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In the Matter of:)
) 17-BUSMTG-01
 Business Meeting)
)

WEDNESDAY, NOVEMBER 8, 2017

10:00 A.M.

CALIFORNIA REPORTING, LLC
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APPEARANCES

Commissioners

Robert Weisenmiller, Chair
Karen Douglas
Janea Scott
David Hochschild
Andrew McAllister

Staff Present:

Drew Bohan, Executive Director
Kourtney Vaccaro, Chief Counsel
Eunice Murimi, Public Adviser's Office
Cody Goldthrite, Secretariat
Soheila Pasha, Engineer
Lisa DeCarlo, Staff Attorney

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Gina Barkalow	7
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Others Present (* Via WebEx)

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Pursuant to Government Code section 11126(e), the Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published;

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or determine whether facts and circumstances exist that warrant the initiation of litigation, or that constitute a significant exposure to litigation against the Commission, which might include:	
a. Claims filed at, and rejected by, the Victim Compensation and Government Claims Board against a number of defendants including the Energy Commission relating to the gas leak at Aliso Canyon.	
b. The U.S. Department of Energy's actions to delay effective dates and failures to complete certain energy conservation standards and test procedures for appliances.	
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1 P R O C E E D I N G S

2 OCTOBER 11, 2017 10:05 a.m.

3 CHAIRMAN WEISENMILLER: Good morning. Let's
4 start with the Pledge of Allegiance.

5 (Whereupon, the Pledge of Allegiance
6 was recited in unison.)

7 CHAIRMAN WEISENMILLER:

8 CHAIRMAN WEISENMILLER: We seem to have a string
9 of these, but let's start the meeting with a minute of
10 silence. We lost over 40 people, up in Napa and Sonoma and
11 then obviously this tragedy in Texas.

12 (Whereupon, a moment of silence
13 was observed.)

14 CHAIRMAN WEISENMILLER: Okay. Let's come back to
15 the Business Meeting and let's start with the Consent
16 Calendar.

17 COMMISSIONER DOUGLAS: Move Consent.

18 COMMISSIONER MCALLISTER: I'll second.

19 CHAIRMAN WEISENMILLER: All those in favor?

20 (Ayes.)

21 CHAIRMAN WEISENMILLER: Aye. Consent is
22 approved 5-0. Let's on to Item 3.

23 MS. ROOT: Good morning, Commissioners. My name
24 is Christine Root and I'm the Compliance Office Manager for
25 the Siting, Transmission and Environmental Protection

1 Division.

2 We are here today to request approval of an
3 agreement with West Coast Code Consultants for On-Call
4 Delegate Chief Building Official Services. The Energy
5 Commission is the Chief Building Official or CBO for all
6 power plants under the Energy Commission's jurisdiction and
7 is authorized to designate a Delegate CBO or DCBO to assist
8 with the Energy Commission CBO responsibilities.

9 This contract will change the flow of funding for
10 these services between the project owner and the DCBO firm,
11 to between the Energy Commission and the DCBO firm. After
12 paying the DCBO firm for these services the Energy
13 Commission would seek reimbursement from the project
14 owners. Thus the state will be reimbursed for services
15 performed. This contract will create a more transparent
16 hiring process for DCBO firms allowing for greater
17 financial accountability for work performed and eliminate
18 the potential conflicts of interest.

19 In July, the Energy Commission released an RFQ
20 for On-Call Chief Building Official Services. The purpose
21 of this RFQ was to select a DCBO firm to carry out the
22 design, review and construction inspection on behalf of the
23 Energy Commission for approved project modifications or
24 emergency power plant facility changes.

25 Before you today is a proposed resolution

1 approving the agreement with West Coast Code Consultants
2 Incorporated, also known as WC3, for a not to exceed amount
3 of \$3 million. This will be a work authorization-based
4 contract for a contract period of three years. And funds
5 under this contract will only be used when work is
6 identified. The hourly rates for services are based on
7 cost negotiations between the Energy Commission and DCBO
8 through a competitive bidding process.

9 Staff request approval of the agreement with WC3
10 for on-call DCBO services. And I'm happy to answer any
11 questions and I also have representatives of WC3 in the
12 room as well.

13 CHAIRMAN WEISENMILLER: Let's have them come up
14 and say a few words, please?

15 (Off mic colloquy.)

16 MR. SENARATNE: Stand up or (indiscernible)?

17 CHAIRMAN WEISENMILLER: No, you can speak from
18 there.

19 MR. SENARATNE: Okay. All right, it's
20 (indiscernible).

21 Good morning, Commissioners. My name is Giyan
22 Senaratne. I'm the owner of West Coast Code Consultants.
23 I'm a structural engineer, a civil engineer. I've been
24 performing these types of services for the last ten years,
25 mainly on big plant construction. This is the first time

1 that we're doing the on-call services.

2 To my right is Christopher.

3 MR. KIMBALL: So I'm Chris Kimball. I'm also a
4 licensed Structural Engineer. I'm a Certified Building
5 Official and for this contract, I'd be serving as the Chief
6 Building Official for the work.

7 CHAIRMAN WEISENMILLER: Thank you. Great.

8 Any comments from anyone in the room? Anyone on
9 the line?

10 (No audible response.)

11 Let's transition to the Commissioners.
12 Commissioner Douglas.

13 COMMISSIONER DOUGLAS: So colleagues I wanted to
14 say that this contract has been a long time in coming,
15 really. We've been looking at a number of different
16 operations in the Siting Division, including on the
17 compliance side. And one of the things that has been a
18 goal for quite a long time was to get a contract like this
19 in place, so that we would have quick access to these
20 Delegate CBO services for a range of different project
21 situations that come in, whether it be a modification that
22 we learn about and where the work needs to be done within a
23 timeframe that doesn't allow for us to go out to bid and go
24 through a solicitation process. Or an emergency where
25 somebody needs to get out, for example, and demolish a

1 structure that's been damaged and is no longer safe or
2 something like that.

3 And so I just wanted to call out both Siting
4 staff, Executive Office and Legal, who have all worked hard
5 and worked together to find a way to make this happen. And
6 I'm very supportive of this and look forward to having you
7 guys on board.

8 So if there are no other questions or comments,
9 I'll move approval of this item.

10 COMMISSIONER SCOTT: Second.

11 CHAIRMAN WEISENMILLER: Others in favor?

12 (Ayes.)

13 CHAIRMAN WEISENMILLER: This item passes 5-0.

14 Thank you.

15 MR. SENARATNE: Thank you.

16 CHAIRMAN WEISENMILLER: Let's go on to Senate
17 Bill 350 Report.

18 MS. BROOK: Good morning, Commissioners. I'm
19 Martha Brook with Commissioner McAllister's office and I'm
20 representing a cross-divisional staff team who produced
21 this report. Next slide, thank you.

22 So here today for your consideration of a report
23 that is part of the bigger Senate Bill 350 Clean Energy and
24 Pollution Reduction Act of 2015. And this bill has five
25 tenants and the doubling of energy efficiency savings by

1 2030 is one of those. And you're well versed in the others
2 and this sort of puts the report that we hope you consider
3 for adoption today in context of the larger legislation.
4 Next slide.

5 So the doubling of energy efficiency by 2030 has
6 a specific framework that we discussed with our
7 stakeholders in early 2017. And some of the questions that
8 we answered were what specific energy savings were we
9 doubling and what do we mean by doubling? And the
10 legislation actually told us to specifically look at the
11 2015 additional achievable energy efficiency. That's part
12 of our policy planning effort. And also to look at the
13 publicly owned utilities goals established in 2014 and that
14 baseline is what is the sum of the savings that we were
15 directed to double. And then we were also told to set
16 annual targets to achieve a cumulative doubling of those
17 efficiency savings by 2030.

18 In our framework discussions, we established the
19 performance metrics that we will track and report over
20 time. And we basically established site energy,
21 electricity and natural gas savings metrics, and then a
22 combined site energy metric that looks at both electricity
23 and natural gas under the same rubric. And then we further
24 established that we would, in time really want to track and
25 report the GHG emission reductions that come from these

1 energy efficiency savings.

2 We chose not to do that emission aggregation
3 method for the 2017 Report. And that's largely because
4 we're waiting for the integrated resource planning process
5 to establish the electricity sector emission factors that
6 we would use in that calculus. And we hope to come back to
7 you in 2018 with that aggregation method for your
8 consideration.

9 We chose to categorize energy savings that are in
10 this report in two large buckets, largely for the division
11 of staff resources to produce the report. And so we
12 focused on the utility programs and then everything else
13 that we cleverly call nonutility programs.

14 So and the legislation also basically directed us
15 to look at everything that's happening in this state to
16 consider opportunities to achieve the doubling. And our
17 staff really focused on the areas that were summarized in
18 the legislation. And that of course, is our job to know
19 and understand.

20 Then the further constraint on that is part of
21 our framework is that the savings targets that we establish
22 have to be cost effective, feasible and have no adverse
23 impacts to health and safety. Next slide, please.

24 So this is a preview of the result that we're
25 going to talk a little bit more in detail in the next

1 several slides, but in the combined metric at the site
2 level for electricity and gas savings, we very nearly
3 achieved the cumulative doubling by the end of the 14-year
4 period at the 2029 or the beginning of 2030.

5 And the only thing I want to talk about on this
6 slide right here is that we sort of -- this just sort of
7 reflects our categorization of utility and nonutility
8 programs. But it's very important to understand that those
9 nonutility programs could also be met with additional
10 ratepayer-funded activities. There could be more
11 aggressive utility programs. There could be new efforts to
12 direct ratepayer funds to achieve additional funds in other
13 ways besides utility administration. And so it's not
14 really black and white in terms of how we accomplish these
15 savings. So the next slide, please.

16 The energy savings targets from the utility
17 contributions, staff largely looked to the utilities to
18 provide these savings goals. The Public Utility Commission
19 worked with investor owned utilities to establish the
20 potential and goals for the investor owned utilities. The
21 PUC adopted these savings targets in September 2017 and
22 they reflect annual saving goals for 2018 through 2030.

23 The kind of new efforts for investor owned
24 utilities are focusing on our behavior retro-commissioning
25 and operational savings. That was directed through AB 802,

1 in terms of areas not typically incented in utility
2 programs. So beyond just equipment rebates, now the
3 utilities are looking at operational opportunities to save
4 energy. And the savings goals adopted by the Public
5 Utility Commission also include a GHG cost adder that
6 increased the potential between 2 percent and 7 percent,
7 depending on the fuel-specific savings established.

8 The California Municipal Utility Association
9 created a potential study for the public owned utilities.
10 And the savings goals that resulted from this study were
11 submitted to the Energy Commission in March and it
12 established savings goals for 2018 through 2027.

13 The study covered 38 individual public owned
14 utilities and the design of the work allowed the individual
15 utilities to decide what measures to include, how far down
16 the emerging technology trajectory they would consider in
17 terms of incenting efficiency efforts, whether to include
18 contributions to our statewide codes and standards
19 activities, and whether to establish savings targets that
20 were considered net savings or gross savings or gross
21 savings. So that summarizes the utility efforts. And then
22 next slide, please.

23 Then the Energy Commission staff then made some
24 adjustments to the utility savings for the purposes of the
25 CAT organization that we had established in the framework

1 efforts and to get to this cumulative savings target by
2 2030. So the first thing we had to do was add in the
3 historical savings, because utilities naturally aren't
4 setting goals for the past. They're setting goals for the
5 future. And because our baseline year starts in 2015, per
6 SB 350 we had to add in the 2015 and 2016 historical
7 savings to the utility goals.

8 We also wanted to have a common framework in
9 terms of net savings versus gross savings, so in the cases
10 where utility provided gross savings goals; we converted
11 those to net savings goals. And then we moved the utility
12 contributions to more stringent codes and standards into a
13 pure statewide codes and standards category. And then we
14 converted annual savings targets to cumulative savings
15 targets, so we get to a cumulative doubling by 2030, as
16 directed by SB 350. Next slide, please.

17 So the next two slides covered the nonutility
18 program category in the SB 350 Report. This really covers
19 the programs the Energy Commission administers in terms of
20 appliance standards, building codes, our public building
21 financing programs, other local and state agency financing
22 programs and also things that are happening in the private
23 sector like the property assessed clean energy, financing
24 opportunities.

25 The Title 24 Building Energy Efficiency Standards

1 and the Title 20 Appliance Efficiency Regulations
2 contribute the greatest to the nonutility program savings
3 in our report. Next slide, please.

4 We further categorized the nonutility programs
5 into four main areas, which include financing, both public
6 and private; codes and standards; behavioral and market
7 transformation. So these are activities that are beyond
8 what the investor and public owned utilities have included
9 in their ratepayer programs. This includes benchmarking,
10 leveraging smart meters and controls for operational
11 savings, and valuing energy efficiency at the time of real
12 estate transactions. And the other area that was included
13 in behavioral and market transformation is field
14 substitution between the electricity and natural gas. And
15 we define fuel substitution for the purposes of SB 350, as
16 requiring both site energy savings and greenhouse gas
17 emission reductions in terms of a qualifying fuel
18 substitution activity.

19 And then finally agricultural and industry. What
20 we did for agricultural and industrial savings is we looked
21 at what the investor owned utilities had identified as
22 technical potential for industrial and agricultural
23 efficiency. And we established a set of savings that were
24 incremental to the utility programs by looking at
25 additional activities that were cost effective. But we

1 only found minor increases from the utility goals in terms
2 of industrial and agriculture.

3 And I'd have to say that this is one area that we
4 are going to focus on in the future in terms of identifying
5 cost-effective opportunities for industrial and ag energy
6 efficiency. And really challenge ourselves to look at
7 integrative design option and destructive technologies that
8 cost effectively save energy in these sectors. Next slide,
9 please.

10 So these next few slides are the summary of our
11 target setting. And I think one thing to clarify is this
12 is step one in our target-setting exercise. And we intend,
13 and are actually directed by legislation, to track, report
14 and update these targets over time as part of our regular
15 policy reporting activities. And so we almost achieve it
16 from a total site energy basis.

17 The next slide shows that we fall short from the
18 electricity perspective of achieving a cumulative doubling
19 by 2030. But we -- next slide -- we actually overshoot the
20 natural gas savings goal. And I think the biggest
21 difference is that there has been a lot of cost-effective
22 electricity savings in the utility programs over the last
23 30 years. And so it's harder to find a pure doubling of
24 cost effective electricity in those areas. Whereas there
25 hasn't been as much activity in natural gas and so it's

1 actually easier to find additional cost-effective savings
2 potential in the natural gas area.

3 The other thing that's helping significantly on
4 natural gas is fuel substitution. So we're actually
5 reducing natural gas significantly by our assumptions that
6 new construction can install electric equipment cost
7 effectively rather than gas equipment and save both site
8 energy and reduce GHG emissions.

9 The other thing I'd say about this slide
10 overshooting is that if you think about it is because
11 natural gas relative to our relatively clean electricity
12 grid has more emission reduction potential, once we do
13 aggregate our savings targets in terms of GHG we probably
14 will meet or exceed the doubling. And so that's
15 encouraging.

16 Okay, so now I'll move on to recommendations
17 quickly. So the next slide, please.

18 The first recommendation is that we fund and
19 improve our current Energy Efficiency Program. So we need
20 to maintain or expand current funding levels, reward
21 effective programs, increase public building financing
22 opportunities and improve code compliance. Oh, and the
23 next slide, please.

24 The next slide actually kind of demonstrates why
25 that first recommendation sort of sounds like well, just

1 keep doing what you're doing. And so this next slide is
2 really meant to explain why that's really important. And
3 basically 80 percent of our doubling goals are going to be
4 achieved by us continuing to do a really great job of
5 setting codes and standards and have really; really
6 effective utility incentive programs and continue our
7 public building financing. So the things we've been doing
8 a lot and over time they're going accrue more and more
9 savings. And we have really aggressive codes and standards
10 goals. And we're assuming we're meeting those goals in
11 this 80 percent of this doubling.

12 The next recommendation basically is addressing
13 the last 20 percent and that is to achieve additional
14 energy efficiency savings. Our specific recommendations
15 are to establish specific action steps and timelines to
16 realize the nonutility savings targets and include those
17 action steps in the next update to the Existing Building
18 Energy Efficiency Action Plan.

19 We need to develop appropriate and effective fuel
20 substitution program guidelines through our collaborative
21 working group, with our sister agencies and stakeholders.
22 And we need to continue and expand partnerships and
23 programs to reduce emissions in industrial and agricultural
24 sectors, but also save energy.

25 The next recommendations are to improve the

1 estimates and expand reporting of our energy efficiency
2 savings. We need to standardize those. Next slide,
3 please. Oh, one more, thank you.

4 We need to standardize historical savings
5 estimates, report on programs and disadvantaged
6 communities, report hourly and seasonal impacts. One thing
7 we're supposed to do, which we didn't include in our 2017
8 Report is accumulative doubling of demand reductions. And
9 we really didn't have the data in place to convert our
10 savings estimates in to demand reductions. So that's
11 really going to require better data collection and
12 analysis, so that we can convert our savings calculations
13 into demand reductions.

14 To get a better understanding of the
15 effectiveness of utility programs in our codes and
16 standards, we want to improve savings, evaluation,
17 measurement and verification methods across the state. And
18 then continue to update our future energy efficiency
19 savings targets.

20 And then finally, we do want to come back to you
21 in 2018 and request that you adopt an aggregation method of
22 electricity and natural gas savings to establish doubling
23 targets for GHG emission reductions.

24 Our next steps are to, after your consideration
25 today of the Report, is to develop methods to track and

1 report the savings starting in 2018 and ongoing. We have
2 Title 20 data collection regulation in process now. We
3 really are depending on that to get us data to track and
4 report energy efficiency savings.

5 We know that both the investor owned and publicly
6 owned utilities are evaluating and planning to evaluate
7 their efficiency programs. We want to work with them on
8 that.

9 We are updating the long-term demand forecasting
10 methods to have more hourly and seasonal considerations of
11 efficiency.

12 And we're in the process across the Commission of
13 establishing an energy analysis and information platform
14 that will give us the foundation to collect confidential
15 data, keep it confidential. And provide all the analysis
16 and visualization activities needed to track and report
17 these savings over time.

18 And then finally, even though it seems like we
19 just updated the Existing Buildings Energy Efficiency
20 Action Plan we actually need to get back to that activity
21 starting in 2018, to establish specific strategies with
22 funding needs, responsible entities, and timeframes to turn
23 these targets into actionable efforts, with commitments by
24 responsible parties to achieve the savings that we've
25 included in the report today.

1 And that concludes my presentation. I'm here to
2 answer any questions that you have.

3 CHAIRMAN WEISENMILLER: First, are there any
4 comments from anyone in the room? I believe we have one
5 comment from the NRDC on the line.

6 MR. FAVIER: Can you hear me okay

7 CHAIRMAN WEISENMILLER: Yeah. We can hear you.

8 MR. FAVIER: Fine. Thanks, Commissioners. I
9 want to just sort of start by thanking you for your support
10 and your commitment to energy efficiency. We at NRDC are
11 strongly in support of the adoption of the annual targets
12 to achieve a doubling of state-wide energy efficiency
13 savings. The Commission staff that we worked with have all
14 been exemplary and we also want to thank them for
15 incorporating the feedback that has been provided by both
16 us and other stakeholders.

17 We believe that the SB 350 doubling targets are
18 not only ambitious but achievable and we really recognize
19 their intent to accelerate energy efficiency in California
20 to unlock additional cost effective savings as illustrated
21 in this report.

22 So our comments focus on the gap between the
23 doubling goal and the current projection of programs. We
24 think the gap isn't insurmountable, but it will require
25 more leadership to effectively address through regulatory

1 reform and an aggressive implementation of the EE Action
2 Plan for existing buildings.

3 Martha mentioned fuel substitution and I want to
4 quickly underscore it a little bit further and highlight
5 its importance in meeting our climate goals. Fuel
6 substitutions from natural gas to efficient electric space
7 and water heating will be an important strategy to achieve
8 the doubling.

9 As the report mentioned reforming the CPUC's
10 refund test and aligning it with the CEC interpretation of
11 Public Resources Code will definitely help assess some of
12 the key considerations in advancing cost effective fuel
13 substitution. And some modest fuel substitution is in the
14 targets, which we really appreciate the commission
15 including.

16 We think they are a really good start, but we
17 also believe that the potential for fuel substitution is
18 much larger, especially when we're considering the impact
19 of emissions from natural gas use, which has 80 times the
20 greenhouse gas potential of CO2 on a 20-year horizon. So
21 in that context, we encourage the commission to launch the
22 working group then the collaborative process that Martha
23 referenced as soon as possible.

24 We think that the working group's focus on
25 appropriately accounting for long-run marginal emissions

1 from electricity use and for well-to-burner fugitive
2 emissions from natural gas use will be a really important
3 component of the largest strategy. So we especially look
4 forward to participating in the recommended process for
5 fuel substitution programs.

6 And I want to close by recognizing the strong
7 leadership of the Commissioner on this topic. Thank you.

8 CHAIRMAN WEISENMILLER: Thank you.

9 Anyone else?

10 (No audible response.)

11 Before transitioning to Commissioner McAllister,
12 I just want to observe that -- two things. One of them is
13 I think all of us when getting the framework in place,
14 recognized that there was going to be some gap. You know,
15 it's not unusual when we had -- looking at the Governor's
16 goals on distributed resources. Certainly over time when
17 we started out there was a very large gap and basically we
18 shot past that. So I'm not concerned the first time out if
19 there's any gap whatsoever.

20 And second, when we were developing the
21 Governor's State of the State on these issues, the thing
22 that he and I really focused on was the need to really push
23 existing buildings harder than we're doing. And so as we
24 go forward, it's good that there's potential on it with the
25 standards in the new construction area. But again, I think

25

1 I think it's really important that we focus on existing
2 buildings.

3 COMMISSIONER MCALLISTER: Yeah, so thanks Martha,
4 for that presentation, really great.

5 First and foremost, I want to acknowledge a few
6 staff that have really worked hard on this in really the
7 Efficiency Division and Energy Analysis Division. It was
8 really a joint effort, this report sort of broadly
9 speaking. Energy Analysis Division where forecasting sits
10 did the sort of the AEEE-related -- sort of the more known
11 and quantified historically, sources of savings. And then
12 the bit more, not nebulous exactly but the sort of
13 speculative savings that are in there as you know as you
14 implied, Chair Weisenmiller.

15 All of the above includes a lot of stuff that we
16 don't know exactly what it's going to look like 5, 10, 15
17 years out and that's okay. That's perfectly fine. In
18 fact, that's the nature of markets, so the Efficiency
19 Division worked largely on those and so it's really a joint
20 effort.

21 So I just wanted to read a short list of names.
22 Mike Jaske, Michael Kenney, Elena Giyenko, Brian Samuelson,
23 Cynthia Rogers, Manjit Ahuja, Mike Sokol. And Melissa
24 Jones particularly for pulling the document together and
25 really ironing it out, making it look good and read well.

1 And then Brian and Martha, I've just got to call you guys
2 out as your counterparts in the Energy Analysis Division,
3 Siva and Sylvia, for leading that as well on their side.

4 So essentially, this is sort of doing the math.
5 It's sort of okay the Legislature told us what we needed to
6 double and what the base year is. And a lot of this is
7 sort of okay doing the math, but it turns out that there's
8 a lot of detail in figuring out well how are we
9 categorizing? And Martha did a great explanation of how
10 that works, what's the role of switching fuel substitution,
11 and how do those sort of pan out, and how are we going to
12 try to track them?

13 So I think of this as sort of a base resource, a
14 foundational resource, for creating the conditions by which
15 we can create transparency and get rigor going forward.
16 Because in energy efficiency really what we I think -- not
17 that we've lacked it in the past, but we're in a modern
18 environment now with -- we needed more data rich kind of
19 set of tools. And so this is going to help create the
20 foundation for putting the together the analytics that
21 allow us to do this with rigor, as the Legislature is
22 expecting.

23 So again the data lake, the data regs, are sort
24 of other legs of the stool here that we need to put in
25 place in order to make this all real.

1 And I also wanted to reiterate AB 758. This
2 isn't just sort of out of the blue. The Action Plan is
3 something we've been working on for -- and it's already
4 been through an original iteration and then an update and
5 then we're going to do an update every three years. So
6 2019 is the next one and we're going to get going on that
7 next year. So we have kind of an ongoing bucket of issues
8 that we include and so that document is really
9 foundational. It's sort of a living document that is a
10 platform for us to work with stakeholders.

11 And SB 350, the State of the State with the
12 doubling, with the Governor is sort of put in place and
13 then the take up of that idea by the Legislature was really
14 what has gotten us where we are. But it was on top of a
15 lot of work that had already been done.

16 So I'm hopeful this will open this activity in
17 the conversations in the work that's sort of -- the
18 stakeholder process that we're going to put in place will
19 open up a lot of new frontiers and get us really moving
20 down the track towards doubling. It happens out there in
21 the world. It doesn't happen -- you know, we do codes and
22 standards and those are foundational for sure too. And
23 those happen in this building maybe more than some of the
24 additional savings. But fundamentally, people have to be
25 out there installing projects. They have existing

1 buildings, as the Chair said, is really key.

2 So we have to work with everyone to make sure
3 that the conditions are in place that contractors can sell
4 something that actually people want. And that they
5 actually get installed and that those projects are good
6 projects. And so that doesn't happen in this building.
7 That happens out there in the world. So that's why this is
8 a little bit different than sort of traditional
9 regulations. This is something that as the Chair said, if
10 we get the market signals right. And we work on things
11 like rates, real-time analytics of programs, you know, much
12 quicker feedback on the ratepayer funded programs for
13 example then we're going to have a conversation that's
14 going to enable people to identify business models at work
15 and really scale. And we're going blast past this
16 doubling. I'm confident of that if we get that right.

17 So and again I think working with our sister
18 agency, with the PUC is key. Because I think there is a
19 lot of ratepayer funding that goes into energy efficiency.
20 And I think the status quo kind of approach is really
21 getting them to maybe one-and-a-half of their -- they've
22 sort of done the projections and they think they can get to
23 one-and-a half, but where's that gap to two the ratepayer
24 funded programs? And I think some creativity is needed and
25 possibly some different ways of administering those

1 programs. And so we're going to help them think about that
2 and they're going to help us.

3 So with that I think I'll just wrap up. I know
4 often energy efficiency, since it's less hardware and more
5 programs and it's sort of out there world and the way you
6 measure it is sort of second order, it's not directly, it's
7 a little bit hard to get your head around. But it has been
8 for 40 years the foundation. The cleanest and most
9 sustainable and cheapest energy is the energy you don't
10 need. And so that helps our economy be more robust. It
11 helps and has many, many co-benefits we haven't even talked
12 about today.

13 So anyway I'm really glad we're at this milestone
14 and I really appreciate all the work that's gone into it.

15 COMMISSIONER DOUGLAS: I wanted to step in, thank
16 Commissioner McAllister for his work on this, and the staff
17 team has clearly done a lot of strong work. And I'm really
18 happy to see the data-driven approach here and just this
19 analytical strength of the Energy Commission being applied
20 very systematically to this new set of challenges. And as
21 both Martha and Commissioner McAllister said, it's clear
22 that meeting our doubling goal is going to require both
23 very, very, very good execution of programs that we have
24 been doing for a long time and also some creativity and
25 recognition of new approaches and new opportunities.

1 So I agree that this is an achievable goal and
2 very much within reach. And I also know it's going to take
3 a lot of effort, work and creativity by us and by folks at
4 the PUC. And by a lot of people out in the marketplace who
5 are bringing these solutions forward. So I'm very
6 supportive of this and wanted to thank you all for bringing
7 this forward.

8 COMMISSIONER SCOTT: And I also wanted to thank
9 Commissioner McAllister and his team for their leadership
10 in this space. I got an excellent briefing from Martha et
11 al., on the topic. It's a really robust analysis. It had
12 a lot of great public process that went along with it. And
13 I'm excited that we have this before us today.

14 COMMISSIONER HOCHSCHILD: Yeah. Just I'd just
15 like to add my thanks as well to Commissioner McAllister.

16 Just I'll tell a brief story to highlight a
17 point. My wife and I moved into a house in Berkeley about
18 eight years ago. And it is in Downtown Berkeley and I was
19 walking and they passed out a certificate. You know, you
20 can get a \$4,000 subsidy for energy efficiency upgraded for
21 old homes. So we did this under the Stimulus Act under
22 Obama, so we did that. We got this upgrade. It was great.
23 It cut our energy bill, I think 40 percent.

24 And I called the folks running the program and
25 said if there's anything I can help do to help with

1 outreach, "If you need a customer testimonial I'll be happy
2 to do that." And they said, "Yes, we'd love to. You know,
3 we want to have a press conference in your house." And
4 they came and they brought the Mayor. They brought all
5 these staff and no press showed. (Laughter.)

6 And this is the challenge I think, with energy
7 efficiency. I've done literally hundreds of dedications
8 for renewable energy and now a few for electric vehicles
9 and so on. I just think how do we make -- get people
10 excited about this and get this in the news? Because it is
11 actually, as you point out, the most important energy
12 resource we have. And I think that's kind of still a
13 challenge before us all. But I want to thank you,
14 Commissioner McAllister and all your staff and look forward
15 to working with you to raise the sex appeal of energy
16 efficiency there.

17 COMMISSIONER MCALLISTER: Yeah. I'll do my best.
18 It's sort of like, yeah no, no, really the insulation's in
19 the walls. Trust me. Trust me. Really, trust me.

20 So but I'm going to move the item, don't worry.
21 (Laughter.) But it's sort of -- what it takes to be in a
22 space, buildings are three-dimensional things. And there's
23 really no -- you can look at pretty pictures and innovative
24 architecture and all that sort of high-end stuff, the
25 really glossy PR stuff. But once you go into a building

1 that is a high functioning, highly-performing building and
2 it's got proper insulation, good windows, and really nice
3 mechanical all that didn't have to cost all that much.
4 It's just good business practice, really.

5 And so when you experience those spaces and you
6 realize how comfortable you are and you're not drafty. And
7 it's quiet even though you've got a train running next to
8 it, it's those -- you definitely feel good, because it's
9 performing and it's low impact and low energy and low
10 energy bills. But you also feel good, because of all these
11 co-benefits. And it just takes experiencing that to really
12 feel it and so there's a lot of word of mouth. I think
13 it's a different kind of commodity product business model
14 that's really needed to get it scaled. Obviously, there
15 are lots of people who know this already. I'm not saying
16 anything new. But I think we need to get our policies
17 aligned to focus on the benefits and not on the paperwork
18 or participating in programs and sort of focus on really
19 the end result that we want.

20 So it's definitely doable and I'm optimistic.
21 This is a great foundation to go forward, so with that I'll
22 just move Item 4.

23 COMMISSIONER HOCHSCHILD: Second.

24 CHAIRMAN WEISENMILLER: All those in favor?

25 (Ayes.)

1 CHAIRMAN WEISENMILLER: This item passes 5-0.

2 Thanks Martha.

3 Let's go on to Item 5, Appliance Energy
4 Efficiency Regulations.

5 MR. SAXTON: Good morning Chair and
6 Commissioners. My name is Patrick Saxton and I'm an
7 Engineer in the Appliances and Outreach and Education
8 Office in the Commission's Energy Efficiency Division.
9 With me are Soheila Pasha, an Engineer from the same
10 office, and Lisa DeCarlo, an attorney from the Chief
11 Counsel's Office.

12 Staff is proposing the adoption of two items
13 related to amending the California Appliance Energy
14 Efficiency Regulations. The two items are the proposed
15 express terms and the finding that the proposed regulations
16 are exempt under the California Environmental Quality Act
17 or SEQA.

18 The proposed amendments for computers cover three
19 issues. They modify the definition for discrete graphics
20 processing unit or GPU, to allow inclusion of a new
21 discrete GPU that is packaged on the same substrate as the
22 central processing unit or CPU. And they create a new
23 power allowance or adder for it. They modify the
24 definitions for mobile gaming systems and mobile
25 workstations to better represent the products that are

1 available in these categories. They make corresponding
2 modifications to the reporting requirements for computers.

3 The proposed amendments for LED lamps modify the
4 reporting requirements to allow for initial product
5 certification using an estimate of lamp lifetime. This is
6 necessary, because of the duration of this testing is four-
7 and-a-half to seven months, which can delay the
8 availability of otherwise compliant products. This
9 allowance for reporting estimated lamp lifetimes aligns
10 with a similar provision from the U.S. Department of
11 Energy.

12 The proposed amendments provide manufacturers
13 with more flexibility to manufacture and sell compliant
14 products. And they benefit consumers and businesses by
15 allowing them to purchase a broader range of compliant
16 products, while ensuring there's no change to the
17 underlying costs or energy savings expected from the
18 existing regulations.

19 The 45-day long public comment period for these
20 proposed changes ran from September 22nd to November 6th.
21 Three public comments were received on the proposed
22 amendments for LEDs. MaxLite expressed support for the
23 proposed changes. Philips lighting and NEMA suggested
24 three points of clarification, but did not raise any
25 objections to the proposed changes. Staff does not believe

1 clarification is necessary and will address the submitted
2 comments in the final statement of reasons.

3 Two public comments were received on the proposed
4 amendments for computers. The Information Technology
5 Industry Council and TechNet supported the proposed
6 changes. The Natural Resources Defense Council or NRDC
7 expressed concern with modifying the definition for
8 discrete GPU and for providing the power allowance for a
9 discrete GPU that is packaged on the same substrate as the
10 CPU.

 Staff does not believe any changes to the
11 regulatory text are necessary. When proposing the changes,
12 staff carefully reviewed the new information submitted
13 about this product category, which was not available during
14 the original rulemaking. Although generally the Computer
15 Regulations are flexible enough to allow for new product
16 innovation this specific technology did not fit into
17 existing categories provided in the regulations,
18 necessitating in the change noticed in the 45-day language.

19 Additionally, as directed by the Commission in
20 the resolution adopting the Computer Regulations at the May
21 10th, 2017, Business Meeting staff will be conducting
22 market monitoring to determine if computers using adders,
23 allowances, or exemptions in the regulations are obtaining
24 rapidly-increasing market share that would significantly
25 reduce the expected energy savings. And may propose

1 changes to the regulations to ensure that expected energy
2 savings will occur.

3 Staff asked that the Commission adopt the express
4 terms, amending the California Appliance Efficiency
5 Regulations and the finding of SQUA exemption.

6 Soheila, Lisa and I are available for any
7 questions. Thank you.

8 CHAIRMAN WEISENMILLER: Thank you. Let's start
9 with public comments from those in the room, ITI?

10 MS. MCBRIDE: Good morning, is my mic on? Great.

11 CHAIRMAN WEISENMILLER: Yeah.

12 MS. MCBRIDE: Good morning Chair and
13 Commissioners. My name is Alex McBride. I'm a Director of
14 Environment Sustainability at ITI. I'm here on behalf of
15 ITI and TechNet and together we have the privilege of
16 representing the most innovative and productive companies
17 in the world.

18 Our companies vigorously compete to offer
19 customers products that meet performance needs with the
20 highest levels of energy efficiency. We're proud of our
21 20-plus year partnership with the EPA and the ENERGY STAR
22 Program and work with global governments worldwide to
23 improve energy efficiency.

24 We're also proud of the constructive partnership
25 that we've had with the California Energy Commission over

1 the past few years. A little less than a year ago I was
2 here on behalf of ITI and TechNet to express support for
3 the groundbreaking Computers and Displays Regulation. And
4 our companies have already begun adjusting product cycles
5 and processes to meet the rulemakings ambitious targets.

6 Over the last few months we've worked closely
7 with CEC staff to obtain clear guidance about the
8 regulations and in this process identified three concerns
9 pertaining to mobile workstations, mobile gaming systems
10 and discrete GPU definitions. We expressed these concerns
11 at the May Business Meeting and provided additional
12 industry data and recommendations in subsequent staff
13 meetings. We greatly appreciate the CEC staff
14 consideration of the additional data. And we fully support
15 the 45-day language presented today.

16 It's important to all stakeholders that the
17 Computers and Displays Regulation is data driven and not
18 based on assumptions or a partial understanding of new
19 technologies. And as we've discussed over the course of
20 this rulemaking, the regulation should not be an impediment
21 to the continued innovation for our companies. The
22 proposed 45-day language strikes that balance and the
23 standards don't compromise our company's ability to
24 innovate.

25 We also want to reiterate that the proposed

1 changes are consistent with the intent of the original
2 rulemaking. And do not impact the energy savings that the
3 Commission expects to achieve with this regulation.

4 We knew this rulemaking would be considerably
5 complex. And we commend the CEC's commitment to rise to
6 the challenge and ensure a smooth implementation of the
7 rule. To support this work, we've gathered a series of
8 frequently asked questions for the CEC staff to ultimately
9 publish to the CEC website and help stakeholders as the
10 rule begins implementation on January.

11 We remain committed to continued engagement with
12 the Commission and we appreciate the opportunity to provide
13 comments today. Thank you.

14 CHAIRMAN WEISENMILLER: Thank you.

15 SoCal Edison, Charles Kim?

16 MR. KIM: Thank you, Mr. Chairman, Commissioners.
17 I'm Charles Kim of the Southern California Edison Company.
18 I'm speaking on behalf of the California investor owned
19 utilities today.

20 Some technologies like a computer advance
21 rapidly. This phenomenon demands greater vigilance and
22 requires frequent updates to regulations. From this
23 perspective, I thank CEC and CEC staff members like
24 Soheila, Lisa, Christen and Pat for updating the definition
25 of a discrete GPU and its allowances.

1 To this action by CEC also demonstrates the CEC's
2 flexibility by accommodating new and innovative
3 technologies, when existing regulations may not provide
4 enough clarity to computer industries. From this
5 perspective, I also thank CEC for being flexible and for
6 embracing new technologies and innovative technologies.

7 As a statewide Appliance Standards advocacy
8 group, I have a request for the computer industries and
9 CEC. Computer industries like you have been, please
10 continue to honor the spirit of our Title 20 Computer
11 Energy Efficiency Regulations. The new definition should
12 not be treated as an open door for producing computers that
13 are less efficient than what CEC has envisioned originally.

14 Now to CEC, like you have been, please be
15 vigilant and update definitions and Energy Efficiency
16 Regulations as the market evolves further.

17 With my request and with my trust in these
18 incredible computer industries I stand here in support of
19 the proposed resolutions and thank you so much.

20 CHAIRMAN WEISENMILLER: Thank you.

21 Anyone else in the room? Anyone on the line?

22 (No audible response.)

23 We'll transition to the Commissioners.

24 Commissioner McAllister?

25 COMMISSIONER MCALLISTER: Yeah. I don't have

1 substance to add. That was very well detailed and
2 specific, so I think in these complex issues you have to be
3 very specific and choose your words carefully to describe
4 the technical situation. I think the staff statement, Pat
5 did that very well.

6 And I just want to thank staff for all your great
7 work on this. And equally ITI and all the stakeholders --
8 and I see some others in the room, some of your members --
9 for just keeping at it and being at the table and making
10 sure that you're letting us know your concerns. And we
11 will definitely be supporting that productive, consultative
12 relationship. So I really appreciate your efforts to
13 produce savings and to really implement the spirit of this
14 agreement.

15 And going forward we absolutely intend to
16 continue, so thanks very much for all your -- on both --
17 with staff and all the stakeholders, just keep it up.
18 Thanks.

19 All right, and with that I'll just move Item 5.

20 COMMISSIONER DOUGLAS: Second.

21 CHAIRMAN WEISENMILLER: All those in favor?

22 (Ayes.)

23 CHAIRMAN WEISENMILLER: This item passes 5-0.

24 Thank you.

25 MR. SAXTON: Thank you.

1 CHAIRMAN WEISENMILLER: Let's go on to Item 6,
2 Improving Performance and Cost Effective of Wind Energy
3 Technologies.

4 MR. ALDAS: Good morning Chair and Commissioners.
5 My name is Rizaldo Aldas. I'm with the Energy Generation
6 Research Office, Energy Research and Development Division.
7 And I'm here to request your approval of an agreement with
8 Jason Cotrell doing business as RCAM Technologies. This
9 agreement was funded under the grant solicitation GFO 16-3-
10 10, the title of which is "Improving Performance and Cost
11 Effectiveness of Wind Energy Technologies." The intent was
12 to fund applied research and development that will improve
13 wind technologies, tools and strategies.

14 In this agreement RCAM Technologies will partner
15 with UC Irvine and the Construction Engineering Research
16 Laboratory, which is a unit under the Department of Army,
17 to work on the development of reinforced concrete additive
18 manufacturing technology; added manufacturing being also
19 known as 3D printing, for your info. And the intent is to
20 eliminate transportation logistics constraints by
21 manufacturing structurally efficient large diameter towers
22 within the plant, using light weight reinforcing methods.

23 Concrete additive manufacturing uses less
24 concrete than conventional construction methods, uses less
25 labor. It does not require a concrete form. And the

1 estimate is that an ultra-tall RCAM tower will result to
2 reduce the levelized cost of energy by 11 percent in a low-
3 wind speed region compared to a conventional say 80-meter
4 tower.

5 With that, I request your approval. And I
6 believe Mr. Cotrell is also in the line and ready to answer
7 your questions. Thank you.

8 CHAIRMAN WEISENMILLER: Great. Thank you.

9 Anyone in the room have any comments on this
10 item?

11 (No audible response.)

12 CHAIRMAN WEISENMILLER: Then let's switch to the
13 phones. We have a number of comments. Let's start with
14 RCAM. Mr. Cotrell, do you want to talk? I guess we have
15 you and Mr. Bell have both put in from RCAM.

16 MR. COTRELL: Yes. Can you hear me?

17 CHAIRMAN WEISENMILLER: Yes.

18 MR. COTRELL: Great. So yes, it's Jason Cotrell.
19 I'm the Founder of RCAM technologies and the Project P.I.
20 I want to thank you for your time and everyone's in the
21 room's time and those on the phone who are to consider this
22 item.

23 I've worked in wind energy R&D for over 20 years.
24 And from my perspective this is a critical period for
25 renewable energy in California. In response to many events

43

1 California has set progressive energy goals, but
2 unfortunately federal support for renewable energy tax
3 credits and federal R&D funding is declining.
4 And now it even appears that there could be import tariffs
5 on other low-cost renewable technologies like solar panels.

6 Meanwhile, new technology opportunities such as
7 that in this project, which is using concrete additive
8 manufacturing, are emerging globally. And they have
9 potential applications to renewables that have not yet been
10 explored. California has a rare opportunity to be at the
11 forefront of this moderate risk, high-impact technology
12 that the National Science Foundation has called a potential
13 revolution for construction and manufacturing.

14 It'll be the first publically-funded effort in
15 this area for wind turbine powers. And it has several
16 potential direct benefits for California electricity
17 ratepayers such as lower cost clean energy technologies,
18 more deployments options for wind turbines. And of course
19 the many associated economic benefits, such as construction
20 and operations and maintenance jobs that go along with wind
21 energy.

22 So thank you for your time and I believe we have
23 several other comments.

24 CHAIRMAN WEISENMILLER: Right. We have a lot of
25 comments and certainly that'll be the last one I'll take

1 from RCAM.

2 But let's go on to UC Irvine.

3 MS. LI: It allows lots of innovation in
4 different fields, including construction and civil
5 engineering, renewable energy industry and material signs
6 and robotics. So this is really an interdisciplinary field
7 and this is really exciting in terms of making an impact on
8 the wind energy industry. And meanwhile the lessons
9 learned from this project can be applied to the
10 construction industry and civil engineering.

11 So overall, I just want to thank you for
12 embracing this new technology and supporting the innovation
13 as a proposed solution for the wind energy industry.

14 CHAIRMAN WEISENMILLER: Thank you. Let's go on
15 to Boulder Wind Consulting.

16 MR. BUTTERFIELD: Sandy Butterfield, I hope you
17 can hear me?

18 CHAIRMAN WEISENMILLER: Sort of, there does seem
19 to be some noise in the background, but go ahead.

20 MR. BUTTERFIELD: Okay. I'm sorry for the weak
21 connection. I happen to be in Austria at a very important
22 international standards meeting.

23 My background is that I've been in the wind
24 industry for 40 years. And in the early '80s I led a
25 company that installed and designed wind turbines in

1 California. I watched as the tax credits and incentives in
2 the United States dwindled. And the lead, the technology
3 lead that the United States enjoyed at that early age and
4 California, was a significant depository. I've watched as
5 that was ceded to other countries. And I think that the
6 U.S. has been a great innovator, but very often the
7 technology that is innovated here goes to other countries
8 and is manufactured there and then comes back as customers.

9 The advanced tower manufacturing brings in a way
10 of onsite manufacturing and that is the key to the next
11 evolution of wind energy. California has an opportunity to
12 bring that technology to the market and benefit the
13 construction companies that will offer that. It's a
14 technology that can be exported and I think for a change it
15 would be very nice to see that American technology is
16 benefitted in the U.S.

17 Since being in California, in the mid '80's I led
18 research at the National Renewable Laboratory for 25 years.
19 And in that capacity I led aerodynamics research, gearbox
20 and drive train research for wind turbines, reliability
21 research and also played a huge role in developing
22 international standards. One of my roles now is I'm the
23 Chairman of an international standards committee that
24 brings certification into worldwide application.

25 I see onsite manufacturing and particularly tall

1 towers in the approach that Jason Cotrell has brought to
2 this innovative approach to onsite manufacturing and 3D
3 printing of concrete towers, as a game changer. And I
4 think California has an opportunity to support that and
5 bring it as a first into the California market and benefit
6 California ratepayers as well as jobs through the
7 California construction companies.

8 I thank you very much for your opportunity to
9 speak and for considering funding this project.

10 CHAIRMAN WEISENMILLER: Thank you.

11 Let's go on to Brandon Fitchett.

12 MR. FITCHETT: Hello, this is Brandon from EPRI.
13 Can you hear me?

14 CHAIRMAN WEISENMILLER: Yes.

15 MR. FITCHETT: Okay, great. I'm calling in from
16 Electric Power Research Institute. I have been in the wind
17 industry for over ten years now working for a couple of
18 different wind turbine manufacturers, designing wind
19 turbines, helping develop the technology, and also in
20 services of wind turbines.

21 I just wanted to say I've also lived in
22 California for about five years, in my past and been to
23 wind energy areas and studied some of the winds there.
24 There a few very focused wind resource areas in California
25 around the Altamont Pass, Tehachapi Pass and San Gorgonio

1 Pass near Palm Springs. They are extremely focused and
2 narrow. There is potential for more wind energy
3 development in those areas, but they could become saturated
4 pretty quickly.

5 This taller tower technology in general could
6 potentially open up a lot of different areas in California,
7 a lot of more distributed areas, a lot of more corporate
8 and industrial-type locations or agricultural type
9 locations to utilize wind energy where it is currently not
10 really viable with 80 to 100 meter conventional steel tube
11 tower technologies. The constraint is a lot of times the
12 tower base, so applying a technology like this could help
13 to prop up conventional technology as a portion of the
14 tower.

15 Or it could allow for more cost effective, taller
16 towers, which would potentially open up some wide-open high
17 desert areas northeast of L.A., some coastal areas north of
18 the Bay Area and some central coast, central near-coast
19 county areas northwest of Santa Barbara, for example.
20 These are some examples that have just been highlighted on
21 wind energy measurement maps where going 20-30-40 meters
22 taller with a wind turbine could open up a lot of these
23 areas for viable wind energy production in California.

24 So I think technology such as the additive
25 manufactured tower could allow taller towers to open up

1 cost effective and viable wind energy production in a more
2 distributed nature in California, not only in the very
3 concentrated wind energy areas of Altamont, Tehachapi and
4 San Geronio. So I just wanted to add that as some
5 assessment of some factual data from available sources.
6 Thank you.

7 CHAIRMAN WEISENMILLER: Thank you.
8 Let's go on to AK Applied Sciences.

9 (Pause for technical issues.)

10 MR. LEIGHTY: Hello. Can you hear me?

11 CHAIRMAN WEISENMILLER: Yes, we can. Maybe some
12 sort of an echo? Yeah, so if you have a computer or
13 something on the telephone, if you could just go to one of
14 the above and mute.

15 (Audio issues.)

16 He closed it. I was wondering if he could -- as
17 I said he had to be opening in, but hopefully he can figure
18 out how to mute one of the devices.

19 UNIDENTIFIED SPEAKER: He fell off.

20 CHAIRMAN WEISENMILLER: He fell off, okay. Let's
21 go on to NREL and see if he comes back.

22 MR. ROBERTS: Hello?

23 CHAIRMAN WEISENMILLER: Yes. Good morning.

24 MR. ROBERTS: Good morning. My name is Owen
25 Roberts. I work at the National Renewable Energy

1 Laboratory. I spent about a decade in the wind industry.
2 I started in construction with the utility scale wind
3 farms. Over the past several years, I've focused on tall
4 towers and turbine scaling.

5 So I guess one of the thoughts that I would like
6 to convey to you is that over the -- basically the IEA, the
7 International Energy Agency, last year conducted a survey
8 with Lawrence Berkeley National Laboratory and NREL where
9 they did a survey of industry experts and technical experts
10 in the wind industry.

11 Though the most aggressive projections basically
12 estimate that there will be a 50 percent reduction in the
13 cost of wind energy by roughly 2030, this reduction in cost
14 simply means that wind will be deployed in areas where it
15 currently is not thought to be feasible.

16 And this echoes what the gentleman from EPRI said. But the
17 base idea is that turbines are getting larger and the costs
18 of these turbines is going to decrease, and the levelized
19 cost of energy is going to decrease. As there turbines
20 grow, specifically blade length, tower heights will also
21 have to increase for blade tip clearance, noise ordinances,
22 other issues and so essentially the common argument for
23 tall towers being cost effective is only part of the
24 equation.

25 The largest driver that we're going to see in the

1 next 10 to 20 years will simply be turbines becoming larger
2 and the cost of these turbines coming down. So as turbines
3 grow, the transportation constraints also increase and so
4 transporting large tower sections within the United States
5 and specifically California, will actually drive the
6 thicknesses of these towers and the costs of these towers
7 to increase exponentially. So alternative technologies and
8 different materials such as concrete and onsite
9 manufacturing are a large focus right now especially within
10 the Department of Energy, when looking at the future of
11 wind energy.

12 So if you -- sorry, go ahead. Sorry, I thought I
13 heard a question.

14 Essentially, what I can say is that even in
15 Europe there are many different turbine manufacturers
16 looking at onsite manufacturing of both steel and concrete
17 towers. And I think that this opportunity space will only
18 keep growing in the next 10 to 20 years. Thank you for
19 your time.

20 CHAIRMAN WEISENMILLER: Thank you.

21 Anyone else on the line?

22 (No audible response.)

23 Okay. So let's transition to the Commissioners.
24 As the Lead Commissioner on R&D I've certainly reviewed
25 this. I think we're going through a process to come up

1 with ideas for funding the existing additional work in the
2 wind area with workshops. And I think, as we've heard from
3 a number of speakers today this is a pretty exciting
4 project. And I certainly would urge people to support it.

5 COMMISSIONER SCOTT: I move approval of Item 6.

6 COMMISSIONER MCALLISTER: Second.

7 CHAIRMAN WEISENMILLER: All those in favor?

8 (Ayes.)

9 CHAIRMAN WEISENMILLER: This passes 5-0. Thanks.

10 MR. ALDAS: Thanks.

11 CHAIRMAN WEISENMILLER: Let's go on to Item 7,

12 Development, Demonstration and Deployment of

13 Environmentally and Economically Sustainable Biomass.

14 MS. BARKALOW: Hello, Chair and Commissioners.

15 My name is Gina Barkalow with the Research and Development

16 Division. I'm requesting approval of a technology

17 demonstration research and development project recommended

18 for award under the EPIC bioenergy competitive

19 solicitation. The remaining projects, under this

20 solicitation, will be presented at future business

21 meetings.

22 In this project Lystek International Limited will

23 develop and demonstrate two skid-mounted mobile units at a

24 sanitary district wastewater treatment plant in Southern

25 California. One unit is a preprocessing de-packaging

1 system for organic waste. The other unit includes the
2 Lystek technology, which uses a thermal hydrolysis process
3 to convert food waste and biosolids into a digester feed
4 stock. The unit also includes a combined heat and power
5 system to generate electricity and useful heat. The Lystek
6 feed stock improves the wastewater digestion process, while
7 increasing the biogas produced and used to generate
8 renewable electricity. It also reduces the amount of waste
9 brought to landfills for disposal.

10 If successful, the technology has the potential
11 to integrate organic waste disposal at wastewater treatment
12 plants across California, while increasing renewable
13 electricity production, due to higher biogas yields.

14 Staff from Lystek is here to answer any questions
15 and I ask for your approval of this project. Thank you.

16 CHAIRMAN WEISENMILLER: Thank you.

17 Yeah, I was going to say Lystek representatives,
18 do you want to say a few words? Come on up. Introduce
19 yourselves, please?

20 MR. DUNBAR: Good morning, Commissioners. My
21 name is Jim Dunbar, a registered engineer in California and
22 General Manager for California operations. We're very
23 excited about this project. It opens up some new markets
24 that we've been exploring both in the organics and the
25 energy fields. And we think it's a time that's come that

1 the blending of these two together for a beneficial reuse
2 is long coming. So thank you.

3 MR. RILEY: Hi. I'm David Riley from Lystek.
4 I'm the Vice President of Public and Partnerships. I don't
5 have much more to say other than what Jim said, but welcome
6 from Canada.

7 CHAIRMAN WEISENMILLER: Well, great. Thanks for
8 coming. Yeah, and thanks for your interest and support on
9 this.

10 Anyone else in the room or on the line who have
11 any comments?

12 (No audible response.)

13 Then let's transition to the Commissioners.
14 Again, as the Lead Commissioner on R&D I reviewed this. I
15 think it's a great project and encourage folks to support
16 it.

17 COMMISSIONER DOUGLAS: I'll move approval.

18 COMMISSIONER MCALLISTER: Second.

19 CHAIRMAN WEISENMILLER: All those in favor?

20 (Ayes.)

21 CHAIRMAN WEISENMILLER: This passes 5-0. Thank
22 you.

23 MR. DUNBAR: Thank you very much.

24 CHAIRMAN WEISENMILLER: Thanks again for being
25 here.

1 Let's go to Number 8, Discussion of Energy
2 Commission Progress Implementation of SB 350. Michael
3 Sokol, please?

4 MR. SOKOL: All right, good morning Chair and
5 Commissioners. I'm Michael Sokol with the Executive
6 Office. Given the lengthy recap last time that marked the
7 two-year anniversary of the signing of SB 350, I'll just
8 have a brief update today.

9 So you heard earlier today that the Commission
10 voted to adopt the SB 350 Energy Efficiency Doubling
11 Report, which was an extensive staff effort. And I just
12 really want to acknowledge all the collaboration and hard
13 work that went into that effort, not only with our staff
14 but with the Public Utilities Commission staff, the
15 utilities, a number of other stakeholders as well.

16 You know, the report we heard a lengthy
17 discussion earlier, but I just wanted to note that it shows
18 that we can get pretty close to the doubling goal with the
19 existing efforts. But it really shines a spotlight on some
20 additional areas and recommendations for exploration over
21 the next couple of years where we'll follow up in the 2019
22 IEPR with additional actions and reporting.

23 The other item that I really wanted to note today
24 for you was the SB 350 Disadvantaged Communities Advisory
25 Group. This is a joint Public Utilities Commission and

1 Energy Commission Advisory Group required by Public
2 Utilities Code Section 400(g). The scope of this group is
3 review and provide advice on proposed clean energy and
4 pollution reduction programs and determine whether those
5 programs will be effective and useful in disadvantaged
6 communities.

7 And we've defined those loosely as increasing the
8 benefits of clean energy in disadvantaged communities,
9 increasing access to clean energy technologies in
10 disadvantaged communities, and maintaining affordability of
11 energy services.

12 So I wanted to note that while if you
13 Commissioners remember, that we brought an informational
14 item for a joint staff proposal that was put out in early
15 August. Well, at this point we now have an official
16 charter and a solicitation letter for applications that are
17 on the street that were posted on November 1st of this
18 year. The charter describes a little more the details of
19 the group. We are soliciting additional comments by
20 December 1st, leading up to consideration of adoption of
21 the charter at the December 13th Business Meeting here at
22 the Commission and the December 14th Public Utilities
23 Commission Business Meeting.

24 So along with the charter there's a solicitation
25 letter that's calling for applications that was posted

1 along with the charter. We are looking for applications to
2 be due by December 22nd to both agencies pending approval
3 of the charter itself at the next business meeting.

4 Afterwards when we receive those applications
5 there'll be an internal review process and a selection
6 process, hopefully with an announcement of the Advisory
7 Group members early next year, so that they can begin
8 meeting shortly thereafter.

9 So you'll hear more about the Advisory Group and
10 some of the more details at the next Business Meeting when
11 you consider it for adoption along with some other SB 350
12 items.

13 But I'll just leave it there and will thank you
14 for time and would be happy to answer any questions that
15 you might have.

16 CHAIRMAN WEISENMILLER: Great, thank you.

17 Commissioner Scott?

18 COMMISSIONER SCOTT: I had almost exactly the
19 same talking points that Mike did on the Disadvantaged
20 Community Advisory Group. So I might just underscore the
21 importance of that and if you are in a place where you have
22 an opportunity to raise awareness of it, just a quick
23 mention before you pivot to whatever you are there to speak
24 about I think that would be really helpful to help get the
25 word out. We've got it posted on our Twitter account and

1 other social media, but just to make sure that we have a
2 great set of candidates who are applying to be on the
3 committee -- I'm sorry, not on the committee, on the
4 advisory group -- that would be fantastic.

5 As always, thank you so much to Mike for his
6 fantastic work. He's herding a lot of cats on SB 350 and
7 doing a fantastic job at it, so thank you for that.

8 I also wanted to say thank you to Alana Mathews
9 who did much of the heavy lifting and shepherding the
10 charter and the application across the finish line.

11 And also thanks to our fellow Commissioners
12 Guzman Aceves and Rechtschaffen over at the PUC for helping
13 me. We had a quick powwow to get some of this right across
14 the finish line and they've been great partners and will
15 continue to be as we put this group together.

16 So those are my comments on that.

17 CHAIRMAN WEISENMILLER: Great. Thanks, Mike.

18 Let's go on to minutes.

19 COMMISSIONER DOUGLAS: Move the minutes.

20 COMMISSIONER SCOTT: Second.

21 (Ayes.)

22 CHAIRMAN WEISENMILLER: The minutes pass 5-0.

23 Let's go on to Lead Commissioner and Presiding
24 Member Reports. Commissioner Scott?

25 COMMISSIONER SCOTT: Sure. So it's been a busy

1 month as usual. Just yesterday we had our Alternative and
2 Renewable Fuel and Vehicle Technology Program first
3 Advisory Committee meeting to look over the draft of our
4 Investment Plan, so that was great. We had about 17 folks
5 of the 22 or so participate, which was terrific. Got some
6 really good feedback and will be working to update that
7 draft and bring it to you all.

8 I also had a chance last week, I am part of the
9 Western Interstate Energy Board, Western Interconnection
10 Regional Advisory Body and Committee on Regional Electric
11 Power Cooperation, so it's WIEB, WIRAB, and CREPC. And
12 these three groups went to do D.C. and a chance to visit
13 with some folks at DOE. We met with Doug Little who is the
14 DOE Assistant Secretary for Intergovernmental and External
15 Affairs, and also with Travis Fisher at DOE and some of the
16 DOE staff.

17 We had a chance to meet also at FERC and we met
18 with Chairman Neil Chatterjee. We met with Commissioner
19 LaFleur and we also had a chance to meet with some of the
20 staff.

21 And basically the message that we wanted to send
22 was really just a meet and greet, let them know who WIEB,
23 WIRAB and CREPC are and just kind of highlight that the
24 Western Interconnection is different than the Eastern
25 Interconnection. And to make sure that they kind of took

1 that away with them, knew that we were here as a resource.
2 We just kind of explained who's in the Western
3 Interconnection and things like that -- very, very high
4 level.

5 Anyways, so I'm the Chair of WIRAB along with
6 Dave Clark who's a Commissioner in Utah. For WIEB is it
7 Laura Nelson from Utah and also Angie Dykama from Nevada.
8 And on CREPC it is Travis Kavulla from Montana and John
9 Chatburn from Idaho, so we had quite a delegation together.
10 Also, Jordan White from Utah talked a little bit about the
11 EIM Body of State Regulators. And we had about 30 minutes
12 with each of these folks, so very, very high level. "This
13 is the Western Interconnection, here's who some of the
14 faces are, please feel free to reach out to us when you
15 need information."

16 So that was in D.C. last week.

17 We also as you know -- and I'll let the Chair
18 speak to this more -- but the California German Bilateral
19 Energy Conference, which was following the CAISO Symposium.
20 And that was great fun. I had a nice opportunity to
21 introduce the second day, it was a fantastic panel on
22 transportation and just really good information. I think
23 people were thought-provoking and the audience really
24 enjoyed the discussion. We had tons of questions and
25 actually ended up sort of -- and Commissioner McAllister

1 was there as well and can talk about this too -- ended up
2 kind of having to cut off the questions really, because
3 there was so much interest in the panels. A lot of
4 interest in doing this again next year or whenever kind of
5 the right timing is for that. But I was pleased to be able
6 to participate in that.

7 And those are the highlights.

8 COMMISSIONER MCALLISTER: Great. Well, let's see
9 I guess the last month I really feel like I've been on the
10 EE speaker circuit, sort of a permanent revolution really
11 on that front but this last month seemed to be more than
12 usual.

13 We had Amory Lovins. I think I announced that at
14 the last Business Meeting, but he came on October 17 and
15 gave a really nice kind of update of his long-term talk
16 about energy efficiency and really kind of modernizing that
17 to point out the immense opportunities that are available
18 for energy efficiency still. So it really dovetailed well
19 with all the work that we've heard about today and at the
20 last few business meetings on 350 and otherwise on
21 efficiency.

22 On the Germany California Bilateral Conference,
23 you know also as Commissioner Scott said, I was there and
24 let's see moderated a sort of smart energy panel. I think
25 it was the last main panel of the event and then wrapped it

1 up. A really great collaboration, I mean they are facing
2 different challenges but very much complimentary to what we
3 are trying to do. And also have just realized that
4 efficiency has got to be key resources for them, so there's
5 just a lot of great collaboration that we have I think in
6 the future between -- and have really good sort of
7 economies that have resources that we can dedicate to that
8 issue in figuring out solutions. And that'll be
9 applicable, I think globally.

10 Let's see, keynoted the California Energy and
11 Demand Management Council annual meeting in Oakland, so a
12 lot of practitioners, a lot of good insight. I think
13 trying to really overall -- I'm trying to just keep the
14 conversation about efficiency, how to measure it, and how
15 to do that quickly and sort of innovatively. Trying to
16 keep that piece of the conversation going, because I think
17 we've been doing this for so long there's a little bit of
18 ossification, you know, in the system. And there's a
19 little bit of sclerosis. And so we've got to break through
20 that and we've got to sort of figure out how to do things
21 better. And we've got all this technology that can enable
22 that.

23 So it's a great group, really smart people, but
24 also part of the status quo, and so moving those
25 stakeholders along I think is a focus of mine lately.

1 And then let's see, I've been doing a lot of
2 interaction just generally with the stakeholders on the
3 Title 24 Building Efficiency Standards Update. So
4 including the builders and many other stakeholders, trying
5 to sort of herd them along and keep us all on message. So
6 far that's going pretty well, fingers crossed.

7 I went to Phoenix on the 1st for the ACEEE
8 Efficiency as a Resource Conference, so that's really a
9 good one. It's a relatively late addition, recent addition
10 to their suite of conferences. But as we've heard from the
11 doubling goal and also the IRP process that we've working
12 through over the last year energy efficiency really needs
13 to be a resource. And so developing the tools and the
14 language around that is a bit of back to the future, but
15 it's also again we've got to modernize that conversation.
16 So it's a really good forum for that.

17 Let's see, and finally I wanted to mention the
18 most recent event I did was last Friday at the University
19 of San Diego. They have this Climate and Energy Law
20 Symposium that they do every year. I think actually
21 Kourtney, you've spoken at that I believe at some point or
22 given a talk down there at some point or I'm not sure.
23 Yeah, yeah, sorry yeah, but I know --

24 (Off mic colloquy.)

25 Yeah, exactly. We'll have to get you in next

1 year, but I know Cliff Rechtschaffen, Ken Alex, other
2 luminaries in California, but also just nationally have
3 been speakers at that. It's quite a high-level event.
4 We've got to get Commissioner Douglas down there too. Any
5 lawyer is fair game, I think.

6 But it's really a quality event and it's the kind
7 of brand that's nationwide now. And Lesley started it nine
8 years ago. This was a ninth annual and they -- it was a
9 little earlier, but this was the annual event so we just
10 went with it. And they proposed to rename it. They just
11 renamed it and dedicated it to her memory, and so now it is
12 the Lesley K. McAllister Climate and Energy Law Symposium.
13 And they dedicated this year's even to her in her memory,
14 so I went down and did the formalities. And it was just a
15 who's who of people of San Diego and beyond, of just an
16 outpouring of condolence, but also just gratefulness for
17 her role.

18 And then I was on a panel with Aimee Barnes from
19 the Governor's Office and Todd Gloria, and the topic was
20 Energy Policy in the Trump Era. And I think obviously very
21 fitting and I think the tenor of the conversation was just
22 so Lesley, right? It was ego free. We're like, "Here's
23 what we've got to do," and it was -- she approached
24 everything with just an openness that I think was notable
25 to everyone. And we need more of that in the world and

1 certainly in this country right now. Just objective and
2 get our ego out of this stuff and try to go with the facts,
3 and I think that's what we're doing in California.

4 And I was just really grateful that that was
5 noticed and acknowledged. And everybody sees it, because
6 it shows what a great kind of community we have. So
7 anyway, it was a little difficult and emotional, but very
8 touching. And next year we'll try to hook up some of our
9 Commission colleagues with that event.

10 So with that over Thanksgiving I'm going to
11 Australia, so I just wanted to mention that. They're doing
12 a big energy efficiency shindig and they've got this whole
13 week of events planned out. There's an opening in
14 Australia to kind of revisit some of the carbon discussion.
15 They had a big blackout. Their energy prices have doubled
16 since 2007 and now they're saying efficiency is a part of
17 the solution and so it's kind of a good opportunity to go
18 move the needle there and build some collaboration.

19 So that's it for me this week.

20 COMMISSIONER DOUGLAS: All right. It's been a
21 busy couple of weeks for me too really. So earlier kind of
22 in mid-October, I had a chance to go to the Colorado
23 University in Boulder and speak at a Women in Energy and
24 let's see -- Energy Law and Regulation Conference. It was
25 quite fun to talk about the California experience and

1 California achievements. There were a number of utility
2 regulators from a couple of other states. There were quite
3 a few -- some number of people from California from either
4 the private sector or nonprofits or people who had come
5 from California and actually gone to study at University of
6 Colorado Law School or Colorado University of Law School.
7 So it was quite a nice event.

8 Later in October we had three meetings on
9 proposed updates to the Energy Commission's Tribal
10 Consultation Policy. One with tribes in Southern
11 California on October 24th; we had a WebEx on October 25th;
12 and a meeting on November 1st with Redding -- in Redding
13 with Northern California tribes.

14 Most notable about these meetings is that we
15 actually did them jointly with the California Public
16 Utilities Commission, which is moving forward with its
17 first tribal consultation policy. Ours is an update of a
18 policy we adopted some years ago.

19 I had the opportunity to attend the Southern
20 California meeting with Commissioner Rechtschaffen and the
21 Redding meeting with Commissioner Randolph. And I'm really
22 pleased to see the level of both staff and Commissioner
23 attention and commitment going into this at the CPUC and
24 also at the Energy Commission. And we've had some really
25 great discussions and work on the updates to the policy,

1 which is coming to a Business meeting near you in December.
2 So stay tuned.

3 Finally, we had a very interesting meeting with
4 Department of Defense, a number of the installations in
5 California were represented. The Director of the
6 Clearinghouse and the Pentagon came out here and we had a
7 participation from the Interim Director of the Bureau of
8 OSHA Energy Management and a number of the Pacific Region
9 staff.

10 And we had a very, very good and productive
11 conversation that allowed us to drill down and better
12 understand the many complex and interrelated Department of
13 Defense activities off the Coast of California. And how
14 those could be affected by offshore wind in different
15 locations and so it was a very good conversation and
16 probably the first of -- or not the first, but probably one
17 of many to come as well.

18 So those are my reports. Thank you.

19 COMMISSIONER HOCHSCHILD: Great. First, I
20 actually just wanted to thank the R&D team and the
21 leadership of the Chair on these grants that we gave today.
22 And it's very much in keeping with the philosophy, I
23 believe in of incremental rather than revolutionary
24 innovation. Things like getting a 10 or 11 percent
25 reduction on a wind project through cheaper concrete

1 (phonetic) is a great thing. And that's certainly been the
2 trend with renewables in general, so I'm really happy with
3 the direction I'm seeing on renewables for R&D. And we
4 just wanted to say thanks for that.

5 And my recent talks, I had to give a talk at
6 ACOR, they're West Coast meeting. And then last week at a
7 big summit of about 800 investors in San Diego, the SRI
8 Conference and just a lot of interest in where we're going
9 on electrification and renewables and how the pieces fit
10 together in sort of intelligent energy demand. You know,
11 just a great, great interest in what we're doing.

12 I wanted to highlight a couple of things that
13 caught my eye that just there's so much going on right now.
14 But one of them is the *Lancet* study that came about a week
15 ago, which looked at deaths from pollution, air and water
16 and soil pollution, mostly air pollution. And the main
17 finding was that we have 9 million people globally who die
18 prematurely from pollution, and that is 15 times more than
19 all the deaths from war, violence and murder combined. And
20 three times greater than all the deaths from AIDS,
21 tuberculosis and malaria.

22 And so it's just a reminder, I think of what we
23 already know, that the health of our environment is human
24 health. And, you know, my wife's a doctor and I spent my
25 career in renewable energy environmental work. And we used

1 to think we're in different fields and it's the same thing.
2 We kind of realized that. And I thought it was a very,
3 very commendable study and am truly glad to see it come
4 out.

5 And then the other one that caught my eye was
6 released by Southern California Edison, their white paper.
7 I've actually invited the author, Caroline Choi, to come as
8 a guest speaker in a few weeks. Basically, laying out
9 their vision for the future, which includes 80 percent
10 carbon free generation by 2030, 7 million EVs for the state
11 and then getting one-third of all water heating and space
12 heating done with electricity. So incredibly bold and
13 pioneering vision, good to see them mixing it up.

14 Let's see, I think we're obviously watching the
15 Stacks bill very closely in D.C. and again considering that
16 we're going to be seeing potentially the elimination of the
17 electric vehicle tax credit, which has been a really
18 important part of our growth here in California on EVs.
19 But they're not touching the oil depletion allowance, no
20 surprise. So we'll see how that all shakes out.

21 I am going to Germany tomorrow. Actually, I have
22 a new goddaughter in Germany who I get to meet and I'm
23 bringing my kids. But I will be doing a bunch of talks on
24 there with the Governor at the UN Sustainable Innovation
25 Forum in Bonn and the World Energy Council in Berlin and

1 then an Energy Storage Conference in Vienna while I'm
2 there. And so I'll report back what I learn and hear.

3 And I think that's it for me.

4 CHAIRMAN WEISENMILLER: I kind of think it's been
5 a long month and anyway, basically I'll sort of start with
6 the China trip. I got back from China on Sunday, so I'm
7 still somewhere over the Pacific I think mentally, if not
8 physically. But anyway, it was a very intense trip. We
9 went to Beijing, Nanjing, Shenzhen and basically then to
10 Hong Kong. And actually some of the group members also
11 went to another city, so we did a number of these fly in
12 one day and then hit the road the next. And each day was
13 pretty packed.

14 You know, basically these were all follow up to
15 the Governor's trip in June and so where we had a number of
16 MOUs and so we were working on the implementation,
17 particularly focused on meeting to talk about the
18 California-China Cleantech Partnership. And we had set in
19 place for innovation on a bunch of agreements in Beijing.
20 We now have similar structures in place in Shenzhen and
21 Nanjing going forward, which I think is important to sort
22 of push the focus on innovation.

23 We also did a number of meetings on the
24 California-China Cleantech Fund and again talked to a
25 number of parties interested in investing in that. And

1 finally signed an agreement with MOHRD, (phonetic) which is
2 basically the Chinese building regulator and so they've
3 done a lot of work over the years with LBL and with the
4 Energy Foundation. And so we'll certainly continue to see
5 how they can connect with us on building stuff.

6 We also went to the Center of Building Technology
7 in Shenzhen, which was pretty interesting. But it was one
8 of those meetings, which the one thing you find around
9 China is that it is very hard to get around. So you think
10 it's going to take you a half hour and sort of an hour
11 later you're still calling them saying, "Well, we'll be
12 there soon."

13 So anyway that particular meeting got scrunched
14 and scrunched, but we went to visit what was a very nice
15 energy efficient building. You know, they has sort of a
16 courtyard on the sixth floor, which was very pleasant.
17 They had the rabbits and chicken off on one side and the
18 greenery and anyway it was on the sixth floor of a high-
19 rise and sort of a very dense city. It was remarkable, but
20 it seemed to be -- anyways a lot to think about from the
21 China trip. But as I said we're building off of what we
22 did in June and basically we need to work towards meetings
23 next year. But convert the MOUs into tangible products.

24 Folks mentioned the California-Germany bilateral
25 event we had. That came out of I think the German

1 realization that they're not doing particularly well on
2 greenhouse gas emission control. And that they need to
3 broaden their focus from renewables to include
4 electrification transportation and also energy efficiency
5 in buildings.

6 So I think that was a good conference. Folks
7 mentioned that we got Amory to come. That is always fun,
8 obviously. As I've probably mentioned before Amory was
9 hired to Friends of the Earth by Jim Harding, and Jim was
10 my office mate, Ron Doctor, originally at the Commission.
11 So Amory would come by periodically and that was in the
12 days when no one knew who he was and basically sleep on
13 Jim's couch. (Laughter.) So anyway, we go back quite a
14 ways, so it was good to catch up with Amory again.

15 And finally, I'll just mention in passing in case
16 you missed it, Picker and I sent out a note to SoCal Gas
17 asking them what their plans are for the winter in Southern
18 California? Basically, if you look at where most of their
19 gas comes in it's from the El Paso system at Topock. And
20 it turns out that they had an explosion. Anyway, basically
21 at this point they're cut off from those imports, and so
22 they have to import either on the Southern system, which is
23 not as good or off of Kern River, which again is a pretty
24 small connection relative to Topock. Or try to bring
25 things up through San Diego.

1 So the bottom line is that we wanted to know what
2 were their plans going forward and are there additional
3 mitigation measures we need to put in place? And they've
4 responded basically saying well if only we'd let them run
5 Aliso Canyon the way they used to, life would be fine.
6 That's obviously not what we're going to do. But so anyway
7 it's getting some degree of public controversy now.

8 Anyway, and let's go on to the Chief Counsel's
9 Report.

10 MS. VACCARO: Nothing today, thank you.

11 CHAIRMAN WEISENMILLER: Okay. Executive
12 Director's Report?

13 MR. BOHAN: Nothing, Chair, thank you.

14 CHAIRMAN WEISENMILLER: Public Adviser Report?

15 MS. MURIMI: Good morning Chair, Commissioners,
16 Eunice Murimi for the Public Adviser. Today Public Adviser
17 Alana Mathews is speaking with a delegation of women
18 leaders from Japan. She'll be showcasing California Energy
19 Commission's goals as we forge forward to comply with our
20 Assembly Bill 865 mandates regarding outreach for our
21 funding opportunities.

22 Other than that there is nothing else I'd like to
23 report.

24 CHAIRMAN WEISENMILLER: Thank you.

25 MS. MURIMI: Thank you.

1 CHAIRMAN WEISENMILLER: Let's go to Public
2 Comment. I understand we have one public comment and we
3 get to try again.

4 MR. LEIGHTY: The Alaska Applied Sciences, can
5 you hear me?

6 CHAIRMAN WEISENMILLER: Yes, we can.

7 MR. LEIGHTY: Hello, great. I called on Agenda
8 Item 6, but couldn't connect. I'm calling from Long Beach
9 where I'm attending the Fuel Cell and Hydrogen Seminar and
10 Expo. I submitted a lengthy comment on Agenda Item 6. We
11 suggest you amend your action on 16-3-10 to include funding
12 our company's proposed wind technology project, our Palm
13 Springs wind plant at 300 to 500 k, which is within your
14 agenda of 2.5 million allocation for 16-3-10 or to defer
15 this additional funding decision until your next meeting.

16 So I'm happy to discuss that comment and our
17 company's proposed project with you now if you'd like. But
18 the larger question for the Commission is how to provide
19 CO2 emission-free transportation energy for California in
20 order to achieve both its RPS for the electricity factor,
21 and its 80 and 50 obligations by year 2050.

22 Attempting to do that by the electricity Grid
23 alone is likely to be technically and economically
24 suboptimal. Electrification of transportation does not
25 necessarily mean switching to the battery electric vehicles

1 alongside of (indiscernible) types.

2 As I show in the poster I sent you titled "Bigger
3 Markets in the Grid for Wind Energy," based on a scenario
4 developed by an Institute of Transportation study at UC
5 Davis, which assumes that fuel cell vehicles displace
6 battery electrics or BEVs in buses and trucks and in many
7 light-duty vehicles. Achieving 80 and 50 will require
8 about \$50 billion for a new underground pipeline
9 infrastructure dedicated to gathering and the
10 transformation and distribution of a renewable resource CO2
11 emission-free hydrogen fuel. That's in the graphic on the
12 upper-right on that poster.

13 But if we don't build that new hydrogen pipeline
14 system, depending primarily on BEVs, we'll need to invest
15 at least that much in the electricity grid expansion
16 (indiscernible) inflicting that cost on the IOU ratepayers
17 in the form of higher electricity prices.

18 So our proposed project for GFO 16-3-10 directly
19 addresses this very large challenge and opportunity. That
20 is, supplying about 7 million tons per year of high purity
21 hydrogen transportation fuel from CO2 emission-free sources
22 by year 2050, for the cost of that new hydrogen pipeline
23 infrastructure that is paid for by the fuel users for
24 transportation and probably also for the large mason
25 stationary (phonetic) combined in the power market rather

1 than by the IOU ratepayers. And therefore our project is
2 the most appropriate investment of EPI funds.

3 Finally, an out-of-service underground pipeline
4 96 miles long from Western Palm Springs to Central Long
5 Beach is for sale. It might be suitable for repurposing
6 for transmission of wind and solar source high purity
7 hydrogen from the entire Coachella Valley and San Gorgonio
8 Pass to the big nation's market for heavy-duty vehicles to
9 improve their quality, of course.

10 So the CEC encouragement of private enterprise
11 consortium might buy that pipeline, extending or upgrading
12 it as the world's first hydrogen transmission and
13 distribution system dedicated to renewable source hydrogen
14 fuel. Our company has no economic interest in this
15 pipeline nor do I.

16 So to conclude, please also fund our company's
17 project via 16-3-10. I believe you have the budget to do
18 that. Thank you.

19 CHAIRMAN WEISENMILLER: Thank you. Obviously, we
20 adopted the proposed contract and we encourage you to just
21 participate in future solicitations.

22 This meeting is adjourned.

23 (Adjourned the Business Meeting at 11:46 a.m.)

24 --oOo--

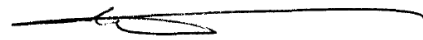
25

REPORTER'S CERTIFICATE

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 20th day of November, 2017.



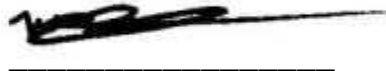
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I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision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

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

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Myra Severtson
Certified Transcriber
AAERT No. CET**D-852