

1 SAN FRANCISCO, CALIFORNIA, MARCH 9, 2011

2 9:00 A.M.

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4 ALJ YIP-KIKUGAWA: We'll be on the
5 record.

6 The Commission will come to order.

7 This the time and place for
8 the workshop in Rulemaking 10-12-007. I'm
9 Administrative Law Judge Amy Yip-Kikugawa.
10 And seated to my right is the assigned
11 commissioner, President Peevey.

12 And before we go into the workshop
13 and some of the background, President Peevey,
14 would you like to say a couple of words?

15 COMMISSIONER PEEVEY: Yes. Good
16 morning. Actually, I'm Mike Peevey.
17 I happen to be president at the moment.

18 We're here today because -- and I
19 appreciate all of you coming, very impressive
20 and good turnout -- because the legislation
21 that was enacted last year, AB 2514,
22 instructed us to open a proceeding by
23 March 2012.

24 We're one year ahead of time. That
25 doesn't always happen in government, so
26 I hope that people will take a certain amount
27 of satisfaction that the Public Utilities
28 Commission is facing up to its

1 responsibilities with some speed in this
2 regard.

3 So, we're looking at how we can
4 tear down barriers that prevent
5 cost-effective energy storage resources from
6 competing and providing benefits to
7 California customers, ratepayers of
8 California utilities.

9 This proceeding will allow us to
10 look more deeply into many new advanced
11 energy storage technologies, as well as uses
12 for existing technologies.

13 I'm excited about the opportunity
14 to learn more about these technologies
15 personally and the potential to enhance our
16 electric grid as these proceedings go forward
17 over the next several months.

18 Storage technologies will be
19 important in helping California integrate
20 renewable resources and minimizing the cost
21 of doing so, for example, when energy storage
22 resources properly located will integrate and
23 smooth both the solar resource and wind
24 resource. In addition, it could bring an add
25 to a vibrant energy efficiency and demand
26 response opportunities that already exist
27 here in California.

28 Last week I was in San Diego at

1 a conference cosponsored by this Commission
2 and DOE where we looked at the integration of
3 solar into the grid. And there was the best
4 circumstances, there was a tremendous amount
5 of interest at Scripps Institute, a
6 conference, two-day conference that Molly
7 Sterkel of the PUC and several other people
8 put together on this very question of storage
9 technologies, the range of storage
10 technologies, how it can best be done, and so
11 forth.

12 So this is an extremely timely
13 matter. And it's just a first step to this
14 proceeding as we're leashing with renewable
15 resources, energy efficiency, and demand
16 response and even smart grid is rarely simple
17 as a single proceeding and a single ruling by
18 this Commission, or any other Commission for
19 that matter.

20 We also know that achieving
21 the full potential of cost-effective storage
22 here in California will require time and
23 coordination with other agencies,
24 particularly the Cal ISO to properly assess
25 all applications and revenue streams for
26 energy storage.

27 Yes, there's a great deal of work
28 in front of us. However, I assure you that

1 I am committed to providing cost-effective
2 energy storage with viable opportunities here
3 in California.

4 So, I want to thank all of you in
5 the room here and many others. And over the
6 course of this proceeding, I look forward to
7 following it with significant interest.

8 I'll turn it back now to the
9 administrative law judge.

10 ALJ YIP-KIKUGAWA: Thank you very much,
11 President Peevey. And thank you very much
12 also for coming down here. I know it's very
13 busy for you right now, right before the
14 Commission meeting, so I completely
15 understand if you need to leave.

16 COMMISSIONER PEEVEY: Thank you.

17 I want to spare a few minutes
18 because I think it is a topic of particular
19 keen interest to myself, my colleagues in
20 this Commission, and extending as far as
21 the new governor of the state of California
22 who his staff and all were the driving force
23 behind the enacted legislation last year.

24 ALJ YIP-KIKUGAWA: Okay. Just to
25 recap: The purpose of this workshop is to
26 identify the issues that should be considered
27 in this proceeding. And I'm sure as we're
28 all aware that there are various issues

1 related to electric energy storage that are
2 being considered in various forums both
3 before the Commission and other state and
4 federal act says, it's necessary to for us to
5 coordinate our efforts here. However, I do
6 want to remind all the parties we're not
7 planning to duplicate work that's being done
8 in other proceedings.

9 And also, I'd like to remind
10 parties that this should not be considered
11 a forum for advocating issues that are
12 currently under consideration in other
13 proceedings. We're not going to be used as
14 a basis for forum shopping. So, just as
15 a reminder there.

16 In terms of the workshop format,
17 what I did want to just highlight is that
18 the agenda that was e-mailed to the service
19 list last week had identified the six topics
20 that we'll be addressing today.

21 There's going to be a slight change
22 in the agenda that was mailed out. We're
23 going to be discussing Topic 6 immediately
24 after lunch and then Topics 3 through 5 will
25 then move down accordingly.

26 The format for today will be as
27 follows: I'm going to be asking Commission
28 staff, primarily Mike Colvin down here, to

1 present each topic and also lead
2 the discussions.

3 We will have two staff members
4 walking around with wireless microphones. So
5 that if do you have a question, please raise
6 your hand, the microphone will be given to
7 you. Please don't talk until you've got
8 the microphone. We do have people
9 participating remotely and they're not going
10 to be able to hear your questions unless you
11 do have the microphone.

12 As we complete the topics, I am
13 going to be asking a court reporter to be
14 coming in on a regular basis to summarize
15 each of the topics. That portion of
16 the summary, along with any presentations or
17 handouts that any of you have, we will enter
18 that into the record at the end of
19 the today's workshop. The discussion however
20 that we do have will be off the record.

21 So before we begin, are there any
22 questions, comments?

23 (No response)

24 ALJ YIP-KIKUGAWA: Okay. Great.

25 Let's go off the record.]

26 ALJ YIP-KIKUGAWA: We will go back on
27 the record.

28 And, Mr. Colvin, at this point I

1 would like to have you just summarize
2 Topic 1.

3 MR. COLVIN: Thank you,
4 Judge Yip-Kikugawa.

5 We are fortunate enough to have a
6 good overview of the -- some of the emerging
7 technology questions that are coming up in
8 energy storage.

9 In our first presentation by Ethan
10 Eklind, he presented an overview project that
11 he is doing on behalf of CIEE. That's the
12 California Institute for Energy and the
13 Environment run out of the Berkeley School of
14 Law. He talked a little bit about a recent
15 white paper that is also going to be up on
16 the PUC's website and will be included in --
17 or linked to this transcript.

18 Some of the themes of his
19 presentation include a general tech overview
20 of the different storage technologies that
21 are out there. There was a question about
22 whereas the tech maturity is there, if a
23 storage technology is not favored in
24 regulation, will it help -- is there a
25 balance on technology maturity.

26 There was a question that was raised
27 or a theme that was raised, I should say, of
28 how does storage technology fit into our

1 system.

2 Some of those areas that were
3 identified in this presentation include a
4 lack of revenue opportunities and a lack of
5 how does it get integrated into the utility's
6 purchasing frame model.

7 One of the qualms that was brought
8 up was how the Federal Energy Regulatory
9 Commission in their rules on asset class,
10 same with the CAISO's, the Independent System
11 Operator's, and what they're doing on
12 unbundling ancillary services.

13 There was some conversation about
14 how storage could be paired with different
15 parts of the loading order, and if it should
16 be a separate part of the loading order or
17 if there are just different policies that
18 need to be done or things that should be
19 considered in this rulemaking that should be
20 done to help pair storage with the different
21 parts of the loading order.

22 He then transitioned and talked a
23 little bit about the Vision Project that is
24 being funded through the PIER Program, where
25 they will be doing two major things via a
26 technology status review and then trying to
27 develop a ten-year strategic vision locating
28 the value of storage and trying to identify

1 value from storage by 2020, trying to figure
2 out what needs to be done in order to make
3 that happen.

4 He also mentioned two upcoming
5 meetings. There was a meeting for his -- an
6 advisory group specific to his project.
7 That's coming up on March 30th.

8 He also mentioned the Integrated
9 Energy Policy Reports Workshop hosted at the
10 CEC coming up in the end of April.

11 The second presentation by
12 Mr. Bining was -- talked a little bit about
13 the PIER Program, how it encourages
14 partnerships and exchange of information.
15 That presentation mentioned a couple of
16 specific pieces of legislation as policy
17 drivers or policy motivators for storage:
18 obviously, AB 2514, which is the Skinner
19 Bill. He also mentioned the move to
20 33 percent RPS, Renewable Portfolio Standard,
21 and also AB 32, which is our greenhouse gas
22 bills.

23 And one of the questions that have
24 sort of come up as result of that is, is
25 greenhouse gas emissions reductions a key
26 policy motivator for storage or not.

27 He talked about -- instead of
28 technology specifically, he talked about the

1 different forms of energy storage, which is
2 mechanical, chemical, thermal and electrical.
3 He talked a little bit about the applications
4 of storage.

5 He also gave a list of recent energy
6 storage projects funded by the ARRA and also
7 again mentioned the 4/28 workshop hosted by
8 the IPER.

9 The last presentation from Lawrence
10 Berkeley National Labs mainly focused on
11 batteries and talked about the framework of
12 how could we think of batteries and what do
13 we need to do on the technical side to fit
14 into the application properly.

15 There was a very interesting
16 distinction of energy versus power and what
17 is it that we're going to be looking for.

18 One of the questions that was
19 brought up was what's the time of discharge,
20 what is it that we are looking for, and what
21 is it that we want. And there needs to be a
22 question asked at the Commission of what do
23 we want and how do we then adopt that to
24 times of discharge which may be adapted to
25 different policy changes or how it all fits
26 together.

27 There was some great information
28 presented on costs. And again, one of the

1 questions to ask was should we be looking in
2 dollars per kilowatt or dollars per
3 kilowatt-hour.

4 There was some discussion and
5 mention of a DOE target that was sort of
6 thrown out there of a hundred dollars per
7 kilowatt-hour, and is that a target that we
8 should all be reaching for or not.

9 And again, going back to the theme
10 of time of discharge, there was some
11 discussion of container batteries versus flow
12 batteries and how do those work and what kind
13 of tech do you want again that's going to
14 inform the kind of discharge.

15 And then there was some general good
16 Q and A about all of these presentations,
17 including, but not limited to -- sorry. I'm
18 going to back up for one second.

19 But one last point I wanted to make
20 about the LBL presentation, I apologize, was
21 this idea of how mathematical tools are being
22 helpful to help us go from lab to market and
23 how new math tools are being used.

24 And one of the questions that had
25 sort of come up in my mind that didn't get
26 asked was as new math tools are being
27 developed, how can we make certain that our
28 policies are flexible enough to be able to

1 take those inputs and use them later on. I
2 apologize for jumping around there.

3 Some of the themes of the Q and A
4 that we had involved some more fleshing out
5 about the dollars per kilowatt-hour as the
6 DOE goal, questions about funding sources for
7 grants with the PIER Program or other things,
8 how do we start making some better choices of
9 these applications.

10 There was some additional
11 conversation about the loading order, how do
12 we pair this with different parts of the
13 loading order. There was an example about
14 demand response applications.

15 There was also some conversation
16 about the 2020 vision with pumped hydro.

17 There was a question asked and some
18 conversation about resource adequacy, ratings
19 for storage, what needs to be done.

20 And I think one of the last main
21 points was, yes, there was a -- in a bunch of
22 the presentations, there was observations
23 about cost and how it can be expensive, but
24 we need to be thinking about benefits
25 wholistically and how we can stack those up
26 together, and how when we do a comparison of
27 costs and benefits, we need to make certain
28 that we're looking at all the various

1 different kinds of applications.

2 The last note that I had here was
3 thinking about -- on that similar note was
4 not just focusing on grid scale storage but
5 thinking about it at the residential
6 community level as well.

7 I had one last note of making
8 certain that -- as thinking of some of these
9 strategic visions and thinking about going
10 forward, making certain that all groups who
11 are interested could participate, including
12 ratepayer advocacy groups, and making certain
13 that we had as much viable input as possible.

14 So with that, let's go off the
15 record for a second.

16 (Off the record)

17 ALJ YIP-KIKUGAWA: Okay. Let's go off
18 the record.

19 (Off the record)]

20 ALJ YIP-KIKUGAWA: Let's go back on
21 the record.

22 And at this point, we are going to
23 summarize Topic 2.

24 And Mr. Colvin, I'm going to turn
25 that over to you for the summary.

26 MR. COLVIN: Okay. So in the last
27 topic, the general question was asked, What
28 is the goal of increased penetration of

1 storage? What is the value of having more
2 storage on our grid?

3 One of the overriding things that
4 I heard was that storage is meant to be
5 focusing on solutions of the problems that
6 the grid has. It's a means to an end. It's
7 not just the -- it's not more storage or more
8 storage space, so let's increase
9 the penetration of storage in order to fix
10 some problems.

11 One of the comments that was
12 brought up was on making certain that we have
13 a framework of addressing or identifying
14 the value of storage, that we are not going
15 to just be looking at avoided costs but that
16 we're going to look at what is the true value
17 chain of storage, make sure that is mapped on
18 to the increased benefits.

19 Some of the benefits that were
20 mentioned specifically was better integration
21 with the different parts of our portfolio,
22 whether that be intermittent renewables, with
23 EG, with displacing peakers, displacing some
24 other dirtier forms of electricity
25 generation.

26 The theme of fit into the grid was
27 brought up.

28 A theme that was brought up and

1 discussed a little bit was flexibility and
2 reliability versus cost.

3 Location: Where do we put
4 the storage?

5 Location, proximity to load: Does
6 that have an added benefit or not?

7 Another set of benefits that were
8 identified was -- the list was intermittent
9 renewables, shifting load, avoiding new
10 investment or new costs such as transmission,
11 ancillary services and then environmental and
12 health impacts.

13 There was some conversation that
14 was brought up about making certain that we
15 do not just focus on grid scale storage but
16 we focus on the price signals behind
17 the meters as customers goals, making certain
18 that whatever policies we come up with are
19 flexible enough for the customer's
20 perspective.

21 This shifted into a conversation of
22 rates, making certain that rate schedules are
23 flexible that the proper price signals are
24 identified, whether it is grid scale or
25 behind the meter.

26 A concept was presented of as we're
27 developing storage policy, let's not solve
28 problems for the grid as it is today but

1 let's solve problems for a new grid and
2 making certain that smart grid is brought
3 into context.

4 The phrase "store and forward grid"
5 was brought up, and there was some
6 conversation about that.

7 There were some conversations and
8 topics -- excuse me.

9 There was some conversations
10 brought up about direct and indirect
11 benefits, how do we isolate them, what is the
12 direct benefit of storage versus other
13 technologies; what is it that we're trying to
14 achieve that is storage specific.

15 And then on a parallel path to
16 that, what are some of the direct and
17 indirect costs.

18 One of the overarching themes
19 throughout those conversations was as we're
20 identifying the benefits of storage or as
21 we're identifying our policy goals, make
22 certain that we are technology agnostic. But
23 that as we are identifying the potential
24 benefits that are out there, that we are
25 identifying the whole range of potential
26 benefits and not just focusing on benefit as
27 a proxy for technology but that we are
28 focusing on the whole range of benefits.

1 There was some conversation that
2 was brought up as we are identifying benefits
3 that we look at the proper time horizon
4 what -- how does this integrate into our
5 long-term procurement proceeding versus what
6 is just the overall benefits of storage, what
7 is it that we're trying to accomplish in
8 the short-term versus the median term versus
9 the long term.

10 The last theme that I heard was
11 storage can be used as a physical hedge. And
12 as we are doing comparisons about rates or
13 about other pricing signals, recognize that
14 storage acts as a physical hedge in ways that
15 are different from other technologies that
16 might also achieve those benefits.

17 Let's go off the record.

18 ALJ YIP-KIKUGAWA: Off the record.

19 (Off the record)

20 ALJ YIP-KIKUGAWA: Let's go back on
21 the record.

22 MR. COLVIN: One other observation that
23 was mentioned which I forgot to bring up was
24 in our conversation about rates, one
25 potential rate schedule that was out there,
26 making certain that rate schedules were
27 properly identified, one would be real-time
28 pricing for other real-time rates, to make

1 certain that the true costs and benefits of
2 the grid are so that storage has a place to
3 play.

4 ALJ YIP-KIKUGAWA: Is there anything
5 else that --

6 Real quickly.

7 We are still on the record.

8 Ms. Thomas.

9 MS. THOMAS: Sarah Thomas, DRA.

10 Just that the statute requires that
11 storage be cost effective, that in the vein
12 of it's -- storage is not an end in itself,
13 that there shouldn't be any -- there's no
14 requirement in the statute that there be
15 a required level of storage, make what level
16 of storage.

17 So I just thought those two points
18 should be made.

19 MR. CAZALET: Ed Cazalet, MegaWatt
20 Storage. I'll just briefly comment on the
21 timing issue that you raised.

22 The ISO does studies as to what
23 they might need for an ancillary service
24 point of view and integration renewables, but
25 that timing can also be affected by when we
26 have to start building transmission lines or
27 other resources. And so I think it's urgent
28 that we get a clear statement of storage

1 policy because that will impact the timing of
2 other resource commitments under the various
3 procurement processes.

4 MR. ALVAREZ: Antonio Alvarez with
5 PG&E. Just a couple of points.

6 One, it's going to provide a path
7 if we're starting from the overarching goal
8 of reducing emissions, do it on an affordable
9 price while maintaining and improving
10 reliability. And then looking at need, and
11 the long-term procurement plan was mentioned.
12 Providing the need definition that would be
13 for us a target development of storage.

14 And the last point I wanted to make
15 is that in looking at costs and benefits,
16 you've got to be careful because the storage
17 offers so many potential benefits that not
18 all the benefits are additive. So, need to
19 be careful about that.

20 ALJ YIP-KIKUGAWA: Okay. Great.

21 Thank you very much. And we will
22 come back again at 1:15.

23 And we'll go off the record. Thank
24 you.

25 (Whereupon, at the hour of 11:55 a.m.,
26 a recess was taken until 1:15 p.m.)]

27 * * * * *

28

1 AFTERNOON SESSION - 2:30 P.M.

2 * * * * *

3 ALJ YIP-KIKUGAWA: Let's go on the
4 record.

5 And, Mr. Colvin.

6 MR. DEAL: Good luck.

7 MR. COLVIN: So we're going to take the
8 opportunity to summarize two topics of
9 conversation.

10 The first one was Topic 6, which was
11 asking questions about jurisdiction, both how
12 could we coordinate the cross proceedings
13 here at the PUC, some of the issues that are
14 happening here at the PUC, what should be
15 occurring in this forum versus some of the
16 other forums here, and also what should be
17 happening and how do we coordinate this
18 proceeding with efforts at the Energy
19 Commission, at the CAISO, at FERC, or at
20 other places.

21 One of the key takeaways, there was
22 a presentation about the recent activities
23 happening at CAISO, talking about both what
24 has happened recently to try and remove some
25 barriers of entry to first storage, and also
26 a conversation about what will be happening
27 at CAISO and a discussion of their time line.

28 Some of the conversation then

1 pivoted to the location of the storage device
2 and whether it would be connected at the
3 transmission or at the distribution level.

4 There was an emerging theme of
5 clarity provides certainty on jurisdiction.
6 So rather than -- so rather than having silo
7 conversations, the storage community -- a
8 barrier to entry will be not having clear
9 lines of communication on some of these
10 jurisdictional questions, essentially
11 preventing a ping-pong of state/federal,
12 state/federal leading to just more delay.

13 One of the themes that came up was a
14 conversation about resource adequacy, what
15 needs to be measured, is there a concern
16 about double-counting.

17 And some of the conversation
18 revealed that, when looked at the context a
19 little bit more closely, there's not
20 necessarily a storage-specific problem, but
21 perhaps a general rule problem that is
22 similar where there could be lessons learned
23 to other types of generation, whether it's
24 wind gen- -- distributed generation,
25 et cetera.

26 One more emerging theme on the
27 jurisdictional questions came up of as the
28 jurisdictional context was being presented,

1 what needs to be done on the short term, for
2 example, on a spot market, versus what is
3 needed for financing purposes in the long
4 term on a contract which might not be at --
5 which might be looked at in a different
6 jurisdiction.

7 Put another way, the market to try
8 and motivate storage installations needs to
9 be coordinated, and that coordination might
10 need to happen across multiple different
11 forums.

12 Lastly on the jurisdictional topic,
13 there was robust conversation about
14 cost-effectiveness, what is needed, what
15 is -- excuse me -- what is specified by
16 legislation versus what is in the PUC's
17 purview and what other revenues streams
18 should we be looking at that might not be in
19 our purview that we would like to consider
20 during our general rulemaking.

21 A suggestion was made that perhaps
22 on this issue of cost-effectiveness and
23 jurisdiction there might be a need to brief
24 some of the matters.

25 On the second topic that was
26 discussed in this last section which was
27 Topic 4, which was talking about what are the
28 applications for storage, a definition was

1 presented of a framework of how to look at
2 storage in various different contexts. And
3 this was an application-specific approach
4 which talked about doing something at a
5 particular place at a particular time, and
6 lots of various examples were given under
7 that context.

8 There was a tremendous amount of
9 discussion presented of should an application
10 framework be used to help diagnose some of
11 the benefits, some of the policies and
12 perhaps some of the jurisdictional questions
13 that arise. And once you looked at something
14 in an application-specific context within the
15 confines of that application, a lot of the
16 perceived problems seem to either melt away
17 or become very clear or very obvious.

18 Another theme coming out of the
19 application-specific conversation was that
20 within the context of where you put the
21 storage or how you put the storage or the
22 timing of it, once looked under the
23 application framework, a lot of the problems
24 are not necessarily storage-specific but are
25 application-specific.

26 There was a question that was asked
27 of can we add applications together, can we
28 add the benefits from multiple applications

1 together, should we be thinking of it in that
2 context or not.

3 There was a question and then
4 subsequent conversation about does the
5 location on the grid, is that embedded within
6 the application definition or can you have
7 the same application but located in multiple
8 different points of contact on the grid,
9 going back and forth from there.

10 There was a proposal that was made
11 in looking at this rulemaking in an
12 application-specific context of, first,
13 identify and define an application, then look
14 at the ramifications of the rules resulting
15 from that application framework, and then
16 once that is done and the policy decision has
17 been made, then do a clear identification of
18 cost-effectiveness.

19 There was also a conversation about
20 changes that need to happen under this
21 application framework of success for our
22 procurement process, whether it is in the RFO
23 or in some other standardized contracting
24 method such as the renewable auction
25 mechanism, and what changes might need to
26 happen here at the PUC and/or at the CAISO to
27 make certain that the true benefits are
28 captured correctly.

1 With that --

2 ALJ YIP-KIKUGAWA: Okay. Are there any
3 other big areas that Mr. Colvin did not
4 cover?

5 I don't want additional comments,
6 just any big areas that were not covered.

7 Okay. Back there.

8 MR. BIALEK: Yes, Tom Bialek, SDG&E.

9 I think one of the things that was
10 also mentioned both by myself and Janice from
11 the Energy Alliance was the fact that,
12 assuming that there are applications or we
13 know some application where storage would be
14 appropriate, that this particular rulemaking
15 does not preclude that particular application
16 moving forward to completion, and so that
17 we're not waiting for the resolution of this
18 OIR for many months.

19 ALJ YIP-KIKUGAWA: Okay. And Susan.

20 MS. SCHNEIDER: Susan Schneider,
21 Phoenix Consulting.

22 I apologize -- I just stepped out of
23 the room -- if you've already gone over this,
24 but I didn't want to lose the point about the
25 qualifying capacity issue and the ramping --
26 and the ramping and regulation capability of
27 portfolio and also the -- I guess that's the
28 main one, but I didn't want to lose that. I

1 wanted to make sure it got in.

2 ALJ YIP-KIKUGAWA: Okay. Great.

3 Anything else?

4 Ms. Lin.

5 MS. LIN: I just wanted to make sure
6 the discussion about ownership and business
7 model was factored in. Because, you know,
8 those value streams to make proper asset,
9 it's related to the policy and the
10 bankability and you do long-term procurement
11 or is it just the day-ahead market can be a
12 very real and significant barrier.

13 THE REPORTER: Your name, please?

14 MS. LIN: Janice Lin from the Storage
15 Alliance.

16 And then also affects
17 cost-effectiveness because different rates of
18 capital.

19 ALJ YIP-KIKUGAWA: We are going to take
20 a 10-minute break. We'll be back at 3:00.

21 With that, we'll go off the record.

22 (Off the record)]

23 ALJ YIP-KIKUGAWA: Let's go on the
24 record.

25 Mr. Colvin, I am going to ask you
26 to summarize Topics 4 and 5 at this point.

27 MR. COLVIN: Okay, thank you.

28 Over the last hour or so, we

1 discussed Topics 4 and 5. I'm going to try
2 and do my best to do a brief summary of both.

3 On Topic 4 which was discussing
4 the need for a unified storage vision, can we
5 have one or do we need a more specific
6 approach, the general question was asked,
7 What is the purpose of having a unified
8 storage policy or storage vision? And then,
9 Do we translate that on to more specific
10 applications or more specific -- addressing
11 more specific barriers to entry or do we need
12 to bifurcate almost immediately to try and
13 really get at the heart of the particular
14 problem.

15 Some of those points that were
16 brought up was that there is both a strategic
17 and practical benefit of having the unified
18 storage statement or storage policy that then
19 can be addressed and can then be translated
20 to address problems at a more specific level.

21 There is -- we had some
22 conversation of the value of picking
23 a target, that the real need of having that
24 target be picked is the policy statement
25 scope behind it. And that has -- that strong
26 of a statement is what is probably needed
27 more than anything.

28 There was a side conversation that

1 came up as we are translating or, excuse me,
2 as we are identifying a unified storage
3 policy or specific storage policy, that we
4 think about how that then translates to
5 bundled customers versus community choice
6 aggregators slash ESPs, direct access
7 customers.

8 We had some conversation about how
9 to properly value each benefit, whether it's
10 at the system level or onsite. And as we
11 properly value that, maybe the stacking up of
12 those benefits will translate into a storage
13 policy rather than trying to come up with an
14 overall statement.

15 There was some conversation about
16 how to have a multiperspective and the
17 benefits of that.

18 Some principles were brought up of
19 we can have a general or unified principle
20 around storage, for example, remove a barrier
21 to entry without necessarily needing to get
22 into specific applications or specific points
23 of barriers -- specific problems that we're
24 trying to fix.

25 Tying back to the conversation we
26 had earlier in the day, if storage is a means
27 to an end, the unified policy statement
28 should be the end vision that we are trying

1 to achieve. It should be technology mutual
2 was some of the conversation that came up.
3 It should promote competition. There should
4 be access to markets when appropriate.

5 One of the topics of conversation
6 that came up was about ownership models and
7 if we were to have a unified storage policy
8 condition or policy statement, think about
9 how that can translate, whether it's utility
10 owned or merchant owned or customer owned,
11 et cetera.

12 On a similar perspective, there
13 was -- instead of looking at a unified
14 storage policy vision or looking at it
15 application specific, perhaps examine the
16 storage policy of generation transmission and
17 not the load since storage might be able to
18 fit into all three, is there an overarching
19 mandate that could be applied that connects
20 all three and then be translated into those
21 three categories.

22 There was overall consensus that no
23 matter what we do, the PUC should try to
24 exercise its leadership and try to move
25 forward and have the conversation move
26 forward.

27 Moving to Topic 5 which was asking
28 about specific barriers for entry, that --

1 excuse me -- unique storage specific barriers
2 to entry, one of the topics that had come up
3 and there was a general overall theme that
4 during this discussion that a lot of
5 the themes have already been identified
6 throughout the day. But to recap some of
7 them, there was a question about net
8 qualifying capacity and some of the problems
9 that were there, and how some of the rules,
10 some of the barriers to entry about the NQC
11 issues are preventing contracts from being
12 signed. And that's really the crux of
13 the barriers to entry: Without a contract,
14 there isn't financing or the right ownership
15 model.

16 On the contracting theme, there was
17 a very robust conversation about the need for
18 contracts versus what the spot market can
19 provide, what happens when there's a lack of
20 price signals because of a lack of contracts,
21 and if the market doesn't have the proper
22 price signal and the contract doesn't have
23 it, then there's a barrier to entry.

24 Similarly, if the price signals are
25 not coordinated across the retail and
26 wholesale level, then there is another
27 identified barrier to entry. So the need for
28 a consistent price signal, that came up.

1 There was, again, some conversation
2 about the need for financing PPAs and making
3 certain that whatever we do on the tariff
4 structure or on any other price signals that
5 we set up are either agnostic to ownership
6 models or not specifically tied to
7 applications that we have.

8 One of the key questions that came
9 up was how do we set up our market that
10 fairly evaluate storage when compared to
11 other resources. And when I say our market,
12 meaning our competitive procurement
13 framework. If the ultimate goal is to get
14 a contract to promote financing but there are
15 specific problems that will not allow storage
16 to participate in a competitive solicitation,
17 then that's perhaps the crux of the barrier.

18 I think the last note that I have
19 is should we let the utilities value and pay
20 for the attributes that storage provides; and
21 if so, does that get embodied in a contract
22 or should we let the market signals get
23 corrected, and then the market signal can pay
24 for -- itself pay for the attribute that
25 storage can provide.

26 With that, I think those hopefully
27 summarize the general topics of 4 and 5.

28 ALJ YIP-KIKUGAWA: Okay, thank you.

1 Is there anything else that
2 Mr. Colvin left out?

3 (No response)

4 ALJ YIP-KIKUGAWA: Okay. I want to
5 thank all of you for coming today. I know
6 it's been a really long day and I appreciate
7 that all of you came and really participated.

8 I think the workshop was very
9 fruitful from our perspective. And I think
10 the rulemaking is going to be shaped quite
11 well as a result of all the information that
12 we've received from all of you today.

13 In terms of next steps, there were
14 a couple of inquiries about the prehearing
15 conference. We are looking at setting
16 a prehearing conference. Tentatively, we're
17 looking at April 19 at 10 o'clock in
18 the morning. We will have a notice sent out
19 as soon as that is firmed up.

20 The other is, I can't recall who
21 asked about making sure that these slides
22 were put into the record, the slides that
23 were presented today. I am planning to do
24 that via ruling. And at the same time I was
25 going to take official notice of the white
26 papers that both the EPRI and the --

27 MS. THOMAS: NREL. And the Berkeley,
28 the Boalt --

1 ALJ YIP-KIKUGAWA: And the Boalt one.

2 So I am planning to take notice of
3 those.

4 As a question to those parties who
5 are parties right now, is there any
6 opposition to my doing that? Do any of you
7 want or feel a need to comment on any of
8 those?

9 If not, I would just like by ruling
10 to get them into the record.

11 So, I don't see anybody opposing.

12 Yes?

13 MR. RITTERSHAUSEN: Is it possible to
14 submit other documents into as well
15 besides --

16 ALJ YIP-KIKUGAWA: There will be
17 opportunities to submit other documents. But
18 you know, just for purposes of today's
19 workshop, those are things that I would like
20 to have entered into the record since this is
21 more informal and pre-scoping memo.

22 MR. RITTERSCHAUSEN: Thank you.

23 ALJ YIP-KIKUGAWA: Yes.

24 MR. MACMILLAN: Yes. These are being
25 added to the record as additional information
26 as opposed to setting any kind of --

27 ALJ YIP-KIKUGAWA: That's correct.
28 I would be adding it as just information

1 because it was presented pre scoping memo.
2 And to the extent that we would like to use
3 those to assist us in setting the scope, I
4 would like to have that in there.

5 Okay, so is there anything else
6 before we conclude today?

7 (No response)

8 ALJ YIP-KIKUGAWA: Thank you very much
9 everyone, and we are off the record.

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11 (Whereupon, at the hour of
12 4:10 p.m., this Workshop having been
13 concluded, the Commission then
14 adjourned.)

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