name H-i-l-l-i-a-r-d. And I am  
23 with Reimagine Power and Ivy Energy, speaking today to  
24 voice our support for the updated CEC Building Standards.

25 Ivy Energy is a California software startup that

1 optimizes the customer billing experience for multifamily  
2 building owners that have a shared distributed energy  
3 resource, such as solar and energy storage. Ivy Energy's  
4 platform enables (indiscernible) in their saving benefits  
5 of onsite clean energy with a win-win business model for  
6 tenants and owners. Ivy Energy was awarded the California  
7 Energy Commission's Visionary of the Year Award in 2020 for  
8 its work.

9           With the increased cost of living in California,  
10 we are seeing more people transitioning into multifamily  
11 homes or complexes. Multifamily construction is on the  
12 rise and nearly half of Californians are renters now.  
13 Standardizing solar and energy storage through the state  
14 building code and maintaining a strong family VNEM program  
15 will allow renters to participate and receive tangible  
16 benefits from the clean energy transition and give builders  
17 and real-estate developers long-term confidence in the  
18 market for onsite, clean energy resources in new  
19 construction. Thank you for your consideration and support  
20 on the new building codes.

21           MS. GALLARDO: Thank you.

22           Next is Jackie Garcia. A reminder to spell your  
23 name, indicate your affiliation if any. Your line is  
24 open, Jackie, you may begin.

25           MS. GARCIA: Hi, I'm Jackie Garcia, J-a-c-k-i-e

1 G-a-r-c-i-a. I'm calling on behalf of 350 Contra Costa to  
2 urge you to support the certification of the EIR and the  
3 adoption of the 2022 Code. And I do want to thank you for  
4 listening to our earlier comments over the years to  
5 strengthen this code. We're really delighted at the  
6 progress that you made and to see that you're taking a  
7 stand in progressing clean energy. This is adoption of the  
8 best available technology that will help clean our  
9 environment. And it supports human health and  
10 environmental health, so you should be proud that you're  
11 taking an actual moral stand. This is just a little piece  
12 of the puzzle in saving our world and it makes me really  
13 proud to be a California, so thank you so much for creating  
14 this strong code. And I urge you, if anything, to make  
15 amendments that strengthen it and implement all clean  
16 energy as soon as possible. Thank you.

17 MS. GALLARDO: Thank you.

18 Next is Aaron Gunzner, apologies if I  
19 mispronounced that. A reminder to spell your name,  
20 indicate your affiliation if any. You have one minute so  
21 please keep it short. Your line is open and you may begin.

22 MR. GUNZNER: Good morning, my name is Aaron  
23 Gunzner, A-a-r-o-n G-u-n-z-n-e-r. I'm a senior manager  
24 advocacy with the Air Movement and Control Association  
25 International. AMCA International is a not-for-profit

1 association of manufacturers of fans, dampers, louvers and  
2 other air-system components. Its mission is to advance the  
3 knowledge of air systems and uphold industry integrity on  
4 behalf of its nearly 400 members worldwide.

5 AMCA thanks the Commission for the opportunity to  
6 provide public comment today regarding the 2022 California  
7 Energy Code. AMCA applauds the Commission for advancing  
8 the code's fan-efficiency provision, which uses the Fan  
9 Energy Index, or FEI metric. AMCA is also pleased to have  
10 been able to comment on the express terms and on other  
11 steps in the development process. FEI is the fan  
12 efficiency metric for predominantly standalone fan  
13 applications found in the 2021 IECC, ASHRAE 90.1 2019, 2021  
14 IGCC and ASHRAE 189.1 2020.

15 AMCA commends the path California is taking to  
16 require third-party verified FEI ratings that could be  
17 provided using manufacturer software. Thank you for your  
18 time.

19 MS. GALLARDO: Thank you.

20 Next is Nehemiah. All right, a reminder to  
21 please state your name, spell your name and indicate your  
22 affiliation if any. Your line is open, Nehemiah, you may  
23 begin.

24 MR. STONE: Yes, Nehemiah Stone, N-e-h-e-m-i-a-h  
25 S-t-o-n-e, Stone Energy Associates. I want to thank the



1 Commission for the steps they are about to take. It is a  
2 necessary but not sufficient step towards dealing with the  
3 climate crisis with buildings, I understand the constraints  
4 that the Commission is under and that this is a tremendous  
5 step forward.

6 I also would like to recognize the CASE Team led  
7 by PG&E and SoCal Edison that has done a lot of the  
8 background work supporting this.

9 And finally I want to thank you for making, for  
10 accepting multifamily standards that now make sense. On a  
11 personal note, you've made it so that I can retire.

12 The next step I think that the Commission needs  
13 to think about as it goes, expands the scope of the  
14 standards, is embodied carbon in materials. There's a lot  
15 of research and information coming out about that. It's no  
16 longer good enough to reduce carbon emissions, but we now  
17 need to embed them back into our buildings. Thank you.

18 MS. GALLARDO: Thank you.

19 Next is Alex Deeter. A reminder to spell your  
20 name, indicate your affiliation if any. Alex, your line is  
21 open and you may begin.

22 MR. DEETER: Hi, thank you very much. Can you  
23 hear me?

24 MS. GALLARDO: Yes, we can.

25 MR. DEETER: Good morning, I'm Alex Deeter, that's

1 D-e-e-t-e-r. I'm the Senior Sales and Marketing Engineer  
2 for SunRing Systems. We are a commercial solar and storage  
3 provider in Southern California and we've installed  
4 multiple large solar and storage solutions for businesses  
5 and new construction projects that all have pretty quick  
6 payback.

7           We support these new solar and storage  
8 requirements for new construction projects. This is  
9 especially beneficial to renters who are an underserved  
10 market for commercial and residential properties for solar.  
11 And installing these in new construction helps property  
12 owners by avoiding retrofits to their building of  
13 puncturing holes in their roofs or replacing the electrical  
14 equipment.

15           Energy storage system retrofits we've been  
16 finding especially difficult, because there are parking  
17 requirements and landscaping requirements that aren't being  
18 taken into consideration, or it's all being maxed out. So  
19 it'd be really great for those local code requirements to  
20 be able to do it in the very beginning. And renters need  
21 more access to programs like these for access to clean  
22 energy.

23           Thank you very much and yep, thanks for letting  
24 us comment.

25           MS. GALLARDO: Thank you.

1           Next is Pete Marsh. A reminder to spell your  
2 name and state your affiliation if any. You have one  
3 minute. Your line is open. You may begin Pete. Pete, a  
4 reminder to unmute on your end. Your line is open.

5           MR. MARSH: Thank you, just did. I'm Pete Marsh,  
6 M-a-r-s-h. I founded a small solar company and became a  
7 climate activist working nationally and locally to devote  
8 all of my personal energy to solving the climate crisis. I  
9 strongly support the staff recommendation's next cycle. Go  
10 all the way to full electric please.

11           I predict you'll hear today comments about how  
12 expensive, difficult or unfair it would be for you to move  
13 away from fossil fuels or any further. As to cost, they're  
14 dead wrong. Many business groups acknowledge the cost of  
15 solving climate will be far less than ignoring it. As to  
16 difficult and unfair? Tough, ignore them because all of  
17 these comments are in some way or another motivated by the  
18 industry that conducted the world's most comprehensive  
19 greenhouse gas research in the 1970s and 80s, getting most  
20 of their predictions remarkably close to what we've  
21 observed.

22           And then they hid their research and spent  
23 millions in dark money to purposely create the  
24 disinformation that is literally killing people at the same  
25 time as their global industry receives a half trillion

1 dollars in direct subsidies and about \$5 trillion or 6  
2 percent of global GDP in indirect subsidies.

3 We can solve the crisis that their industry has  
4 imposed on us, but only by a unified action to rapidly wind  
5 down fossil energy. You're leading the way. Thank you,  
6 please --

7 MS. GALLARDO: Thank you. Your time is up, Pete.

8 Next is Karyn Boenker, a reminder to spell your  
9 name, indicate your affiliation if any. Karen, your line  
10 is open and you may begin and a reminder to unmute on your  
11 end.

12 MS. BOENKER: Yep, got it. Hi, this is Karyn  
13 Boenker, K-a-r-y-n B-o-e-n-k-e-r with Sunrun and I'm  
14 speaking in support generally for the suggested 2022  
15 California Energy Code. We especially appreciate the  
16 commercial and high-rise multifamily PV and storage  
17 requirement as well as the storage-readiness provisions  
18 and, additionally, the clarifications on the community  
19 solar assumptions.

20 The proposed solar and storage commercial  
21 requirements build on the progress of SCHIP and SOMAH as  
22 well as many other multifamily programs. And California  
23 just is extending California's leadership on a global  
24 level, not just nationally. And these programs can help  
25 spur the market and make it possible to be ready for this

1 kind of requirement by 2023, both in terms of our company's  
2 readiness and I believe the manufacturing pipeline.

3 We've committed to develop 100 megawatts of  
4 affordable multifamily housing in California by 2023 and  
5 have been pretty successful so far. So we really look  
6 forward to helping builders comply with this new  
7 requirement.

8 As for the single-family home storage readiness  
9 requirements, we support this direction because it  
10 addresses a major hurdle in the fight against climate  
11 change. Currently the U.S. must replace 100 million  
12 breaker boxes or main panels in order to hit renewable  
13 energy and electrification goals, so this process is --

14 MS. GALLARDO: Karyn, your time is up. Apologies  
15 for interrupting, we want to be fair to others.

16 Next is Heidi Werner. Heidi, a reminder to spell  
17 your name, indicate your affiliation if any. Your line is  
18 open and you may begin.

19 MS. WERNER: Hello, my name is Heidi Werner, H-e-  
20 i-d-i W-e-r-n-e-r. I'm with Energy Solutions, but today  
21 I'm speaking on behalf of the Statewide Utility Codes &  
22 Standards Enhancement Team, or CASE Team, which is  
23 supported by PG&E, SDG&E, SCE, LADWP, and SMUD. The  
24 Statewide CASE team supports the adoption of the 2022  
25 Energy Code. Doing so will be a significant step towards

1 building decarbonization and ultimately achieving our  
2 statewide energy and climate goals.

3 Thank you to the Energy Commission staff for your  
4 dedication during this code cycle. Thank you to Payam  
5 Bozorgchami and Peter Strait for managing an effective code  
6 development process through a pandemic, and other  
7 uncertainties.

8 We also really appreciate the entire Energy  
9 Commission staff for their careful review of our proposals  
10 that we submitted, and for your continued collaboration  
11 with us and with many other stakeholders to refine and  
12 improve proposals.

13 The statewide CASE Team actively participated in  
14 the Energy Commission's code change process. And with  
15 input from hundreds of individual stakeholders we developed  
16 91 unique code change proposals, of which 66 are included  
17 in the version of the code language that's under  
18 consideration for adoption today.

19 We strongly support the adoption of the 2022  
20 California Energy Code. Thank you for your time today and  
21 throughout the whole code cycle.

22 MS. GALLARDO: Thank you.

23 Next is Alex Boesenberg, apologies if I  
24 mispronounced that. A reminder to spell your name,  
25 indicate your affiliation if any. Alex your line is open

1 and you may begin.

2 MR. BOESENBERG: Well, good morning. I am Alex  
3 Boesenber, the Director of Regulatory Affairs for the  
4 National Electrical Manufacturers Association and that's  
5 spelled B-o-e-s-e-n-b-e-r-g. We are in support of the  
6 revisions to Title 24 that sought to improve harmony and  
7 alignment and make the code more understandable. The  
8 easier it is to interpret the better conformance is and  
9 with better conformance comes energy savings.

10 There is one exception that we're concerned about  
11 where 45-day proposed revisions to Table 150.0-A, that  
12 would have aligned Title 20 with Title 24 with respect to  
13 high-efficacy and high-quality lighting, was struck in the  
14 15-day language. What this means is the Commission has  
15 determined a quality LED lamp or LED product in Title 20 is  
16 not quality somehow for Title 24. Title 20 goes out to  
17 retail, that's the install base, that's where the greatest  
18 energy savings is. That should also be allowed in new  
19 construction. Please when you adopt, amend to restore 45-  
20 day language to Table 150.0-A. Thank you.

21 MS. GALLARDO: Thank you.

22 Next is Tara Hammond. A reminder to spell your  
23 name and indicate your affiliation, if any. Your line is  
24 open and you may begin, Tara.

25 Tara Hammond: T-a-r-a H-a-m-m-o-n-d, Hammond

1 Climate Solutions. Hello, Chair Hochschild and  
2 Commissioners, my name is Tara Hammond. I'm the Founder of  
3 Hammond Climate Solutions based in San Diego, working to  
4 stop climate injustices in the climate crisis. I'm calling  
5 in support of staff's recommendation and I'll reduce my  
6 planned comments to avoid overlap.

7           There is no question that we need to get off of  
8 fossil fuels ASAP. Encouraging heat pumps is a great first  
9 step; however, having all-new buildings be fully electric  
10 is a crucial step to setting the example in creating a just  
11 and livable future. Adding any natural gas in 2022 and  
12 beyond is incredibly dangerous and irresponsible.

13           I'd recommend all new construction, which already  
14 must have solar to adopt storage as well, especially when  
15 using SCHIP and financing for the clean energy project  
16 adding storage to a new home is a nominal cost that will  
17 result in savings, reduce CO2 emissions, and resiliency.  
18 It can also help drive innovation and reduce storage costs,  
19 overall.

20           I urge you to adopt the new code, hopefully with  
21 a modification to get us off of fossil fuels for new  
22 construction. Thank you for your time and for your  
23 leadership.

24           MS. GALLARDO: Thank you.

25           Next is Robert Haw, apologies if I mispronounced



1 that. A reminder to spell your name, indicate your  
2 affiliation if any. Robert, your line is open and you may  
3 begin.

4 MR. HAW: There we go. Can you hear me?

5 MS. GALLARDO: Yes, we can.

6 MR. HAW: Great. Good afternoon, Commissioners,  
7 my name is Robert Haw, H-a-w. I'm the Proprietor of  
8 Habitable Designs, Inc., a home energy modeling consultancy  
9 firm. I commend you on the proposed update to the Title 24  
10 provisions, nudging Calif away from combustion-source  
11 energy and closer to clean energy and I fully support it.  
12 I'm especially happy with the performance-based  
13 requirements for heat pump water heaters. That's a firm  
14 stroke in favor of science-based policy.

15 What's needed next are building envelope  
16 performance-based requirements, high standards for thermal  
17 energy demand intensity in order to increase interior  
18 comfort and conserve overall energy use within dwellings.  
19 Thank you so much, and I appreciate all you're doing for  
20 California.

21 MS. GALLARDO: Thank you.

22 Next is Marc Monbouquette. Please spell your  
23 name, indicate your affiliation if any. Marc, your line is  
24 open and you may begin. (Silence on the line.) Marc, your  
25 line is open and you may begin. You may need to unmute on

1 your end.

2 MR. MONBOUQUETTE: Thank you. Good morning  
3 Commissioners my name is Marc Monbouquette, M-a-r-c M-o-n-  
4 b-o-u-q-u-e-t-t-e. I'm with NLX and NLX strongly support  
5 the 2022 code proposal to require solar and storage in  
6 nonresidential new construction. And we commend Commission  
7 staff for their efforts in developing these proposals.  
8 They have extensive experience deploying these resources at  
9 a diverse array of medium to large commercial, industrial  
10 customer facilities, with around 50 such projects in  
11 California alone. Solar and storage resources provide  
12 significant customer bill savings, promote consumption of  
13 locally generated carbon-free energy, and until a payback  
14 period, usually under 10 years in our experience.

15 Going forward these resources are poised to play  
16 an increasingly important role in the state's energy supply  
17 and to provide the source and customer backup resiliency in  
18 the face of extreme heat events and wildfires, which pose  
19 the serious threats to grid reliability as we're acutely  
20 experiencing this summer.

21 NLX is ready to partner with the building  
22 industry to ensure a smooth transition to the new code  
23 requirements and to help the Commission achieve its  
24 objectives. We appreciate consideration of these comments  
25 and urge the approval of the proposed code. Thank you.

1 CHAIR HOCHSCHILD: Okay, thank you.

2 Just before we move on to the next comment, to  
3 calibrate with everybody we have 38 more public comments to  
4 take. We will get through those and then we'll turn to  
5 Commissioner discussion and the vote and conclude the item.  
6 And then we'll break for lunch for those of you trying to  
7 plan timing on that.

8 And I just want to thank everybody, these  
9 comments have been terrific. I'm hearing a lot of passion  
10 and insight and compassion and just thank you to all the  
11 stakeholders who have called in. So with that let's get  
12 back to the next comment, thank you.

13 MS. GALLARDO: This is Noemi, the Public Advisor.  
14 Next comment is Pierre Delforge, apologies if I  
15 mispronounced that. A reminder to spell your name, indicate  
16 your affiliation if any. Pierre, your line is open and you  
17 may begin.

18 MR. DELFORGE: Good morning, Chair and  
19 Commissioners, my name is Pierre Delforge, P-i-e-r-r-E D-e-  
20 l-f-o-r-g-e. I'm with an NRDC, the Natural Resources  
21 Defense Council. We're in full support of this staff  
22 proposal. This code update is a monumental step towards  
23 the clean, efficient and affordable buildings we need to  
24 fight the climate crisis.

25 With this policy, the world's fifth largest

1 economy is pivoting to climate-friendly and cleaner  
2 buildings that cost less to build and to operate than  
3 fossil fuel alternatives, setting a model for the  
4 international community. We thank the Commission for its  
5 leadership and hard work on this update and urge an aye  
6 vote on this landmark code update. It is the right thing  
7 to do for Californians' climate safety, health and  
8 pocketbooks. Thank you.

9 MS. GALLARDO: Thank you.

10 Next is Eddie Ahn. A reminder to spell your  
11 name, indicate your affiliation if any. Your line is open,  
12 Eddie, you may begin.

13 MR. AHN: Hi, Eddie Ahn. That's E-d-d-i-e A-h-n.  
14 Executive Director of Brightline Defense, we're an  
15 environmental justice organization based in San Francisco  
16 and we do work throughout the Bay Area. We really believe  
17 in clean energy as well as good-paying jobs for local  
18 communities and we're in strong support for the 2022 Energy  
19 Code. Not just for the energy savings but also delivering  
20 for frontline communities through building electrification  
21 and catalyzing demand for cleaner energy and storage has  
22 been really important to make sure we're not relying on  
23 aging infrastructure.

24 And the UN Climate Change Report has been  
25 mentioned several times already, but something to highlight

1 from the report is that we're at Code Red for humanity.  
2 It's just astonishing that we're in as bad of a state as we  
3 are in. And that approval and implementation of these new  
4 standards can't come soon enough, so thanks to CEC staff  
5 and the Commissioners for your leadership on this issue.  
6 Thanks.

7 MS. GALLARDO: Thank you.

8 Next is a phone number ending in 602. So again,  
9 this is a phone number ending in 602. I am going to open  
10 your line. A reminder to state your name, spell it,  
11 indicate your affiliation if any, your line is open and you  
12 may begin.

13 MR. PARR: Hi, can you hear me?

14 MS. GALLARDO: Yes, we can.

15 MR. PARR: Hi, good morning or good afternoon  
16 Commission and Commissioners, my name is Jeff Parr. I am  
17 calling from a company called Solar Technologies. My last  
18 name is spelled Parr, P-a-r-r, P as in Paul.

19 We are a solar and energy storage solution  
20 provider and installer in the greater San Francisco Bay  
21 Area. We've got over, I don't know the exact number, but  
22 over 80 full-time employees. We've installed over 5,000  
23 solar energy systems and approaching several hundred,  
24 almost a thousand energy storage systems for residential  
25 and commercial businesses.

1           Our install base really spans across tens of  
2 multifamily properties, tens of public-school districts,  
3 tens of commercial condo developments, things like that.  
4 Areas where there has been some concern expressed in the  
5 installation of these applications. And I just want to  
6 applaud the staff and the Commission for coming out with  
7 this code, it's a landmark change in promoting distributed  
8 energy resources.

9           We have the people to do this, we have the  
10 training, the equipment is readily available, the paybacks  
11 are far less than 10 years, interconnection options with  
12 virtual net meter interconnections are well proven. We've  
13 done tens of them. I submitted a letter and just wanted to  
14 call and reiterate that.

15           And to anyone that would be displaced from this  
16 we are sympathetic to them, but rest assured we encourage  
17 them to transition to (indiscernible) train and get them  
18 working.

19           MS. GALLARDO: Jeff, your time is up.

20           MR. PARR: So thank you for your time, appreciate  
21 it.

22           MS. GALLARDO: Thank you.

23           Next is Suzanne Leta. Suzanne, a reminder to  
24 spell your name, indicate your affiliation, if any. Your  
25 line is open. You may begin. Suzanne, you may need to

1 unmute on your end.

2 MS. LETA: My apologies, can you hear me?

3 MS. GALLARDO: Yes.

4 MS. LETA: Great. Hi, my name is Suzanne Leta,  
5 S-u-z-a-n-n-e L-e-t-a. I'm the Head of Policy and Strategy  
6 for SunPower, a 35-year-old national solar energy  
7 technology and services provider headquartered in San Jose.  
8 We work with 17 of the top 20 California builders,  
9 completing over 70,000 new homes installations since 2006.  
10 This business includes a growing multifamily residential  
11 business with customers utilizing virtual net energy  
12 metering.

13 We are seeing strong demand for solar paired with  
14 battery storage across all of our channels. I urge the  
15 Commission to vote to approve the staff recommendation  
16 today. Rather than confronting our challenges with rolling  
17 blackouts, we know the better answer is to provide greater  
18 opportunities for energy generation that give consumers  
19 greater freedom, while also providing an ability to  
20 increase their personal savings. Especially working  
21 families who need those savings the most.

22 A recent study concluded that California's  
23 consumers stand to save over \$120 billion by 2050. That's  
24 4 billion annually if we continue to construct rooftop  
25 community solar and batteries as a way to meet our clean

1 energy and climate change goals. Some believe that the  
2 battery storage requirement for non-residential buildings  
3 is too far ahead of its time.

4 MS. GALLARDO: Suzanne, your time is up.

5 MS. LETA: Thank you.

6 MS. GALLARDO: Thank you.

7 Next is Brandon Carlson. Brandon, a reminder to  
8 spell your name, indicate your affiliation if any. Your  
9 line is open and you may begin. Brandon, you may need to  
10 unmute on your end.

11 MR. CARLSON: Okay, can you hear me now?

12 MS. GALLARDO: Yes.

13 MR. CARLSON: There we go. Good afternoon,  
14 Commission Chair and Members. My name is Brandon Carlson.  
15 That's B-r-a-n-d-o-n C-a-r-l-s-o-n. I am a Building Codes  
16 and Standards contributor and I'll keep it short. The  
17 changes to the code were all well thought out and  
18 discussed. I applaud staff's and all contributors efforts,  
19 I'm in full support of staff's recommendation. And thank  
20 you for your time.

21 MS. GALLARDO: Thank you.

22 Next is Lisa Saponaro, apologies if I  
23 mispronounced that. Please spell your name, state your  
24 affiliation if any. Lisa the line is open and you may  
25 begin.



1 MS. SAPONARO: Hello, my name's Lisa Saponaro, L-  
2 i-s-a S-a-p-o-n-a-r-o. I'm a Senior Thermal Regulatory  
3 Project Engineer from Vertiv Corporation, a global  
4 manufacturer of data center cooling equipment.

5 We respectfully request that the Commission  
6 accept the errata submitted to the docket last night, which  
7 would revert Title 24 to the 2019 language (indiscernible)  
8 as it pertains to computer room economizers in sections  
9 140.9(a)1 and 141.1(b)1. This request would remove  
10 unattainable and unsubstantiated efficiency metrics imposed  
11 on refrigerant economizers. The analysis underlying the  
12 proposed prescriptive efficiency metrics was haphazardly  
13 formulated. This is evidenced by the inconsistent  
14 adjustments that relate to the proposed metrics during the  
15 CASE Team's review last Friday, August 6th.

16 The adjustments to the efficiency metrics  
17 decrease some of the compliance numbers by as much as 11  
18 percent and increase others by up to 88 percent. These  
19 significant changes on review indicate flawed methodology  
20 that was made at the last minute. Vertiv commits to  
21 working with CEC staff to help resolve any underlying  
22 concerns regarding the addition of pumped refrigerant  
23 economizers as a prescriptive technology option.

24 However, arriving at an agreeable and rational  
25 solution requires more time that has been allotted within

1 this 2022 code cycle. Thank you.

2 MS. GALLARDO: Thank you.

3 Next is Luke Morton. A reminder spell your name,  
4 indicate your affiliation any. Just a second, so Luke,  
5 your line is open and you may begin.

6 MR. MORTON: Yes, hi. My name is Luke Morton, L-  
7 u-k-e M-o-r-t-o-n, calling on behalf of the California  
8 Association of Building Energy Consultants, also known as  
9 CABEC. I would like to express my full support of the 2022  
10 Energy Code and urge the Commission in its adoption today.

11 A few things I'd like to highlight. First is the  
12 inclusion of a separate multifamily chapter. With the  
13 housing crisis that the state is currently experiencing  
14 this new chapter will make the code much easier to read,  
15 understand and apply and are in this necessary housing  
16 element.

17 Secondly, I strongly support the electrification  
18 elements in the code. These market-based policy elements  
19 are eminently practical steps forward. And we emphasize  
20 practicality here since as image consultants we understand  
21 as well as anyone the energy code isn't just words on a  
22 page, rather it is our entire profession to manifest these  
23 codes into real building performance.

24 Elaborating further on behalf of our practice I  
25 think I can speak fairly on behalf of my colleagues that we

1 came into our role as energy consultants with some form of  
2 conservation ethic, and that ethic is what continues to  
3 drive us in our work. It is really exciting to see a code  
4 that continues to evolve in support of that ethic, and not  
5 only as a moment of our own values, but as a model for the  
6 world this makes our practice work practicing

7           Lastly, I wanted to thank all the hard work by  
8 the Commission, staff and CASE teams today and  
9 (indiscernible) --

10           MS. GALLARDO: Your time is up.

11           MR. MORTON: Thank you, guys.

12           MS. GALLARDO: Thank you.

13           Next is Brenna Shafizadeh, apologies if I  
14 mispronounced that. Please restate your name, spell it and  
15 indicate your affiliation if any. Brenna, your line is  
16 open and you may begin.

17           MS. SHAFIZADEH: Hi my name is Brenna Shafizadeh,  
18 it's B-r-e-n-n-a S-h-a-f-i-z-a-d-e-h. And I manage rental  
19 properties in the East Bay Area and I'm committed to  
20 switching over to all-electrical appliances as they come to  
21 their end-of-use cycle.

22           Currently I'm in the process of trying to switch  
23 over the heating, cooling systems to heat-pump technology  
24 at two of the property sites that I manage. And the  
25 reasons I'm trying to make the switch is because one, I

1 believe that we are in a climate emergency, which trumps  
2 everything else. In fact, one of these properties was  
3 evacuated for fire a couple years ago. And thankfully the  
4 fire didn't reach that neighborhood, but it came very  
5 close. It's clear to me that the changes we must make  
6 cannot come fast enough.

7           Two, energy cost and efficiency have become a  
8 regular concern among my tenants.

9           Three, I made the switch to heat-pump  
10 technologies for water heating and cooling in my own home  
11 last year and I feel confident in the benefits that they  
12 promise.

13           So thank you for your leadership and raising the  
14 benchmark for building energy efficiency in our state,  
15 thank you for working toward better stewardship of our  
16 natural environment, and increased resiliency in our  
17 communities. I support you in adopting the recommended  
18 higher efficiency comes.

19           MS. GALLARDO: Thank you.

20           Next is Linda Hutchins-Knowles. A reminder to  
21 spell your name, indicate your affiliation, if any. Linda  
22 your line is open and you may begin.

23           Ms. Hutchins-Knowles: Hi, my name is Linda  
24 Hutchins-Knowles. It's spelled H-u-t-c-h-i-n-s and Linda  
25 is L-i-n-d-a. I'm the Co-founder and volunteer with

1 Mothers Out Front, Silicon Valley. I now work for Acterra,  
2 a Bay Area nonprofit accelerating an equitable transition  
3 to provide transportation and buildings. Most importantly  
4 I'm a mother and I'm speaking in support of the new energy  
5 code on behalf of the over 6000 members of Mothers Out  
6 Front California, and my own two children one of whom has  
7 asthma.

8           As mothers we are committed doing everything  
9 within our power to save our children's health for a  
10 livable climate for all children, we urge you to do the  
11 same. You have the power to adopt this all-electric code  
12 this cycle. To be honest, we're disappointed that the  
13 staff code falls short of this mark, we have no time to  
14 waste. As the new IPCC Report reveals, we are in Code Red  
15 for humanity. Building any new buildings with gas is going  
16 in the opposite direction perpetuating the use of health-  
17 damaging and climate destabilizing gas for decades to come  
18 and increasing the future costs retrofitting these  
19 buildings.

20           So we urge you to not only adopt the strengthened  
21 code that's proposed today, but before the next code cycle  
22 we urge you to move it to an all-electric code. We need  
23 you to act commensurate to the climate crisis. Don't allow  
24 gas to be built in our buildings anymore, it's killing our  
25 children and damaging their future. Thank you.

1 MS. GALLARDO: Thank you.

2 Next is Shelah Ott. Shelah, a reminder to spell  
3 your name, restate it -- if I mispronounced it, apologies  
4 if I did -- and indicate your affiliation, if any. Your  
5 line is open and you may begin.

6 MS. OTT: Thank you. My name is Shelah Ott, S-h-  
7 e-l-a-h O-t-t and I'm with the San Diego Building  
8 Electrification Coalition. Good morning, Chair and  
9 Commissioners. Again, I'm a member of the San Diego  
10 Building Electrification Coalition, I'm calling in from San  
11 Diego.

12 As the climate crisis worsens and the need for  
13 sweeping climate action increases an urgency it is  
14 encouraging to see the Title 24 building code update will  
15 be a step forward in ensuring climate resiliency across the  
16 state.

17 As the timeline to take bold climate action  
18 continues to shorten though we must adjust accordingly. So  
19 first, rather than requiring new construction to simply be  
20 storage-ready I'm urging the Commission to require all-new  
21 construction, which already must have solar to adopt  
22 storage as well. This could help drive innovation and  
23 reduce the cost of storage, while reducing carbon dioxide  
24 emissions and stabilizing the grid.

25 In addition the proposal doesn't go far enough

1 for PV requirements and I'm advocating for all-electric  
2 versus just an all-electric appliance and buildings being  
3 prewired all-electric-ready, which still allows for a  
4 natural gas infrastructure. Thank you so much for your  
5 time and leadership.

6 MS. GALLARDO: Thank you.

7 Next is Tara Hammond. Tara, a reminder to spell  
8 your name, indicate your affiliation if any. Your line is  
9 open, you may begin.

10 MS. GONZALEZ: Hi everyone, sorry this is Karinna  
11 Gonzales, K-a-r-i-n-n-a G-o-n-z-a-l-e-z. And I am a member  
12 of the San Diego Green New Deal Alliance calling in from  
13 Chula Vista.

14 I want to start off by thanking the Commission  
15 and staff for bringing forward these updates to the  
16 building code. As the climate crisis is rapidly  
17 accelerating we need to ensure that our building standards  
18 are bold enough to move us towards the transition to 100  
19 percent renewable energy while meeting the state's  
20 electrification goals.

21 Studies show that local rooftop solar and storage  
22 not only lower rates for everyone by reducing the amount of  
23 costly grid infrastructure that's needed, but also reduces  
24 the amount of dirty energy we need to meet our demand. as  
25 we move towards electrification and zero-carbon buildings

110

1 mandates for homes to be battery-ready will reduce costs  
2 down the line for homeowners. And in the state with one of  
3 the highest prices for energy in the nation this is a big  
4 deal.

5 I urge you to approve the building standards that  
6 will help us address the climate emergency and make  
7 California a leader in moving towards electrification and  
8 reducing emissions from dirty energy. Thank you.

9 MS. GALLARDO: Thank you.

10 Next is Joe Cain. A reminder to spell your name,  
11 indicate your affiliation if any. Joe, your line is open  
12 and you may begin.

13 MR. CAIN: Hello, Joe Cain, C-a-i-n. And I am  
14 the Director of Codes and Standards for the Solar Energy  
15 Industries Association. SEIA is in full support of the  
16 updates in the 2022 Energy Code. We are especially  
17 supportive of the new prescriptive requirements for PV and  
18 battery storage systems for select commercial buildings in  
19 section 140.10 and very supportive of residential battery  
20 storage readiness in section 150.0. These new  
21 requirements are critical for helping the state meet its  
22 climate goals.

23 We also believe Commission staff did a good job  
24 of balancing the varying interests in its update of section  
25 10-115 for community-shared solar and battery storage.



1           We appreciate the efforts, outreach, and  
2 engagement of Commission staff in developing these changes.  
3 And we encourage the Commission to adopt the 2022 Energy  
4 Code. Thank you.

5           MS. GALLARDO: Thank you.

6           Next is Al Sattler. A reminder to spell your  
7 name, indicate your affiliation if any. Al, your line is  
8 open and you may begin.

9           MR. SATTLER: Sure, Alfred Sattler, A-l-f-r-e-d  
10 S-a-t-t-l-e-r. I'm a resident of California down here in  
11 Southern California. I'd like to applaud the Energy  
12 Commission and staff for doing a good job here.

13           I think it's especially good to have heat-pump  
14 water heaters. I think it's disappointing not to have more  
15 call-out for heat-pump heating. We have a retrofit Douglas  
16 heat pump heating/air conditioning system and have been  
17 very pleased with it, very energy efficient. And might  
18 well -- and would recommend it for those doing retrofits,  
19 especially perhaps for multifamily dwellings. Thank you.  
20 Thank you very much, bye.

21           MS. GALLARDO: Thank you.

22           Next is David McCoard. A reminder to spell your  
23 name, indicate your affiliation if any. David your line is  
24 open and you may begin.

25           MR. MCCOARD: This is a David McCord, D-a-v-i-d

1 M-c-C-o-a-r-d and I live in El Cerrito. And I strongly  
2 support the staff recommendations for updated requirements  
3 to solar and storage in many commercial and other kinds of  
4 buildings. And wiring for storage and solar in new  
5 residential construction are very important for reducing  
6 greenhouse gas emissions from electricity generation and  
7 will flatten peaks in demand.

8 We must take the IPCC Report seriously and the  
9 effects now of climate change in California. Thank you.

10 MS. GALLARDO: Thank you.

11 Next is Joan Taylor. A reminder to spell your  
12 name, indicate your affiliation if any. Joan your line is  
13 open and you may begin.

14 MS. TAYLOR: Good morning, this is Joan Taylor,  
15 T-a-y-l-o-r. I'm speaking as an individual, support the  
16 proposed energy code update, especially the onsite solar  
17 and storage requirements. Thank you.

18 We're in the new age, PV solar is as  
19 revolutionary as is the cell phone and doesn't have to be  
20 tethered to transmission wires. Distributed solar is the  
21 future as are other distributed energy resources.

22 Going forward I'd like to urge the Commission to  
23 increase its focus on the state policy adopted in 2015 to  
24 double additional, achievable energy efficiency. Without  
25 aggressive energy efficiency the state's decarbonization

1 goals will always be a moving target, more expensive and  
2 politically problematic.

3 In addition to pursuing energy efficiency CEC  
4 also needs to improve regularity and transparency reporting  
5 progress relative to 2015 to achieve the energy efficiency  
6 policy goals. Thanks very much.

7 MS. GALLARDO: Thank you. Next is Sven Thesen &  
8 Associates. A reminder to spell your name, indicate your  
9 affiliation to make sure this is correct. And your line is  
10 open, you may begin.

11 MS. WARHIET: Hi, can you hear me?

12 MS. GALLARDO: Yes, we can.

13 MS. WARHIET: Okay. Sorry, my name is actually  
14 Vanessa Warheit. My last name is spelled W-a-r-h-e-i-t. I  
15 lead a statewide coalition that advocates for EV charging  
16 access for all at the state level and I'm also a member of  
17 the numerous democratic and environmental organizations in  
18 the Bay Area.

19 I want to thank the Commission for proposing this  
20 landmark code because creating affordable energy-efficient  
21 housing that helps Californians to better survive the  
22 impacts of climate change is critically important and we  
23 have no time to lose.

24 There is currently a lack of responsible building  
25 codes at the national level as government officials have

1 been ejected from the ICC code making process. So this  
2 year's Title 24 building code update is extra important.  
3 It helps to fill this code vacuum at the national level and  
4 continues California's leadership in the just transition to  
5 a clean energy economy.

6 And I just want to point out working with Labor  
7 is critical to ensuring appropriate high-road jobs are made  
8 available to those workers losing their jobs in this  
9 transition, which includes the essential work of building  
10 water-catchment systems and cleaning up the thousands of  
11 idle and abandoned oil wells in our state.

12 It also needs to be fast. I'm tired of having  
13 friends evacuated and losing everything, so I urge you keep  
14 going; go even farther, go as fast as you can. Thank you.

15 MS. GALLARDO: Thank you.

16 Next is Charles Eley, apologies if I  
17 mispronounced that. Please restate your name, spell it and  
18 indicate your affiliation, if any. Charles your line is  
19 open and you may begin. And Charles a reminder to unmute  
20 on your end.

21 MR. ELEY: Thank you. Yeah, my name is Charles  
22 Eley, that's E-l-e-y. I'm a Senior Fellow for Architecture  
23 2030 and I'm speaking on behalf of Architecture 2030 in  
24 support of the standard. And in particular I want to note  
25 that AR6 from the IPCC is as noted the urgency of climate

1 change. And while there's some things that I think the  
2 Commission could have done more on I think this is a  
3 landmark standard and we certainly support it.

4 One of the things in particular that I think is  
5 extremely important is what the Energy Commission calls  
6 hourly source energy and what we call in the Zero Code  
7 time-dependent source energy. This is something that will  
8 encourage them through the performance standards more  
9 battery storage and management. Thank you.

10 MS. GALLARDO: Thank you.

11 Next is someone with a phone number ending in  
12 533. Please state your name, spell it and indicate your  
13 affiliation if any. Your line is open, you may begin.  
14 Again, this is the phone number ending in 533.

15 MS. LUPUS: Good afternoon, can you hear me?

16 MS. GALLARDO: Yes, we can.

17 MS. LOPEZ: Good afternoon. Good afternoon  
18 Commissioners, Chair Hochschild, and CEC staff. My name is  
19 Licha Lopez and I'm reading this comment on behalf of  
20 Pacific Gas and Electric Company in support of the 2022  
21 Energy Code adoption.

22 The first thing I'd like to say is that PG&E  
23 supports the decarbonization of California's economy  
24 through timely, durable, safe and applicable policy on  
25 energy solutions. We at PG&E remain committed to reducing

1 greenhouse gases from the point clean energy technologies  
2 to continuing and innovate on energy efficiency. The  
3 updated energy code moves California towards making clean  
4 energy a simple (indiscernible) on retrofitted buildings.  
5 This includes energy efficient, cost-effective, all-  
6 electric new construction.

7           As Californians choose all-electric buildings  
8 PG&E welcomes the opportunity to avoid any new gas assets  
9 that might later prove underutilized. PG&E appreciates the  
10 opportunity to offer proposals to our goal as statewide  
11 (indiscernible) standard programs and contributes PG&E's  
12 comments through the update process. Thank you for the  
13 opportunity to comment here today and we look forward to  
14 (indiscernible).

15           MS. GALLARDO: Thank you.

16           Next is Leane Eberhart, apologies if I  
17 mispronounced that. Please restate your name, spell it and  
18 indicate your affiliation, if any. Leane, your line is  
19 open and you may begin.

20           MS. EBERHART: Hi my name is Leane Eberhart, L-e-  
21 a-n-e E-b-e-r-h-a-r-t. And I'm an architect in San Mateo.  
22 I'm speaking for myself. I just wanted to come today to  
23 express my support for the new code and to urge you to go  
24 as far as you can. I'm not a member but the AIA, American  
25 Architects Institute has declared a climate crisis. We're

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1 in this now where we're going to try our hardest.

2 And as the past callers have said I am proud to  
3 be a Californian, but I look at my relatives in Australia  
4 and New Zealand who haven't had their shots yet and I know  
5 that California is truly blessed. And I urge you to take  
6 on this leadership to do as much as you to help us win this  
7 climate crisis. Thank you.

8 MS. GALLARDO: Thank you.

9 Next is Robert Gould. A reminder to spell your  
10 name, indicate your affiliation if any. Robert your line  
11 is open and you may begin.

12 DR. GOULD: Hi. I'm Dr. Robert Gould, R-o-b-e-r-  
13 t G-o-u-l-d. I'm an Associate Adjunct Professor at UCSF's  
14 School of Medicine working in our program on reproductive  
15 health and the environment.

16 Today I'm speaking as President of San Francisco  
17 Bay Physicians for Social Responsibility, representing  
18 hundreds of professionals who speak for the health of our  
19 patients and communities who are increasingly impacted by  
20 the unfolding fully connected issues of air pollution,  
21 reinforced by last week's ominous report issued by the  
22 IPCC. Because of this we strongly support rapid  
23 electrification of our infrastructure provided by renewable  
24 and sustainable non-nuclear sources as a replacement for  
25 natural gas in support of climate, respiratory and

1 cardiovascular health.

2 This is especially important as a combustion of  
3 gas inside our homes causes a development or exacerbation  
4 of asthma, which disproportionately burdens African  
5 American and Latinx children, and those who are poor, more  
6 likely living in housing with smaller unit size, and  
7 greater occupant density.

8 As such, we in San Francisco Bay PSR applaud  
9 CEC's proposed Title 24 building code update as a landmark  
10 step towards creating affordable and energy-efficient  
11 housing that enables Californians to be more resilient to  
12 the impacts of climate change. While greatly advancing the  
13 green economy, we need.

14 MS. GALLARDO: Your time is up.

15 DR. GOULD: Okay, thank you.

16 MS. GALLARDO: We need to be fair to others.

17 Thank you.

18 Next is Suzanne Emerson. A reminder to spell  
19 your name, indicate your affiliation if any. Suzanne, your  
20 line is open and you may begin.

21 MS. EMERSON: Good afternoon, my name is Suzanne  
22 Emerson, S-u-z-a-n-n-e E-m-e-r-s-o-n of Emerson  
23 Environmental. I'm a CALGreen Special Inspector and  
24 GreenPoint Rater.

25 On a daily basis, I work with architects to



1 assure that their projects are designed to be consistent  
2 with the energy and CALGreen codes as well as local reach  
3 and green building ordinances. I'm speaking of favor of  
4 adopting the proposed codes.

5 In my experience architects for single-family  
6 home projects often assume heating and water heating will  
7 be default gas equipment under most circumstances and leave  
8 decision-making about efficiency levels to the energy  
9 consultant who prepares the Title 24 report. The energy  
10 consultant then lets the designers know what fuel type and  
11 efficiencies will be needed to meet the energy code  
12 requirements.

13 I'm pleased to see that under the current  
14 proposal the baseline to which each home will be compared  
15 will include either a heat pump space-heating or heat pump  
16 water-heating.

17 Although we'd previously advocated for an all-  
18 electric baseline and would have loved to see that proceed  
19 we understand that this is not feasible at this time. This  
20 partial heat pump baseline will send a useful message to  
21 the design community to at least consider some of their  
22 standard assumptions about fuel selection and consider  
23 whether or not it makes more sense for projects to go all-  
24 electric instead of dual fuel.

25 It'll also encourage the design community to

1 develop their own training and experience with heat pump  
2 water heaters and heat pump space systems. Thank you.

3 MS. GALLARDO: Thank you.

4 Next is Brianna Duarte. A reminder to spell your  
5 name and your affiliation if any. Brianna, your line is  
6 open and you may begin.

7 MS. DUARTE: Hello my name is Brianna Duarte  
8 spelled B-r-i-a-n-n-a and then Duarte is D-u-a-r-t-e. And  
9 I'm with Acterra a nonprofit organization in Palo Alto. I  
10 am in support of the adoption of the 2022 California Energy  
11 Code. And aside from building efficiency and why heat pump  
12 water heaters are a very efficient option, I would like to  
13 also point out that the Intergovernmental Panel on Climate  
14 Change 2021 Report states that climate change is now in  
15 Code Red. And we really do not have time to wait, we  
16 cannot ignore building efficiency standards and we need  
17 these implemented now.

18 Not only will this code help reduce the effects  
19 of climate change, but also heat pump water heaters are  
20 simply the most efficient option, up to 375 percent  
21 efficiency; that's insane. Heat pump water heaters  
22 genuinely are a phenomenal option. And in addition to  
23 building efficiency of heat pumps and electric appliances  
24 in general please consider the amount of indoor and outdoor  
25 air pollution that will be decreased with this energy code.

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1 Families and children are already exposed to indoor air  
2 pollutants that are dangerous to human health let's  
3 consider the health of the population.

4 Also, just would like to point out that the  
5 Department of Energy says that at least 2.5 million water  
6 heaters will fail each year. And with California having a  
7 high population, we can replace that with heat pumps.

8 Thank you.

9 MS. GALLARDO: Thank you.

10 Next is Janny. A reminder to please state your  
11 name, spell your name and indicate your affiliation if any.  
12 Janny, your line is open and you may begin.

13 MS. ZHANG: Hi my name is Janny Zhang, spelled J-  
14 a-n-n-y Z-h-a-n-g. I'm a Committee Lead in Sunrise Silicon  
15 Valley speaking today on my own capacity. I grew up in  
16 SoCal as the daughter of immigrants, graduated college in  
17 NorCal two years ago. And so now I'm an early career  
18 software engineer and renter in the Bay area.

19 And I'm calling today to support adopting the  
20 staff recommendation for the 2022 Energy Code and to ask  
21 that you strengthen this and future codes, including full  
22 electrification in the California building code and good  
23 jobs for all to help secure a carbon-free future for  
24 California, while ensuring that workers are protected in  
25 the transition.

1           This year's Title 24 building code update is a  
2 landmark step in creating affordable and energy efficient  
3 housing that enables California has to be more resilient to  
4 the impacts of the climate crisis.

5           I am also here in the middle of my work day,  
6 because as a young professional I have barely just started  
7 my adult life, but I am perpetually scared for my future.  
8 The IPCC Report released just a few days ago fills me with  
9 anxiety. My parents say folks my age should focus on  
10 making money and living a good life, but my friends and I  
11 can't do that when the climate crisis is destroying our  
12 future baseline quality of life. So I need to see my state  
13 taking faster, bolder steps to ensure the well-being of  
14 Californians.

15           So thank you, the Commissioners, for your work so  
16 far. And I ask you all to please adopt the recommended  
17 2022 code. Thank you for your time.

18           MS. GALLARDO: Next is Cynthia Mahoney. Cynthia,  
19 a reminder to spell your name, indicate your affiliation if  
20 any. Your line is open, Cynthia, you may begin.

21           DR. MAHONEY: Thank you, Dr. Cynthia Mahoney, C-  
22 y-n-t-h-i-a M-a-h-o-n-e-y. I'm an Associate Clinical  
23 Professor of Medicine at Stanford, retired. I work with  
24 multiple health groups like Climate Health Now to address  
25 the climate health emergency.

1 I'm speaking in strong support of adopting these  
2 new codes that will improve our health now by decreasing  
3 asthma from indoor air pollution and decrease the climate  
4 health emergency by decreasing particulates and also  
5 providing cooling in the face of global heating.

6 So as many have noted the IPCC has called it the  
7 Code Red for humanity, so this new building code is a baby  
8 step on the path we need to decarbonize and to mitigate  
9 against climate change. So I want to thank you very much  
10 for what you've done and urge that you immediately start  
11 doing more. Thank you very much.

12 MS. GALLARDO: Thank you.

13 Next is Jamie Jang. Jamie, a reminder to spell  
14 your name, indicate your affiliation if any. Your line is  
15 open and you may begin.

16 MR. JANG: Hi, can you hear me?

17 MS. GALLARDO: Yes, we can.

18 MR. JANG: Thank you. Hi my name is Jamie Jang.  
19 I'm an architectural professional and environmental  
20 advocate with Sunrise Sacramento, on behalf of whom I  
21 speak. We're an at environmental advocacy group of 300  
22 young people, many of whom are in high school and are so  
23 angry with the slow motion of securing a safe future.

24 I'm pleased to see the outpouring of support  
25 from real California is here. For too long fossil-fuel

1 lobbyists have influenced public discourse and public  
2 policy. They've known about this crisis since the 1970s.

3 Two days ago the IPCC Report came out. The only  
4 significant change from the 2018 report is that it's not  
5 written in the future tense, but now it's in the present  
6 tense.

7 There are good things in this code. California  
8 is leading the way in climate change, but ask yourself is  
9 it enough? What are the actual carbon savings in this  
10 code? Does it reach the 65 percent reduction we need to  
11 see by 2030? When considering cost-effective measures do  
12 your calculations consider the destruction of Santa Rosa,  
13 Paradise or Greenville? If not then your system that binds  
14 your hands is broken. In a month when the winds come from  
15 the east what's going to keep you up at night, the smoke or  
16 the world that you're leaving your grandchildren?

17 In 2025 I want a code that unequivocally says  
18 the age of fossil fuels is over. Thank you.

19 MS. GALLARDO: Thank you. Next is J. Grose.  
20 Please restate your name, especially if I mispronounced  
21 that, and spell it, indicate your affiliation if any. Your  
22 line is open and you may begin.

23 MR. GROSE: Good afternoon. My name is John  
24 Grose, J-o-h-n G-r-o-s-e with Sensible Technologies  
25 Incorporated, a hydronic specialist company. We have a

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1 customer base of around 1,000 plumbing and mechanical  
2 contractors and mechanical engineers.

3 I'm calling regarding air-to-water heat pumps and  
4 their three-in-one capabilities to do space heating,  
5 cooling and domestic hot water heating from one appliance.  
6 This technology is important, it's an important component  
7 to decarbonize and electrify California. The current Title  
8 24 is regressive to the sale of these air-to-water heat  
9 pumps. The new proposed code will help correct that, thank  
10 you very much. However, given the seriousness of the  
11 climate crisis I strongly recommend changes to be  
12 implemented immediately per the California Energy  
13 Commission staff meeting November 17th, 2020. Thank you  
14 and I really appreciate your leadership on this.

15 MS. GALLARDO: Thank you.

16 Next is Dana at SolarCraft. Dana, a reminder to  
17 restate your name, spell your name and indicate your  
18 affiliation to make sure that's correct. Your line is  
19 open, and Dana you may begin.

20 MR. SMITH: Hi all, this is Dana Smith, Dana D-a-  
21 n-a, Smith S-m-i-t-h. I'm with SolarCraft. I've been in  
22 solar for ten years, I've been in commercial solar for  
23 five years.

24 We're up here in PG&E territory where we have  
25 some of the highest rates in the country. Utility rates,

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1 in fact the large utilities of all of California are some  
2 two, three, four times higher than the rest of the country.

3 We're up here in PG&E where they're asking for an  
4 18 percent increase coming up. And that high cost means  
5 solar pays for itself superfast. In commercial solar we  
6 can have paybacks of three, four years; you get all your  
7 money back and you get 20, 30 years of free energy. Now I  
8 need to qualify that. That's with the tax incentives and  
9 current NEM.

10 What's unsaid with new commercial buildings is a  
11 lot of these are built by owners and then leased or rented  
12 the tenants who pay the bills. And that disconnect means  
13 it's hard to get solar on them, it just tends not to  
14 happen. And the negative with this proposition as it  
15 stands now, when we look back ten years from now we're  
16 going to have a whole bunch of new buildings that are only  
17 60 percent of usage done with solar.

18 So the superfast payback is even faster for new  
19 construction. Marginal costs of adding more solar is a  
20 super- good deal, so for the ratepayers it saves them tens  
21 -- I'm sorry, you cut me off -- but it's millions of  
22 dollars for ratepayers if you increase that 60 percent to  
23 90 percent.

24 MS. GALLARDO: Thank you, Dana.

25 Next is Blake Herrschaft. Apologies if I



1 mispronounced that. Please restate your name, spell it and  
2 indicate your affiliation if any. Blake, your line is open  
3 and you may begin.

4 MR. HERRSCHAFT: Very good pronunciation. Good  
5 afternoon, my name is Blake Herrschaft, B-l-a-k-e H-e-r-r-  
6 s-c-h-a-f-t. I'm Director of Building Decarbonization for  
7 DNV, a 15,000-person global engineering firm. I'm speaking  
8 on behalf of myself, a mechanical and plumbing engineer who  
9 has been designing buildings in California since 2006.  
10 I've been a registered engineer in this state since 2011.

11 Thank you to the CEC for having this hearing and  
12 for the Commissioners dedication to our state energy policy  
13 and for your continued leadership on energy efficiency  
14 within our building stock.

15 I will be brief and I will be blunt, I support  
16 the adoption of the code because it is a significant step  
17 in the right direction. I absolutely commend the work of  
18 the staff and Commission on this topic.

19 I oppose the CEC's choice to continue to allow  
20 fossil fuel to be installed in our buildings. From 2002 to  
21 2019 the California Energy Commission made a tremendous  
22 misstep by all the mandating the use of fossil fuel for  
23 space and water heating in new construction. This was an  
24 abject failure, it's time to correct it.

25 Please adopt the code as-is and immediately get

1 to work on a better one. The Commission respectfully is 20  
2 years late. I cede the remainder my time, thank you.

3 MS. GALLARDO: Thank you.

4 Next is a person on the phone, a phone number  
5 ending in 528. So please state your name, spell it,  
6 indicate your affiliation if any. Again, this is a phone  
7 number ending in 528. Your line is open and you may begin.  
8 Reminder to mute on your end pressing \*6.

9 MS. ROSENBERGER-HAIDER: Can you hear me?

10 MS. GALLARDO: Yes, we do.

11 MS. ROSENBERGER-HAIDER: Hello, this is Laura  
12 Rosenberger-Haider, L-a-u-r-a H-a-i-d-e-r. I'm Secretary  
13 of Fresnans Against Fracking, from Fresno. And I thank you  
14 for your stronger codes and for the efficiency of them, but  
15 we need heat pump air conditions and heat pump water  
16 heaters. And also efficient too, so that the pipe don't go  
17 around the whole house and lose their heat before they get  
18 to the shower so people waste a lot of water.

19 And there's also a lot of pollution from the oil  
20 industry like compressor leaks and a lot of wells leaking.  
21 And then they have this radioactive TENORM mud and in the  
22 water and it gets out into people's wells and gets dumped  
23 in the garbage dumps and leeches into neighbors' homes and  
24 backyards. And you just can't seem to protect the local  
25 residents from these things. All right, thank you very

1 much.

2 MS. GALLARDO: Thank you.

3 Next is Benjamin Davis. A reminder to spell your  
4 name, indicate your affiliation if any. Benjamin, your  
5 line is open and you may begin.

6 MR. DAVIS: Hey good afternoon Commissioners and  
7 staff my name is Ben Davis, so B-e-n D-a-v-i-s. I'm with  
8 the California Solar and Storage Association.

9 We are in strong support of the proposed  
10 standards. The requirement for commercial construction to  
11 include solar and storage would be absolutely monumental.  
12 California would be the first state to pass such a standard  
13 and it would add 280 megawatts of PV to the grid annually.

14 And at the same time while the requirement is  
15 monumental the solar and storage requirement is also the  
16 logical next step for the building standards, right? If  
17 our goal is zero-emission buildings at a certain point we  
18 need to use solar and storage to make sure the electricity  
19 from the highly efficient and electrified loads is carbon-  
20 free.

21 We are also supportive of the electrification  
22 baseline and the requirement for new homes to be battery-  
23 ready.

24 We are especially supportive of many of the  
25 changes made to the Community Solar Program including the

1 protection for properties to be able to receive them  
2 credits for rooftop solar by un-enrolling in the Community  
3 Solar Program.

4 And then lastly the solar industry in California  
5 is at the ready to help builders comply. We have already  
6 installed 4 gigawatts of commercial solar to date and have  
7 a wealth of experience we can bring to working with  
8 builders. Thank you.

9 MS. GALLARDO: Thank you.

10 Next is Andrew Tanner. A reminder to spell your  
11 name, indicate your affiliation if any. Andrew, your line  
12 is open and you may begin. (Silence on the line.) Andrew,  
13 you may need to unmute on your end.

14 MR. TANNER: Apologies for that. Good afternoon  
15 my name is Andrew Tanner, it's spelled T-a-n-n-e-r and I'm  
16 VP of Strategy and Growth at Yotta Energy spelled Y-o-t-t-  
17 a. Yotta stands in support of 2022 building standards for  
18 new construction, which includes a mandate for PV and  
19 energy storage on multifamily and commercial buildings.

20 Yotta is the manufacturer of a modular energy  
21 storage technology that safely and scale-ably installs  
22 directly beneath solar modules on rooftops. Our technology  
23 specifically targets the unique needs of commercial and  
24 multifamily buildings. Yotta is ramping its manufacturing  
25 capability to meet the increasing demand for energy

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1 storage, coupled with solar and the implications this  
2 policy will have from 202 onwards.

3 Today energy storage has a payback well under 10  
4 years in California. Consumers benefit from energy storage  
5 by shifting energy to times when it's more expensive, as  
6 well as reducing the peak demand of buildings and the  
7 electricity grid broadly.

8 In addition to the technological enhancements  
9 codes and standards have evolved to ensure installations  
10 are safe for consumers. Yotta urges the Commission to  
11 support the staff recommendation to adopt this landmark  
12 code, thank you.

13 MS. GALLARDO: Thank you. Next is Jon McHugh.  
14 Reminder to spell your name, indicate your affiliation if  
15 any. Jon, your line is open and you may begin. (Silence on  
16 the line.) Jon, you may need to unmute on your end.

17 MR. MCHUGH: Can you hear me now?

18 MS. GALLARDO: Yes, we can.

19 MR. MCHUGH: Oh great, thanks. Jon McHugh, J-o-n  
20 M-c-H-u-g-h. I am a registered mechanical engineer in Fair  
21 Oaks, California.

22 I support adoption of the 2022 Title 24, Part 6  
23 Building Efficiency Standards, This update balances  
24 decarbonization in new buildings as follows: two-thirds of  
25 the reductions come from energy efficiency, 21 percent are

1 associated with solar-plus batteries, and 13 percent from  
2 electrification.

3 I've commented into the EIR docket with concerns  
4 that edits to Table 150.0-A would undermine the residential  
5 lighting quality standards in Joint Appendix J8, and this  
6 would have a significant negative impact on the residential  
7 built environment. Since that time this change was  
8 reversed, and I support that change and the proposed  
9 standard.

10 NEMA is asking for the CEC to recognize  
11 equivalency between Title 24 and Title 20 qualified  
12 products. These two standards are not equivalent. A  
13 higher quality is required for products that are approved  
14 for installation in new residential construction indoors  
15 versus those that are for sale in any application in  
16 California, including outdoors and in commercial and  
17 industrial settings. The feedback from any commenters --

18 MS. GALLARDO: Your time is up Jon.

19 MR. MCHUGH: Okay.

20 MS. GALLARDO: Apologies, we want to be fair to  
21 everybody else who is waiting.

22 Next is Brian Barnacle. A reminder to spell your  
23 name, indicate your affiliation if any. Brian, your line  
24 is open and you may begin.

25 COUNCIL MEMBER BARNACLE: Thank you. Good

1 afternoon Chair Hochschild, Commissioners. My name is  
2 Brian Barnacle, B-r-i-a-n B-a-r-n-a-c-l-e. I'm a Petaluma  
3 City Council Member and the Board Alternate for Petaluma on  
4 the Sonoma Clean Power Board. Thank you for hearing my  
5 comments and to your staff for the work on the proposed  
6 code update.

7 Today the "New York Times" shared a troubling  
8 graphic showing last month's week of extreme heat killed  
9 more Americans than the worst week of COVID-19.

10 Here in Sonoma County we live in constant fear of  
11 wildfires. Wildfires have exacerbated our housing crisis,  
12 devastated families, and created new issues like  
13 spontaneous bloody noses amongst schoolchildren. For  
14 people in Sonoma County and communities across the state  
15 the early impacts of climate change are devastating our  
16 communities. We know this is only the beginning and the  
17 future is terrifying. We're relying on leaders like you to  
18 adopt this landmark code. If you're going to make  
19 amendments they should be to strengthen the staff proposal.

20 This is a critical step in creating affordable  
21 and energy-efficient housing that enables Californians to  
22 be more resilient to the impacts of climate change. Thank  
23 you for your leadership. We look forward to an all-  
24 electric code in the future.

25 MS. GALLARDO: Thank you.

1           Next is a caller with the phone number ending in  
2 073. Please restate your name, spell your name, indicate  
3 your affiliation if any. Again the phone number ending in  
4 073 line is open, you may begin. Press \*6 to unmute on  
5 your end. (Silence on the line.) Again, phone number  
6 ending in 073 your line is open. Phone number ending in  
7 073 it looks like your line is open unmuted, but I'm not  
8 hearing anything.

9           MS. BAILEY: Good afternoon, Commissioners and  
10 all, my name is Diane Bailey. That's spelled D-i-a-n-e B-  
11 a-i-l-e-y. I'm representing Menlo Spark, a community  
12 climate action organization.

13           I'm hearing strong support of the proposed  
14 energy code, but also ask you to do more to address our  
15 climate crisis. We should not allow natural gas, also  
16 known as methane gas, in our homes. All-electric new  
17 construction is cheaper, more efficient, safer and  
18 healthier, so why allow any methane gas at all in new  
19 construction.

20           The IPCC Report issued this week was a Code Red  
21 for humanity on the rapidly closing window that we have to  
22 address runaway climate change. It gave us clarity and the  
23 need to focus immediate action on potent global warming  
24 pollutants, especially methane. In fact, experts note that  
25 cutting methane emissions is the single fastest, most



1 effective way there is to slow the rate of global warming  
2 right now.

3           This morning I heard that wildfires in  
4 California have destroyed 900 homes so far this year, so  
5 our climate crisis is fueling our housing crisis. And we  
6 know exactly what's creating the climate crisis, fossil  
7 fuels.

8           Please take a decisive action to stop the use of  
9 fossil fuels and new construction in California. Thank you  
10 for your leadership.

11           MS. GALLARDO: Thank you. Next is Panama  
12 Bartholomy. Reminder to spell your name, indicate your  
13 affiliation if any. Panama your line is open and you may  
14 begin.

15           MR. BARTHOLOMY: Thank you. P-a-n-a-m-a B-a-r-t-  
16 h-o-l-m-y -- that's a mouthful -- with the Building  
17 Decarbonization Coalition. And thank you Commissioners,  
18 congratulations on today and getting to this point.

19           A number of speakers have mentioned the IPCC's  
20 Code Red Report. And it clearly lays out what we need to  
21 do in order to avert catastrophic climate change, and that  
22 includes swiftly transitioning to all-electric homes and  
23 buildings. And the very first step in that journey is to  
24 stop building new fossil fuel buildings.

25           I want to compliment and thank the incredibly

1 hardworking CEC staff for the package before the  
2 Commissioners. They have threaded the needle of legal  
3 authority, market readiness, and customer choice and come  
4 out the other end with what will be, if adopted, the  
5 strongest state decarbonization code in the country.

6           These measures are going to set a strong  
7 incentive for all-electric design. But combined with  
8 nearly \$150 million in build-funding that will be coming,  
9 builders in the golden state will have strong regulatory  
10 and financial incentives to build the types of buildings  
11 that we all need.

12           This is an exciting step in the right direction  
13 and we look forward to working with the Energy Commission  
14 and other state agencies for the suite of programs we need  
15 to fully decarbonize our building stock.

16           Lastly, I want to thank you, over 150  
17 organizations that helped make this standard possible,  
18 congratulations and good luck today.

19           MS. GALLARDO: Thank you.

20           Next is Arun. Please state your name, spell it  
21 and indicate your affiliation, if any. Your line is open,  
22 Arun, and you may begin. And a reminder to unmute on your  
23 end. In case I pronounced it incorrectly it's the spelling  
24 is A-r-u-n on the Zoom. Okay again, unmute on your end so  
25 you can begin your comment. (Silence on the line.)

1 All right, I don't see a response so we're going  
2 to move forward. Next is a caller with a phone number  
3 ending in 409. Please state your name, spell it, and  
4 indicate your affiliation if any. Phone number ending in  
5 409 is open, you may begin. Press \*6 to unmute on your  
6 end.

7 MS. FITZSIMMONS: Thank you very much. My name  
8 is Colleen Fitzsimons, that's spelled C-o-l-l-e-e-n, last  
9 name F-i-t-z-s-i-m-o-n-s. I'm the Executive Director of  
10 the San Diego Green Building Council. And I'm calling  
11 into applaud the staff recommendation to take the first  
12 step to address the dire climate emergency we're in.

13 The transition to clean electric heat pumps  
14 cannot come soon enough, and this new code will make clean  
15 energy the simple, most affordable choice to power our  
16 homes. California's building code update during this code  
17 cycle is a groundbreaking step, but much more needs to be  
18 done to address climate warming pollution from fossil  
19 fuels.

20 I strongly urge you to vote to accept the staff  
21 recommendations as-is and to continue your great work to  
22 advance our codes even further in intervening cycles.  
23 Thank you.

24 MS. GALLARDO: Thank you.

25 Next is Alice Sung. A reminder to spell your

1 name, indicate your affiliation if any. Alice, your line  
2 is open, you may begin.

3 MS. SUNG: Thank you so much. Alice Sung, A-1-  
4 i-c-e S-u-n-g, Architect and Sustainability Professional,  
5 Principal of Greenbank Associates. I'm here today speaking  
6 as an independent climate advocate for the 6.3 million  
7 school children in California, representing over 1,000  
8 school districts in support of zero-carbon public school  
9 districts. And I strongly support the adoption of the 2022  
10 Title 24 code today and applaud you for your hard work on  
11 this Commissioners and staff.

12 Of course, there's always more work to do, and we  
13 look forward to addressing this together with you to build  
14 towards a totally decarbonized public school district,  
15 including both public buildings, commercial buildings and  
16 residential buildings. And look towards the total  
17 decarbonization of California. And including, especially,  
18 cooking and existing buildings in our next code.

19 So I want to thank you for your leadership today.  
20 Please do adopt this code and kudos to your leadership so  
21 far. Thank you.

22 MS. GALLARDO: Thank you.

23 This is Noemi Gallardo, the Public Advisor. I am  
24 not seeing hands raised at this time, but I do have two  
25 comments to read. I will start with a comment from

1 Carmelita Miller, that's C-a-r-m-e-l-i-t-a Miller, M-i-l-l-  
2 e-r of the Greenlining Institute.

3 "Greenlining supports this Building Code Update.  
4 It is a necessary step towards maximizing benefits for  
5 disproportionately and overburdened low-income communities  
6 of color. We see this as a sign that the state is  
7 carefully and meaningfully redressing energy injustice and  
8 inequities in California. This is a groundbreaking step in  
9 our long road to address the impacts of racism and climate  
10 change. Market-driven policies are not enough, but we also  
11 know that the Commission and advocates here have the will  
12 and power to help. We should strengthen authentic  
13 partnerships with organizations on the ground and listen to  
14 their community's needs.

15 "Lastly, we cannot continue to live in two  
16 Californias -- one where people cannot pay their utility  
17 bills and keep their lights on. And another one where  
18 people benefit from the newest clean energy technology.

19 "However, maintaining our reliance on fossil  
20 fuels is not the solution to this problem. Thank you and  
21 we look forward to continued engagement on this very  
22 important issue."

23 MS. GALLARDO: The next comment is from James  
24 Wilson on behalf of the Los Angeles County Chapter of the  
25 National Electric Contractors Association, which represents

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1 300 electrical contracting companies who employ over 7,000  
2 electricians throughout Los Angeles and Ventura County.

3 "We strongly support the adoption of the proposed  
4 2022 Energy Code. Not only is this code essential for  
5 California to achieve its aggressive climate goals,  
6 facilitating the adoption of sustainable energy  
7 technologies will create new careers in the rapidly  
8 expanding clean energy sector.

9 "By requiring new prescriptive solar photovoltaic  
10 and battery storage for many categories of newly  
11 constructed non-residential building types the proposed  
12 code will create a more resilient and reliable grid.

13 "As California continues to electrify, it is  
14 essential to have distributed solar and storage that can  
15 smooth our peak demands, reduce the burden on our  
16 transmission and distribution systems in this time of  
17 unpredictable wildfires and ease some of the burden of  
18 blackouts.

19 "California's buildings are responsible for 25  
20 percent of its GHG emissions. Most of this comes from gas  
21 and propane appliances. Gas-fueled furnaces, water heaters  
22 and stoves significantly compromise air quality and  
23 occupants health.

24 By establishing standards to facilitate building  
25 electrification and improve air quality, this code will

1 have important health benefits while improving the  
2 potential economic benefits of solar and storage.”

3           That concludes the written comments. I do see  
4 there are several raised hands now. We will first go to  
5 Susan Butler-Graham, a reminder to keep your comments one  
6 minute or less. Please spell your name and indicate your  
7 affiliation, if any. Susan, your line is open and you may  
8 begin.

9           MS. BUTLER-GRAHAM: Hi, I'm Susan Butler-Graham,  
10 B-u-t-l-e-r hyphen G-r-a-h-a-m. I'm a mother and  
11 grandmother and former teacher with Mothers Out Front,  
12 Silicon Valley. We are mothers and others working toward a  
13 livable climate for all children. Our over 6,000  
14 supporters in California strongly support the proposed  
15 changes to the California Building Code.  
16 When I think about the future we're handing to my little  
17 granddaughters it makes me want to cry.

18           I desperately hope the Commission votes to pass  
19 the staff proposal without weakening it and urge you to  
20 move to an all-electric code in the next revision. Some  
21 fossil-fuel related companies want you to water it down,  
22 but allowing any use of methane gas would be disastrous for  
23 our climate.

24           This new code does mean affordable, clean energy  
25 in our homes. That means cleaner air indoors and out,

1 affordable building costs and energy bills, and cuts to  
2 climate pollution.

3           With these record-breaking heat waves the new  
4 normal heat pumps will be crucial for keeping our  
5 vulnerable populations safe as temperatures rise with  
6 climate change, while cutting pollution from methane gas  
7 that is driving this climate crisis. All children deserve  
8 clean, livable, indoor air and a livable climate future.  
9 Thanks.

10           MS. GALLARDO: Thank you.

11           Next is Jan Warren. A reminder to spell your  
12 name, indicate your affiliation if any. Jan, your line is  
13 open. You may begin.

14           MS. WARREN: Thank you. My name is Jan Warren,  
15 J-a-n W-a-r-r-e-n. I'm with 350 Contra Costa and in  
16 support of adoption of the 2022 Energy Code without  
17 watering down. And I want to express gratitude to Dorothy  
18 and Noemi today for their exceptional handling of all these  
19 calls. Thank you.

20           MS. GALLARDO: I thank you.

21           I see another hand raised, it's Sven Thesen and  
22 family. But I believe we have already opened your line, so  
23 unless it's a different person we ask that it only be one  
24 comment per representative. I'm going to allow -- I'm  
25 going to open your line and allow you to speak, but only if

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1 it's someone different than who spoke before. Your line is  
2 open.

3 MR. THESEN: Hi. This is Sven Thesen calling on  
4 my family -- for my family. I have not spoken yet. I  
5 apologize. I had to leave for an hour and a half.

6 I want to say God bless to all of you guys and  
7 gals here working, so hard on this code, thank you. This  
8 is the code we need. As a chemical engineer, as a business  
9 owner who has a company that finances solar on top of  
10 nonprofits, who has -- a man of faith and a house that it's  
11 all-electric. We've been living there for ten years.  
12 Thank you guys so much, this is the code we needed five  
13 years ago. I look forward to seeing a true all-electric  
14 code in the next cycle, hopefully, in the next 18 months.

15 And to those that feel that their jobs are  
16 threatened, I apologize. I'm sorry, but we cannot allow  
17 the rest of California to burn up. We cannot shorten our  
18 own and our children's' life spans with poor air quality,  
19 we cannot. There's so much negativity associated with  
20 climate change. I'm sorry, we will put in place as best we  
21 can programs to assist you. Thank you.

22 MS. GALLARDO: Thank you.

23 Again, this is Noemi Gallardo, Public Advisor.  
24 Chair, I do not see any more hands raised and I do not have  
25 any other written comment that was submitted to me to read.

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1 CHAIR HOCHSCHILD: Well thank you so much, Noemi.  
2 And before I turn it over to Commissioner discussion let me  
3 just thank all of the stakeholders and members of the  
4 public who joined us to speak, that was over two-and-a-half  
5 hours of public comment.

6 I think everyone feels the deep urgency of the  
7 moment and the unprecedented nature of the changes to the  
8 climate that we're all living through. And also how high  
9 the stakes are for this vote and for our role as a state.  
10 California really is a postcard from the future and we have  
11 a chance to really be the model. And I think we're doing  
12 that in many regards on climate solutions and really  
13 getting policies in place here that we want to spread  
14 around the nation and around the world.

15 The future we're trying to build together is a  
16 future beyond fossil fuels. It's a future that's  
17 sustainable, that's healthy, one that we can be proud to  
18 pass on to our children. I especially want to thank the  
19 parents who spoke, some of them very movingly, all of them  
20 very movingly. And I just want to say all five of us who  
21 are going to vote today are also parents and we think about  
22 our kids every day with the decisions we make.

23 But yeah, this change we're trying to make  
24 together, it's not just folks who are in our position to be  
25 able to vote on a policy like this that matter. Big

1 changes require everyone to play a role and that's as a  
2 citizen, as an advocate, as a business owner, as an  
3 activist, as a voter, as a family member, we all have a  
4 role to play in building this future. And this is an  
5 incredible show of support for the code we're going to be  
6 considering and voting on in a few minutes. I just want to  
7 thank everyone for participating. I will make a few more  
8 comments about the code itself toward the end of it.

9 Let's now turn to Commissioner discussion. If  
10 we could begin with Commissioner McAllister.

11 COMMISSIONER MCALLISTER: Thank you, Chair  
12 Hochschild. I just want to reiterate the thanks that you  
13 just expressed to all the commenters, it's a very diverse  
14 set of comments. I think certainly all of us feel we can  
15 hear the passion and just the urgency and the emotion  
16 behind what's motivating folks to get involved in this.

17 And I have some significant comments and I've  
18 added a little bit to them as folks have talked and I've  
19 kind of reflected even a little a little more deeply.  
20 Yeah, I think the passion here is a reflection of how  
21 important what we're doing today actually is and this is  
22 good for our energy and our climate goals. It's also good  
23 for our equity goals, it's good for our health of the state  
24 individually and collectively, our air quality. And I  
25 think we need to take a broad view. And even though we

1 are in this Title 24, Part 6 kind of frame, which is not a  
2 comprehensive one we certainly need to place this in  
3 context. And I wanted to just make a few remarks to do  
4 that.

5           The comments from parents and folks who  
6 expressed sympathy and concern about their family members  
7 who have health challenges, and just are really on the  
8 frontlines of climate change -- certainly if you're out in  
9 the rural areas and the wildlife urban interface you're  
10 living this every day, even more than those of us who are  
11 in more urban areas. I've been reflecting actually as  
12 we've, over the last 18 months with staff, we've been  
13 trying to chart a path forward. And the zeitgeist really  
14 just in that time has shifted and it's been, I think, in a  
15 good direction. And it's forcing these issues to be talked  
16 about and openly and I think we're seeing that, this  
17 urgency. California is being is being forced to lead even  
18 more than before and that's a good thing.

19           My late wife was an environmental law professor  
20 and she spent her career trying to improve the laws and the  
21 enforcement of just the kind of regulations that we are  
22 doing today. And she had a career run for 16 years. She  
23 was a true leader in that area, and I think it's still  
24 acknowledged as such. And it's been difficult to try to  
25 get this to the finish line without her by my side to help.

1 To not just manage our family but to help kind of ground  
2 the truth of what we're doing here, because I think folks  
3 who understand how to get things done in a kind of a  
4 regulatory regime in the state are invaluable.

5           And I want to just put this in a little bit of a  
6 personal context because it is, it is personal to all of us  
7 as we try to figure out how to confront climate change.  
8 And the path might have been a little bit different if we'd  
9 been able to strategize about this on the home front as  
10 well as professionally.

11           But we are in, I think, a very strong place with  
12 this building code update, it's just it's monumental. A  
13 lot of adjectives have been expressed over the last couple  
14 of hours. It's been a long road to get to this point and  
15 I want to just again compliment the hundreds of  
16 stakeholders, groups, advocates, experts, building  
17 consultants, utility, CASE Team folks, all the industry  
18 representatives up and down the supply chain, for your  
19 thoughtful and really well-considered comments along the  
20 way. And there's a huge record I think that's helped us  
21 get to where we are, to thread all those needles that we've  
22 heard some comments about.

23           We still have a lot left to do. This is one  
24 tool we have in our toolbox, but it's not the only tool.  
25 We have agency counterparts, other jurisdictions, both at

1 the state and local level. We hope to have some influence  
2 at the federal level to improve the overall federal context  
3 here. But this is a huge, important lever that California  
4 has to pull to really get the attention of the marketplace  
5 and focus people's efforts on making this happen in  
6 reality.

7           We've heard a lot of commenters -- a number of  
8 commenters that are members of CABEC and other  
9 professionals here. And they know what they're talking  
10 about in terms of the need for a strong code to enable real  
11 projects to happen that express the response to climate  
12 change that we have to have. Without a good regulation  
13 that actually is enforceable and implementable we don't  
14 make the progress we need, we still have the emissions.  
15 And so we just have to -- up and down, up and down the  
16 chain, from the very top of state government all the way  
17 down to every individual project and retrofit -- we have to  
18 make sure that we're doing things correctly. And I'm just  
19 taking really great heart in all the acknowledgement of  
20 that and all of the deep stakeholder commitment.

21           So with this, if any of you -- we have another  
22 item later in the day, that's the AB 3232 Building  
23 Decarbonization Report. I won't talk about the details but  
24 it does put this in broader context and the trajectory that  
25 we have to attain if we want to get deep carbon reductions

1 from our building sector is a very steep upward, through  
2 2030 to 2045. And so this is one component of that.

3 But our existing buildings, certainly we need  
4 broad program support across the marketplace including very  
5 much our disadvantaged communities and our existing  
6 buildings. So the Building Code obviously applies to all  
7 the new construction and to additions and alterations. But  
8 there's a huge stock of existing buildings that need  
9 resources and treatment. And those resources are not going  
10 to be small, it's going to be big resources.

11 I'm looking forward to working with our sister  
12 agencies on really broad regulatory efforts and taking  
13 advantage of all of our relative, respective jurisdiction  
14 to develop rules that work together well and makes sense.  
15 And then help sort of direct the marketplace even more and  
16 more broadly than we're doing today, even in the building  
17 code update.

18 So let's see, I'm having to sort through my  
19 notes a little bit because I have moved things around based  
20 on some of the comments. But I think California's  
21 leadership is crucial here, we do have a massive market.  
22 And that market will move the national market, and I think  
23 we'll get international, some international traction. Many  
24 of the companies that are the supply chain are global  
25 companies. And the winds are blowing through California,

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1 as they just kind of start here and blow elsewhere, so I  
2 think providing a big market that's got some certainty to  
3 it, really the importance to that cannot be overstated.

4 Our challenge, overall, as many people have said  
5 we are in the middle of a unprecedented summer, another  
6 one. We have heat waves, we have health risks associated  
7 with those heat wave; spoke of the heat itself. And we  
8 have electric reliability concerns that emerge from that,  
9 from those challenges.

10 And these buildings, they're not just  
11 decarbonization buildings, they're decarbonized buildings.  
12 They're not just putting us on that path they're doing a  
13 lot of other things at the same time: energy efficiency and  
14 electrification go hand-in-hand, they have to go hand-in-  
15 hand. The reason is because we have to chart a path that  
16 manages costs and all the equity implications that that  
17 has, as well as decarbonizes and supports reliability with  
18 things like load flexibility, behind the meter storage, and  
19 sort of grid-smart buildings. And this building code does  
20 all of those things. And so I think that context of our  
21 buildings as citizens of the grid is something that maybe  
22 gets a little less play, but it's equally important as the  
23 decarbonization itself.

24 There's a lot of detail here and I won't go into  
25 all the detail. This is more kind of for the benefit of my



1 colleagues on the dais. Part of the reason -- so this is  
2 such a big lift. And I'm going to get to thanking the  
3 staff and that's going to take a little time and I just  
4 appreciate you bearing with me on that -- but the nature of  
5 the building code, Title 24, Part 6, is that it is a  
6 process that is complicated, has lots of stakeholders. And  
7 many of those stakeholders have very specific expertise,  
8 HVAC, lighting -- I mean, you've heard some of them today -  
9 - the building design, the CABEC folks, they know a lot  
10 about a lot of things.

11           And so we have to look for savings and  
12 improvements in every little segment across the building  
13 stock. And so that inadvertently results in rules that  
14 talk about those details in order to kind of push the  
15 envelope wherever possible. And so some of what you heard  
16 about, refrigerant economizers and some of the lighting  
17 checks and things like that reflect that complexity. But I  
18 think that's part of the beauty of our process is that it  
19 can handle those conversations and put them in a cogent  
20 place in the Building Code that all rolled up is something  
21 that the marketplace cannot manage.

22           On the other hand, well I think all of this  
23 rolled up, the process is really the lifeblood. We  
24 wouldn't get to this point if we didn't have a process that  
25 was robust and really listened to people. And I think

1 we've heard some of that appreciation. Even if everyone  
2 didn't get everything they wanted we've heard some of that  
3 respect for the process. And I absolutely share and  
4 nurture that.

5           So I think that the sum of what I want to say is  
6 that there's wisdom actually in this update that is maybe  
7 not there at first glance, but as we implement and as we go  
8 to the compliance materials and put it all together and  
9 it's expressed in the real world and actual projects on the  
10 ground we're going to see amazing buildings that are  
11 healthy, that people want to live in, that provide  
12 incredible service, that are just a better product. And  
13 that's what this building code is going to produce. And  
14 they're going to be decarbonized and they're going to  
15 provide us with all of these other services that we need in  
16 California to proceed forward.

17           All of this is public, all these comments will  
18 be responded to, all of the previous written comments have  
19 been responded have been or will be responded to.

20           The Environmental Impact Report, all the process  
21 for that is public: the comments, the response to comments,  
22 the analysis behind it, it's all public. That really is  
23 the strength of the process and it helps us be accountable  
24 and it helps us get to the right result.

25           So, if you look at the forest and not the trees

1 you really do see a forest that I think we're trying to  
2 nurture and preserve the health of, and I think that  
3 metaphor is apt these days. So I'm getting there.

4           So it's a real privilege to have been intimately  
5 involved in this process for the last two code cycles. And  
6 in particular over the last year with all the stakeholder  
7 engagement it's been really wondrous actually. And it's  
8 producing this critical movement that we that we need in  
9 our state.

10           And as a public service, I think I can speak for  
11 all of the Commissioners and staff that as public officials  
12 that is our job is to foster that process and get to a  
13 result that expresses where California must go. And so I  
14 think we don't underestimate the sort of the blessing that  
15 that is for each of us. And I know that's true at the  
16 staff level. And I'm going to get to some thank yous here,  
17 because so many people deserve credit for this teamwork  
18 that you see before you.

19           So this item is both the Environmental Impact  
20 Report and it's the Code Update itself. And I'm going to  
21 give a number of staff recognitions here. And I'm going to  
22 start with the EIR, that the cross-Commission effort here  
23 and the interdivisional effort has been tremendous over the  
24 whole cycle really, but definitely around the EIR and the  
25 developing of the package, express terms, and the whole

1 package that's behind the code update.

2           So first I want to start with EIR. Linda  
3 Barrera, the Chief Counsel has just been an incredible  
4 star, just stellar across this whole process and just  
5 keeping multiple, parallel train tracks with trains running  
6 on them in parallel. So that's just been an incredible  
7 accomplishment and I'm very grateful.

8           Also in the Chief Counsel's Office, Matt Chalmers  
9 has just provided great input and work. Caryn Holmes as  
10 well. Just on the EIR she is so deeply knowledgeable, we  
11 all are lucky to have her working on this. And James  
12 Qaqundah, the Assistant Chief Counsel, is just his  
13 commitment to this has been massive and is a really great  
14 to work with as are all his colleagues, but I just wanted  
15 to call him out. Michael Murza as well in the Chief  
16 Counsel, has helped with some of the regulatory issues that  
17 come up in an enterprise of this magnitude.

18           And then a number of other folks in the Chief  
19 Counsel's Office: Susan Cochran, Josephine Crosby, Lisa  
20 DeCarlo, Justin Delacruz, Ralph Lee, Nick Oliver, and Matt  
21 Pinkerton thanks to all of you for your incredible legal  
22 work.

23           In Siting, in the Siting Division many staff in  
24 the Siting Division worked on the EIR as well. First among  
25 them Gerry Bemis who his work on the greenhouse gas piece

1 of it and the air quality piece was really great, it was  
2 really tremendous. Abdel-Karim Abulaban is another in  
3 Siting as well as Tom Gates, Mark Hamblin, Steven Kerr,  
4 Eric Knight, Matthew Layton, Paul Marshall, Gary Maurath,  
5 Gabriel Roark, Kenneth Salyphone, Carol Watson and then  
6 Lisa Worrall on the equity piece did really tremendous  
7 work, so thanks to all of you,

8           So on the Part 6 package, on the code update  
9 package itself it was really, I think, the all-hands-on-  
10 deck for a while, certainly across the Efficiency Division.  
11 But also we got a lot of input and a great work product  
12 from folks in the Assessments Division.

13           In Assessments Nick Janusch and Angela Tanghetti  
14 and Chris McLean, their analytical work behind this, behind  
15 the scenes but really critical to help kind of cross-  
16 reference our work and really make sure that all the i's  
17 were dotted and the various analyses matched up properly.

18           In the Efficiency Division this is where the real  
19 heavy lifting happened. I have to call out a few people  
20 really as having done amazing heavy lifting. Payam  
21 Bozorgchami, who many of you on the phone know and have  
22 interacted with. I think the work that he does and just  
23 the relationships and the quality management of many of  
24 these complex issues is really tremendous. Mazi Shirakh  
25 is really a thought leader, helped with the move to these

1 new carbon-based metrics, the source energy metric, really  
2 drove that process and managed a lot of the contractors and  
3 consultants that were involved in that.

4 Peter Strait as well, just a huge role in the EIR  
5 and also the regulatory documents, also on the lighting  
6 front on the technical side.

7 And then my advisor throughout this Building Code  
8 Update, Bill Pennington, who is just a lion in this area  
9 and just has along with Mazi has, I think, a deep  
10 institutional memory here. And they both actually are  
11 playing a key role in bringing up sort of filling out the  
12 team for future building standards and that  
13 intergenerational transfer of knowledge, which is just so  
14 critical to keeping the energy to the Energy Commission on  
15 point and doing this kind of quality work, this cycle and  
16 in future cycles. And we have a lot of good younger staff  
17 that are coming in. The Energy Commission is a great place  
18 to be working on these issues. You know, we are changing  
19 the world and so that continuity across time is really key.  
20 And I just want to thank all the team, but in particular  
21 Mazi and Bill for that.

22 So Jeff Miller as well on the ventilation side,  
23 Javier Perez on some of the EIR issues and leading many of  
24 those areas. Danny Tam on the heat pump side of things in  
25 many of the technical HVAC issues associated with that, on

1 batteries, on PVs, a really great collaborator so thank  
2 you, Danny. RJ Wichert, again on heat pumps for non-res  
3 buildings and the software development, managing much of  
4 that process.

5 Let's see, so I'm going to just read off a few  
6 other names from the Efficiency Division because they were  
7 involved. Everyone's contribution to this has been just  
8 huge, and so I just want to make sure to acknowledge  
9 everyone. I'm hoping I'm not leaving somebody out but here  
10 we go, so Haider Alhabibi, Ronald Balneg. Thao Chau on the  
11 controlled horticulture, so thank you, Chau, for that.  
12 Christine Collopy the Deputy Director of the Efficiency  
13 Division. She just is an organizational force and really  
14 helped get this to the finish line, so thank you,  
15 Christine. Danuta Drozdowicz who is really focusing on  
16 Part 11 in the ordinances, the local governments, and they  
17 are a key ally going forward in this. Corrine Fishman, the  
18 regulatory process, just really constructive and helping to  
19 understand timelines and make sure we met those deadlines.  
20 Tajanee Ford-Whelan for clerical support. Matthew Haro,  
21 Simon Lee on lighting, Joe Loyer, Alexis Markstrum on the  
22 compliance tools. Cheng Moua assisted on the HVAC work.  
23 Michael Schumacher on the building envelope pieces of the  
24 update. Mike Sokol, I have to call out Mike as well, the  
25 Deputy of the Efficiency Division, who has just been an

1 incredibly strong ally and great manager in helping move  
2 this large enterprise to the finish line, so thank you,  
3 Mike.

4 Mary Trojan for clerical support early on. And  
5 Lorraine White in the Compliance Office who is really  
6 engaged on the implementation side of things and will be  
7 key for that. And Daniel Wong as well who has been also  
8 very involved in many aspects of this.

9 Finally, let's see, I think that's going to be  
10 it. Yeah, I think that's it for staff.

11 So now I would obviously encourage a positive  
12 vote on this, but I just wanted to again note that the CEC  
13 team, staff and our colleagues, both on the dais here, I  
14 just want to manifest how key you are to all the aspects of  
15 what we do in the Commission.

16 And this is obviously one of the activities that  
17 the Commission was founded to do, was conceived to do back  
18 in the 70s. And this is after many cycles that were put in  
19 place where the hundred billion dollars in savings over the  
20 course of the Building Code is really actually a vast  
21 underestimate. It's actually a lot bigger than that, we  
22 just sort of stopped counting after a certain large number.  
23 But it has improved the lives of California immeasurably  
24 and will continue to do so.

25 And as I said, as we all know, the urgency is



1 there so I just want to thank all the staff for keeping  
2 this ship moving forward. There's a lot of work left to  
3 do, really excited to move on with it, and thanks a lot for  
4 your support.

5           And with that I think I may have some additional  
6 comments, but I think this bold update is really just the  
7 right thing to do. It's the right moment, it is. Some  
8 people have said it's really past due and I think we've  
9 moved really quickly here within the regulatory environment  
10 that we have and all the processes that we have to comply  
11 with. But I think this is the right moment to be doing  
12 this and we need to move forward in earnest to implement  
13 it. And move into the Part 11 conversation, which will  
14 happen in the coming month or two. And then in  
15 implementation start the next round.

16           So with that I'll pass it back to the Chair. So  
17 thanks for bearing with me on all those comments, I  
18 appreciate it.

19           CHAIR HOCHSCHILD: Thank you, Commissioner.

20           Let's turn now and see if there's other  
21 Commissioners wishing to make a comment. Commissioner  
22 Gunda.

23           COMMISSIONER GUNDA: Thank you, Chair. I did  
24 have some substantive comments that I wanted to pull  
25 together, but I think Commissioner McAllister set it up so

1 well that I am going to just keep this to a kind of a high-  
2 level thanks and a couple of points.

3           So I think I just want to begin with just  
4 acknowledging all the commentators and reiterating what  
5 Chair, you said, and Commission McAllister said, thanks for  
6 the participation of every stakeholder today and the  
7 passionate appeal to help address the climate crisis and  
8 help save the planet. And for the future and make sure we  
9 as families stay together a little longer. And I  
10 completely take that sentiment. And I just want to say  
11 thank you so much for bringing that passion to the table  
12 today.

13           I also want to just appreciate Commissioner  
14 McAllister's comments on the importance of the public  
15 process and the recognition that as we all work together we  
16 might not individually get everything we would like. But  
17 collectively we move the ball as hard as we can, taking  
18 into account all the complexities that Commissioner  
19 McAllister noted.

20           Specific to the climate crisis and in the  
21 comments that were made today, two points kind of really  
22 call out. One is one of the commentators kind of called we  
23 are in Code Red of climate crisis. And I think that that  
24 is an essential goalpost that we all need to kind of move  
25 toward. And the other is a couple of the commentators who

1 really talked about empathizing with the industry that  
2 might lose jobs and might have to transition. And the  
3 importance of us collectively figuring things out as a  
4 state, as a community. And I think those are really  
5 important anchors for us to have this discussion. And I  
6 just want to commend again Commission McAllister's comments  
7 on really elevating the importance of the public process  
8 and the integrity of that process.

9 I would also like to extend my thanks to the  
10 Building Standards Office who have been tirelessly working  
11 over the last year. I have not been in this particular  
12 role, so I haven't really gotten briefed all that much  
13 except for the last three, four months. And I just want to  
14 specifically thank Will Vicent, Mike Sokol, Peter Strait,  
15 Payam and Mazi Shirakh and many others who have briefed,  
16 but primarily those five who really helped me understand  
17 the nuances of the topic.

18 You know, these comments become extremely  
19 lengthy, but I think it's important, because it's not every  
20 day you get to publicly say thanks to people. And I just  
21 want to take one moment to really thank my friend, my  
22 colleague and my mentor Commissioner McAllister for his  
23 vision, integrity, genuine heart and the deep knowledge  
24 that he brings to the table. And he mentioned his personal  
25 story. I mean, he inspired me to join at the CEC and kind

1 of take on this important work.

2 I think it is extremely important to note the  
3 kind of integrity it takes to do a job like this and to  
4 move such an important proceeding forward. And Commission  
5 McAllister, really, congratulations to you and kudos for  
6 all the work that you do. And for your leadership, not  
7 just today, but over so many years in kind of helping move  
8 energy efficiency and the building decarbonization  
9 discussion forward.

10 And as you mentioned, the CEC has a very  
11 important responsibility you to kind of improve these codes  
12 every three years. And I'm just incredibly grateful for  
13 the work we do for the State of California, but also for  
14 the for the country and the globe as a as a whole. So  
15 thanks to everyone who has been a part of this process.

16 And then finally I'm just thankful to my  
17 colleagues on the dais. I think every one of them is kind  
18 of an example of what I like to follow, people who are  
19 genuine in getting through the importance of accountability  
20 and transparency and making sure we balance our decisions  
21 based on all points of view and I'm looking forward to  
22 supporting this.

23 CHAIR HOCHSCHILD: Thank you, Commissioner.

24 Let's turn to Commissioner Douglas.

25 COMMISSIONER DOUGLAS: Thank you, Chair

1 Hochschild. I will be brief, but I wanted to join in the  
2 thanks to Commissioner McAllister for his leadership on the  
3 2022 Energy Code. It's a tremendous step forward for the  
4 code. This was one of our core responsibilities at the  
5 Energy Commission and has been for a long time. It's a lot  
6 of work. And Commissioner McAllister's thanks through the  
7 staff and the stakeholders who helped bring this together  
8 just demonstrated the depth and breadth of effort and work  
9 that goes into something like this kind of code update. So  
10 I'll join in his thanks and look forward to supporting this  
11 package, thank you.

12 CHAIR HOCHSCHILD: Thank you, Commissioner.

13 Let's go to Commissioner Monahan.

14 COMMISSIONER MONAHAN: Well, we're all going to  
15 pile on to Commissioner McAllister's praise, and the staff,  
16 but I just want to say I really actually appreciate you  
17 sharing your personal story with all of us. And I think  
18 that idea that we are all motivated by the people that we  
19 love in trying to make sure that we leave a better world.  
20 And we're going in the wrong direction. I think we all  
21 recognize this. California is the cutting edge of passing  
22 climate-friendly regulations.

23 And we're also experiencing harmful effects of  
24 climate change, including wildfires that are spinning out  
25 of control and causing us to check our apps all the time to

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1 see what the air quality is going to be like outside. We  
2 don't know our kids can go outside and play because the  
3 winds may have shifted and the Dixie fire smoke may be  
4 blowing our way, so we are all motivated by that.

5 I really appreciated in addition to the comments  
6 by parents and also the comments by young people, I was  
7 actually struck by Sasan's comment. He's 26-years-old and  
8 half of all greenhouse gas emissions have been in his  
9 lifetime. And I thought to myself, "I've been working on  
10 climate change for longer than 26 years," and that's  
11 depressing. But what inspires me and what I think is why  
12 we're all so excited to support this regulation is this  
13 idea that we can change, we can change the course of  
14 history, we can. We have power here in the state of  
15 California to influence other states, the country as a  
16 whole, even other nations.

17 And Senator Feinstein actually cited the draft  
18 standards in a letter that she wrote to the Department of  
19 Energy saying, "Hey you guys need to do more to support  
20 building carbonization," and this is, I think, a model for  
21 others. And I'm very excited to be able to move forward  
22 with a vote and I think well I'll just stop there.

23 CHAIR HOCHSCHILD: Thank you, Commissioner.

24 Well I join my colleagues. Let me first say I  
25 will be voting in support this and I'll be doing that in

1 memory of your late wife Lesley, Commissioner McAllister,  
2 who I know would be incredibly proud of you today,  
3 incredibly proud. So we'll keep her in our hearts and  
4 thoughts as we make this vote today.

5 I wanted to also share there was one comment, I  
6 think, from Jenny Green today, saying mothers are asking  
7 for a strong code for our children's health. And it's  
8 really in that spirit that we should all be approaching all  
9 these public policy questions. This is ultimately about  
10 the health of the next generation and the planet, which are  
11 inextricably intertwined.

12 I wanted to highlight a couple key features of  
13 the code that I don't think have gotten the attention they  
14 deserve, among them the battery storage element is really  
15 exciting. It's 400 megawatt hours of battery storage  
16 annually that we are projecting.

17 And the solar piece, actually the solar mandate  
18 that's included in this element of the code is more  
19 significant and greater than the solar mandate we did for  
20 the residential side three years ago. So we're projecting  
21 280 megawatts annually of solar just from this code. So  
22 cumulatively with the code we adapted last cycle that's  
23 over 400 megawatts annually, which is really going to help  
24 with clean energy and resilience for the grid.

25 And keep in mind as we're moving towards greater

1 reliance on the electric grid, the grid itself is greening  
2 rapidly, so almost two thirds of the electricity on the  
3 California grid today is carbon-free on route to 100  
4 percent clean energy. And it's really that's the sort of  
5 ascendant element of our climate strategy is the electric  
6 grid.

7           It's happening on the transportation side too.  
8 We are coming up on a million electric vehicles sold in  
9 California, a really exciting milestone we're going to hit  
10 in the months ahead, and I think this is a very nice sort  
11 of partnership to that on the building side.

12           So this is a landmark code. In my judgment the  
13 code we're going to adopt today is the most significant  
14 energy code that we've done. And there's a lot of reasons  
15 for that, but really the path that it gets us on towards  
16 decarbonization and improved indoor air quality. You know,  
17 one of the things we've seen as a discrepancy in  
18 California, indoor air quality is worse for low-income  
19 households and this code really takes great strides in that  
20 direction. And it's going to result in better air quality  
21 indoors at a time when people are still working and going  
22 to school and so forth indoors, and probably more than  
23 ever. So I just think that's a really important feature to  
24 this that we should not lose sight of.

25           And finally, just Commissioner McAllister, I just



1 want to say I am personally incredibly proud of you. You  
2 have worked your heart out on this code and for many years  
3 before this. This space building decarbonization has been  
4 your heart and souls gone into this.

5 We got a result here today that I'm thrilled  
6 with. I feel like I just want to make a vigorous defense.  
7 We got attacked a lot, right? We got sued by SoCal Gas.  
8 We got various stakeholders at us. This code is really  
9 getting us exactly on the path we need to be on. I think  
10 it's pragmatic, I think it's bold, I think it landed in  
11 just the right place. I want to thank you from the bottom  
12 my heart for all your incredible work.

13 And especially Mike Sokol and your leadership  
14 with the whole team. I won't repeat everybody's name, you  
15 guys know who you are. But, Mike, you really distinguished  
16 yourself. Drew Bohan, our Executive Director. My team Le-  
17 Quyen, Terra, Ken, thank you for all your work in  
18 contributing to this. And I am very happy to support this.

19 And so with that I'd ask Commissioner McAllister  
20 if he'd be willing to move Item 4.

21 COMMISSIONER MCALLISTER: So in classic form, I  
22 did actually leave a few names out, so if you're going to  
23 start you have to finish. Thank goodness for texting,  
24 because a bunch of staff said, "Oh, you left out some."  
25 And I had skipped over a couple of names thinking I was

1 going to come back to them.

2 But in any case, Will Vicent I just want to say  
3 thank you, you have been -- you presented and you did a  
4 fantastic job. I'm really glad that you're leading the  
5 Building Standards Office. And this is just a tremendous  
6 testament to your effectiveness, even just being relatively  
7 new to the organization. But you really owned this, so  
8 thank you.

9 Amber Beck on the media front in the Efficiency  
10 Division, did not mean to leave you out, Amber. Really  
11 great pulling together information and interfacing with the  
12 public and just getting information out. It's been really  
13 helpful.

14 And Haile Bucaneg on EIR and many other places,  
15 you are just a fantastic resource person and help to this  
16 whole endeavor.

17 Noemi Gallardo, the Public Advisor, the many  
18 Business Meetings we've had with various items on it  
19 related to the Building Code, just managing the input  
20 encouraging people to participate, I mentioned how  
21 important the process is. It's that management, I mean you  
22 manage the arteries for how that flow happens, and it's  
23 just a healthy process thanks to you. So we really  
24 appreciate it today, and on many, many previous occasions.  
25 And your team, Dorothy, Rosemary and the whole team, thank

1 them for their help.

2           And then I'll just pile on to the Executive  
3 Office, Drew, Linda more recently.

4           And then all of our advisors, my office, I know  
5 Brian and Fritz and Bill have just worked many, many, many  
6 extra hours on this nights and weekends for months and  
7 months. And alongside many staff who do the same. And so  
8 I just have to express my appreciation for all of you as  
9 well, across all the offices as well, the advisors.

10           On a sort of final personal note, I really  
11 appreciate all the collegiality of you, my colleagues, on  
12 the dais and I'm touched actually by your humanity in this.  
13 And just kind of your -- you know, we're all in this for  
14 the right reasons. And I think all the commenters today as  
15 well. We may not agree on the details, but we're all able  
16 to express ourselves and compare notes and try to convince,  
17 and at the end of the day come to some kind of an  
18 agreement.

19           This affects every single project in the state  
20 that gets a permit. I mean it is very central to people's  
21 lives, especially of certain people in the industry, but  
22 just anybody who does anything in a building that needs a  
23 permit has to navigate the Building Code. And so the  
24 multifamily improvements, making it more usable at the same  
25 time we go really aggressively towards the savings and the

1 electrification and the pivot towards decarb, it's hard to  
2 juggle all those things. And just the process is what  
3 allows that to happen.

4 I mean we are incredibly fortunate here to be  
5 some of the folks that can actually do projects on our own  
6 and have the resources and can do special things. I mean  
7 you all know I built my project, you all are doing your  
8 retrofits to decarbonize our lives and trying to figure out  
9 what that looks like.

10 And we pour that into our daily activities,  
11 whether it's transportation, building siting, reliability,  
12 I mean all of you have incredible responsibilities. And so  
13 I really want to just express how just how blessed I feel  
14 for working with you, and in this great state that we have.

15 CHAIR HOCHSCHILD: Thank you, Commissioner.

16 I would just add to that, I think that point is  
17 very well taken. And I think I found in life when  
18 sometimes we take on the biggest challenges it's also where  
19 you find the very best of the human spirit. And I think we  
20 saw that today from all the stakeholders and public  
21 commenters who participated and from all the staff and our  
22 colleagues.

23 Actually I neglected a point, we have to take  
24 two separate votes, because we have to certify the EIR. So  
25 Commissioner McAllister would you be willing to move Item

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1 4a? And we'll vote on that first.

2 COMMISSIONER MCALLISTER: Yes, I move Item 4a.

3 CHAIR HOCHSCHILD: Okay. Commissioner Gunda,  
4 would you be willing to second 4a? (Silence on the line.)  
5 We can't hear you, Commissioner Gunda.

6 COMMISSIONER GUNDA: Oh sorry, double muted. I  
7 absolutely second it.

8 Chair Hochschild: Okay. All in favor say aye,  
9 Commissioner McAllister?

10 COMMISSIONER MCALLISTER: Aye.

11 CHAIR HOCHSCHILD: Commissioner Gunda?

12 COMMISSIONER GUNDA: Aye.

13 CHAIR HOCHSCHILD: Commissioner Monahan?

14 COMMISSIONER MONAHAN: Aye.

15 CHAIR HOCHSCHILD: And Commissioner Douglas?

16 COMMISSIONER DOUGLAS: Aye.

17 CHAIR HOCHSCHILD: And I vote aye as well. Item  
18 4a. passes unanimously.

19 Commissioner McAllister would you be willing to  
20 move Item 4b?

21 COMMISSIONER MCALLISTER: Sorry, I was muted,  
22 Commissioner. I will move the Building Code Update, Item  
23 4b.

24 CHAIR HOCHSCHILD: Okay. Commissioner Douglas,  
25 would you be willing to second Item 4b?

1 COMMISSIONER DOUGLAS: Second.

2 Chair Hochschild: All in favor say aye,  
3 Commissioner McAllister?

4 COMMISSIONER MCALLISTER: Aye.

5 CHAIR HOCHSCHILD: Commissioner Douglas?

6 COMMISSIONER DOUGLAS: Aye.

7 CHAIR HOCHSCHILD: Commissioner Gunda?

8 COMMISSIONER GUNDA: Aye.

9 CHAIR HOCHSCHILD: Commissioner Monahan?

10 COMMISSIONER MONAHAN: Aye.

11 CHAIR HOCHSCHILD: And I vote aye as well. Item  
12 4b. passes unanimously.

13 Congratulations to all the staff and the whole  
14 team.

15 All right, with that we are going to take a long  
16 overdue lunch break. It is 1:48. I would suggest we  
17 reconvene at 2:30 and we'll take up Item 3. I mean, so we  
18 have a long way to go here. If that's acceptable everyone,  
19 let's reconvene at 2:30.

20 COMMISSIONER MCALLISTER: Thanks, everyone.

21 (Off the record at 1:48 p.m.)

22 MS. MURIMI: Thank you for joining us for the  
23 California Energy Commission's August Business Meeting.  
24 The Business Meeting is currently on a break and will  
25 resume at 2:30 p.m. Again, the August 11th Business

1 Meeting is currently on break and we will resume at 2:30  
2 p.m. If you have any questions call the Public Advisor's  
3 Office at 916-654-4489. Again, call 916-654-4489 with any  
4 questions. Thank you for your patience and continued  
5 participation in the California Energy Commission's  
6 proceeding.

7 (On the record at 2:38 p.m.)

8 MS. GUTIERREZ: Good afternoon, Chair and  
9 Commissioners. I am Aleecia Gutierrez, Deputy Director of  
10 the Energy Assessments Division and I'm joined by Angela  
11 Tanghetti, our Lead Modeler in the Energy Assessments  
12 Division.

13 Today, I'll be providing an informational update  
14 on the actions that the state has undertaken to ensure grid  
15 reliability since last year's extreme weather heat events,  
16 provide information on the rapidly changing conditions and  
17 their impact on system reliability. And provide an update  
18 on the near-term and mid-term planning products that the  
19 CEC is developing, to support system reliability efforts.

20 Angela will then present the results of our  
21 modeling of electric system reliability for the summer of  
22 2022.

23 Before I begin I'd like to take a moment to  
24 recognize Chair Hochschild and Commissioner Gunda for their  
25 leadership in this area. Earlier this year, our Chair

1 appointed Commissioner Gunda as Lead over the Commission  
2 system reliability work and Commissioner Gunda has  
3 contributed countless hours to provide his thought  
4 leadership into the analytical work to support energy  
5 system planning. Next slide.

6 As we heard echoed in many of the public comments  
7 on the Building Standards this morning, the impacts of  
8 climate change continue to be felt in California. In the  
9 last five years we've experienced the hottest years on  
10 record, those record-breaking years being 2017 and 2020.  
11 We're in a drought, which further constrains our hydro  
12 resources. And wildfires continue to wreak havoc on  
13 California posing a threat to the safety of our communities  
14 and our energy infrastructure. Next slide.

15 The impacts of climate change continue to stress  
16 our electricity grid as well. In August of last year we  
17 experienced a multi-day West-wide extreme heat event that  
18 led to rotating outages on August 14th and 15th, impacting  
19 hundreds of thousands of Californians. We also issued five  
20 Flex Alerts in 2020.

21 Thanks to considerable conservation efforts from  
22 the public and the collaborative work between the CEC, CPUC  
23 and CAISO, the state was able to reduce the stress on the  
24 grid. Flex Alerts have proven to be an effective measure  
25 in times of stress.



1           The heat wave of August 2020 was considered to be  
2 an extreme weather event with multiple consecutive high  
3 heat days. Governor Newsom issued two emergency  
4 proclamations to give the energy entities the tools  
5 necessary to navigate stress to grid conditions. Next  
6 slide.

7           The emergency proclamation directed the CEC, CPUC  
8 and CAISO to take actions to minimize further outages as  
9 well as report on the root causes of the events leading to  
10 the August outages.

11           The final root cause analysis was completed in  
12 January of this year. It confirmed that there was no  
13 single root cause of the outages. And that three the three  
14 major factors contributing to the outages were related to  
15 extreme weather conditions, resource adequacy and planning  
16 processes, and market practices. It also provided  
17 recommendations for immediate near and longer-term  
18 improvements to our resource planning, procurement and  
19 market practices, many of which are underway. Next slide.

20           The CEC, CPUC and CAISO took action to reduce  
21 further outages and propose modifications to their  
22 respective programs to improve the approach to system  
23 planning. There's also regular engagement with the  
24 Governor's Office on all important reliability related  
25 issues. Each of these entities has a different role to

1 play in electric system reliability with CPUC setting  
2 resource procurement requirements for the CPUC  
3 jurisdictional entities. And CAISO acting as a balancing  
4 authority responsible for maintaining wholesale electric  
5 reliability for 80 percent of the state. The CEC plays a  
6 key role in supporting electric system reliability through  
7 our modeling efforts, work with CEC jurisdictional  
8 generators, and R&D. And I'll be touching on each of those  
9 in a minute.

10           While we've each been pursuing our own actions,  
11 principals and technical staff from the three agencies have  
12 been working together closely to ensure our actions are  
13 coordinated. We also have pursued joint actions  
14 recognizing planning regime will take time to resolve.  
15 We've developed a contingency plan to bridge and provide a  
16 set of tools to address extreme conditions. We recently  
17 finalized a contingency plan that systematizes measures  
18 that were enacted last year under leadership from the  
19 Governor's Office. This plan identifies additional  
20 measures and creates the processes and structures to enable  
21 advanced coordination.

22           The Legislature also held two oversight hearings  
23 in October 2020 and May 2021, in which principals from all  
24 three agencies participated. The three agencies have  
25 continued to keep the Legislature updated on our actions

1 through monthly reports.

2           Following the root cause analysis, the CPUC  
3 completed an emergency rulemaking to procure over 500  
4 megawatts of additional resources and increase the planning  
5 reserve margin to better account for extreme weather events  
6 and grid conditions. CAISO also made several market  
7 modifications to bring market practices in alignment with  
8 our goals to decarbonize our energy systems and maintain  
9 system reliability.

10           CPUC and CAISO have worked closely with the CEC  
11 to make improvements to the Flex Alert public awareness  
12 campaign to educate Californians about the critical benefit  
13 they offer in maintaining grid stability. Next slide.

14           In general the key roles for CEC and summer  
15 reliability include gathering data and conducting  
16 independent analysis at the statewide level and across the  
17 Western Region to provide situational awareness to the  
18 Governor's Office, CPUC, CAISO, and utilities. This  
19 includes our demand forecast, as well as additional  
20 reliability related analysis.

21           Energy demand forecasting is one of the CEC's  
22 charter mandates. The forecast remains a critical planning  
23 tool and has evolved over the years to suit a wide variety  
24 of needs and to reflect the increasing complexity of  
25 California's planning needs. The forecast is used directly

1 on CPUC and CAISO proceedings and studies, including  
2 resource adequacy integrated resource planning distribution  
3 resource planning and the transmission planning process.

4 In response to the Governor's call to action, the  
5 CEC will produce a full refresh of the forecast in 2021,  
6 which includes creating new hourly forecasts, extending the  
7 forecast beyond its normal 10-year horizon out to 2035.  
8 And coordinating with our Research Division to use climate  
9 models to better inform our understanding of extreme  
10 weather events in the next 10 or 15 years.

11 CEC staff also are developing completely new  
12 products intended for uses system reliability studies. Our  
13 near-term assessments look at short windows of time, like  
14 the critical summer season, and they're also referred to as  
15 stack analyses.

16 This near-term Summer Stack Analysis goes beyond  
17 the traditional planning criteria that is focused on a  
18 single peak hour. With the increasing amounts of solar on  
19 the system, assessing net peak hours later in the evening  
20 when solar is no longer available, is now a priority. The  
21 stack analysis considers both the peak and net peak hours  
22 and the stack of available supply. This analysis is used  
23 to identify hours that may trigger the use of  
24 contingencies, such as new resource procurements, use of  
25 backup generators, and load reductions to name a few.

1           Today Angela is going to present our summer '22  
2 analysis. We developed this analysis to support CPUC's  
3 refresh of emergency procurement.

4           Midterm assessments look over a five-year period  
5 and the CEC takes a different approach for this longer  
6 horizon, because there's more variability in what can  
7 happen over five years. This approach allows us to look at  
8 many more scenarios than in a simple analysis. We can vary  
9 weather conditions, resource build-outs and retirements,  
10 and levels of imports to get a better sense of the range of  
11 possibilities in the future years. We gave an overview of  
12 this approach at the July 8 workshop, IEPR workshop, and we  
13 will present our preliminary results in another workshop  
14 later this month. CPUC will use this analysis to inform  
15 their IRP proceeding. And our long-term assessments are  
16 more complex and the possibilities even greater.

17           CEC conducted extensive scenario modeling for the  
18 SB 100 joint agency report that was released in March to  
19 look at the implications of different approaches to meeting  
20 SB 100 goals. We provide these analyses to CPUC to plan  
21 for shortfalls under extreme conditions. We also have a  
22 role in planning for contingencies, in the event that we  
23 have unusual events such as extreme heat waves, were  
24 additional resources are needed.

25           Lastly, we utilize all our programs to advanced

1 reliability, such as our role in working with power plants  
2 to improve performance and make available 300 megawatts  
3 more from the thermal fleet. And supporting R&D to develop  
4 technologies that will make the grid more reliable.

5 Three recent research grants alone will result in  
6 28.7 megawatts of flexible load shift this summer. Next  
7 slide.

8 Adapting to changing conditions over a range of  
9 years, we are also experiencing hotter summers on average,  
10 and as a result summer demand is higher in many regions of  
11 the state. Several substantial changes will impact our  
12 supply in the next four years, and account for a loss of  
13 almost 6,000 megawatts of capacity.

14 Typically 15 percent of California's energy is  
15 met by hydro power, so is less predictable than plant  
16 closings and varies by month, but has a significant impact  
17 on our capacity.

18 For example, we are losing 700 to 1,000 megawatts  
19 a month this summer from drought impacts on our hydro  
20 projects. This is likely to continue next year based on  
21 NOAA's predictions that next summer will have similar  
22 drought conditions.

23 In a typical year 25 percent of California is  
24 energy is met by imports. There's uncertainty in the  
25 amount of imported electricity we can count on towards

1 system reliability, particularly during Western heat events  
2 like we've seen this summer, because the competition for  
3 available resources increases.

4           Although it cannot always be quantified fires  
5 also threaten our power supply. All of our transmission  
6 lines coming into the state cross through areas prone to  
7 wildfire. We saw that this year in the Bootleg fire in  
8 Southern Oregon resulting in a de-rating of the California-  
9 Oregon transmission line, resulting in the temporary loss  
10 of up to 3,700 megawatts of import capacity. Next slide.

11           In 2021 stress grid conditions arrived sooner  
12 than we anticipated in June and July. CEC developed its  
13 first stack analysis for the summer of 2021 and presented  
14 at the May 4th IEPR reliability workshop before the heat  
15 events of this year. The stack was initially developed for  
16 August and September, when we typically experience extreme  
17 weather. CEC analysis did not take into account the early  
18 onset of high heat not typically seen in these months.

19           The conditions resulted in six Flex Alerts and  
20 the Governor's proclamation of a state of emergency. For  
21 perspective on changing conditions with regard to Flex  
22 Alerts I mentioned earlier that we had five Flex Alerts  
23 last year. This year we've already issued six Flex Alerts  
24 compare this to twenty Flex Alerts issued in the prior nine  
25 years. Next slide.

1 Governor Newsom issued the emergency proclamation  
2 on July 30th and the proclamation requires the state to  
3 take multiple actions to secure grid reliability for this  
4 year and next. Actions include requiring the CEC in  
5 collaboration with CPUC and CAISO to work with load-serving  
6 entities to accelerate construction, procurement and rapid  
7 deployment of new clean energy and storage projects,  
8 providing incentives for load reduction through a new  
9 program by Department of Finance. And allowing CEC CPUC  
10 and CAISO to streamline processes to approve new projects,  
11 including CEC's approvals of power plant upgrades  
12 ultimately yielding about 300 megawatts of additional  
13 capacity. CPUC's approval of demand response programs and  
14 storage and clean energy projects. And CAISO's actions on  
15 interconnections.

16  
17 And now Angela will present the Summer 2022 Stack  
18 Analysis that was noted in the recent emergency  
19 proclamation. Next slide, please.

20 MS. TANGHETTI: Thank you. Hello to our Chair,  
21 Commissioners and stakeholders. As Aleecia mentioned, I'm  
22 providing the input assumptions and preliminary results for  
23 the short-term that is the Summer 2022 Stack Analysis.  
24 This analysis is helpful in developing a preliminary view  
25 of the quantity and duration of trigger contingencies that



1 may be needed for summer 2022.

2           With the help of colleagues at the California  
3 Public Utilities Commission and the California ISO, CEC  
4 staff was able to develop a summer stack analysis that goes  
5 beyond the summer of 2021 analysis presented on May 4th and  
6 then revised for a second shop on July 8th, to include the  
7 impacts of the 2021 California drought.

8           Given the more extreme weather trends experienced  
9 so far this year, and projections for the 2021 California  
10 drought, possibly persist in to 2022, an outlook now for  
11 summer 2022 is critical. The stack analysis provides a  
12 look at summer 2022 considering a prolonged drought and the  
13 potential of extreme weather.

14           As noted here in the first bullet, CEC staff is  
15 projecting a net decrease in monthly peak hour demand of  
16 approximately 2 to 400 megawatts for July through September  
17 due to changes in our water agencies' pumping loads.

18           For the supply side in 2021 we project an  
19 approximate 1,000 megawatt de-rate to hydro power plans.  
20 For summer 2022 we're increasing this by 500 megawatts for  
21 a total of 1,500 megawatts due to projected lower reservoir  
22 levels and water availability.

23           CPUC procurement in the amount of 840 megawatts  
24 is projected for August 2022 and 556 megawatts of CPUC  
25 emergency procurement is expected by July 2022. Note, this

1 is in addition to the CPUC procurement that has already  
2 come online this summer.

3 Retirement of the Redondo Beach Power Plant is  
4 also projected by the end of this year. We're including  
5 two metrics for planning reserve margin: a 15 percent  
6 planning reserve margin that accounts for variations under  
7 average weather, and a 22.5 percent planning reserve margin  
8 that accounts for more extreme weather and demand  
9 variability. Next slide.

10 Okay. Let's go into the slides, so let me break  
11 down the stack analysis figures that some of you have seen  
12 at the previous workshop. Okay, next.

13 The left axis shown here is in terms of  
14 megawatts, and this will display hourly supply bars and  
15 demand curve lines for 15 and 22 percent planning reserve  
16 margin. Under these demand curve lines, we will show the  
17 stack of bars of available resources.

18 First bar in the stack, the bottom blue bar, is  
19 the existing supply generation adjusted by projected dew  
20 rates for the drought to persist through 2022. Next, sorry  
21 (indiscernible) the first part. I'm sorry about that, and  
22 next. This is the bar showing our existing demand  
23 response, next. Followed by the gray bar that identifies  
24 the CPUC new resources and expedited procurement. And  
25 next, the darkest blue bar displaying the solar supply.

1 Next, and lastly, the green bar showing the projected  
2 importance. And next, this reddish lower line is a 15  
3 percent average demand curve and next followed by the 22.5  
4 extreme weather demand curve. And lastly next, boxes  
5 highlighting the amount of trigger contingencies.

6 Assuming a 15 percent average weather demand  
7 curve for July 2022 the analysis does not identify a need  
8 for trigger contingencies. However, the analysis shows a  
9 need for trigger contingencies beginning in the 6:00 to  
10 7:00 p.m. hour and persisting through the 8:00 to 9:00 p.m.  
11 under 22.5 percent extreme weather demand curve. Note the  
12 peak demand hour for July is expected to occur in the 5:00  
13 to 6:00 p.m. amount. Next slide.

14 So here I'm throwing it all at you at once,  
15 instead of breaking it down since you've already seen that.  
16 So for August 2022, the staff analysis tool projects  
17 similar results as seen in the figure for July, however the  
18 magnitude of the contingencies different. The 22.5 percent  
19 extreme weather demand curve projects trigger contingencies  
20 well under a 15 percent average weather demand curve known  
21 for their contingencies are identified. Next slide.

22 So, again for September, and throwing it all out  
23 in here, for September 2022 the stack analysis tool  
24 projects contingencies under both average and extreme  
25 weather demand curves. Under a 22.5 percent extreme

1 weather demand curve, our analysis projects that not only  
2 the magnitude of trigger contingencies is increasing in  
3 this month, but also the duration when compared to July and  
4 August.

5           The trigger contingencies assuming extreme  
6 weather now begin in the 5:00 to 6:00 p.m. hour. And as  
7 you can see, they persist through the 8:00 to 9:00 p.m.  
8 hour.

9           So, again for September 2022 the stack analysis  
10 tool projects trigger contingencies under both average and  
11 extreme weather demand curves. Under a 22.5 percent demand  
12 curve, extreme weather demand curve, the analysis projects  
13 over 5,000 megawatts of trigger contingencies in the 7:00  
14 to 8:00 p.m. hour. Next slide.

15           So please note the near-term analysis presented  
16 here is considered preliminary and we are requesting public  
17 input. Since we have limited time to present here today, a  
18 staff white paper with additional details is docketed under  
19 the docket numbers shown here. So please use either the  
20 docket number or this QR code to access this white paper,  
21 and please provide comments by August 20th. Thank you.

22           CHAIR HOCHSCHILD: Thank you. And is that it,  
23 Angela?

24           MS. TANGHETTI: It is.

25           CHAIR HOCHSCHILD: Okay, thank you both so much.

1           What we'll do we will take public comment on this  
2 at the end of the meeting as this is an informational non-  
3 voting item. But with that let's move to Commissioner  
4 Gunda starting off the Commissioner discussion.

5           COMMISSIONER GUNDA: Yeah. Thank you, Chair.  
6 And thank you Aleecia and Angela for the really informative  
7 presentation, and also to all the staff that have been  
8 working on this tirelessly since last year.

9           Just for the public that are here and my  
10 colleagues on the dais, virtual dais here, we are  
11 approaching exactly one year from the rolling averages.  
12 And it has been an absolute marathon for so many of our  
13 staff. You know, the CEC in three different divisions has  
14 been doing a bulk of the work. But we have incredible  
15 support from the Siting Division, as well as the R&D  
16 Division to help move this forward.

17           But I also want to take an opportunity to  
18 recognize colleagues from CPUC, CAISO and occasionally CARB  
19 are weighing in on a multitude of these issues. So I just  
20 want to recognize the enormity of this work that has been  
21 undertaken for over a year. And I think we're not slowing  
22 down at all here, at least until next year.

23           So a couple of things I want to note here is, as  
24 you have seen the numbers at a high level. So the 3,500  
25 megawatts shortfall for this year and 5,000 shortfall for

1 next year, are under extreme conditions. Angela noted the  
2 trigger for contingencies and that is something the  
3 Executive Order really helps fill for this year. And a  
4 significant part for this year would be incentivizing some  
5 of the demand side deductions. But really as we move into  
6 the next year, you know the executive order provides a  
7 number of tools, especially in a siting authority to really  
8 increase the clarity projects coming online. So that we  
9 don't have to depend on some of these demand reductions.

10           So, before I close, I just want to recognize  
11 Chair Hochschild's leadership on this. He's been kind of a  
12 phantom in the back on these issues. But just I think both  
13 in setting the urgency on this issue, but also helping  
14 double up an improved coordination coalition between the  
15 three agencies working as closely as I've never seen, as  
16 we're all working on this together. CEC plays an important  
17 convening role, so I think I know this presentation is a  
18 part of that.

19           I also want to thank Commissioner Douglas,  
20 especially for the last several months digging in here,  
21 helping developing some of the solutions that were not on  
22 the radar. Especially thinking through what other  
23 generation can we get online between now, and next year and  
24 really doing a lot of work, she and her office and a number  
25 of staff from the Siting. To think about what can we do

1 for the next several years, as I think it has been a lot of  
2 work.

3 I just want to commend our staff. And I want to  
4 set an expectation for the dais, the public, and the staff  
5 that we are not out of this. It is going to be like this,  
6 at least for a year, if not more. And we really hope that  
7 the actions that the CPUC is going to take, by taking into  
8 account some of the key provisions and the executive order,  
9 were able to close the gap significantly by '23. But I  
10 think '22 is still going to be difficult for us, even under  
11 a good situation.

12 So Aleecia, thank you for your leadership, a  
13 number of people: David Erne, Chris McLean, Angela, Alana,  
14 I know I can go to 20 or 30 members that have been working  
15 on this. I'll send a note separately to the organization  
16 as a whole, but just great, great work. Thank you for all  
17 your wonderful work.

18 CHAIR HOCHSCHILD: Thank you, Commissioner Gunda,  
19 and right back at you. You've been phenomenal at all the  
20 oversight and coordination among agencies. I very much  
21 agree with your observation that the energy agencies in  
22 California are working more closely together than ever,  
23 which is exactly what the state needs. So thank you and  
24 thank you, Angela and Aleecia, for all your terrific work  
25 and that of your teams.

1 Any other Commissioner discussion on this?

2 COMMISSIONER DOUGLAS: Yes, Chair Hochschild,  
3 this is Commissioner Douglas with a few comments if that's  
4 all right?

5 CHAIR HOCHSCHILD: Yeah, great.

6 COMMISSIONER DOUGLAS: All right, so I wanted to  
7 just express my appreciation as well for the really good  
8 analytical work from the Energy Assessments Division. That  
9 helped us hone in on the supply stack and on the shortfall  
10 that we're looking at under extreme conditions.

11 And also thank Commissioner Gunda for his  
12 leadership on all of this, the analysis, the coordination  
13 efforts and more as we look at working with our partner  
14 agencies. And taking the steps that are needed to provide  
15 the grid reliability for summer, for this summer and next  
16 and beyond.

17 It certainly is sobering to see these projections  
18 of potential energy shortfalls. And it's very clear that  
19 we need to redouble our efforts to close these shortfalls  
20 to the maximum extent possible. And to take the steps that  
21 are needed to implement the July 30th Emergency  
22 Proclamation.

23 There are a number of initiatives underway to  
24 implement the proclamation. Looking at, for example,  
25 maximizing the output of the existing fleet, both through



1 efficiency measures, which is something that we've been  
2 working on here at the Energy Commission. And with the PUC  
3 and project owners through identifying additional  
4 opportunities to just have the power plants in the system  
5 run harder during an emergency. Even where that requires  
6 -- and it sometimes does -- waiving permit conditions and  
7 getting special dispensation from DOE and the federal  
8 government to do that.

9           Next week, staff from the Energy Commission  
10 Siting, Transmission and Environmental Protection Division  
11 is planning to present to the Commission, proposed  
12 permitting pathways to implement Items 9 and 10 of the  
13 Emergency Proclamation. That will be expediting permitting  
14 pathways for post-certification modifications and for new  
15 applications for temporary and emergency generation that  
16 can deliver peak energy before October 31st of this year.  
17 So coming next week to all of you, colleagues; that's a  
18 heads up for you.

19           And then the staff in the STEP Division will be  
20 turning their attention as well to Item 11 in the  
21 proclamation, which involves developing an expedited  
22 process for battery storage projects of 20 megawatts or  
23 more that will deliver net peak energy by October 31st,  
24 2022.

25           There's a lot of work that needs to be done to

1 bring the projects online that will be needed to meet our  
2 demand in this summer, next, and the summer after. And a  
3 lot of that I think calls on skills in the area of  
4 coordination and project tracking that were developed. And  
5 were really successful in the ARRA days when the state was  
6 really pushing hard to get projects online and take  
7 advantage of federal incentives. And dealing with very  
8 tight timelines and very important needs to coordinate, not  
9 only among state agencies, but with local agencies and with  
10 federal agencies. So I think we're going to be seeing some  
11 reversion to some of the Recovery Act playbook as we look  
12 at the next couple of years.

13           And I think I'll just close by saying that I have  
14 also seen and greatly appreciated the high level of  
15 coordination that we've had with the CPUC, with the ISO,  
16 with Department of Water Resources. Really across state  
17 government as well as on between different levels of  
18 government and between us and stakeholders, and so I am  
19 heartened by the level of coordination and commitment to  
20 kind of meeting the challenges that we face today.

21           It's a challenge to deal with these compounding  
22 impacts of climate change. The heat events, the drought,  
23 the effects on hydro power and more. Many of which are  
24 West-wide that impact imports and all of that, at the same  
25 time that we're building the clean energy system of the

1 future. But I think we, are going to do that.

2 So anyway, those are my comments. Again, many  
3 thanks to Commissioner Gunda and to you, Chair Hochschild,  
4 and the rest of our colleagues here who are all working  
5 hard on this.

6 CHAIR HOCHSCHILD: Thank you so much,  
7 Commissioner. Any other -- yeah, Commissioner Gunda?

8 COMMISSIONER GUNDA: Yes, Chair, I'm going to  
9 take a cue from Commissioner McAllister's (indiscernible)  
10 which is just kind of take the time to thank a last few  
11 couple of people I really do want to mention. Because I  
12 didn't mention them and I felt really bad.

13 Mark Kootstra has been incredible in the  
14 analytical work that he's been doing. Liz Gill, currently  
15 the advisor but has been working on SB 100 has been  
16 phenomenal in developing the necessary relationships across  
17 the Commission and different agencies. Le-Quyen, I don't  
18 know how she does that, Chair, supporting you, and kind of  
19 helping our office going to move forward. And her ability  
20 to just develop a good faith relationship between the  
21 agencies. Drew Bohan has been an integral part of this  
22 coordination. Justin Cochran, and Sean has been very  
23 important in this coordination, (indiscernible) and Linda  
24 Barrera for a lot of work that she has been doing behind  
25 the scenes along with Commissioner Douglas's office.

1           So I just want to take a moment to just thank  
2 these individuals who have been working so much who never  
3 really you know show their faces, but without them, none of  
4 this will happen. So thank you.

5           CHAIR HOCHSCHILD: Well, said. I second all of  
6 that. Thank you so much.

7           Any other Commissioners wishing to comment  
8 Commission McAllister.

9           COMMISSIONER MCALLISTER: I would just thank  
10 Commissioner Gunda for your leadership on this. I mean, we  
11 all watch how engaged you are and how hard you're working  
12 on. And Commissioner Douglas as well just in pulling out  
13 all the staff resources. I mean it's an all-hands-on-deck  
14 moment.

15           And it's multifaceted, all of us have to pull the  
16 levers that we have in front of us in our particular areas.  
17 But in particular a lot of onus is on you and I just really  
18 appreciate you and the Chair stepping up to make sure that  
19 that we're developing one voice on this.

20           CHAIR HOCHSCHILD: Yep. All right, unless  
21 there's further Commission discussion thank you, Angela.  
22 Thank you Aleecia and we very much appreciate all the  
23 diligence.

24           And I've been thinking of this summer. It's like  
25 a football season where we have to go undefeated the entire

1 season. Every week that we go keep the lights on is a win  
2 and we are in the toughest part of the season now with all  
3 these stresses. And it really is unprecedented, because  
4 this is all happening -- this heat dome that we're seeing -  
5 - unprecedented temperatures. You know, 115 degrees in  
6 Portland and Seattle and across the West is all coming on  
7 top of the drought, which has reduced hydro capacity. And  
8 all these other stresses so imports are down, and so it's  
9 just this is truly an all-hands-on-deck moment. And  
10 everybody does have a role to play, every agency every  
11 individual, and all the terrific staff and colleagues we  
12 have on the Commission, so thank you to everybody. Let's  
13 finish strong here.

14           With that let's move on, if we could to Item 5,  
15 Final Staff Report: California Building Decarbonization  
16 Assessment, Michael Kenney.

17           MR. KENNEY: Good afternoon, Chair and  
18 Commissioners. I'm Michael Kenney, an Energy Specialist in  
19 the Energy Assessments Division. And I'll be joined by Dr.  
20 Nicholas Janusch, also an Energy Specialist in the Energy  
21 Assessments Division. And today, we will be presenting the  
22 final California Building Decarbonization Assessment for  
23 your consideration to adopt. Next slide.

24           The California Building Decarbonization  
25 Assessment brings benefits to the state including an

1 increased understanding of building decarbonization  
2 pathways and their role in reaching mid-century carbon-  
3 neutrality. It provides clarity on the benefits and  
4 barriers to achieving building decarbonization and  
5 generally advances knowledge of decarbonization strategies  
6 supporting California's clean energy goals. Next slide.

7           This bill was developed as a result of Assembly  
8 Member Friedman's authored Assembly Bill 3232 in 2018. The  
9 primary directive of the bill was for the Energy Commission  
10 to assess the potential to reduce greenhouse gas emissions  
11 from residential and commercial building stock by at least  
12 40 percent below 1990 levels by January 1, 2030. Other  
13 considerations in the assessment include the cost per  
14 metric ton of decarbonization strategies, the cost-  
15 effectiveness of space and water heating decarbonization,  
16 challenges associated with decarbonization in low-income,  
17 multifamily, and high-rise buildings, considerations of  
18 load management strategies, and impacts to ratepayers,  
19 construction costs, and grid reliability. Next slide.

20           The Energy Commission conducted a series of  
21 workshop over the course of nearly two years to collect  
22 feedback from the public on different aspects of the  
23 assessment. These workshops covered the development of the  
24 1990 baseline, the scenario analysis tool, the draft  
25 decarbonization scenarios, the barriers and challenges to

1 decarbonization strategies, and the draft assessment. This  
2 process included close collaboration with the California  
3 Public Utilities Commission and the California Air  
4 Resources Board. The public comments received throughout  
5 this process have been reviewed and considered in the final  
6 report.

7           Now, we will briefly cover the findings of the  
8 assessment. Next slide.

9           The legislation points out that buildings account  
10 for about 25 percent of all greenhouse gas emissions in  
11 California. This includes emissions from electricity  
12 generation as well as onsite fuel combustion, refrigerant  
13 leakage, and behind-the-meter gas leaks, which we call  
14 together system-wide emissions. When we remove electricity  
15 generation emissions and only focus on fuel combustion,  
16 refrigerant leakage, and behind-the-meter gas leakage, the  
17 total greenhouse gas contribution is reduced to  
18 approximately 10 percent, which the legislation also notes.  
19 We call these latter collection of emissions "direct  
20 emissions." The assessment used both a system-wide and  
21 direct emission 1990 baseline to measure progress to 2030.  
22 Next slide.

23           After developing the greenhouse gas baseline  
24 needed to account for reduction, staff identified seven key  
25 strategies to decarbonize buildings. These strategies

1 include: Building electrification, electricity generation  
2 decarbonization, energy efficiency, refrigerant conversion  
3 and leakage reduction, distributed energy resources,  
4 decarbonizing the gas system and demand flexibility

5 Staff also identified variables, which impact the  
6 success of these strategies ranging from costs, to  
7 equipment availability, to workforce preparedness, to  
8 building conditions, and more.

9 Using these strategies, staff then assessed  
10 several greenhouse gas reduction scenarios, which my  
11 colleague Dr. Nicholas Janusch will present next. Next  
12 slide.

13 DR. JANUSCH: Thank you, Michael.

14 My name is Dr. Nicholas Janusch. I am an Energy  
15 Commission Specialist in the Energy Assessments Division.  
16 With these next two slides, I will summarize some of the  
17 results of our assessment of the different analyzed  
18 scenarios. This summary will show the major takeaway  
19 message that even although some decarbonization strategies  
20 may be more cost effective, to go the distance to reach the  
21 state's emissions goals requires technological  
22 transformation through building electrification.

23 This figure summarizes the potential reduction of  
24 GHG emissions in 2030 for each of the nine analyzed  
25 building decarbonization scenarios relative to both the



1 direct and system-wide 40 percent reduction emission  
2 targets. All these impacts in 2030 are relative to our  
3 business-as-usual case that is based on the 2019 IEPR  
4 California Energy Demand Forecast, which already embeds  
5 many of these decarbonization strategies.

6 Starting on the left, we see incremental gas  
7 energy efficiency, then four different electrification  
8 scenarios in green, a renewable gas scenario, incremental  
9 electric energy efficiency, incremental rooftop PV, and  
10 accelerated renewable electric resources.

11 The four green building electrification scenarios  
12 vary by the rate of electrification penetration in new and  
13 existing buildings by 2030. The “efficient aggressive”  
14 electrification scenario is a modification of the  
15 “aggressive electrification” scenario where staff hand-  
16 picked the most efficient electric appliance to be  
17 installed. For example, for water heating, instead of any  
18 electric water heater replacing a natural gas water heater,  
19 the scenario assumes an efficient heat pump water heater is  
20 installed.

21 Also, in this figure, we see two horizontal lines  
22 representing two 40 percent GHG reduction targets. The red  
23 line represents the system-wide emissions baseline target,  
24 which includes electricity generation system emissions in  
25 the 1990 base year. This means if we are measuring a 40

1 percent greenhouse gas reduction relative to the system-  
2 wide baseline, then a successful scenario in 2030 must  
3 avoid 5.5 million metric tons of carbon dioxide equivalent.

4           The other horizontal line is the more aggressive  
5 dashed black line above, which represents the direct  
6 emissions baseline target. It is not based on including  
7 electricity generation system emissions in 1990. A  
8 successful scenario for this direct emission baseline  
9 target would need to reduce emissions in 2030 by 22.1  
10 million metric tons of carbon dioxide equivalent.

11           We present both of these baselines since the  
12 legislation does not recommend one and suggests that these  
13 two approaches are valid. And both have merit and  
14 reporting both provide important perspectives for  
15 conversation. Next slide.

16           Lastly, notice in this figure the diagonal-  
17 patterned region on top of each decarbonization scenario's  
18 bar. These regions represent the potential additional  
19 emission reductions resulting from Senate Bill 1383, which  
20 was passed in 2016 and established economy-wide emission  
21 reduction targets of short-lived climate pollutants for  
22 2030. These diagonal-patterned boxes thus represent an  
23 all-or-nothing case in 2030 for reducing hydrofluorocarbon  
24 or HFC emissions from refrigeration and air conditioning in  
25 the buildings sector. In actuality, with the state's

1 current effort, the amount of HFC emission reduction is  
2 likely somewhere in between these two extreme cases.

3 As such there are a few important takeaways I  
4 want you to walk away from this figure. The two GHG  
5 baselines matter and provide important perspectives. Each  
6 scenario achieves the red system-wide emissions target line  
7 assuming the success of HFC leakage reduction efforts.  
8 However, when assessing GHG reductions relative to the  
9 black-dashed direct emissions baseline target line only the  
10 two aggressive electrification scenarios with assistance  
11 from HFC reduction achieve this 40 percent GHG reduction  
12 target. Next slide, please.

13 Moving now to the costs of these decarbonization  
14 scenarios. This figure shows the total net costs and the  
15 cost per metric ton of each scenario. On the X-axis, we see  
16 the same scenarios as described on the previous slide. On  
17 the left Y-axis, we have the total net costs. On the right  
18 Y-axis is the cost per metric ton.

19 The total net costs of an electrification  
20 scenario equal the total incremental technology costs of  
21 replacing gas with electric equipment, the net energy  
22 costs, and any panel upgrade costs. Notice that energy  
23 efficiency and rooftop PV scenarios show negative costs,  
24 whereas electrification scenarios and renewable gas  
25 scenario show positive costs. The negative costs might

1 raise the question of why households and businesses are not  
2 making optimal decisions. However, these estimates are  
3 modeled on basic assumptions that do not consider  
4 behavioral or institutional barriers that may prevent these  
5 savings from being realized.

6           The four electrification scenarios have net costs  
7 ranging from \$3 to 40 billion, which translates to \$39 to  
8 \$142 per metric ton. Lastly, I want to note that the most  
9 expensive cost per metric ton is the renewable gas scenario  
10 at \$343 per metric ton.

11           So, given the two figures, a major take away is  
12 that although some decarbonization strategies are more cost  
13 effective, technological transformation from building  
14 electrification is needed to go the distance in meeting the  
15 state's emissions reduction goals.

16           In addition to these results, when considering  
17 grid impacts, please note that these electrification  
18 efforts can cause impacts to the managed peak loads at a  
19 scale that shifts the dates and hours in the winter season  
20 for utilities. Assessing such grid impacts will continue  
21 for our IEPR demand forecasting work.

22           Now I'll turn it back to Michael. Next slide,  
23 please.

24           MR. KINNEY: Thank you, Nick.

25           In addition to the conclusions that come from the

1 baseline and scenario analyses just described by my  
2 colleague, the report also finds that in order to reduce  
3 direct emissions, the state will need to see large-scale  
4 deployment of electric heat pumps. The newly constructed  
5 buildings have the lowest decarbonization costs, and that  
6 the Energy Code will continue to advance efficiency in  
7 those newly constructed buildings.

8           It also finds that reducing greenhouse gas  
9 emissions in existing buildings will require coordinated  
10 efforts and large investments.

11           It will also be important to understand and  
12 document the reliability impacts from increased  
13 electrification.

14           Staff also concluded that the success of existing  
15 refrigerant leakage reduction policy is essential to  
16 achieving building decarbonization.

17           The assessment also concludes that the role of  
18 the gas system in decarbonizing buildings needs further  
19 research, and the role incentives play in adding new gas  
20 infrastructure for buildings must be reviewed. Next slide.

21           Continuing with the conclusions, we also find  
22 that equity considerations are paramount when planning  
23 investments and funding disbursement. Also, that  
24 regulators, decision makers, program implementers, and  
25 local governments will need to collaborate with utilities,

1 Tribal governments, building owners, workforce training  
2 organizations, and community groups.

3 Decarbonization initiatives must directly involve  
4 environmental justice communities and reflect their needs  
5 and priorities.

6 Also find that an information campaign to  
7 familiarize consumers with electric appliances is needed.

8 And it will also be critical for California to  
9 continue expanding and training its clean energy workforce.

10 Finally, any building decarbonization efforts  
11 must work in harmony with the state's response to the  
12 ongoing housing crisis. Next slide.

13 So I'd like to first give a big thank you to all  
14 the people involved in the assessment. Especially Ingrid  
15 Neumann and Mike Jaske who co-authored this report, and so  
16 many other folks from the Energy Commission, the California  
17 Air Resources Board and the California Public Utilities  
18 Commission that were part of this collaborative process.

19 Should the Commission vote to adopt this report  
20 today, it will be prepared for submission to the  
21 Legislature. The topics covered within this assessment  
22 will also be considered in the Integrated Energy Policy  
23 Report. And thank you for your consideration.

24 CHAIR HOCHSCHILD: Thank you so much, Michael,  
25 really appreciate all the hard work. And with that let's

1 go to public comment if we could.

2 MS. GALLARDO: Yes, this is Noemi, the Public  
3 Advisor. I see several hands raised. I just want to  
4 remind everybody to raise their hand if you would like to  
5 speak, using the high five raise hand icon through Zoom.  
6 If you're on by phone, press \*9 to raise your hand and then  
7 \*6 to unmute.

8 So we will begin with Aaron Reaven. Apologies if  
9 I mispronounced that. Please restate your name, spell it  
10 for the record and indicate your affiliation if any.  
11 Aaron, your line is open and you may begin. Aaron Reaven  
12 go ahead.

13 MR. REAVEN: Okay, can you hear me now?

14 MS. GALLARDO: Yes.

15 MR. REAVEN: So thank you. I just want to  
16 express -- okay, my name is Aaron Reaven. That's A-a-r-on,  
17 last name is R-e-a-v like Victor e-n. And I am an active  
18 member of the Oakland hub of 350 East Bay.

19 I am just calling in to express my strong support  
20 for the staff recommendations on Item 5. And I express  
21 that strong support, because to me this is not just a  
22 matter of climate mitigation, but of public health. And  
23 I'm very concerned about the indoor air pollution from  
24 fossil gas appliances, especially cooking appliances that  
25 are often unvented. And I just think we need to do

1 everything we can in the retrofit realm to replace and  
2 eliminate fossil gas pollution indoors. Thank you.

3 MS. GALLARDO: Thank you.

4 Next is Jose Torres. I am going to unmute the  
5 line, a reminder to please spell your name and indicate  
6 your affiliation, if any. Jose, your line is open and you  
7 may begin.

8 MR. TORRES: Hello, good afternoon. Thank you,  
9 Commissioners. Thank you, Chair. Thank you Energy  
10 Commission staff for all the work you did. You know, the  
11 Energy Commission has -- sorry, Jose Torres here, J-o-s-e  
12 T-o-r-r-e-s, with the Building Decarbonization Coalition.

13 And I think just to jump right in, the Energy  
14 Commission building decarbonization assessment clearly  
15 shows that California must electrify homes and buildings to  
16 meet Governor Newsom's recent 2035 carbon neutrality goal.  
17 As well as the new Energy Code points California in the  
18 right direction to shift the market toward clean and all-  
19 electric new construction.

20 However, the assessment also underscores the  
21 critical need for a long term multi-prong strategy to  
22 electrified new and existing building. So we think this  
23 plan must include a suite of policies and investments to  
24 support the transition, including funding incentive  
25 programs like Built-In Tech (phonetic) to financially

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1 support low and moderate-income families. Stopping the  
2 expansion of the gas network in ending subsidies for new  
3 gas hookups and ultimately, ensuring that low-income and  
4 vulnerable communities are prioritized in transition.

5           So I think beyond that just one point of  
6 correction, the assessment states on page 87 that induction  
7 cooking requires purchasing new dedicated pots and pans.  
8 We just wanted to state that this is not necessarily the  
9 case. Any ferrous metal pot or pan can work on induction,  
10 so cast iron, all-clad, steel, etcetera, can all work. So  
11 SMUD did a polling of customers in November 2020 about this  
12 issue, and that pulls down that 40 percent of respondents  
13 say that more than half of their cookware is compatible  
14 with induction cooking.

15           Thank you for all your work. I just wanted to  
16 point to that piece and kind of highlight that we  
17 appreciate what's been done.

18           MS. GALLARDO: Thank you.

19           The next speaker is Sean Soni, a reminder to  
20 spell your name, indicate your affiliation, if any. Sean,  
21 your line is open and you may begin.

22           MR. SONI: Good afternoon, Energy Commissioners  
23 and staff, my name is Sean Soni, spelled S-e-a-n S-o-n-i.  
24 And I'm speaking on behalf of Southern California Gas  
25 Company.

1           I just want to take a moment to appreciate the  
2 insights presented by the CEC staff during the Business  
3 Meeting, and all the effort that went into the California  
4 Building Decarbonization Assessment. The assessment  
5 emphasizes the traditional energy efficiency and  
6 weatherization programs for both gas and electric  
7 appliances can continue to provide cost effective emissions  
8 reductions.

9           We recognize that California has a long-standing  
10 leadership role in energy efficiency standards in buildings  
11 and appliances, as well as the dedication to continue  
12 energy efficiency measures through the success of previous  
13 legislation such as AB 758 and SB 350. We want to commend  
14 the CEC for acknowledging that equity considerations are  
15 paramount and that these considerations should reflect the  
16 needs of communities. Overall, we support increased  
17 funding for energy efficiency and weatherization programs  
18 targeting low-income households.

19           Although electrification plays an essential role  
20 in building decarbonization, RNG and other clean gaseous  
21 fuels are also critical for supporting the decarbonization  
22 effort. Reducing building sector emissions by at least 40  
23 percent by 2030 requires the consideration of all possible  
24 pathways and a thorough evaluation of any unintended final  
25 financial consequences for the most energy burdened

1 Californians.

2 That is all, thank you again for the opportunity  
3 to provide comments. Thank you.

4 MS. GALLARDO: Thank you.

5 Next is Arun, and I apologize if I mispronounced  
6 that. It's spelled A-r-u-n here on the screen. Please  
7 state your name, spell it, and indicate your affiliation,  
8 if any. Your line is open, Arun, and you may begin.

9 MR. ARUN: Hello, do you (indiscernible) me?

10 MS. GALLARDO: We can hear you.

11 MR. ARUN: (Indiscernible) A-r-u-n, I'm a social  
12 worker. I heard everything that next year there will be a  
13 shortage of electricity, but I have an idea that nature has  
14 helped the California, because of sun power. And if we  
15 mandated 100 percent of houses with solar panels on that we  
16 can produce 200 times more electricity than today we are  
17 producing.

18 Secondly, I have one suggestion that nowadays new  
19 solar -- new (indiscernible) solar panel coming, which  
20 increases the efficiency of the -- only all the replacement  
21 of that government should have one policy. That if I have  
22 the old type of solar panels, and I have to take a new type  
23 of solar panels, so that replacement -- some policy should  
24 be there. I would like to say like this, thank you very  
25 much.

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1 MS. GALLARDO: Thank you.

2 Next is Pierre Delforge. A reminder to spell  
3 your name, indicate your affiliation, if any. Pierre, your  
4 line is open and you may begin.

5 MR. DELFORGE: Thank you. Good afternoon again  
6 Chair and Commissioners. My name is Pierre Delforge, P-i-  
7 e-r-r-e D-e-l-f-o-r-g-e, with the NRDC. Thank you again  
8 for developing this assessment and the process and multiple  
9 workshops and public comments to be able to contribute to  
10 it.

11 This AB 3232 decarbonization assessment is  
12 important, timely, and a perfect complement to the Title 24  
13 discussions this morning. It helps us envision and  
14 understand what it's going to take to decarbonize all  
15 existing buildings, going beyond the leadership step that  
16 you took this morning on new construction.

17 The assessment report makes it clear what  
18 decarbonization levels are required by climate science and  
19 what they mean in buildings. It's an all-hands-on-deck  
20 effort. It requires energy efficiency, clean energy,  
21 demand flexibility and large-scale electrification. There  
22 is no pathway that can get us on a trajectory to carbon  
23 neutrality by 2045 without large-scale electrification in  
24 buildings. And rapid -- the sooner we get started the more  
25 affordable the transition will be in order to be able to

1 take advantage of a natural replacement.

2           So we need to think about it in a similar way  
3 that we did on the rooftop solar with the California Solar  
4 Initiative, which invested I believe \$2 billion in rooftop  
5 solar from 2006 to 2016. Transforming that market and  
6 creating a new industry, making rooftop PV cost effective  
7 enough that the 2019 Building Code could include in the  
8 code requirements. So this is the type of market  
9 transformation that we need, and that this report makes  
10 clear that is going to be the most cost effective way to  
11 decarbonize buildings.

12           So we commend staff for this very thorough and  
13 thoughtful assessment. It's particularly doing it in  
14 parallel with the Building Code. It sets a clean path  
15 forward for state investments in large-scale market  
16 transformation programs like the California Solar  
17 Initiative to bring down the cost of efficient heat pump  
18 technologies, develop the workforce to install them. And  
19 to prioritize renovations in low-income communities who  
20 need them the most, but can least afford them.

21           So thank you for this thought-provoking report.  
22 And we look forward to working with the Commission to  
23 implement it and move to the next steps. Thank you.

24           MS. GALLARDO: Thank you.

25           All right, Chair, that was the last hand raised.

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1 Just let me do one last call. Again, a reminder to use the  
2 raise hand feature, which looks like a high five on the  
3 screen or \*9, if you are on by phone. All right, Chair, I  
4 see no other hands.

5 CHAIR HOCHSCHILD: Okay, thank you to all the  
6 members of the public providing public comment there.  
7 Let's turn now to Commissioner discussion starting now with  
8 Commissioner McAllister.

9 COMMISSIONER MCALLISTER: Okay, thank you, Chair.  
10 And thank you, Michael, for that great  
11 presentation. And really thanks to all the commenters too.  
12 It's really great that everybody's not tapped out from all  
13 the comments this morning. And I'm really excited to have  
14 this on the agenda today, because it's really the  
15 culmination of a lot of work. And you heard about the  
16 timeline, but really there have been -- as the conversation  
17 has shifted, quickly around building decarbonization. And  
18 also the positives, we've tried to work with stakeholders.  
19 And really have a lot of back and forth and engagement to  
20 make sure this report is sort of up to date and really  
21 projecting planning and projecting a path that's going to  
22 get us where we need to go. And it's gratifying to hear  
23 those comments and thanks Pierre Delforge, for those. And  
24 all the other speakers.

25 And I totally agree that the two complement each

1 other really well. The staff that worked on it, the names  
2 were up there, but I just have to call out Michael Kenney  
3 and Nick Janusch who you heard from. And Ingrid Neumann  
4 and Mike Jaske, as really the driving forces behind this  
5 report, but also Eddie Rosales and Jennifer Nelson on the  
6 management side, and keeping the administrative side of it  
7 going and in the report elaboration itself. And Matt  
8 Caldwell from the Demand Analysis Office. Mike Sokol again  
9 over the Efficiency Division and Aleecia over the  
10 Assessments Division.

11 Now, both of those divisions worked really hand-  
12 in-glove on this report. And it's gratifying again to see  
13 these cross-divisional efforts bear fruit and it only makes  
14 our products better. And all of this under the guiding  
15 hand and Drew Bohan at the Executive Office.

16 Lots of other people involved in this report and  
17 they're on the acknowledgments page, but I did want to call  
18 out the Air Resources Board and the Public Utilities  
19 Commission staff that reviewed and provided comments I  
20 believe and multiple times on this report as it unfolded.

21 And then we received a lot of technical support  
22 from Guidehouse that put together a modeling tool, the Fuel  
23 Substitution Assessment Tool, that provided a lot of the  
24 background modeling and numbers for this report.

25 I would just commend all of you to consider, to

1 really look and sort of a sit with those two graphs. Those  
2 two charts that we saw, because there's a lot of  
3 information embedded in those charts. But I think Nick did  
4 a good job of summarizing.

5           In the near term there are pathways that get us  
6 incremental savings and decarbonization benefits, including  
7 efficiency, both on the electric and gas side. And some  
8 other initiatives, but we really have to pivot. You know,  
9 we don't have multiple replacement cycles in our existing  
10 buildings for HVAC, for water heaters, and for all these  
11 devices. We only have at most one, and we really need to  
12 get to pivoting our end uses to clean electricity. And the  
13 report shows that in multiple ways and from multiple  
14 viewpoints.

15           And you know the long-term trajectory is clear.  
16 And the way it matches up with our code that we voted this  
17 morning, is that you know by 2030 we're basically assuming  
18 that all new construction is electric. And that the  
19 differences in the trajectories are in the scenarios are,  
20 well how fast the existing buildings get there. How  
21 quickly they can turn over their primary end uses to  
22 decarbonize. And so that's really where a lot of our  
23 program effort needs to be.

24           And so in that sense, our program environment for  
25 existing buildings is really the kind of missing pieces,



1 the key piece, to begin to walk down these pathways, these  
2 trajectories that we need to take. And so just round  
3 numbers, you know you heard the \$40 billion number for the  
4 aggressive electrification scenarios are similar. You  
5 know, the degree of efficiency varies a little bit in the  
6 scenarios. But if we have 3 or so million low-income  
7 households and disadvantaged communities, households, rural  
8 fixed-income households across the state. And say roughly  
9 3 million, if you're investing \$10 million or \$10,000 in  
10 each in each of those homes that's \$30 billion that that  
11 needs to channel just towards our disadvantaged  
12 communities, low-income households.

13           So that's a that's a lot of resources and it's  
14 great that we have these programs. You know, the 1477  
15 Build Tech, and you know the like programs. CSP has the  
16 Weatherization program and LIWP and how the Utilities  
17 Commission has The Energy Savings Assistance Program. And  
18 all those together add up to roughly, you know, less than a  
19 billion dollars. And so we really do need to kind of lock  
20 arms and figure out how we're going to get some resources  
21 to this sector. And I think the market transformation  
22 pathway is essential.

23           We have to get the cost down and really the  
24 supply chain ramped up. But in the cases of people who  
25 can't afford it, we really have to fill the resources gap.

1 And figure out ways to bring private capital into this mix  
2 sort of in a Public-Private Partnership kind of way.

3           So the reason I'm providing some context here is  
4 that those are the conversations we are aiming to have in  
5 this IEPR cycle around building decarbonization. And so  
6 this report is a really key input to that conversation.  
7 And we will be getting it here in the next few days, to the  
8 Legislature. And then hopefully it will lead to  
9 conversations about the path forward, both with the  
10 administration, of course, but also with the Legislature.  
11 And seeing where the pressure points that provide the most  
12 leverage for the state to move this marketplace actually  
13 lie.

14           The equity piece is just so, so important. We  
15 are not going to get there if we are not successful on, in  
16 particular he that piece of it. Really the families and  
17 the businesses that don't have that kind of cash flow or  
18 disposable resources that they can invest themselves in  
19 these, so we have to figure out ways to make that happen.

20           You know, all new loads are not created equal so  
21 highly efficient and electric. And again the refrain just  
22 have to keep being that, that when we electrify whether  
23 it's buildings in this report, transportation, flexibility  
24 has to be a key part of the mix. And so that we just heard  
25 about reliability, you know we're just getting this theme

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1 from various perspectives today.

2           And in order to meet all of our goals and enhance  
3 reliability decarbonize and manage costs and equity  
4 considerations, we have to do efficient electric and  
5 equitable and flexible rather. So it's all possible.  
6 That's I think the upside here is that we do have a clear  
7 view of what's needed, and this report, I think lays it out  
8 nicely.

9           So I have to again commend staff on a job very  
10 well done on this. I'm really happy with the way the  
11 report landed.

12           Lastly, I'll just say the legislation itself, if  
13 that wasn't completely clear from the presentation, but  
14 legislation itself actually suggests both of those  
15 baselines. And so that's the reason that the two lines,  
16 the two horizontal lines, were there. One baseline is the  
17 global view, including the cleaning of the electric grid,  
18 which makes life a lot easier in terms of overall  
19 decarbonization effort if you assign that to buildings that  
20 electrify. But if you really focus on the onsite  
21 emissions, which largely emanate from natural gas  
22 combustion and some leakage and the agencies -- or sorry,  
23 combustion and leakage -- that is much harder one.  
24 Reducing those emissions is much harder and it's really  
25 going to require the electrification.

1           Either way we're going to have to deal with the  
2 hydrofluorocarbons. Those are big greenhouse gas, and we  
3 have to create a system to both decrease their global  
4 warming potential and learn how and put in place the  
5 systems to capture them and recycle them. So either way we  
6 saw, every scenario requires that the HFC management  
7 happen.

8           So there's just a lot of pieces to this, but we  
9 have clarity. And this report gives us increased clarity.  
10 I'm really happy with where it's landing and excited to  
11 work with all the stakeholders to implement going forward.  
12 So anyway thanks for allowing me to expound a little bit on  
13 this report, because I think it's a very important input to  
14 the state policy arena.

15           CHAIR HOCHSCHILD: Thank you, Commissioner.  
16 Commissioner Gunda?

17           COMMISSIONER GUNDA: Thank you, Chair. I think  
18 this is a day of embarrassment for Commissioner McAllister,  
19 and I'll find a way to embarrass him on the stage today.  
20 But I just want to begin by just thanking Commissioner  
21 McAllister's leadership on this report.

22           It was one of the last analytical work that I was  
23 a part of before taking this new role, and just really  
24 appreciated the evolution of this over the last 15 to 18  
25 months. And I think the ability of the staff to really

1 make it more comprehensive, but at the same time bucket it  
2 into important teams like the way the strategies were laid  
3 out at the very top of the presentation, is extremely  
4 helpful.

5           So, from my kind of lens of the reliability and  
6 energy system planning, I think this is a seminal work. I  
7 think this is extremely important as we consider both the  
8 electric system reliability, as well as the natural gas  
9 system reliability. I think the different scenarios  
10 provide us insights into the kind of loads we might  
11 experience in the summer typically in the current  
12 trajectory. But also what it could look like in winter and  
13 the electrification loads and then thereby the intersection  
14 of the electricity load. And then the reduction in the  
15 natural gas mode and what that does to the overall natural  
16 gas grid.

17           So I think it's extremely important work. And  
18 I'm really glad that the staff took all the input, really  
19 made it as comprehensive and explaining as possible. So  
20 that as we move forward here, I think this could become a  
21 framework for some important work in kind of a sector that  
22 we really need to understand to really solve our SB 100  
23 goals.

24           I think a good tangent here has become that this  
25 work is now flowing into not just the building

1 decarbonization element of the IEPR. It is also moving  
2 into the demand scenarios planning for the broader group  
3 planning.

4           So I think again, you know, we have Michael and  
5 Nick kind of presenting today. I just want to recognize  
6 their kind of leadership here. And I don't want to repeat  
7 all the names that Commissioner McAllister kind of pointed  
8 out, but I do want to include a few other names that I'm  
9 glad I go after him so that I don't have to sell the  
10 substantive things. I just pick up on some of the names.

11           So I think Anitha Rednum and Late Eunice  
12 (phonetic) and their contribution on the demand scenarios  
13 now and then it's kind of an intersection there. Angela  
14 Tanghetti who presented on the previous presentation and  
15 Mark Kootstra had work done from the system side emissions,  
16 and what that means for this 3232 work. And also I had the  
17 opportunity to work with Bryan Early and Ken Rider and  
18 their leadership from Commission McAllister's office the  
19 Chair's office on this important thing.

20           So overall kudos to everybody, great work and  
21 looking forward to continuing to improve this and making it  
22 an important anchor for all the analysis we do moving  
23 forward. Thank you.

24           CHAIR HOCHSCHILD: Thank you, Commissioner.

25           Any other Commissioners wishing to comment,

1 Commission Monahan?

2 COMMISSIONER MONAHAN: I'll be really fast. I  
3 too like Commissioner Gunda just really appreciate the hard  
4 analytical work that Commissioner McAllister has been  
5 spearheading, you know, together of course with the  
6 analytical teams. I appreciate what Michael and Nicholas  
7 have brought to the table in this report.

8 And I just want to say that there's so much  
9 connective tissue today, not just with the building codes,  
10 but also with reliability. And this need to move swiftly  
11 to avert the worst consequences of global warming. And  
12 it's all kind of to me, you know, building decarbonization  
13 is a key aspect. You know, how do we (indiscernible)  
14 everything in a way that creates a resilient affordable  
15 safe grid and that is our challenge.

16 And I just didn't recognize Commissioner Gunda  
17 and his leadership before on the reliability portion, but  
18 of course he's been seminal in helping all the agencies  
19 work collaboratively on solving this problem.

20 So it is just interesting to me how it's all  
21 coming together and how we, as the strong analytical  
22 foundation of the Energy Commission, is really a critical  
23 tool in the toolbox of decarbonizing our economy and  
24 helping all of California.

25 So just thanks for the analytical underpinnings

1 that we're going to be able to use for regulatory actions  
2 going forward.

3 CHAIR HOCHSCHILD: Thank you.

4 Commissioner Douglas did you have any comments?

5 COMMISSIONER DOUGLAS: Yeah, no just I'm in  
6 strong support of this measure and I join in my colleagues  
7 comments okay.

8 CHAIR HOCHSCHILD: Okay. Thank you.

9 Yeah, I very much appreciate the work here. And  
10 I guess the only other point I would make is, you know,  
11 when you think about the early days of the renewable energy  
12 revolution, the people who were calling for a clean energy  
13 future 30 years ago right, before the renewal technology  
14 was mature or reliable was a harder case to make then. And  
15 I really am grateful for the early leadership.

16 You know today when we're talking about this, the  
17 technology is really in a healthy place. I mean there's  
18 always improvements to be made, but I can just speak for  
19 myself in our family we got rid of our natural gas water  
20 heater. And swapped out and replaced it with an electric  
21 heat pump water heater about three years ago, and did the  
22 same with our gas furnace a few months ago and it's working  
23 great. And I'm really pleased with the performance and the  
24 reliability and the savings. And I have to say, I think  
25 that bodes well in terms of looking ahead of what's



1 possible. The technology, the heat pump technologies have  
2 really come a long way and will continue to make further  
3 strides. And certainly the R&D investments we're seeing, I  
4 think, will help support that so.

5           So with that I would welcome Commission  
6 McAllister to move Item 5 if you're ready to do that,  
7 Commissioner?

8           COMMISSIONER MCALLISTER: I am ready to do that.  
9 I actually had Bryan and Ken down to acknowledge, so thank  
10 you Commissioner Gunda for that. I also wanted to  
11 acknowledge Lindsay from the media office. She helped make  
12 the report look really, good her team was great, and  
13 actually on the Title 24 work as well she's been just  
14 stellar on that front.

15           COMMISSIONER GUNDA: Commissioner McAllister,  
16 before you move the item let's just add Aida Escala to that  
17 list.

18           COMMISSIONER MCALLISTER: Yes, Aida Escala,  
19 exactly. Exactly, great.

20           But and I would aggregate the induction cooking  
21 onto your list of ready for prime-time technologies there.  
22 It's great, it's ready for prime time. So we do have a lot  
23 of great tools in our toolbox. So thanks a lot for all  
24 your comments and your support and really looking forward  
25 to implementing an artist.

1 I will move Item 5.

2 CHAIR HOCHSCHILD: Okay, Commissioner Gunda,  
3 would you be willing to second?

4 COMMISSIONER GUNDA: Second, Item 5.

5 CHAIR HOCHSCHILD: All right, all in favor say  
6 aye. Commissioner McAllister?

7 COMMISSIONER MCALLISTER: Aye.

8 CHAIR HOCHSCHILD: Commissioner Gunda?

9 COMMISSIONER GUNDA: Aye.

10 CHAIR HOCHSCHILD: Commissioner Douglas?

11 COMMISSIONER DOUGLAS: Aye.

12 CHAIR HOCHSCHILD: Commissioner Monahan?

13 COMMISSIONER MONAHAN: Aye.

14 CHAIR HOCHSCHILD: And I vote aye as well. Item  
15 5 passes unanimously.

16 Let's turn now to Item 6, Equilon Enterprises,  
17 LLC.

18 MS. JARVIS: Good morning Chair and  
19 Commissioners, my name is Madison Jarvis and I work in the  
20 Fuels and Transportation Division. Today I will present  
21 the proposed award for Shell's Multi-Modal Hydrogen  
22 Refueling Station project, proposed under the Hydrogen Fuel  
23 Cell Demonstrations in Rail and Marine Applications at  
24 Ports solicitation, also known as the H2RAM solicitation.

25 The Fuels and Transportation Division partnered

225

1 with the Energy Research and Development Division to  
2 release this funding opportunity. The infrastructure  
3 project I'm proposing today with Shell, will be in  
4 coordination with the Sierra Northern Hydrogen Locomotive  
5 Project at the Port of West Sacramento, which is a  
6 demonstration project awarded under the same solicitation  
7 that is being managed in the Energy Research and  
8 Development Division. Next slide, please.

9           The map on the left from CalEnviroScreen shows  
10 the spatial distribution of gridded diesel particulate  
11 matter emissions from on- and off-road sources. As you can  
12 see, West Sacramento is in the 70-80th percentile for  
13 diesel particulate matter emissions. The chart on the  
14 right shows the breakdown of sources contributing to  
15 nitrogen oxides emissions, and heavy-duty diesel vehicles  
16 account for 36 percent of these emissions and diesel  
17 powered locomotives contribute an additional 6 percent.

18           An objective of the H2RAM solicitation is to  
19 reduce the emissions from locomotives by advancing the use  
20 of zero-emission hydrogen fuel cell technology. The  
21 agreement I am presenting would reduce local and regional  
22 emissions by establishing a hydrogen fueling station in  
23 West Sacramento that will serve on-road heavy-duty hydrogen  
24 vehicles. As well as a switcher locomotive being developed  
25 by the Gas Technology Institute and demonstrated by Sierra

1 Northern Railway, which was a project approved at the March  
2 2021 Business Meeting under the same solicitation. Next  
3 slide, please.

4 This project with Shell Oil Products would  
5 develop the first multi-modal hydrogen refueling station in  
6 California. This station will be located at the Port of  
7 West Sacramento and will have three dispensers, two of  
8 which will be public facing to serve on-road heavy-duty  
9 hydrogen vehicles. And the third to be a private dispenser  
10 facing the railyard, which will be used to fuel the Sierra  
11 Northern Hydrogen Locomotive that is currently being  
12 developed.

13 Switcher locomotives generally operate within the  
14 confines of the railyard they serve, localizing the high  
15 levels of pollutants emitted. Retiring an older diesel  
16 switcher locomotive will displace around 4,200 pounds of  
17 NOx, 150 pounds of particulate matter and 100 metric tons  
18 of CO2 emissions annually. In addition to fueling the  
19 locomotive, this station will allow public access to heavy-  
20 duty hydrogen vehicles, dispensing hydrogen fuel at 350-bar  
21 pressure. The predicted well-to-wheels greenhouse gas  
22 emissions savings from replacing diesel fuel combustion  
23 with the hydrogen fuel cell-powered trucks is projected to  
24 be roughly 16,000 metric tons of CO2, 100 metric tons of  
25 NOx, and 7 metric tons of particulate matter over the first

1 five years of operation. Next slide, please.

2 Staff recommends approval of this grant award and  
3 adoption of staff's determination that this project is  
4 exempt from CEQA. I am available for any questions and I  
5 believe we also have Wayne Leighty, Business Development  
6 Manager in Hydrogen at Shell Oil Products on the call for  
7 public comment. Thank you very much.

8 CHAIR HOCHSCHILD: Thank you.

9 Let's go to public comment on Item 6. Noemi, do  
10 we have any public comment?

11 MS. GALLARDO: Hi there, this is Noemi, the  
12 Public Advisor. I'm checking for raised hands now and I do  
13 see one. So we will start with Sean Soni, a reminder to  
14 spell your name and your affiliation any on. Sean, your  
15 line is open, you may begin.

16 MR. SONI: A good afternoon again Commissioners  
17 and staff. My name is Sean Soni, spelled S-e-a-n S-o-n-i.  
18 And I'm speaking on behalf of Southern California Gas  
19 Company, SoCalGas.

20 My comment is to commend the resolution with  
21 Equilon Enterprises to demonstrate the first multimodal  
22 hydrogen refueling station in California. This project  
23 will support both climate and air quality goals.

24 In addition, hydrogen fuel cell powered  
25 locomotives can significantly reduce air pollution and

1 greenhouse gas emissions from the railways that serve  
2 California's ports and warehouses. SoCalGas has recently  
3 announced it will be working with the Sierra Northern  
4 Railway and the Gas Technology Institute to test a zero  
5 emission hydrogen fuel cell engine for a switcher  
6 locomotive. Creating a fuel cell engine for traditional  
7 locomotives can also eliminate their related emissions,  
8 improve local air quality, and reduce associated noise.

9           That's all I have. Thank you again for the  
10 opportunity, thank you. Thank you.

11           MS. GALLARDO: All right, so I will remind folks  
12 on the phone to press \*9 to indicate you would like to make  
13 a public comment and then \*6 to unmute. And those of you  
14 using the Zoom platform, and can see it on the screen,  
15 click on the raised hand feature that looks like a high  
16 five.

17           Chair, I am not seeing any raised hands.

18           CHAIR HOCHSCHILD: Okay. Let's turn to  
19 Commissioner discussion, starting with Commissioner  
20 Monahan.

21           COMMISSIONER MONAHAN: And I have to warn you  
22 all, I'm having an allergy attack so I don't know if you  
23 can hear my voice is going. So I'm going to speak just  
24 really briefly and then (indiscernible) see if I'm getting  
25 my voice back.

1           So I just want to say that this is the kind of  
2 project that we want to see going forward. We want to see  
3 hydrogen, that is not produced from fossil fuels, but it is  
4 rather produced from renewable sources that are zero  
5 carbon. And looking historically, I think we were very  
6 focused on light-duty, but now our attention is expanding  
7 to medium and heavy-duty locomotives, air travel, use in  
8 industry, uses for electricity and storage. And so we're  
9 looking at hydrogen in all these more expansive ways.

10           But in order for hydrogen to be really a  
11 solution, it has to be zero carbon or heading that  
12 direction. So I'm excited about this project and other  
13 work we're exploring here at the Energy Commission about  
14 how to foster that investment in the zero carbon solutions  
15 we need.

16           CHAIR HOCHSCHILD: Okay, Commission Monahan, I'm  
17 sorry about your allergies. And you're excused from having  
18 to speak further. We will do our best to channel your  
19 (indiscernible) and you don't have to wear your voice out,  
20 and hope that you get some tea there.

21           CHAIR HOCHSCHILD: Other Commissioners interested  
22 to make a comment, Commissioner Gunda?

23           COMMISSIONER GUNDA: Oh sorry, Chair, but since  
24 you called I'm going to say it was a good presentation. It  
25 has an item identified that I think with important element

1 of ensuring we have other ways of decarbonizing the  
2 transportation sector, especially in key areas where  
3 electrification is not feasible. And I think this project  
4 really sets us up for that. And again, congratulations to  
5 the team for kind of pulling this together, Commissioner  
6 Monahan's leadership and the entire FTD, so thank you.

7 CHAIR HOCHSCHILD: Okay, thank you. Unless there  
8 --

9 MS. GALLARDO: Chair?

10 CHAIR HOCHSCHILD: Yes?

11 MS. GALLARDO: Yes, apologies for interrupting,  
12 this is Noemi, the Public Advisor. I do see a hand raised  
13 and it is Wayne Leighty, the Applicant. So I wanted to  
14 check to see if it was okay to let him speak.

15 CHAIR HOCHSCHILD: Public comments are actually  
16 closed. But I'll make an exception in this case, because  
17 it's the Applicant but yeah.

18 MS. GALLARDO: Okay, thank you, Chair. Apologies  
19 again for the interruption.

20 So Wayne, I'm going to open up your line, a  
21 reminder to indicate your affiliation.

22 MR. LEIGHTY: Thank you. Yes, good afternoon,  
23 Commissioners, this is Wayne Leighty, can you hear me?

24 CHAIR HOCHSCHILD: Yes, good.

25 MR. LEIGHTY: My apologies, I was paying



1 attention to your cadence all day and just dialed back in a  
2 little late, my name is W-a-y-n-e L-e-i-g-h-t-y. I'm the  
3 commercial head for North America at Shell Hydrogen. And I  
4 thank you very much for your consideration today.

5 As you may know, we have just opened the first  
6 hydrogen fueling stations for heavy-duty class eight trucks  
7 in California. And already, with your approval of funding  
8 today we will put the next steps in motion for, to what my  
9 knowledge is the world's first multimodal hydrogen station  
10 fueling cars, trucks, and locomotives, which more than  
11 triples the station capacity. While still reducing the  
12 capital and operating costs and which then can get to  
13 diesel parity for the hydrogen fuel costs, once we get to  
14 full utilization.

15 Also, I just wanted to mention, as you may know,  
16 we sold up 100 percent renewable hydrogen for  
17 transportation in California last year, and we expect to  
18 get to zero carbon intensity this year.

19 And finally, as you probably know, a critical  
20 impediment to widespread adoption of hydrogen fuel cell  
21 electric vehicles is a robust fueling infrastructure, which  
22 now lags both the vehicle availability and the customer  
23 demand. So I just wanted to express to you there is a  
24 tremendous pace of progress in hydrogen mobility and I  
25 thank you very much for your consideration today and your

1 continued support for hydrogen infrastructure. Thank you.

2 CHAIR HOCHSCHILD: Colleagues, I apologize. I  
3 did not realize that this meeting was going to run until  
4 4:00 o'clock. I have to take my daughter to the dentist.

5 Commissioner Douglas, could I ask you to take  
6 over the meeting? I'll patch in by phone.

7 COMMISSIONER DOUGLAS: Yes, I would be happy to.  
8 Can you hear me?

9 CHAIR HOCHSCHILD: Thank you so much.

10 COMMISSIONER DOUGLAS: Good, I appear to be  
11 frozen. I'm going to turn my video off since that's kind  
12 of silly. All right, but I'm here.

13 So I want to thank the Applicant for their  
14 comments. And let's see, Commissioner Monahan, you have  
15 already spoken on this item. Would any other Commissioners  
16 like to speak on this item?

17 COMMISSIONER MCALLISTER: I would just speak and  
18 support. I've already had lots of turns today, so I'm  
19 going to be brief. Thanks.

20 COMMISSIONER DOUGLAS: All right, thank you  
21 Commissioner McAllister.

22 Let me ask, Commissioner Monahan, could you make  
23 a motion?

24 COMMISSIONER MONAHAN: I move to approve this  
25 item.

1           COMMISSIONER DOUGLAS: All right, I forgot the  
2 Chair had excused you from further talking. I forgot about  
3 that. Commissioner McAllister, could you second?

4           COMMISSIONER MCALLISTER: I'll second.

5           COMMISSIONER DOUGLAS: All right, Commissioner,  
6 so we'll call a vote -- Commissioner Monahan?

7           COMMISSIONER MONAHAN: Aye.

8           COMMISSIONER DOUGLAS: Commission McAllister?

9           COMMISSIONER MCALLISTER: Aye.

10          COMMISSIONER DOUGLAS: Commissioner Gunda?

11          COMMISSIONER GUNDA: Aye.

12          COMMISSIONER DOUGLAS: Chair Hochschild?

13          COMMISSIONER DOUGLAS: All right, he appears to  
14 be on his way to the car. I vote aye, so that one passes  
15 4-0 with Commissioner Hochschild not voting.

16                 Let's go on to the next item, please.

17          MS. GALLARDO: This is Noemi, the Public Advisor,  
18 so that would be Item Number 7, so that would be Hieu  
19 Nguyen.

20          MR. NGUYEN: Hello Chair and Commissioners. My  
21 name is Hieu Nguyen, staff with the Fuels and  
22 Transportation Division. Today, staff is seeking approval  
23 of one project, H2B2 USA, LLC.

24                 The project was proposed for funding under the  
25 Renewable Hydrogen Transportation Fuel Production

1 Facilities and System solicitation. This solicitation  
2 provided a little under \$4 million in funding for projects  
3 that construct and operate a California-based 100 percent  
4 renewable hydrogen production facility that will supply to  
5 the state's network of hydrogen vehicle refueling stations.  
6 Next slide.

7 The proposed agreement provides the following  
8 benefits to California. This project will provide economic  
9 benefits to a disadvantaged community in Fresno County by  
10 establishing a qualified opportunity zone. The image on  
11 the slide pinpoints the location of the opportunity zone.

12 And the project has also committed to hiring  
13 labor from the local region around the project location.  
14 Providing 6 temporary construction jobs and 3 full time  
15 jobs for the lifetime of the fuel production facility.

16 An additional benefit of the project, when  
17 completed, is the increase of the in-state production of  
18 100% renewable hydrogen. Next slide.

19 The agreement with H2B2 USA for nearly \$4 million  
20 to design, build and operate a renewable hydrogen  
21 production plant in Fresno County, California. The project  
22 proposes to produce up to 1,000 kg/day or 365,000 kg per  
23 year of hydrogen. The total production for the project can  
24 fill up about 1,400 fuel cell vehicles a year.

25 The facility will utilize renewable electricity

1 produced by a planned neighboring solar photo-voltaic plant  
2 that will feed directly to the electrolyzer and battery  
3 storage system, providing between 18-20 hours of continuous  
4 operation. The California electricity grid will provide the  
5 remainder of the electricity during off-peak hours, where  
6 H2B2 will buy 100 percent renewable energy. The plant will  
7 have, on-site, a 500kg hydrogen storage system at 350 bar  
8 pressure and a loading station for tube trailers. The  
9 produced hydrogen will have an approximate carbon intensity  
10 of 3.42 gCO<sub>2</sub>e/MJ.

11           The carbon intensity represents the amount of  
12 carbon emissions generated for each unit of fuel produced.  
13 For comparison, Ultra Low Sulfur Diesel has a carbon  
14 intensity score of about 100 gCO<sub>2</sub>e/MJ. The finished fuel  
15 will be used to further support the California's hydrogen  
16 refueling station network. The figure on the right is an  
17 example of how the finish fuel production system will look  
18 like. Next slide.

19           H2B2's renewable hydrogen plant was evaluated by  
20 the lead agency, the Fresno County Department of Public  
21 Works and Planning, which conducted an Initial Study and  
22 found that the proposed project, with mitigation, would  
23 have no significant impact on the environment. Fresno  
24 County adopted the Initial Study, a Mitigated Negative  
25 Declaration, and a Mitigation Monitoring and Reporting

1 Program. Commission staff considered these documents in  
2 their own analysis and determined that this project causes  
3 no new significant or substantially more severe  
4 environmental impacts beyond those already considered and  
5 mitigated by the lead agency.

6 For this agreement, staff is seeking your  
7 adoption of the CEQA findings and approval of the grant  
8 award in Item Number 7. Thank you for your consideration.  
9 This concludes my presentation. Jim Corboy with H2B2 is  
10 here and available to answer any questions you may have.  
11 Thank you.

12 COMMISSIONER DOUGLAS: All right, thank you very  
13 much.

14 Is there public comment on them seven?

15 MS. GALLARDO: This is Noemi, the Public Advisor.  
16 If anybody would like to make a public comment, please use  
17 the raise hand feature in zoom. If you're on by phone  
18 press \*9 to indicate, you would like to make the comment  
19 and then \*6 to unmute. I do see a hand raised. I will  
20 begin with Charles Eley. Apologies if I mispronounced  
21 that. Please restate your name, spell it, and indicate  
22 your affiliation. Charles, your line is open and you may  
23 begin.

24 MR. ELEY: This is Charles Eley, E-l-e-y, Senior  
25 Fellow with Architecture 2030. I just have a question.

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1 What's the round-trip efficiency of producing hydrogen  
2 through the process of electrolysis and then converting it  
3 back to electricity, either through combustion or fuel  
4 cell? And how does that compare to a battery?

5 MS. GALLARDO: Charles, this is Noemi, the Public  
6 Advisor. We do not engage in dialogue during public  
7 comments. These are your three minutes to use to speak if  
8 you'd like to make a comment, so that we can take that  
9 question as a comment.

10 Commissioner Douglas, I apologize. I think I  
11 interrupted you. If you want to do a different process,  
12 please let us know.

13 COMMISSIONER DOUGLAS: No, I was going to say the  
14 very same thing you did, Noemi. Thank you.

15 MS. GALLARDO: All right, so Charles would you  
16 like to continue your comment, or do you want to leave it  
17 as that question?

18 MR. ELEY: I'll leave it at that.

19 MS. GALLARDO: Okay, thank you.

20 All right, and I did see Jim Corboy here, but  
21 don't see his hand raised. And Jim, would you like to make  
22 a public comment? If so, if you could raise your hand?  
23 Okay, I am going to open your line, Jim. If you would like  
24 to make a comment you may begin.

25 MR. CORBOY: Yes, thank you. This is Jim Corboy.

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1 I'm the CEO of H2B2 USA, LLC. And my comment would be to  
2 really thank the Commissioners and the staff for its  
3 patience and its endurance for this long process of getting  
4 the full CEQA approval. And all of the Notice of  
5 Determination from Fresno County, particularly Hieu and  
6 Andrew Hom and Jean and Jane have all been very supportive  
7 over the last three years that I've been working on this  
8 project.

9 We're anxious to move forward and we would very  
10 much appreciate approval and am happy to answer any main  
11 questions that anyone may have at this point.

12 COMMISSIONER DOUGLAS: All right, thank you very  
13 much for your comment.

14 Noemi, is there anything else? Any other  
15 comments?

16 MS. GALLARDO: I see no other hands,  
17 Commissioner, you may proceed.

18 COMMISSIONER DOUGLAS: All right, great. So  
19 let's move on to Commissioner discussion. And Commissioner  
20 Monahan, would you like to start?

21 COMMISSIONER MONAHAN: Again I'm not going say  
22 very much. I (indiscernible) hydrogen. I'm sorry. Sorry  
23 you have to hear it. It's actually work for you to hear it  
24 than it is for me. But this is the kind of project that  
25 we're seeking to incentivize these kinds of investments



1 that lead to a zero carbon hydrogen future. I'll say no  
2 more.

3 COMMISSIONER DOUGLAS: Thank you, Commissioner.  
4 Monahan. I am so sorry. It's hard to have your voice goes  
5 in the middle of a meeting. So any other Commissioner  
6 comments?

7 COMMISSIONER MCALLISTER: I just wanted to just  
8 be supportive, but I can't channel Commissioner Monahan  
9 very well, but obviously you know this is -- we've had such  
10 a broad ranging meeting today. And we've talked about a  
11 lot of different intersecting items, and I think this is a  
12 part of that theme. And an increasing conversation about  
13 hydrogen for a plethora of different uses, cross-cutting  
14 uses. And we're doing a lot of R&D. We're doing a lot of  
15 I think interesting work and having certainly lots of  
16 interesting discussions about the directions that hydrogen  
17 might go in the state. And how we should plan that.

18 And I think this could be a really key  
19 contribution to the knowledge base here, so happy to  
20 support.

21 COMMISSIONER DOUGLAS: Thank you, Commissioner  
22 McAllister. And thank you for stepping in and making some  
23 more comments on this item. And you know, we very recently  
24 had an IEPR workshop on hydrogen and that was fascinating  
25 as well. And so I agree we're seeing a lot of these

1 different threads coming together here.

2 Any other Commissioner comments, because if not  
3 we'll move on to our vote. And I think we're taking this  
4 in two parts. So Item 7a is regarding the CEQA findings.  
5 And I almost hate to ask, but Commissioner, Monahan would  
6 you be willing to make a motion on Item 7a?

7 COMMISSIONER MONAHAN: I move to approve Item 7a.

8 COMMISSIONER DOUGLAS: All right, Commissioner  
9 McAllister, could you second?

10 COMMISSIONER MCALLISTER: I'll second.

11 COMMISSIONER DOUGLAS: All right, all in favor,  
12 Commissioner Monahan?

13 COMMISSIONER MONAHAN: Aye.

14 COMMISSIONER DOUGLAS: Commission McAllister?

15 COMMISSIONER MCALLISTER: Aye.

16 COMMISSIONER DOUGLAS: Commissioner Gunda?

17 COMMISSIONER GUNDA: Aye.

18 COMMISSIONER DOUGLAS: Chair Hochschild?

19 (No audible response.) All right, and I vote  
20 aye. So that item, 7a passes 4-0 with Commissioner  
21 Hochschild not present. And let's go to Item 7b.

22 Commissioner Monahan, would you be willing to make a  
23 motion?

24 COMMISSIONER MONAHAN: I move to approve Item 7b.

25 COMMISSIONER DOUGLAS: All right.

1 COMMISSIONER MCALLISTER: I'll second.

2 COMMISSIONER DOUGLAS: All right, perfect. So  
3 Commissioner McAllister seconds, Commissioner Gunda?

4 COMMISSIONER GUNDA: Aye.

5 COMMISSIONER DOUGLAS: All right, and I vote aye  
6 as well. So Item 7b -- and Chair Hochschild, are you on?  
7 I don't think so.

8 COMMISSIONER MCALLISTER: I vote aye as well, by  
9 the way.

10 COMMISSIONER DOUGLAS: Thank you, Commissioner  
11 McAllister. I'm going to stick with the 4-0 count I think  
12 with Chair Hochschild not present.

13 And thank you all, let's move now to Item 8,  
14 Blueprints for Medium and Heavy-Duty Zero-Emission Vehicle  
15 Infrastructure.

16 MS. REID: Good afternoon, Chair and  
17 Commissioners. My name is Kate Reid, Air Resources  
18 Engineer with the Fuels and Transportation Division's  
19 Freight and Transit Unit. We're seeking approval today for  
20 11 agreements resulting from the "Blueprints for Medium and  
21 Heavy-Duty Zero-Emission Vehicle Infrastructure  
22 Solicitation".

23 This solicitation was released in July 2020. \$3  
24 million was available to fund planning "blueprints" to  
25 identify actions and milestones needed for implementation

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1 of medium- and heavy-duty zero-emission vehicles and the  
2 related electric charging and/or hydrogen refueling  
3 infrastructure. A minimum of \$1 million of total funds was  
4 set-aside for public entities. Subsequently, the Energy  
5 Commission increased the total funding to approximately  
6 \$5.6 million, which allowed all public entities with a  
7 passing score to be funded.

8 Under this solicitation, 28 projects were  
9 proposed for award, 9 of those projects were presented and  
10 awarded at last month's business meeting. Today I will be  
11 presenting 11 more of those projects -- the remaining 8  
12 will be presented at later business meetings. Next slide,  
13 please.

14 The proposed projects will create roadmaps for  
15 large-scale infrastructure projects, plan for resiliency,  
16 and provide best practices and key lessons learned for  
17 future replicability at other private and public agencies.

18 These blueprints will also help other agencies  
19 and fleets understand which technology may work best for  
20 their applications, routes, and driving environments, which  
21 will ultimately accelerate meeting California's goal of  
22 transitioning medium- and heavy-duty trucks and buses to  
23 zero-emission by 2045. Next slide, please.

24 The first proposed agreement is with the City of  
25 Long Beach. This project is to develop a blueprint for

1 deploying Medium- and Heavy-Duty Zero-Emission Vehicle  
2 fueling and charging infrastructure for the City's own  
3 municipal fleet and help enable private fleet transitions  
4 within the City boundary. This plan, when implemented, will  
5 benefit low income and disadvantaged communities. Next  
6 slide, please.

7           The next proposed agreement is with the Regents  
8 of the University of California, Irvine. This project is  
9 to develop a blueprint for medium- and heavy-duty charging  
10 and hydrogen infrastructure within the South Coast Air  
11 Basin with a focus on transit, drayage, and long-haul  
12 trucking. This project will benefit disadvantaged and low-  
13 income communities. Next slide, please.

14           The next proposed agreement is with InCharge  
15 Energy. This project is to develop a blueprint for  
16 installation of infrastructure for the Inland Empire, which  
17 is the Riverside- San Bernardino and Ontario area, and I-  
18 710 corridor. The blueprint will examine 50 fleet  
19 locations in the project area with more than 1,000 M/HD EVs  
20 in low income and disadvantaged communities. Next slide,  
21 please.

22           The next proposed agreement is with Santa Barbara  
23 Metropolitan Transit District. This project is to develop  
24 a blueprint for medium and heavy-duty infrastructure for  
25 transit and municipal fleets. This project will explore

1 development of a microgrid to support fleet resiliency at  
2 the Transit District's terminal in Downtown Santa Barbara.  
3 The project site is located in a low-income community and  
4 low-income communities along MTD's transit lines serve low-  
5 income communities. Next slide, please.

6           The next proposed agreement is with Central  
7 Concrete, Inc. This project is to develop a blueprint for  
8 charging and hydrogen refueling infrastructure including  
9 material handling equipment, heavy machinery, concrete  
10 mixers, and Class 6-8 trucks throughout its affiliated  
11 supply and service chains representing 23 California  
12 facilities. Central's Bay Area facilities are primarily in  
13 low-income communities or disadvantaged communities. Next  
14 slide, please.

15           The next proposed agreement is with the  
16 University of California, Irvine. This project is to  
17 develop a blueprint that will enable the adoption of medium  
18 and heavy-duty battery electric and fuel cell electric  
19 vehicles for fleets at a marine terminal. Next slide,  
20 please.

21           The next proposed agreement is with Oxnard Harbor  
22 District. This project is to develop a blueprint for  
23 battery electric and hydrogen fueling infrastructure to  
24 support medium and heavy-duty zero emission vehicles,  
25 equipment, and marine vessels at the Port of Hueneme. This

1 plan, when implemented, will benefit disadvantaged  
2 surrounding the port. Next slide, please.

3           The next proposed agreement is with the Port of  
4 Stockton. This project is to develop a blueprint for ZEV  
5 infrastructure at the Port and develop a series of  
6 instructional electrification guides that will facilitate  
7 the evaluation, design, and deployment of ZEVs and ZEV  
8 infrastructure by small ports, municipal utilities, and  
9 port tenants. Surrounding Disadvantaged Area Communities  
10 will benefit from implementation of this plan. Next slide,  
11 please.

12           The next proposed agreement is with The Regents  
13 of the University of California, Riverside. This project  
14 is to develop a blueprint for renewable fuel and  
15 electricity sources for heavy-duty vehicle refueling and  
16 recharging for the City of Riverside. The blueprint will  
17 be designed to be replicable across the South Coast region  
18 of California. Next slide, please.

19           The next proposed agreement is with San Diego  
20 Association of Governments. This project is for the  
21 development of a blueprint for infrastructure for electric  
22 vehicle charging in the San Diego region. It incorporates  
23 actions and strategies identified in regional and state  
24 goods movement plans. Next slide, please.

25           The final proposed agreement is with San

1 Francisco Bay Area Water Emergency Transportation  
2 Authority. This project is to develop a plan to transition  
3 ferry operations on San Francisco Bay to zero-emission  
4 ferries using electric propulsion systems, with an emphasis  
5 on resolving the technical and regulatory barriers for the  
6 shore side infrastructure. Next slide, please.

7 Staff recommends approval of these eleven grant  
8 awards and adoption of staff's determination that the  
9 projects are exempt from CEQA. Thank you all for your  
10 time and consideration of these items.

11 COMMISSIONER DOUGLAS: All right, thank you very  
12 much, Kate, for that presentation.

13 And let me ask now, is there any public comment  
14 on Item 8?

15 MS. GALLARDO: This is Noemi, the Public Advisor.  
16 I do see at least one hand raised, so we will start with  
17 that comment. So Katrina Aceves, a reminder to please  
18 spell your name, indicate your affiliation, if any. Your  
19 line is open, Katrina, you may begin.

20 MS. ACEVES: Good afternoon Commissioners. My  
21 name is Katrina Aceves, K-a-t-r-i-n-a A-c-e-v-e-s. I'm the  
22 Lead Project Manager for Momentum supporting the City of  
23 Long Beach's blueprint project. I'd like to share the  
24 following statement from April Walker, Project Management  
25 and Officer for the City.



1           "Our city, the City of Long Beach, is frequently  
2 described as a series of strong, diverse, interwoven,  
3 smaller communities within a large city. We will be ranked  
4 as the ninth most ethnically diverse large city in the  
5 country. The vibrant diversity of the city lends to the  
6 rich cultural heritage and strong sense of the community  
7 cohesiveness to despite its size. For the benefit to our  
8 communities zeroing out the emissions of medium and heavy-  
9 duty fleets is a priority for our city.

10           "Long Beach has consistently been ranked the city  
11 with a worst air quality out of the nation's hundred  
12 largest cities. Tackling the air quality and environmental  
13 justice issues associated with their vehicle operations is  
14 a top priority. And one we hope this blueprint will help  
15 address.

16           "Through this blueprint we intend to build  
17 holistic solutions to consider all aspects: regulatory,  
18 technical, social and financial at all scales from driver  
19 to vehicle to station to grid, for all stakeholders in our  
20 vibrant and diverse communities.

21           "With the breadth of departments involved and the  
22 blueprint scope from airport utilities to public transit,  
23 we hope that this blueprint can lend as an opportunity for  
24 California as a full serving as a representative  
25 municipality for other cities across California to follow.

1           "On behalf of the City of Long Beach and our  
2 project team members Arab and Momentum we are immensely  
3 grateful for the opportunity and support the CEC has  
4 provided, allowing us to take just and swift action for our  
5 community members in the clean energy transition. Thank  
6 you."

7           MS. GALLARDO: Thank you.

8           This is Noemi, again. Let me remind folks to  
9 raise their hand using the high-five looking feature on  
10 the platform and \*9 if you're on by phone. I'm not seeing  
11 any hands, Commissioner Douglas, but I do have a comment to  
12 read. So this is from Lauren Goulart, L-a-u-r-e-n G-o-u-l-  
13 a-r-t-e, Government and Regulatory Affairs Manager at the  
14 Water Emergency Transportation Authority, also known by the  
15 acronym WETA, W-E-T-A.

16           "WETA is eager to study the requirements and  
17 costs of shore-side infrastructure, so that we can start  
18 planning and securing funds to move our fleet towards zero  
19 emissions. WETA is committed to reducing greenhouse gas  
20 emissions from our fleet while providing the clean  
21 transportation options that connects communities and  
22 employment centers in our region. We would like to thank  
23 the California Energy Commission for considering approval  
24 of this grant for WETA to start this critical work and help  
25 the state meet its emission reduction mandate."

1           That concludes the comment. Commissioner  
2 Douglas, I do not see any other hands.

3           COMMISSIONER DOUGLAS: All right, thank you very  
4 much Noemi.

5           In that case let's go on to Commissioner  
6 discussion. And Commissioner Monahan, are you able to  
7 start? Would you like to start?

8           COMMISSIONER MONAHAN: Oh yeah, I'll start.  
9 Maybe it's a little better, maybe. Well we've seen these  
10 projects, before. I mean, basically with medium and heavy-  
11 duty the planning is particularly important, because it can  
12 be very complicated on that infrastructure for  
13 (indiscernible) battery electric vehicles. And you can  
14 also see the diversity of projects being funded here in  
15 terms of (indiscernible) facilities. And the City of Long  
16 Beach, I think their remarks were very appropriate here.

17           So I just want to thank the staff for managing  
18 all these, there were a lot of different entities applying  
19 for these. And we're really trying to get as much money as  
20 we can to all these different entities, so we can plan for  
21 that transition with a big focus on medium and heavy-duty.  
22 And I will stop there, because I'm losing it again.

23           COMMISSIONER DOUGLAS: Thank you.

24           Other comments, Commissioners?

25           COMMISSIONER MCALLISTER: I just really like the

1 diversity of projects, and particularly like seeing the  
2 ports and the customs facilities in there. There's a lot  
3 of footprint there that is really kind of as a result of  
4 the footprint of the larger influence they have on the  
5 whole goods movement enterprise. And so that's a key place  
6 where we can get reductions and those populations  
7 (indiscernible), so really happy to see the various  
8 complimentary initiatives here.

9 COMMISSIONER DOUGLAS: Yeah, thank you for that  
10 comment. And I agree, I just love the diversity of  
11 projects. And it just makes me think you know, I'd like to  
12 go learn more about each and every one of them. It's just  
13 so great to see all the different initiatives that are  
14 happening in the space all over the state and that we're  
15 able to help facilitate here at the Energy Commission.

16 Commissioner Gunda, any comments from you and no  
17 pressure. Sorry, I muted.

18 COMMISSIONER GUNDA: Sorry, double muted. No, I  
19 was just going to just support Commissioner Monahan. I  
20 think you know for me again acknowledging the diversity,  
21 but also I really like this idea of potentially having a  
22 library of blueprints for then potentially scaling and  
23 replicating, such as the kudos to the kind of framing of  
24 how to do these. So yeah, again thank you. I look forward  
25 to supporting it.

1 COMMISSIONER DOUGLAS: Super.

2 Well, Commissioner Monahan, would you like to  
3 make a motion on this item?

4 COMMISSIONER MONAHAN: I move to approve this  
5 item.

6 COMMISSIONER DOUGLAS: Commissioner Gunda, would  
7 you like to second?

8 COMMISSIONER GUNDA: Yes, second Item 8.

9 COMMISSIONER DOUGLAS: All right, we'll go to the  
10 vote then. Commissioner Monahan, do you?

11 COMMISSIONER MONAHAN: Aye.

12 COMMISSIONER DOUGLAS: Commissioner Gunda?

13 COMMISSIONER GUNDA: Aye.

14 COMMISSIONER DOUGLAS: Commissioner McAllister?

15 COMMISSIONER MCALLISTER: Aye.

16 COMMISSIONER DOUGLAS: And I vote aye as well.

17 And Commissioner Hochschild, Chair Hochschild is not on.

18 So this item passes 4-0 with Chair Hochschild not present.

19 Let's go on now. Let's see, Item 9 was removed  
20 from the Business Meeting agenda, so we'll go to Item 10,  
21 Research and Development of High-Value Recycling Pathways  
22 for Lithium-Ion Batteries. And I welcome Ben Wender to  
23 present.

24 MR. WENDER: Thanks so much, and good afternoon,  
25 Commissioners. My name is Ben Wender. I'm an Electric

1 Generation System Program Specialist in the Energy Research  
2 and Development Division. Today, I am presenting two  
3 awards from a recent EPIC solicitation focused on  
4 developing technologies to help responsibly and  
5 economically manage lithium-ion batteries from electric  
6 vehicles and stationary storage systems when they reach the  
7 end of their service life. Next slide, please.

8           The proposed awards will bring multiple benefits  
9 to Californians. Near-term progress on meeting our  
10 climate, air quality, and public health protection goals  
11 will require large-scale deployments of lithium-ion  
12 batteries in both transportation and electricity systems.

13           After ten or more years in use, these batteries  
14 will reach their end-of-life in growing volumes over the  
15 coming decades. For example, shown here are three different  
16 scenarios for electric vehicle batteries needing disposal  
17 in California by 2050 ranging between 30 and 90 thousand  
18 metric tons. The advanced recycling processes supported  
19 through this solicitation can reduce greenhouse gas  
20 emissions and environmental impacts of lithium-ion  
21 batteries, conserve critical materials, and potentially  
22 produce low-cost feedstocks that can help reduce the cost  
23 of new batteries for electric vehicles and stationary  
24 storage. Next slide, please.

25           The objective of the solicitation and of the

1 projects recommended today is to improve and scale-up  
2 lithium-ion battery recycling processes that recover high-  
3 value materials such as electrodes in their functional  
4 form. Shown here are some general processes along the  
5 battery supply chain in blue, beginning with mining of raw  
6 materials, processing, manufacturing, use, and reaching  
7 end-of-life.

8 In green are different types of recycling  
9 processes with an indication of where the recovered  
10 materials are returned to the battery supply chain.

11 This solicitation supports development of  
12 recycling processes that provide feedstocks directly to  
13 battery manufacturing, shown in this inner most green  
14 circle. These processes and the materials they produce  
15 have higher economic value, can avoid upstream mining and  
16 processing activities, and can help support growth of  
17 domestic supply chains for lithium-ion batteries.

18 The goal of the solicitation and of the projects  
19 recommended today is to develop technologies that recover  
20 more than 95 percent of the mass of cathode, anode, and  
21 lithium contained in spent batteries at end of life. Next  
22 slide, please.

23 In the first proposed project, UC San Diego will  
24 improve, scale-up, and conduct environmental and economic  
25 analyses of their patented recycling process to recover

1 high-purity materials from used lithium-ion batteries. The  
2 general steps of their recycling process are shown here,  
3 taking in spent batteries with degraded materials and  
4 producing regenerated battery materials that can be used  
5 directly in battery manufacturing. The project will use  
6 the recovered materials in new batteries and demonstrate  
7 their performance in electric micro-delivery vehicles in  
8 partnership with a company located in the pollution  
9 burdened Barrio Logan neighborhood in San Diego. Next  
10 slide.

11           In the second proposed project, OnTo Technology  
12 will collect used lithium-ion batteries from sites in  
13 California, demonstrate their patented recycling and  
14 cathode healing process, and scale-up capacity to be able  
15 to handle multiple kilograms per day with potential for  
16 further increases in the future. The project will partner  
17 with battery manufacturers to evaluate the quality of  
18 recovered materials, produce new batteries with high  
19 recycled content, and compare their performance to  
20 batteries made from mined materials.

21           Shown here are two early examples of batteries  
22 produced by the proposed recipient with recycled materials.  
23 And on the right are results from testing showing near  
24 equivalent degradation between the recycled and new battery  
25 over thousands of cycles. This project will build on these



1 early results to help build battery manufacturer confidence  
2 in the performance of recycled materials. Next slide,  
3 please.

4 So staff recommends approval of these two grant  
5 awards and adoption of staff's determination that these  
6 projects are exempt from CEQA. I'm available for any  
7 questions, as are representatives from OnTo Technology.  
8 And thank you, that concludes my presentation.

9 COMMISSIONER DOUGLAS: Thank you, Ben.

10 At this point we will move on to public comment.  
11 Noemi, is there any public comment on Item 10?

12 MS. GALLARDO: Thank you, Commissioner Douglas.  
13 This is Noemi Gallardo, the Public Advisor. I wanted to  
14 note that Chair Hochschild has joined us by phone. I have  
15 opened his line in case he wants to speak, I will -- go  
16 ahead, Chair.

17 CHAIR HOCHSCHILD: Thank you, Noemi. No, I just  
18 wanted to give my support for this terrific project and  
19 very well timed, nothing further.

20 COMMISSIONER DOUGLAS: Thank you, Chair  
21 Hochschild.

22 MS. GALLARDO: All right, thank you. So  
23 Commissioner Douglas, it does look like we have a hand  
24 raised. And I just want to make sure to remind everybody  
25 if you would like to make a comment, please use the raise

1 hand feature. It looks like high five on your screen. If  
2 you're on by phone press \*9 to indicate you would like to  
3 make a comment and \*6 to unmute. We will begin with Steve  
4 Sloop. Steve, a reminder to spell your name, indicate your  
5 affiliation. Your line is open and you may begin, Steve.

6 MR. SLOOP: Hi, this is Steve Sloop, S-t-e-v-e S-  
7 l-o-o-p. And just wanted to say I'm the Founder and  
8 President of OnTo Technology. We are very excited about  
9 the opportunity with the California Energy Commission with  
10 this project for high-value recycling pathways for lithium-  
11 ion batteries. And the development of manufacturing with  
12 recycled materials is a critical step for the environmental  
13 and economic sustainability of batteries for vehicles and  
14 storage, which is just becoming more and more critical. So  
15 it's like critical squared here.

16 This project squarely addresses that chain link  
17 from going to end of life and recycling back into  
18 manufacturing. And uses an OnTo suite of direct recycling  
19 technologies that we've developed and demonstrated since  
20 the early 2000.

21 We just are very appreciative of this opportunity  
22 and thank the support of the CEC for the project. That's  
23 it.

24 MS. GALLARDO: Great, thank you.

25 Okay, let's see, I do not see any other hands

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1 raised at this time.

2 COMMISSIONER DOUGLAS: Okay.

3 MS. GALLARDO: That's all for public comment.

4 COMMISSIONER DOUGLAS: Thank you, Noemi, that's  
5 great.

6 So let's move on to Commissioner discussion and  
7 Chair Hochschild, would you like to start us off?

8 CHAIR HOCHSCHILD: Yeah, no additional comments  
9 for me. Just totally support this item, and I want to  
10 thank the staff for preparing it.

11 I will say, you know, this dovetails very nicely  
12 with the lithium recovery efforts we're doing around the  
13 Lithium Valley Commission. I want to thank Commissioner  
14 Douglas for her work on the Lithium Valley Commission. But  
15 these two things need to proceed sort of in parallel, both  
16 strengthening and building up the lithium cycling ecosystem  
17 and focusing recovery efforts in the Salton Sea Initiative.  
18 Those are both parallel efforts as is a July 6th Project.  
19 (phonetic)

20 COMMISSIONER DOUGLAS: Thank you so much, Chair  
21 Hochschild. And I've got to say I couldn't agree more with  
22 that sentiment on both the importance of the Lithium Valley  
23 lithium recovery work and the importance of battery  
24 recycling.

25 Any other comments from Commissioners?

1           COMMISSIONER MCALLISTER: I would just point out,  
2 you know, batteries -- again we just adopted the nation's  
3 first battery requirement for certain building sectors.  
4 And so that's a guaranteed market for a certain segment,  
5 certain type of battery, certain size of battery.

6           And batteries as a whole, really do mobilize a  
7 lot of resources. And not just lithium, but lots of --  
8 it's a huge endeavor. And we need to support both the  
9 materials flow issues as well as the extraction issues, so  
10 I totally agree with both your comments.

11           COMMISSIONER DOUGLAS: Thank you, Commissioner  
12 McAllister. Commissioner Monahan, would you like to either  
13 make a comment or make a motion?

14           COMMISSIONER MONAHAN: Well, I agree with -- oh,  
15 gosh. My voice is back, it's getting better. That's good.

16           CHAIR HOCHSCHILD: Your voice is back, yay!

17           COMMISSIONER MONAHAN: I've been coughing up a  
18 storm back here and that seems to be helping.

19           So well, I agree with everything that's been  
20 said around we need to develop an ecosystem of recycling  
21 batteries, so that as we electrify more and more of our  
22 transportation systems that we don't have a solid waste  
23 disposal problem. And I don't think we will. I think  
24 we're actually doing what we can here in California to make  
25 sure that we're recycling all that we can. Or that we're

1 setting the stage to be able to do that. We're not there  
2 yet, but that's our goal so I strongly support these  
3 projects.

4 And I moved to approve Item -- are we at 10 now?

5 COMMISSIONER DOUGLAS: We are on Item 10.

6 COMMISSIONER MONAHAN: Item 10, I move to approve  
7 Item 10.

8 CHAIR HOCHSCHILD: I will have to second that and  
9 actually just add one more point, which is that I would  
10 guess a way to think about it is maybe as a three-legged  
11 strategy here. Lithium recovery and lithium recycling, but  
12 then I want to call it the efficiency of making the most  
13 use of effective technology. I met just last week with  
14 Echion Technologies, which is a company we funded through  
15 EPIC. Which has made really big strides. They basically  
16 have a technology now that can get another 40 percent  
17 energy out of the same amount of lithium and you know that  
18 is really exciting as well. I think those are those are  
19 like the three key pieces of the puzzle, I think if we look  
20 at building up (indiscernible)

21 So I'm going to say I'm happy to second the item.

22 COMMISSIONER DOUGLAS: Super, thank you. So the  
23 item has been moved by Commissioner Monahan, seconded by  
24 Chair Hochschild. So we'll call the vote now, all in  
25 favor.

1 Commissioner Monahan?

2 COMMISSIONER MONAHAN: Aye.

3 COMMISSIONER DOUGLAS: Chair Hochschild?

4 CHAIR HOCHSCHILD: Aye.

5 COMMISSIONER DOUGLAS: Commissioner McAllister?

6 COMMISSIONER MCALLISTER: Aye.

7 COMMISSIONER DOUGLAS: Commissioner Gunda?

8 COMMISSIONER GUNDA: Aye.

9 COMMISSIONER DOUGLAS: And I vote aye as well, so  
10 this item passes 5-0.

11 And we will now go on to Item 11, Local Building  
12 Energy Efficiency Standards Application. And Danuta  
13 Drozdowicz, please.

14 MS. DROZDOWICZ: Thank you. Good afternoon,  
15 Chair and Commissioners. My name is Danuta Drozdowicz, I  
16 work in the Efficiency Division's Buildings Standards  
17 Office and I'm presenting a local ordinance that exceeds  
18 the energy code from a jurisdiction that has applied for  
19 review and consideration by the CEC. Joining me today is  
20 Jacqueline Moore from the Chief Counsel's Office. Next  
21 slide, please.

22 Jurisdictions that adopt local ordinances are  
23 exploring and adopting technologies for our clean energy  
24 future, and reducing state greenhouse gas emissions and  
25 dollars spent for energy and they become of grassroots of

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1 interest.

2           Approximately one in three Californians lives in  
3 a community with an energy code that exceeds state energy  
4 standards. Next slide, please.

5           For a local standard to be enforceable, the  
6 jurisdiction must file with the CEC its determination that  
7 its standards are cost-effective. And the CEC must find  
8 that the local standards reduce energy consumption compared  
9 to the current statewide energy code. Next slide.

10           To give you a better sense of what's happening  
11 throughout the state, to date under this code cycle, 49  
12 ordinances from 41 jurisdictions, have been approved for  
13 enforcement by the CEC. This does not include the  
14 application on the agenda today. The majority require all-  
15 electric or electric preferred construction, 29 ordinances  
16 also require photovoltaics on buildings not subject to the  
17 current provisions of the energy code. And 27 required  
18 additional electric vehicle infrastructure or charging.  
19 Next slide.

20           One jurisdiction has applied for approval to  
21 enforce their local ordinance at this Business Meeting.  
22 The City of Alameda requires new buildings to be all-  
23 electric with some exceptions. Photovoltaic systems on new  
24 buildings, also with some exceptions. Prewiring for  
25 electric appliances where gas appliances are installed.

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1 Next slide, please.

2 Staff posted the complete application on the  
3 CEC's website under Docket 19-BSTD-06 for the required  
4 public comment period. Staff determined that this local  
5 ordinance will result in the reduction of energy permitted  
6 by the 2019 Energy Code, and also confirmed that the  
7 jurisdiction publicly adopted a finding of cost  
8 effectiveness for the standard.

9 Because the application meets all the  
10 requirements of the Public Resources Code, staff recommends  
11 approving enforcement of the ordinance.

12 This concludes my presentation. I am available  
13 to answer any questions you may have.

14 COMMISSIONER DOUGLAS: Thank you. Thanks for  
15 that presentation.

16 Is there any public comment on Item 11?

17 MS. GALLARDO: This is Noemi, the Public Advisor,  
18 reminding folks if you'd like to make a public comment use  
19 the raise hand feature. It looks like a high five on the  
20 screen. Press \*9 if you're on by phone. I do not see any  
21 hands, Commissioner Douglas.

22 COMMISSIONER DOUGLAS: All right, we'll move on  
23 then to Commissioner discussion. Commissioner McAllister,  
24 would you like to start.

25 COMMISSIONER MCALLISTER: Absolutely, so thanks



1 to the City of Alameda for bringing this to us. And our  
2 review at this point is pretty straightforward. The  
3 technical part is whether it sort of beats or meets the  
4 statewide minimum. And then the administrative part is to  
5 confirm that the local consideration of a finding of cost  
6 effectiveness is taking place, without evaluating that  
7 finding itself. So those are the two things we do and  
8 they've met that bar.

9           So it's really great to see local jurisdictions  
10 leading and really leading all of their resources to do the  
11 right thing for their populace and under the direction of  
12 their leadership. So I really appreciate their  
13 contributions and I support this item.

14           COMMISSIONER DOUGLAS: Thank you, Commissioner  
15 McAllister. Would any other Commissioner like to speak on  
16 this item, Chair Hochschild?

17           CHAIR HOCHSCHILD: Nope, I'm in full support.  
18 Yeah, I'm in full support, thanks.

19           COMMISSIONER DOUGLAS: All right. Great let's  
20 move on to the vote then. Commissioner McAllister, would  
21 you be willing to make a motion?

22           COMMISSIONER MCALLISTER: I move Item 11.

23           COMMISSIONER DOUGLAS: And Commissioner Monahan,  
24 would you be interested in seconding?

25           COMMISSIONER MONAHAN: I second.

1 COMMISSIONER DOUGLAS: All right, so all in  
2 favor. Commissioner McAllister?

3 COMMISSIONER MCALLISTER: Aye.

4 COMMISSIONER DOUGLAS: Commissioner Monahan?

5 COMMISSIONER MONAHAN: Aye.

6 COMMISSIONER DOUGLAS: Chair Hochschild?

7 CHAIR HOCHSCHILD: Aye.

8 COMMISSIONER DOUGLAS: And Commissioner Gunda?

9 COMMISSIONER GUNDA: Aye.

10 COMMISSIONER DOUGLAS: And I vote aye, so that  
11 makes this measure pass 5-0. Thank you.

12 And we'll move on to Item 12, possible approval  
13 of the July 15, 2021 Business Meeting minutes. Is there  
14 any public comment on Item 12?

15 MS. GALLARDO: This is Noemi, the Public Advisor.  
16 Again reminding anyone who would like to make a comment to  
17 use the raise hand feature. It looks like a high five on  
18 the screen. If you're on by phone press \*9.

19 Commissioner Douglas, I do not see any hands.

20 CHAIR HOCHSCHILD: All right, then let's move on  
21 to I'll ask for a motion on this item. Commissioner Gunda,  
22 would you be willing to make a motion?

23 COMMISSIONER GUNDA: I would like to move Item  
24 12.

25 COMMISSIONER DOUGLAS: All right, Commissioner

1 McAllister, would you second?

2 COMMISSIONER MCALLISTER: Second.

3 COMMISSIONER DOUGLAS: All right, we have a  
4 motion and a second. All in favor, Commissioner Gunda?

5 COMMISSIONER GUNDA: Aye.

6 COMMISSIONER DOUGLAS: Commissioner McAllister?

7 COMMISSIONER MCALLISTER: Aye.

8 COMMISSIONER DOUGLAS: Chair Hochschild?

9 CHAIR HOCHSCHILD: Aye.

10 COMMISSIONER DOUGLAS: Commissioner Monahan?

11 COMMISSIONER MONAHAN: Aye.

12 COMMISSIONER DOUGLAS: And I vote aye, and this  
13 item passes 5-0.

14 So moving on to Item 13 Lead Commissioner or  
15 Presiding Member Report, Commissioner Gunda, could you  
16 please begin.

17 CHAIR HOCHSCHILD: Good, thank you for Douglas.

18 COMMISSIONER GUNDA: Thank you, Commissioner  
19 Douglas. It's been a long meeting, so I'm going to try and  
20 keep it as short as I can, just a high level.

21 A lot of work on reliability, we are beginning to  
22 look at how best to address the Executive Order, as  
23 Commissioner Douglas mentioned. There are elements that  
24 require our siting authority to be implemented to ensure  
25 some of the generation projects come online in an

1 expeditious fashion. Not just for gas (indiscernible), but  
2 also you know clean energy projects through next year. So  
3 I think it's an important element.

4           There's also work being done in ensuring that the  
5 DWR is taking point on being the facilitating agency for  
6 the state to procure additional generation and mobile  
7 package gen sets. Again, kudos to Commission Douglas and  
8 her office on leading that effort for the CEC.

9           There is an element in the Executive Order,  
10 specifically on the demand side reduction, which is an  
11 incentive program for the demand side reduction. That's  
12 something the LSEs are taking point to develop the program  
13 design, so once we have a program design it's really going  
14 to be led by DOF. And DOF will be able to provide  
15 reimbursement funds to LSEs that are able to assist in the  
16 grid stress conditions. And CEC and CPUC and CAISO will  
17 have consultation elements in there, but just basically  
18 trying to help verify some of the savings we might get. So  
19 those are kind of high-level topics.

20           We are beginning to think through the 2022  
21 reliability issues as Angela and Aleecia presented today.  
22 A critical element of all this is to ensure that we have a  
23 list of contingencies, at least for this year and next  
24 year.

25           We do have about 3,500 megawatts of contingencies

1 this year, assuming all the programs that we're working on  
2 come to bear. For next year CPUC is hoping to accelerate  
3 some of the procurement and that will help us not rely on  
4 the demand side incentives, hopefully. So that's something  
5 we'll be tracking very carefully and we'll try to report  
6 here particular fashion.

7           We did have a DR kickoff workshop. I just want  
8 to congratulate Tom Flynn. It's a staff workshop, so  
9 Commission Monahan, Douglas and Chair, if you weren't  
10 tracking that it's an essential workshop for us to move  
11 forward the discussion on the baselining methodology used  
12 for DR. This is directly in response to CPUC's request of  
13 assistance from CEC, so I again want to embarrass and  
14 congratulate and thank Commissioner McAllister for his  
15 leadership on that in really kind of moving the ball  
16 forward. And it's been an interdivisional effort, so R&D,  
17 the Efficiency Division and EAD all working together very  
18 closely to ensure we move that forward.

19           We had as a part of the reliability discussion,  
20 we are really hoping that we're able to have a significant  
21 load reduction through either existing programs or our new  
22 programs. But really talking to key sectors on how best to  
23 get support from them. We did have a roundtable with the  
24 education sector in California, so we had a meeting with  
25 all the UCs, (phonetic) CSUs and community colleges who

1 were able to kind of convene a meeting to just get a sense  
2 of what they can bring to the table. And those sector-wide  
3 discussions and round tables are beginning to happen. I  
4 want to thank Le-Quyen Nguyen for taking point on a number  
5 of those discussions.

6           We had a number of workshops. I'm sure  
7 Commissioner Douglas is going to talk about the SB 100  
8 transmission side. I thought it was it was pretty awesome  
9 and I learned to never say least (indiscernible) staff  
10 mission projects anymore. All staff mission projects are  
11 important, so I learned my lesson. And me and Commissioner  
12 Douglas were able to attend a BANC Commission meeting and  
13 present some of the work we've been doing on SB 100 and  
14 what that has been, answer some of the Commissioners'  
15 questions. I'm really glad we had the opportunity to do  
16 that.

17           Title 20 rulemaking was another one that we just  
18 did, glad that we moved the ball on that. And also the  
19 IEPR workshop on demand forecasting, inputs and  
20 assumptions.

21           Overall I just feel like there is so much  
22 happening. I mean I just can't believe that -- and then  
23 just on the dais and the staff -- everybody is able to find  
24 an additional tank to work off of. I just can't believe  
25 how we're pulling this together, so I just want to take a

1 moment to really thank every single person that's been  
2 keeping up the momentum for all the work we need to do.  
3 And you know just to recognize, you know the Executive  
4 Office's work on coordinating a lot of these efforts.  
5 They've been behind the scenes, but Drew and Linda Spiegel  
6 have really jumped into health coordinate a number of these  
7 issues for us, so just thanking them.

8           Finally, flagging two things for you, for  
9 September, We have on the September Business Meeting, we  
10 most probably will have the adoption of the 2022 Net Short  
11 Analysis that Angela presented today. It's an important  
12 element, and so it gives some credibility for CPUC to be  
13 able to use in their proceedings as they try and accelerate  
14 procurement for the purposes of grid reliability.

15           Also for adoption in September will be our IRP  
16 Analysis, specifically the reliability analysis through  
17 2026. Figuring out based on the procurement today,  
18 (indiscernible) net short but also looking at it if there's  
19 a need for additional gap procurement. So it's an  
20 important topic for us to discuss.

21           In support of that particular agenda item, we are  
22 going to try and have a workshop on the 30th to look at  
23 qualitatively the need for potentially natural gas, which  
24 could include supply chain issues, alternate technologies.  
25 It could it could include grid reliability and stability,

1 the question of inertia. So there's a number of things  
2 that are happening, so I just want to flag these things for  
3 your office as you try and follow.

4 We are, last point, having -- I asked Liz Gill  
5 and Le-Quyen, because of the amount of reliability work  
6 we're doing --we're going to try and have a weekly update  
7 email for all the Commissioners, so that you know all the  
8 pieces that are happening. So if there's anything that you  
9 need briefings on, we're more than happy to present to all  
10 of you staff.

11 So thank you, and back to your Commission  
12 Douglas.

13 COMMISSIONER DOUGLAS: Thank you, Commissioner  
14 Gunda. Thanks for the thorough report and there's so much  
15 going on it's important, like everything you covered was  
16 important to cover, so thank you.

17 Commissioner Monahan.

18 COMMISSIONER MONAHAN: Let's see if my voice  
19 holds. Well, I think last time I mentioned that we were  
20 trying to pull together an event with the EV manufacturing  
21 facilities in Los Angeles. We've cancelled that event. It  
22 actually was kind of a whirlwind week. At first we sent  
23 every confirmation out at the beginning of the week. And  
24 at the end of the week looking at the COVID numbers we said  
25 we just can't do it, so that was disappointing. But I



1 think the right thing to do with what's happening right now  
2 with COVID numbers.

3           And interestingly, right after our last business  
4 meeting I had my first and I guess potentially only in-  
5 person event of the year with the Anaheim School District.  
6 Meeting with those district officials and it was a really  
7 nice event. I was very excited at that time, but now I  
8 think we have to rein in our expectations about events and  
9 travel.

10           I just want to say I've been attending the IEPR  
11 workshops and really appreciating all the work that  
12 Commissioner McAllister has put into the agenda. It's been  
13 some really interesting discussions, learning a lot, and  
14 just appreciate his leadership in the space.

15           Right just last week actually, I hosted in my  
16 backyard, two German visitors including Rainer Baake who  
17 used to be the head of the German -- he was the State  
18 Secretary for the Economy. He was also State Secretary for  
19 the Environment at one point. And he's Managing Director  
20 of the Climate Neutrality Foundation. We were together  
21 with Commissioner Rechtschaffen and Chair Hochschild, just  
22 talking through what California and Germany can learn from  
23 each other when it comes to carbon neutrality.

24           Germany is targeting a much more ambitious goal  
25 than we are, so they're looking at cutting emissions by 65

1 percent below 1990 levels by 2030. It was 65 percent,  
2 they've increased their level of ambition. And they're  
3 making concrete strides towards reaching that target, so I  
4 think there's a lot of course we can learn from Germany.  
5 Things that they can learn from us as well, and I guess  
6 backyard meetings are kind of our future going forward.

7           Just for those that aren't always looking at the  
8 dashboard, (indiscernible) date is out, public and we're at  
9 over 10 percent of new vehicle sales in ZEV. That's a  
10 highest ever. We're on track to reach a million zero  
11 emission vehicles sometime this year, so that will be an  
12 exciting milestone, and something to celebrate.

13           That's all and I'm celebrating that I have my  
14 voice apparently back.

15           COMMISSIONER DOUGLAS: Thank you, Commissioner.  
16 (Laughter).

17           COMMISSIONER MONAHAN: I pretty much coughed out  
18 a lung there for (indiscernible).

19           COMMISSIONER DOUGLAS: Oh, boy. Well, you sound  
20 a lot better, so that's great. Let's move on to  
21 Commissioner McAllister.

22           COMMISSIONER MCALLISTER: Thanks a lot and I'll  
23 try to be brief. Lots of action today obviously and really  
24 good stuff. I think we all should feel really like we're  
25 firing on all cylinders today, I guess to use what will

1 soon be an outdated metaphor.

2           So I wanted to just mention a couple of other  
3 things related to the Building Code Update and there's a  
4 whole ecosystem that brings the different measures, really  
5 evaluates the potential for energy efficiency and  
6 decarbonization across the whole technical and economic  
7 landscape. And of resources, a lot of ratepayer funds  
8 actually fuel that activity. And the codes and the  
9 standards enhancement, or the standards team, CASE Team as  
10 we refer to them, that are really driven by ratepayer funds  
11 through the utilities with the sort of blessing of the  
12 CPUC. And PG&E generally takes the lead on that, so it's a  
13 really deep effort with a lot of technical expertise  
14 through a lot of contractors. We heard one of those  
15 contractors speak today. But I just wanted to extend my  
16 thanks to that whole CASE effort, because it does bring  
17 dozens of measures. And sort of the best measures float to  
18 the top and those are the ones that end up in the Building  
19 Code and similarly in the appliance side in Title 20.

20           So I think a lot of that is behind the scenes.  
21 It's not often sort of pointed out as how critical it is,  
22 but it is foundational work that we get to sort of look at  
23 the final result at the Business Meeting. And so it feeds  
24 a really virtuous conversation that really does allow  
25 California sort of keep at the leading edge, so I wanted to

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1 call out the CASE effort.

2           Again, just you know, we get to talk about the  
3 things we oversee here, but this whole code update is  
4 really all about staff and their engagement and just  
5 tremendous commitment over decades. You know, in many  
6 cases over really truly decades, multiple decades. And so  
7 I think we have such a deep bench and deep, deep knowledge  
8 base here at the Commission. We're incredibly fortunate  
9 and other states look to us for this kind of leadership,  
10 because they don't have those kinds of resources. And now  
11 that we have sort of very close alignment with the Federal  
12 Government, I think the potential is really high to channel  
13 some funds from infrastructure, from reconciliation and  
14 beyond through to help implement the next -- develop and  
15 implement the next building codes. To implement, bring  
16 real resources to implement the decarbonization plan that  
17 we adopted earlier as well. So I'm just really feeling  
18 good about all the alignment here across the stakeholder  
19 landscape.

20           I want to thank Heather and her team for just all  
21 of the competence and attention to all the IEPR workshops.  
22 There's a mind-boggling range of topics that they're  
23 dealing with. And they just manage to keep it all together  
24 and be professional and help stakeholders engage. And it's  
25 just a tremendous effort and just such high level. I can't

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1 thank them enough.

2           Coming up, so Commissioner Gunda, thanks for  
3 mentioning some of the items that we've been talking about  
4 on the IEPR track: the (indiscernible) assumptions and  
5 getting the forecasting effort really moving forward. We  
6 recently had workshops on industrial decarbonization, on  
7 hydrogen, several on different aspects of building  
8 decarbonization.

9           And upcoming we have two workshops in the  
10 building decarbonization track. One of them is on energy  
11 efficiency and building decarbonization. Efficiency  
12 traditionally, and building decarbonization are very  
13 similar and they're definitely rowing in the same  
14 direction. So we have goals that kind of need to be  
15 matched up in terms of efficiency doubling from SB 350 and  
16 SB 100, which is true decarbonization and the AB 3233  
17 report that you've all seen.

18           And so it's really key I think to articulate  
19 clearly and succinctly that those two goals go together  
20 well. That energy efficiency is part and parcel with  
21 decarbonization and that those goals can be translated  
22 between them and so we're going to have a workshop that  
23 essentially provides building blocks for that. So that we  
24 can know where we are with respect to both doubling  
25 efficiency and building decarbonization, because they are

1 slightly different languages, so I'm excited about that.

2           Then on the 26th, we have a workshop that's about  
3 embodied energy. So that came up today, I think somebody  
4 challenged us to do that. I'm not clear exactly what the  
5 jurisdictional landscape is, but we're going to talk about  
6 that. And then on refrigerants, which obviously we've  
7 heard another really necessary arena to make progress on,  
8 working together with the ARB who is the lead agency on  
9 that.

10           And then finally we did Part 6 today, so we've  
11 adopted that. We can move into getting that all tidied up  
12 and push it over to the Building Standards Commission. And  
13 partner with them on getting it truly across the finish  
14 line with their adoption of the whole Building Code Update  
15 later this year.

16           Part 11 is also part of the next -- CALGreen,  
17 which is this year we're proposing a voluntary improvement  
18 on the sort of REACH codes. And so that really sort of  
19 plays to the local government desire to do REACH codes.  
20 And give them something to sort of use as a template  
21 instead of having to reinvent the wheel every time  
22 themselves at the local level. So you'll be seeing Part 11  
23 hopefully in the September Business Meeting. So just a  
24 heads up on that.

25           Other than that just really enjoyed the -- glad

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1 the data rulemaking has been kicked off, so thank you  
2 Commissioner Gunda. I'm really happy to have that going.  
3 And then yeah, just really looking for ways to help out on  
4 the demand side with demand response, which we're  
5 partnering on as well. And then just looking for demands  
6 on resources, trying to think creatively about how to sort  
7 of check that work in that arena under the proclamation.

8 So lots of exciting things going on and good  
9 things.

10 COMMISSIONER DOUGLAS: All right, thank you,  
11 Commission McAllister.

12 Chair Hochschild, would you like to go next?

13 CHAIR HOCHSCHILD: Yeah, I will keep it  
14 mercifully short, given this has been a seven-hour meeting.  
15 I first of all, just am in agreement with what Commission  
16 McAllister just said. This was a landmark day for the  
17 Energy Commission, an absolute historic milestone in our  
18 Building Energy Code.

19 I just couldn't be prouder of the team and I  
20 especially want to call out Lindsay Buckley for the  
21 terrific infographics and communications we're doing. And  
22 as we make these full policies, how we communicate about  
23 them to the rest of the country in the world matters a lot.  
24 And I've been so proud of the whole Comms team for really  
25 stepping up their game.

1           You know, the speech of this code when you look  
2 at just the solar piece alone, we're going to be adding  
3 almost a gigawatt every two years from our solar menus on  
4 new construction. And that's you know just enormously  
5 significant, the model. And the same thing with energy  
6 storage, the first building code to mandate energy storage.  
7 It's historic and so how we communicate about this matters  
8 a lot.

9           The only other thing I'd point out is this is  
10 also a historic day in the United States Senate. It's  
11 about 1:00 a.m. this morning the Senate voted to advance  
12 the \$3.5 billion reconciliation bill on the heels of this  
13 \$1 trillion infrastructure package. And there's a lot of  
14 exciting stuff in there. I think in the infrastructure  
15 alone it's 7.5 billion for transportation electrification.  
16 And I know there's some building decarb as well.

17           And I know there's both a 10-year wind and solar  
18 tax that is being contemplated. So we have to monitor that  
19 really closely and obviously there's a lot at stake for  
20 California.

21           The last thing I'd say is just I did accept an  
22 invitation from the Lieutenant Governor this week to join  
23 her as part of a delegation that's going to Japan on a  
24 trade mission in March, assuming travel is okay by then.  
25 I'll be meeting some energy storage companies over there.



1 And I'm still planning to do an October trip on offshore  
2 wind to Portugal with a bunch of legislators. And we'll  
3 obviously be monitoring the COVID conditions closely. And  
4 that may change, but that's on the books now.

5 And I'll leave it there, thanks.

6 COMMISSIONER DOUGLAS: Thank you, Chair  
7 Hochschild.

8 And I will bat last here with a brief report. I  
9 want to thank Commissioner Gunda for covering a lot of what  
10 I would have covered on the reliability work that's  
11 occurred over the past month-and-a-half or so, or more  
12 really. And he and I over the time that he's been at the  
13 Commission, you know, both on the staff side and as a  
14 Commissioner, have had many conversations about how the  
15 skill set and analytical approaches in STEP and EAD are  
16 complimentary. And how we need to bring them together and  
17 how we can really look for ways to do that.

18 And certainly these last two months have put us  
19 there where we've been spending probably more time together  
20 than we ever have before. And we've been bringing this  
21 together in a very new way. And it's given me a lot more  
22 appreciation for the energy analysis side and the  
23 understanding of how those pieces are put together. And  
24 what you can learn from that.

25 And I think what the STEP and Siting side bring

1 to the table is the real kind of steel in the ground in  
2 the permitting process. And what does it take if you  
3 decide you need more megawatts of a certain kind, well how  
4 do you get there? And how long does it take and what  
5 levers do you have? And what relationships do you have  
6 that can help you move more faster?

7           And so it's been a tremendous privilege to get to  
8 work together in that way, Commissioner Gunda. And it's  
9 been great. And I really appreciate your hard work.  
10 You've been unbelievable in this. So yeah, so we've been  
11 working together closely on that, counting megawatts,  
12 trying to understand where they'll come from. Trying to  
13 understand how to facilitate more and trying to count them  
14 right and so on. And that's been fantastic.

15           Last week I attempted to take a vacation. It  
16 was the Emergency Proclamation went out on Friday and I  
17 left on Sunday. And I'll just say it was not a great  
18 vacation, but it was a good vacation. And I did get to see  
19 my family, and you know I did enjoy that. And I did also  
20 spend a fair amount of time on the phone with the door  
21 shut, but that's okay because that's what it takes.

22           And so let's see, I'm just going through my list  
23 here. So the reliability work's been important. It's been  
24 a really good opportunity to just step up and do what we  
25 need to do, which of course we will.

1           Outside of the reliability work, Commissioner  
2 Gunda mentioned the SB 100 implementation process. So we  
3 held, in cooperation with the PUC and the ISO, a workshop  
4 on transmission. And I've spent so much time in the last  
5 month or two thinking about like next week or next month or  
6 next summer, right? And the SB 100 implementation process  
7 is almost the opposite thing, it's like let's think about  
8 2045. Let's think about what we need to do today to get on  
9 that path and stay on that path. And what are the  
10 different pathways and what are some of the trade-offs  
11 between these pathways. And sometimes if you want to have  
12 2045 look a certain way, you really have to start thinking  
13 about some things -- offshore wind is a great example --  
14 today. And so we had that workshop.

15           The Independent System Operator is launching a  
16 20-year conceptual transmission plan, which is a fantastic  
17 initiative. Because it takes us out of the 10-year  
18 transmission outlook, or at least it supplements the 10-  
19 year transmission outlook. Ten years is when you think  
20 about how long it takes to build a transmission line, kind  
21 of just in time planning. If you want to have a  
22 transmission line up and operating 10 years from now, you'd  
23 really better know it today.

24           And so that doesn't give you the long-term  
25 perspective. And to have the ISO step up and do a 20-year

1 outlook on transmission is really going to help us  
2 understand different choices and opportunities and trade-  
3 offs with that longer-term look.

4           And to support that, the Energy Commission is  
5 working on a resource map that will look at the state, but  
6 will also take into account out-of-state resources, to the  
7 extent we can. And that will help the ISO get a better  
8 sense of where they can look for different kinds of  
9 resources across the landscape in California, and beyond,  
10 in doing that 20-year transmission outlook. And there are  
11 a lot of factors that go into that. You know, certain  
12 resources just are where they are.

13           Other resources like solar can be everywhere, but  
14 it's not equally suitable or easy to permit in different  
15 locations. And there are different kinds of trade-offs and  
16 there are different kinds of opportunities. So having the  
17 opportunity to look at the landscape and say solar could do  
18 really well in this region, and it might not have  
19 transmission yet, but by 2045 it could be a fundamentally  
20 really important way to be able to think. As opposed to  
21 the very near-term outlook, where the existence of local  
22 transmission is what draws a project, just because the lead  
23 time for transmission is so long. So it's a really  
24 important effort.

25           We have a staff workshop on that tomorrow, and

1 we're working on a pretty fast turnaround to get a  
2 preliminary map to the ISO for their 20-year conceptual  
3 plan. With the understanding that we are going to take  
4 that preliminary map and continue making it better and  
5 continue getting input. Because the build out that we will  
6 need to meet our goals in 2045 is very, very substantial.  
7 And it's more year-after-year than we've ever done before.  
8 And it has to be done consistently for probably multiple  
9 decades to get to that goal.

10 So we really are in a place where we need to find  
11 really good locations and solutions and benefits associated  
12 with the renewable energy build-out.

13 And so Commissioner Gunda mentioned we had an  
14 opportunity to join a BANC meeting and make a presentation  
15 to them. It's the Balancing Authority of Northern  
16 California, so SMUD is the biggest member, although they've  
17 got a number of public POU members. And it was great  
18 discussion with them. And this is another real opportunity  
19 for us to think about the planning needs of the ISO and of  
20 the POU systems together, because as we move forward to  
21 these 2045 goals there's going to be a lot of opportunity  
22 and a lot of need for shared resources and shared planning.  
23 And so just starting on the ground floor talking about  
24 opportunities and understanding different perspectives and  
25 different -- least in the immediate term different ideas

1 about where to go for resources and what mix might work --  
2 is extremely helpful. I think it will help both the ISO  
3 system and the POU's to have this kind of collaboration.

4 And finally, speaking of renewable energy  
5 opportunities that bring tremendous benefits, I did have a  
6 work trip. It was my first work trip since COVID started  
7 that involved my getting on an airplane and traveling for  
8 work. And it's the reason why I started out this meeting  
9 in my car driving back from the airport.

10 I had an opportunity to go to Humboldt County for  
11 an event that Secretary Haaland, the Secretary of the  
12 Department of Interior; and Brenda Mallory, the Chair of  
13 DEQ; held with Congressman Huffman in Eureka at the Port.  
14 And of course Eureka and Arcata are right at one of the  
15 Northern California call area for offshore wind. And the  
16 state has actually provided in the budget, \$11 million in  
17 matching funds to the Port of Humboldt to support its grant  
18 to the Federal Government for port upgrades that will  
19 facilitate offshore wind. There's a tremendous amount of  
20 local engagement in Humboldt County. There's a tremendous  
21 amount of excitement and interest, and also commitment on  
22 their part to have a community project to engage all parts  
23 of the community.

24 On our tour, we had a representative of the  
25 fishing community. We had tribal. We had we had a broad

1 range of community voices taking part in the event. And  
2 then a brief media availability and it was exciting and it  
3 was a good day up in Humboldt. Although they are also in a  
4 drought and they are also being affected by wildfires. And  
5 so certainly the challenges we face today are visible  
6 almost anywhere that you go.

7           So I think that's my report. And with that, we  
8 will go on to the next item, which I think is the Executive  
9 Director's Report. Correct, Drew?

10           COMMISSIONER GUNDA: Commissioner Douglas?

11           COMMISSIONER DOUGLAS: Go ahead, please.

12           COMMISSIONER GUNDA: I apologize. Sorry, I  
13 raised my hand right just as I finished my comments,  
14 because I keep forgetting to include important people.

15           I just this last four weeks, one the key groups  
16 in the in the condition has been the Media and the Leg  
17 teams. Like completely invisible, but there was an  
18 incredible amount of coordination both on the reliability  
19 and all the emerging issues, including the drought  
20 condition. And then being able to kind of talk about those  
21 issues, so I just want to thank Lindsay Buckley, Sandy as  
22 well as Anna Ferrara, for continually putting like the best  
23 professional front to make sure everything's happening in a  
24 collaborative fashion with the other agencies and with the  
25 public. And being very transparent and quick in providing

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1 the information, so just thanks to them.

2 COMMISSIONER DOUGLAS: Thank you, Commissioner  
3 Gunda.

4 All right, we'll go to Item 14 then.

5 MR. BOHAN: Great, thank you, Commissioner.

6 Just a couple quick things, first I also wanted  
7 to share that I thought the Media shop's been doing a great  
8 job. I would I would direct folks to the brochure that was  
9 prepared for the Building Standards item. It takes a bunch  
10 of complicated stuff that those of us who do this every day  
11 understand, but makes it very understandable and compelling  
12 for a general audience. So I think kudos to the team.

13 And second, I'd like to just thank staff the same  
14 way everyone at the dais has done so already. But I wanted  
15 to also underscore the presentations that I think staff are  
16 doing. Again, this stuff's complicated and in combination  
17 with Media, with the help of Noemi and others, and  
18 particularly the office managers and other managers in the  
19 organization and the deputies, we've been working to try to  
20 be able to communicate these complicated ideas --  
21 particularly future-looking things in a way that's  
22 understandable for folks.

23 And then finally I just want to say our buildings  
24 opening and we are moving. I know this is widely known by  
25 everybody, from the organization, but I wanted to share

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1 with anyone in the public who's listening. We will be  
2 moving sometime this month. It's a soft move. It's a  
3 block away, so it's not far. But we're moving into the new  
4 Natural Resources, Building. And we still have to figure  
5 out things like business cards and our address on the  
6 website and certain details, but I do want to announce we  
7 will all be going in there, so thank you.

8 COMMISSIONER DOUGLAS: Thank you, Drew.

9 Let's go on to Item 15, Public Advisor's Report.

10 MS. GALLARDO: Hi, there everyone. This is  
11 Noemi, the Public Advisor. I'm keeping my video off,  
12 because I'm having major connectivity issues. So I do not  
13 have a long report.

14 I just wanted to let you know that we are working  
15 on our Inclusion, Diversity, Equity and Access Initiative.  
16 I am also wanting to add justice in there, it just won't  
17 come out like a cute acronym but it's very important. So  
18 I'll have a bigger report on that for the next meeting.

19 And with that, Commissioner Douglas, I can give  
20 the relevant instructions for the general public comment  
21 period, Item 14, if you'd like for me to do that now?

22 COMMISSIONER DOUGLAS: Yes, please go ahead.

23 MS. GALLARDO: All right, so this is the period  
24 for any person wishing to comment on information items or  
25 reports of the meeting agenda or any other item. Each

1 person has up to three minutes to comment and comments are  
2 limited to one representative per organization. We may  
3 reduce the comment time, depending on the number of  
4 commenters.

5 Use the raise hand icon to indicate your interest  
6 in making public comments. If you're on the phone press \*9  
7 to raise your hand, and \*6 to unmute.

8 After you are called on, please restate and spell  
9 your first and last name, state your affiliation if you're  
10 representing a tribe, agency, organization or any other  
11 entity.

12 Do not use the speakerphone when talking, because  
13 we won't hear you clearly.

14 So I am going to look for hands now and I do not  
15 see any, last call for hands? (No audible response.)

16 All right, no hands. Commissioner Douglas, we  
17 can proceed.

18 COMMISSIONER DOUGLAS: All right, thank you know  
19 me, and that was item 16 public comments so we'll go on to  
20 item 17 Chief Councils report.

21 COMMISSIONER DOUGLAS: All right, thank you,  
22 Noemi. And that was Item 16, Public Comment.

23 So we'll go on to Item 17, Chief Counsel's  
24 Report.

25 MS. BARRERA: Hi, Commissioners, hi Chair. It's

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1 been a long day. I don't have a report, but I do want to  
2 recommend for the Commissioners to break for a brief closed  
3 session to discuss Agenda Item 17a.iv, which provides  
4 notice that the Commission may adjourn to a closed session  
5 with its legal counsel pursuant to Government Code Section  
6 11126(e) to discuss litigation to which the Energy  
7 Commission is a party.

8 COMMISSIONER DOUGLAS: All right, thank you. In  
9 that case we will move to closed session. And we will  
10 return when it's concluded. Do you have a time estimate  
11 for when we might conclude?

12 MS. BARRERA: I think 10 minutes.

13 COMMISSIONER DOUGLAS: Perfect. All right, thank  
14 you.

15 MS. BARRERA: Yes, perfect.

16 COMMISSIONER MCALLISTER: Okay, can I just ask  
17 for clarification? Is it I'm looking at Item 17 and that  
18 that is not the item, I think it's a different item?

19 MS. BARRERA: It's sorry, it's yeah 17a.iv.  
20 SoCalGas vs CEC.

21 COMMISSIONER MCALLISTER: Okay, maybe I printed  
22 out a previous version but I have it as number vi, 17a.vi.

23 MS. BARRERA: Yeah, you're looking at the --

24 COMMISSIONER MCALLISTER: Okay.

25 MS. BARRERA: The (indiscernible) apologize for

1 that. It's properly noticed in the agenda that was  
2 published.

3 COMMISSIONER MCALLISTER: Okay, perfect. Thank  
4 you for that.

5 COMMISSIONER DOUGLAS: All right, Eagle Eye  
6 McAllister, good job. Thank you.

7 All right, very good. We'll move into closed  
8 session and thank you.

9 MS. BARRERA: Thank you.

10 (Off the record at 5:21 p.m.)

11 (On the record at 5:38 p.m.)

12 MS. MURIMI: (Overlapping colloquy.)

13 Commissioner, apologies. You are now live and recording.

14 COMMISSIONER DOUGLAS: All right, great. Well,  
15 this Commissioner Douglas. I'm back with Commission  
16 McAllister and Commissioner Gunda from the closed session.  
17 We have no report out and just ask the Chief Counsel if she  
18 has anything she wants to add, and then we'll adjourn.

19 (No audible response.)

20 COMMISSIONER DOUGLAS: It sounds like she does  
21 not, so we are adjourned.

22 (The Business Meeting adjourned at 5:38 p.m.)

23

24

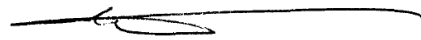
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I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under 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 25th day of August, 2021.

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PETER PETTY  
CER\*\*D-493  
Notary Public

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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.

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Myra Severtson  
Certified Transcriber  
AAERT No. CET\*\*D-852