

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

GREEN RIBBON SCIENCE PANEL
MEETING

RED LION HOTEL
MARTINIQUE BALLROOM
1401 ARDEN WAY
SACRAMENTO, CALIFORNIA

THURSDAY, SEPTEMBER 9, 2010

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APPEARANCES

GREEN RIBBON SCIENCE PANEL MEMBERS

Ken Geiser, PhD, Co-Chairperson

Ann Blake, PhD

Bill Carroll, PhD, Co-Chairperson

Jae Choi, PhD

Bruce R. Cords, PhD

Tod Delaney, PhD

Arthur T. Fong, PhD

Joseph H. Guth, PhD

Lauren Heine, PhD

Dale Johnson, PhD

Timothy F. Malloy, J.D.

Roger McFadden

Kelly Moran, PhD

Oladele A. Ogunseitan, PhD, MPH

Megan R. Schwarzman, MD, MPH

Julie Schoenung, PhD

Michael P. Wilson, PhD, MPH

APPEARANCES CONTINUED

DTSC STAFF PRESENT

Maziar Movassaghi, Acting Director

Kathryn Barwick

Bob Boughton

Richard Driscoll

Trina Gonzalez

Michael O'Docharty

Jeffrey Wong, PhD

ALSO PRESENT

Brandon Kuczenski

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1 PROCEEDINGS

2 CO-CHAIR GEISER: Good morning, and welcome to
3 the first full meeting of the Green Ribbon Science Panel.
4 Bill Carroll and I are pleased to welcome you here, and
5 saddened to not have our colleague, Debbie Raphael with us
6 as well. Debbie chose not to be here, and we apologize
7 for that. And we are of course missing her, because she's
8 just a delightful balance to Bill and I. She is obviously
9 the most attractive of the three of us. So when you have
10 to look up here, you'll miss Debbie even more than we do.

11 I want to welcome you and just note that I hope
12 that you all had a good summer recess. For those of us
13 who teach, this is the -- not the middle of the year; this
14 is the beginning of the year. I was just talking to Dale
15 about this. And that is both of us, just as many of you
16 who teach, just met our first class this week, and it's
17 always an exciting time to see young beautiful people and
18 eager to learn and all.

19 And I might say just to add, it's wonderful to
20 see you as well beautiful people. Not always all young,
21 but beautiful.

22 Anyway, it's a pleasure for us to have this
23 meeting. This meeting is, as you know, a one-day meeting.
24 We originally scheduled this to be a two-day meeting. But
25 because of the State's constraints, we are packing it all

1 in today just on this meeting. So we have a lot to cover
2 during the day. We're mostly focused on the area of
3 alternatives assessment, and we will spend most of the
4 time on that.

5 I'm going to open this up. Bill and I will share
6 the morning as well as this afternoon as well.

7 I'm going to turn this over to Kathy to open it
8 up with just some housekeeping details, and then I'll go
9 over the agenda a little bit with you.

10 MS. BARWICK: Thank you, Dr. Guiser.

11 I'd like on behalf of the Department of Toxics to
12 welcome you as well. It's great to see everybody. And a
13 couple of housekeeping items.

14 First of all, for those of us here in Sacramento,
15 the rest rooms are right through that door. I believe one
16 gender is to the left and the other is to the right. So
17 that you know where that is.

18 You said you were going to do an agenda review.
19 I was going to do that. Should I just go ahead?

20 CO-CHAIR GEISER: If you want to go ahead, go
21 ahead.

22 MS. BARWICK: So this morning we're going to have
23 some opening remarks from our director, Maziar Movassaghi,
24 and he's going to help us place the conversation in the
25 context of where we're going with our Green Chemistry

1 Program. We'll have a brief introduction of members. Be
2 prepared to introduce yourself this morning. We decided
3 that you're all perfectly capable of doing that. So
4 that's the way we'll do that today.

5 As we start our discussion on alternatives
6 analysis, we'll have a brief overview and a presentation
7 on the U.C. Santa Barbara report that was distributed for
8 your review. In particular, distributed as a foundation
9 for our discussion, but certainly not the be all and end
10 all of the discussion.

11 And as you all heard from Director Movassaghi, we
12 have some specific questions for you to consider this
13 afternoon as we have our discussion and advice from the
14 Green Ribbon Science Panel members on what we're thinking
15 about with alternatives analysis.

16 After the presentation, we will have public
17 comment period. And I'd like to talk briefly about that.
18 We have Nathan Schumacher over here at this table. He's
19 our public participation representative today. He has
20 comment cards for members of the public. If anybody would
21 like to make a comment, please get one of those comment
22 cards from Mr. Schumacher, just so that we have an idea of
23 what we're looking at in terms of how many people would
24 like to make comment.

25 If you are watching on our webcast today, we

1 welcome you as well. You may address any comments to the
2 Panel to green.chemistry@dtsc.ca.gov. We'll be monitoring
3 that mailbox. And if you submit comments, we'll be
4 reading those comments into the record during the public
5 comment period. Once again, green.chemistry@dtsc.ca.gov.

6 I'd like to remind members of the public that
7 when you make comments, you are making comments to the
8 Green Ribbon Science Panel. And so that's something to
9 keep in mind.

10 After lunch -- we will take lunch after the
11 public comment period. And then the Green Ribbon Science
12 Panel members will have the afternoon to have discussion,
13 consider the questions that we've asked you, and to
14 provide you advise to the department.

15 We plan to adjourn at 5:00. So that's pretty
16 much the time we're going to spend today.

17 One more housekeeping thing. Panel members, if
18 you have any travel paperwork for me, go ahead and give it
19 to me sometime during the day. And your microphones are
20 always on. So if you don't want to be heard, you might
21 want to turn the microphone up or just be careful what you
22 say. Works either way. So there's no off switch there.

23 Okay. Did I forget anything? I think that's it.

24 Turn it back to you, Ken.

25 CO-CHAIR GEISER: So let me just begin by asking

1 that we do go around the room. We have had Jeff often
2 introduce, but we felt now that we're kind of
3 self-sufficient and we can just really kind of start on
4 our on. So I think we're going to start on this end.
5 Let's have the Panel members introduce themselves, who you
6 are and where you're from, and then we will have the staff
7 introduce themselves.

8 And then if we could, I'd like to ask the members
9 of the public who are here as well to introduce
10 themselves. So let's start with you.

11 PANEL MEMBER SCHOENUNG: I'm Julie Schoenung.
12 I'm a Professor at the University of California here in
13 Davis in the Department of Chemical Engineering and
14 Material Science.

15 PANEL MEMBER SCHWURZMAN: I'm Megan Schurzman.
16 And I'm a family physician and a researcher in the U.C.
17 Berkeley School of Public Health.

18 PANEL MEMBER MATTHEWS: I'm Scott Matthews. I'm
19 a Professor at Carnegie-Mellon University in engineering
20 and public policy and civil and environmental engineering.

21 PANEL MEMBER DELANEY: Todd Delaney with the firm
22 of First Environment. And we're a general consulting firm
23 primarily in the LCA area.

24 PANEL MEMBER JOHNSON: Dale Johnson. I'm faculty
25 of U.C. Berkeley and Emiliem, Inc.

1 PANEL MEMBER MALLOY: Good morning. My name is
2 Tim Malloy. I'm a Professor at the UCLA School of Law and
3 Faculty Director of the UCLA Sustainable Technology and
4 Policy Program.

5 PANEL MEMBER CORDS: Bruce Cords, recently
6 retired from Ecolab, but still representing them on this
7 Panel.

8 PANEL MEMBER CHOI: This is Jae Choi from Avaya.
9 We are the communication company. I manage the Product
10 Reliability Lab.

11 PANEL MEMBER GUTH: I'm Joseph Guth.
12 I'm a Legal Director of a nonprofit called the
13 Science and Environmental Health Network. And I've also
14 recently taken on a second appointment with U.C.
15 Berkeley's Center for Green Chemistry.

16 CO-CHAIR GEISER: And I'm Ken Guiser. I'm a
17 Professor of Work Environment at the University of
18 Massachusetts, Lowell Director of the Lowell Center for
19 Sustainable Production.

20 CO-CHAIRPERSON CARROLL: I'm Bill Carroll,
21 Occidental Chemical Corporation, Dallas, Texas.

22 PANEL MEMBER FONG: Good morning. I'm Art Fong.
23 I'm a Senior Scientist at IBM Corporate Environmental
24 Affairs and the Program Manager for IBM's Chemical
25 Management Program Globally.

1 PANEL MEMBER BLAKE: I'm Ann Blake, an
2 independent consultant with my firm Environmental and
3 Public Health Consulting.

4 PANEL MEMBER MC FADDEN: Good morning. My name
5 is Roger McFadden. I'm Senior Scientist at Staples.

6 PANEL MEMBER HEINE: Good morning. My name is
7 Lauren Heine. I'm Science Director with the nonprofit
8 Clean Production Action.

9 PANEL MEMBER QUINT: I'm Julie Quint, and I'm
10 retired from the California Department of Public Health
11 where I was a research scientist for many years.

12 PANEL MEMBER MORAN: Good morning. I'm Kelly
13 Moran. I'm an environmental chemist, and I'm president of
14 TBC Environmental.

15 PANEL MEMBER OGUNSEITAN: Good morning. I'm
16 Oladele Ogunseitan. I'm a professor of public health at
17 U.C. Irvine.

18 PANEL MEMBER WILSON: Mike Wilson, Associate
19 Director for Integrated Sciences at the Berkeley Center
20 for Green Chemistry.

21 MS. BARWICK: Ken, we do not have a hand-held
22 mike, wireless. So I'm just thinking logistically.
23 Should we come up and ask people to introduce themselves
24 here?

25 CO-CHAIR GEISER: Sure. Let's go through the

1 staff first. And then yes, we'll ask the public to step
2 forward and I think for the record it would be good if we
3 could hear people's names.

4 MS. BARWICK: Great. Thank you.

5 So if everybody would just be ready to do that,
6 that would be awesome.

7 DR. WONG: I'm Jeff Wong, Chief Scientist for the
8 Department and the formal introducer of you all.

9 MR. BOUGHTON: I'm Bob Boughton with the Green
10 Technology Program in the Pollution Prevention Unit.

11 MR. KUCZENSKI: I'm Brandon Kuczenski. I'm a
12 postdoctoral researcher at U.C. Santa Barbara, author of
13 the report.

14 MS. GONZALES: My name is Tricia Gonzales. I'm
15 Deputy Director of Pollution Prevention and Green
16 Technology at DTSC.

17 MR. ULRICH: Good morning. I'm John Ulrich, the
18 Executive Director of the California Chemical Industry
19 Council and Co-Chair of the Green Chemistry Alliance.

20 MR. BECK: Good morning. I'm Bob Beck, Director
21 of Research and Development for Masco Corporation.

22 MS. MARCUCCI: I'm Alexander Marcucci with Sierra
23 Research.

24 MR. ALLAYAUD: Bill Allayaud with the
25 Environmental Working Group.

1 MR. LA BELLE: Bruce LeBelle, Chief of DTSC's
2 Environmental Chemistry Laboratory.

3 MS. MOLIN: Daphne Molin, Department of Toxic
4 Substances Control, P II, Consumer Product Unit.

5 MR. CHESTER: Mikhail Chester, doctoral
6 researcher at U.C. Berkeley.

7 MS. MILLER: Ansje Miller. I'm the Policy
8 Director for Center for Environmental Health and the
9 Coordinator of the Change Coalition.

10 MR. KOKAI: I'm Akos Kokai, a chemist for the
11 Center for Occupational and Environmental Health at U.C.
12 Berkeley.

13 MR. POOLE: I'm Doug Pool with Dupont.

14 MR. POWERS: I'm Will Powers with the Bay Area
15 Environmental Training Center and faculty member at
16 Mission College. And we're developing a green chemistry
17 curriculum for biology and chemistry classes.

18 MR. JACOB: Tom Jacob. I represent DuPont as a
19 Government Affairs Director -- former Government Affairs
20 Director. I also coordinate the California Nano Industry
21 Network.

22 MS. WAGGONER: I'm Kim Waggoner, and I'm here for
23 AIAM, Association of International Automobile
24 Manufacturers.

25 CO-CHAIR GEISER: Anyone else who did not

1 introduce themselves?

2 Great. Well, thank you all for sort of signing
3 in with us. And thank you, members of the public, for
4 taking the time to be here as well. Again, please
5 remember if you are prepared, if you are intending to make
6 comment during the public period, please fill out a card
7 and get it to Kathy Barwick. Kathy is the one with person
8 I didn't get a chance to introduce, but it almost feels
9 unnecessary. She's the person who has kept us running so
10 well for so many different meetings and I thank Kathy for
11 that. Great effort on her part.

12 So with that, I think we're ready to launch into
13 our day here. We normally start these meetings with the
14 opening remarks. And our Director Maziar is here to do
15 that. As we know, Maziar has been the Director since
16 Morgorson left and has carried on the work that Morgorson
17 initiated on the Green Chemistry Initiative and has been
18 an important source of leadership for us in directing this
19 work over this period of time. So it's great to have
20 Maziar do the opening remarks here.

21 DIRECTOR MOVASSAGHI: Thank you, Ken.

22 Good morning to all the Panel members.

23 I think it's very apropos we've come back to the
24 location we first held the meeting for this esteemed body
25 back in March of '09. So it gives as chance for us to

1 take account of how far we've come and also wanted to
2 reserve some time at the end of this meeting to briefly
3 talk about future steps and issues.

4 As was indicated earlier, our half-day meeting
5 for tomorrow is not taking place due to the furloughs at
6 the State of California. So we don't have time for an
7 in-depth transition discussion.

8 But at the end of the day, I wanted to come talk
9 about where I see or what the department is going to
10 recommend in our transition document moving forward.

11 But the task at hand today, we have spent a good
12 portion of this past year and a half talking about the two
13 drivers of the Green Chemistry Initiative, the plank for
14 accelerating the quest for safer alternatives and the
15 toxic information clearinghouse and the two pieces of
16 legislation that are tied to those pieces.

17 I really want to thank this body because of the
18 discussions we've had with you all and the guidance we've
19 received. I think when I look back at the various
20 documents that we've put out from the first draw all the
21 way to the June 23rd draft, I see you know, consecutive
22 layers of improvement into the document.

23 We will be very shortly -- we're talking about a
24 matter of days, not even weeks -- going to be starting our
25 formal rule making process and the department will be

1 issuing revised set of regulations from the June 23rd
2 draft. Once you guys see this June 23rd -- this revised
3 draft, I think you will see a lot of your comments in
4 there, input we received about specific factors and our
5 prioritization came from the body. You will see proposals
6 about how to approach alternatives assessment and also a
7 mechanism for really trying to incorporate the thinking
8 behind alternatives assessment.

9 I need to be a little coy, because we have a
10 couple more hours before everything gets finalized and the
11 regs team is working hard as we speak. But I really think
12 many of you will see your comments in this new revised
13 draft. So we really want to thank you, because it really
14 made it a better product. There was nobody at DTSC that
15 had this knowledge. So it's very much appreciated.

16 So talking about this thinking, 1879, AB 1879,
17 the underlying legislation for Safer Products Consumer
18 Corporation really laid out a process and asked the
19 department to come in with a process regulation to
20 prioritize chemical of concern and consumer product and
21 laid out some factors in alternatives assessment. But
22 there is a next step that goes from translating statute
23 into regulation. So a lot of what we talked about the
24 past year was the process, what comes first, what comes
25 second, how you get through them.

1 Now that our process is much more set and we've
2 had discussions about when is the department going to
3 require alternatives assessment. Remember, we're going to
4 go through a prioritization process. We're going to
5 prioritize chemicals of products and those manufacturers
6 of prioritized products will be required to do
7 alternatives assessment. So now we're at a point where
8 since the discussion about the process are getting a
9 little more congealed around certain ideas, it was time
10 for us to delve a little deeper into, well, what is
11 alternatives assessment? You've all heard me say this
12 going back to last year that I really viewed this concept
13 of alternatives assessment both in the regulatory and
14 non-regulatory framework of our Green Chemistry
15 Initiative. One of the main pillars of the fundamental
16 paradigm shift we talk about in green chemistry.

17 As I have learned about alternatives assessment,
18 it's -- I think Ken mentioned this once best. It's not a
19 traditional compliance checklist in regulation. It's an
20 approach. It's a design question. It's a reapproach and
21 thinking type of a question. So when we talk today about
22 alternatives assessment, I want you all to remember we're
23 not just talking about it in the context of a regulatory
24 framework. We want to as we have talked about expanding
25 pollution prevention, about moving to a cradle to cradle

1 economy we recognize we have to push this type of thinking
2 and creatively way beyond what's even required of a
3 regulatory framework.

4 So we initiated the discussion with U.C. Santa
5 Barbara for us to really capture the state-of-the-art a
6 snapshot of time right now about what is an understanding
7 of chemicals alternatives assessment just doing that
8 mainly as a way of just to frame the discussion and
9 actually have a document this body could react to and move
10 forward. It is not meant to be and we recognize that it's
11 not at a level of depth that is of particular value to the
12 regulator and the regulated community. Therefore, as I
13 stated in my e-mail, we recognize we need to come at a
14 lower level with a series of case studies that provides
15 more example to policy makers, to regulators, to the
16 industry folks about how this alternative assessments
17 work.

18 And our aim is to use those case studies to
19 initiate a discussion about hopefully standardizing
20 alternatives assessment. I'm not sure whether we're going
21 to get to that aim. It's wonderful to be at the front end
22 of this discussion.

23 This field is moving very fast and there is a lot
24 of research going on. But I think at some point it's
25 always good for a regulator to have documents out there

1 where all stakeholders can be on the same page. We need
2 that for transparency and accountability so that all
3 stakeholders, regulated entities, NGO groups, other public
4 agencies at federal levels and such, even local
5 government, have a chance to get an understanding of what
6 we're talking about.

7 So the discussion today really is meant to be a
8 starting point. I'd really hope by the end of the day
9 today we can walk out of here with specific guidance from
10 this body about what should be specific alternative
11 assessment case studies. Is there a particular product
12 we've got to look at? Is there a particular research
13 that's gone on that we need to incorporate? Are there
14 different types of alternatives assessments that we have
15 to make sure we incorporate?

16 And given you all's level of involvement in this
17 arena and in order to meet our ambitious time line of
18 getting this done within the next year, I also hope once
19 we get that list done we can get some direct leads from
20 you folks.

21 As you can imagine, when the regulator calls
22 somebody like a company or even sometimes an academic
23 institution and say, hey, we want to work with you on a
24 case study, the first response is, "I didn't do anything
25 wrong. Why you looking at me?" It's like we're not

1 coming here to regulate you, but we have a little bit of
2 that hurdle to overcome. Some advise from this body and
3 recommendations would be very much appreciated.

4 One question that my staff has asked me to add to
5 the list that wasn't in my e-mail to you all is we really
6 don't have a good understanding of what -- how much it
7 would cost to do eight to ten case studies that are about
8 20 to 25 pages. Kind of like a Harvard Business School
9 case study. Not a very technical and in-depth engineering
10 case study. And this is stuff -- either in discussion or
11 later on if anybody has some ideas, we'd appreciate
12 getting that information helps us set the budget a little
13 bit about how much we need to allocate to get to the
14 finish line.

15 But other than that, I'd like to reiterate my
16 questions. Does the UCSB report capture the state of the
17 art? Is there anything missing that we should add to that
18 report?

19 Then as I mentioned, case studies, what should be
20 the factors. Should we make sure we have a different
21 array of consumer product types? Should we look at
22 different types of alternatives assessment tools that you
23 all are aware out there? Should we be looking at public
24 versus private approaches to be able to look at them?

25 And one of the things I always use as a learning

1 mechanism, I would think it would be appropriate in this
2 compilation to have an example of a failure or -- and
3 failure is yet to be defined, but approach that didn't
4 result or didn't get to the result that you folks wanted,
5 because I think there's lessons learned from failures as
6 well.

7 And then lastly, again, reminding this body that
8 for us, we really view alternatives assessment in green
9 chemistry as an approach, as a design, as a continuous
10 improvement loop. How should we account for continuous
11 improvement in alternatives assessment? Do you build in
12 milestones?

13 So much of what we do in environmental
14 regulation, as we talked about, is a checklist type
15 approach that does not fit well to this type of thing.
16 What are the questions we need to be asking to see if we
17 area on the path for continuous improvement?

18 I'd like to close with one particular remark. I
19 want to remind this body, this is not a consensus body.
20 It's an advisory body to the Department and to the State
21 of California. And as I mentioned in my first meeting in
22 March to you all, I view the strength of this body in its
23 composition because many of you have organizations in your
24 name tabs but a lot of you wear multiple hats. And in
25 your careers, you had a lot of different roles. And when

1 I look at the advice that comes from this body, I look at
2 that totality of advice, not just a particular advocacy of
3 a particular institution.

4 And some of the comments that were received
5 created a little bit of confusion in the media because the
6 comments -- there were multiple Panel members that
7 submitted a unified comment and the media interpreted that
8 as that was the advise from the body. It was references
9 made or I was asked, well, "The Green Ribbon Panel said
10 blank." And it said, "Well, who are you talking about?"
11 They said, "No, no, no. The Panel said." And I said,
12 "No, you have to tell me who you're talking to or which
13 one you're referring to." So I'd like to remind this body
14 in order to avoid the confusion because this is not a
15 consensus body that comments should be coming from
16 individuals to the department. You're obviously Green
17 Ribbon Science Panel members, but the comments should be
18 coming in an individual format.

19 So in the future, would appreciate it -- and a
20 great example of it I think as the e-mail -- and it should
21 be copied in your packets. The e-mail we got today -- or
22 yesterday from Richard Liroff -- Richard couldn't be here
23 today. But he provided his comments and we're going to
24 make those available. But it's very clear those are
25 Richard's advice and comment to the department. So allow

1 folks to parse out the different discussions. So as we
2 move forward, please let's make sure to remind ourselves
3 that the comments are individual and they need to be
4 submitted individually.

5 With that, again, I'm really looking forward to
6 this discussion. As I mentioned, our regs team is working
7 feverishly. So if I vanish, I have a couple things to
8 take care of. But I will definitely be back, because I
9 want to talk at the end of the day about the future of
10 this body and what I see us doing next.

11 CO-CHAIR GEISER: Maziar, we'll take some
12 questions. You have questions.

13 Remember, please, if you do have a question to
14 raise your card. That's the best way for us to be able to
15 see it. And please note these are questions to Maziar
16 about what he's just said.

17 So Megan.

18 PANEL MEMBER SCHWURZMAN: Just briefly, I'm a
19 little unclear in terms of our goal of the target of our
20 comments today. If the reg writing team is off putting
21 this into language, what is the goal of our comments on
22 the alternatives assessment framework for today? My sense
23 is this is providing advise to the department about how to
24 write the alternatives assessment process into
25 regulations. So who would you like us to be making our

1 comments to today or how will this be used by the
2 department?

3 DIRECTOR MOVASSAGHI: The process that's been
4 laid out for the safer consumer product alternatives is
5 not going to be spelling out in detail in a compliance
6 checklist format what is an alternatives assessment. In
7 essence, the big picture framework isn't changing from the
8 June 23rd draft in the sense that once the department
9 finishes prioritizing chemicals and consumer products,
10 then manufacturers have a couple of options. Basically
11 they submit a work plan to us, an alternatives assessment
12 work plan, and then there is a couple of progressing of
13 milestones of reports they have to submit and there's
14 going to be third party verifications and such going on.

15 But we recognize in order to give guidance as to
16 what are the appropriate metes and bounds of an
17 alternatives assessments, there needs to be this
18 discussion. So within the regulatory framework, we built
19 this flexibility to account for different tools that are
20 out there, different approaches that are out there. We
21 heard from a lot of practitioners during the comment
22 period that the same tool doesn't work for every single
23 type of consumer product.

24 For instance, a lot of folks were pointing
25 differentiations between formulated versus assembled goods

1 and what tools they have right now. So we want to allow
2 for those flexibility because 1879 had a very broad
3 definition of consumer products and we want to capture a
4 broad range of types of consumer products in our
5 regulatory framework. But a lot of folks -- companies
6 that haven't done alternatives assessment or life cycle
7 analysis are coming to us and saying, well, what are you
8 thinking about in alternative -- because alternative
9 assessment just basically counting our energy usage? It's
10 like we recognize we have to be answering some of those
11 questions and providing guidance, which is par for the
12 course for anything we've done very well in the hazardous
13 waste arena.

14 When super fund regulations came out, the
15 regulation came out and overtime guidance have come out
16 clarifying. When hazardous waste permitting came out, we
17 issued guidance over time. Heck, I'm reviewing guidance
18 on a regular basis about vapor intrusion and soil gas
19 measurements. These are all ongoing changes in technology
20 and science that we need to incorporate into our
21 regulatory framework. So this is just intended to be the
22 beginning of that discussion.

23 And like I said, the aim today is to take us from
24 the UCSB document which to me is at the 100,000 foot level
25 to a series of case studies that would bring it down to

1 the 10,000 foot level that then we could use to bring to
2 even further lower as we move forward.

3 PANEL MEMBER SCHWURZMAN: I guess just in follow
4 on, my question was even a little bit more mundane than
5 that, which is just my impression was our comments is how
6 will our comments as a Panel today be accessed and used if
7 the reg writing team and you aren't here?

8 DIRECTOR MOVASSAGHI: There are members of DTSC
9 here that are taking those comments. But the comments,
10 they really are going to feed the case study compilation.

11 CO-CHAIR GEISER: Mike is next.

12 PANEL MEMBER WILSON: Mike Wilson.

13 It's a follow-on question. The first is a
14 clarifying question that I heard you ask three questions
15 of the Panel. The first being that our sort of assessment
16 of the UCSB report and what, if anything, is missing from
17 that, what are the different types of alternatives
18 assessment tools and sort of their pros and cons as well.
19 And then how do we account for continuous improvement in
20 alternative assessment as an objective of the regulation.
21 So that's just clarifying question, if those were the
22 three questions you'd like us to begin with. And I had
23 the same -- seconded the same question as Dr. Schwurzman,
24 will the input today be effectively a draft the text of
25 the next draft?

1 DIRECTOR MOVASSAGHI: No. What the input today
2 will do is provide tools both for within the department
3 and for folks outside the department about alternatives
4 assessment, what is an alternatives assessment. What
5 is -- like I said, what are appropriate metes and bounds.
6 What are the tools out there. And then in developing the
7 case studies, getting a better understanding of potential
8 weaknesses and strengths of the different tools out there.
9 So we used to navigate and inform us as we keep moving
10 forward.

11 PANEL MEMBER WILSON: If I could just follow on,
12 I just wanted to clarify. Is it not true that the
13 draft -- that the regulations that come out are going to
14 drive the types of tools that are used?

15 DIRECTOR MOVASSAGHI: No, because we're not
16 specifying the technology. We're going to be specifying
17 performance goals and like we have talked about. And
18 again if we are on the wrong path, this is a good time to
19 know about it.

20 But our understanding is there are a lot of
21 different tools out there. There is no accepted consensus
22 standard. And the tools have pros and cons depending on
23 how they get applied. So recognizing those challenges,
24 the idea is to not actually at this point specify that
25 consisted of a unified path that everybody would have to

1 move forward. This will allow for different technologies
2 to be employed and new methodologies to be deployed to get
3 to the performance rule that gets set by the regulations.
4 That's why the regulation is much more than a process
5 regulation rather than a technical regulation.

6 We never intended to come out with the checklist
7 the way we do, for instance, for hazardous waste
8 regulations where you have to meet particular thresholds
9 and have particular tubs underneath the tank that are
10 three inches wide, four inches deep. You couldn't do that
11 with the heterogeneity of consumer products. And even
12 within the consumer products the heterogeneity of the
13 different firms, they use different processes and
14 technologies to make the same product and then the
15 complete unknown of the alternatives to the chemicals of
16 concern that could be used in these products. So we
17 expect different tools to be used. And we're hoping the
18 case study compilation captures these different tools.

19 CO-CHAIR GEISER: Tim.

20 PANEL MEMBER MALLOY: Thanks for that
21 introduction. I guess I had a related -- the first
22 question was so do you anticipate -- so the regs are going
23 to come out -- and I appreciate as we sit here the process
24 and all. So the regs come out. And are you anticipating
25 that the prioritization process that will start out

1 everything will be ongoing while the case studies are
2 being done such that the first set of alternative analyses
3 under the regulation will come? You expect would come
4 after the case study and maybe after some standardization?
5 Or instead are you anticipating that there's going to
6 actually be alternative analyses being done kind of in
7 tandem or at the same time that you're developing case
8 studies, so on, so forth?

9 DIRECTOR MOVASSAGHI: Tim, thank you for
10 reminding me. I forgot to mention that, actually.

11 Our proposal coming out in a matter of days is
12 going to have some specified time lines, because we heard
13 from a lot of folks during our comment period that we need
14 time because we need to know where this thing is going.

15 Our goal is to have the case studies done before
16 anybody has to do an alternatives assessment. So in the
17 prioritization process of our regs if you'd remember, our
18 goal is to have this done at least after the chemical
19 prioritization has been finalized, but before we have
20 finalized our product prioritization, which then becomes
21 the regulatory driver for the next pieces.

22 I don't believe at this point we think -- we
23 don't know whether we're going to be able to get to a
24 consensus based standardization process by the time our
25 product prioritization is done. But allowing for

1 flexibilities of different technologies to be used I don't
2 believe we need to have fully standardized approach in
3 order to be able to successfully navigate through the
4 alternatives assessment arena, because again of the wide
5 variety of consumer products that are going to be captured
6 in our regulation.

7 CO-CHAIR GEISER: It might be helpful to just
8 also give an idea of when my understanding is they will be
9 eventually guidance on alternatives assessment. What's
10 your schedule for thinking about drafting that guidance?
11 And will this discussion today inform that guidance?

12 DIRECTOR MOVASSAGHI: It very much will in both
13 an indirect and direct way. A guidance document really is
14 a consensus document. Consensus document in an arena that
15 is evolving very quickly and with high degree of variance,
16 it's going to take -- it's going to take considerable
17 resources from DTSC to keep moving through this process.

18 So the way I see this discussion today working is
19 when we start talking about what kind of case studies to
20 have, we're beginning to sketch out for me the major
21 subheading sessions of what a guidance document should
22 discuss. And I think parallel to developing the case
23 studies we will be sketching out an outline of what this
24 guidance document will look like. And then start the
25 heavy lifting process of trying to fill in the details

1 after the subheading.

2 CO-CHAIR GEISER: I'm not sure who was first,
3 Lauren? Julie? Julie.

4 PANEL MEMBER QUINT: I think I'm a little clearer
5 about what our discussion today will and will not inform.
6 I think it sounds to me like it's educational for the DTSC
7 staff. Oh, sorry.

8 It sounds like a lot of our input today will be
9 directed towards staff or educational in some part for
10 staff. It raises for me in reading the U.C. report, the
11 level of sophistication. I know it's the 100,000 mile
12 versus. But for some of this, even for folks who have
13 done alternatives assessment, you know, it requires a
14 certain amount of expertise. And I'm wondering if you're
15 planning to go forward with this with existing staff or if
16 you've thought about what type of staff you need to do --
17 to look at alternatives assessments and what the plan is
18 for that, because I'm very concerned about the burden on
19 existing staff and what you really need in order to do
20 this in whatever form it takes. It sounds like it's
21 pretty enormous right now. And that might be needed. But
22 I think we have to think about what we're looking at and
23 how we're going to judge whether or not it really meets
24 what we are trying to accomplish here.

25 DIRECTOR MOVASSAGHI: Julie, you bring up a very

1 good point. We don't intend to be developing these case
2 studies in house. That's why my staff is asking the
3 additional question how much would this thing cost.
4 Because we're not good at that. I mean, we leave a bunch
5 of government folks to write a case study, it will not be
6 very useful.

7 So for the case study development, we want to go
8 to folks that do this. Probably university much better
9 suited for this. But in the long run, when you're talking
10 about how will the department evaluate these alternatives
11 assessments as part of the regulatory structure, one of
12 the main reasons of including a third-party verification
13 process and a consideration of creating lead -- l-e-a-d,
14 not L-E-E-D -- certified individuals is a recognition that
15 the science and technology is going to evolve very fast,
16 much faster than government is built to adapt. So we're
17 hoping that those folks help with QAQC of the data that
18 comes to the department. That you have a certified
19 individual in the front end. You have a neutral third
20 party. These are very sophisticated folks, high technical
21 folks to advise and give advise on developing the
22 alternatives assessment.

23 So what comes more into the DTSC realm is more of
24 a completeness check, a process check, and just a
25 coordination aspect as opposed to playing this role of oh,

1 we don't think this thing is right. That thing is wrong.
2 And also we built our process around this notion that in
3 an alternatives assessment, the likelihood of getting to
4 the silver bullet answer that is the safest compared to
5 everything else is a low probability event. Most results
6 out of an AA probably identify a safer approach. But
7 there is more work to be done.

8 So the idea was we don't need to have somebody
9 sit in DTSC, say yes, you're safe. The idea was to say
10 you made the improvement, go get captured in the process
11 if your improvement is minimal. If you made major
12 improvements, you're not captured. But those are some of
13 the reasons why we have the third party verifier.

14 And I know it's created some angst for some of
15 the folks that believe that you don't need third party
16 verifier. But to be very frank, government is not
17 designed to be very agile and nimble and move fast.

18 CO-CHAIR GEISER: Okay. I'm going to take
19 Lauren. And then I'm going to try to move us on.

20 So Lauren.

21 PANEL MEMBER HEINE: Thank you. This is an
22 exciting opportunity for us, and I appreciate that.

23 And I just wanted to clarify something that Mike
24 Wilson said. The way the earlier draft of the regs was
25 written, it does begin to describe life cycle moving into

1 life cycle analysis which does tend to be interpreted as
2 somewhat prescriptive as to how you do an alternatives
3 analysis. I just want to be clear that what I heard from
4 you is that it's not intended to be prescriptive and the
5 door is wide open in terms of our thinking about when to
6 use what tools, whether you're substituting or
7 re-designing a process or business model or a function or
8 whatever it takes. The door is open for us to think about
9 a -- it's large and broad; is that true?

10 DIRECTOR MOVASSAGHI: Absolutely. That's one of
11 the comments actually we got from a lot of practitioners
12 was that, well, the June 23rd draft didn't capture that.
13 So one of the fundamental re-writes that we were doing to
14 that section is to make it clear that there are certain
15 statutory requirements in 1879 there was that list of A
16 through M factors that must be considered. But the idea
17 wasn't that everybody has to look at all of those at once,
18 because depending on what we prioritize in the chemical
19 and consumer product and what the alternative is or
20 whether -- simply is a bad word here -- but simply
21 swapping a chemical of concern for another chemical versus
22 full re-design, you would have to take into account
23 different inputs.

24 That's why we want to certify lead assessors to
25 be that super project manager that can look and say, okay,

1 this company wants to do this. Well, these are the skills
2 that we need. These are the types of alternatives we have
3 to consider. So it is intended to actually try to
4 encourage innovation in the development of alternative
5 assessments tools and technology, the same way we want
6 companies to innovate and put new products out there in
7 the marketplace.

8 CO-CHAIR GEISER: Thank you very much, Maziar,
9 for opening up discussion. And now I think what we want
10 to do is turn to actually looking at where the department
11 is on alternatives assessment, given the University of
12 California Santa Barbara report.

13 But let me -- before I turn this over to Bob
14 Boughton for introducing that, let me take the privilege
15 of the Chair for making a historic note here, if I might.
16 And it might even be widely controversial. But I'd like
17 to say that. And that is that I think this is an
18 important task here that we are doing and trying to
19 prescribe what an alternative assessment is for the state
20 of California. I look back to other tools that we've used
21 developed and used in our environmental health or chemical
22 policy work. And if I think about where we were in the
23 1980s as we wrestled with risk and with the whole idea of
24 risk, how do we identify a way to talk about chemicals
25 without talking about them with the consideration of their

1 exposure as well as their hazard and work very hard to
2 develop a technique, a tool much like this I believe risk
3 assessment.

4 I think that what we did is really try to
5 overcome a particular problem in the decision making
6 process there, which gave us a way to think about the
7 hazards of a substance in a context and still be able to
8 do kind of replicable science, et cetera, to come up
9 within the case that we did a procedure, a four-part
10 procedure, sort of lock down by the National Academy Study
11 that became kind of central guiding procedure for doing
12 risk assessment.

13 One of the things that happened in the
14 implementation of that over the years is it got very
15 locked down. It became very procedural and very dogged.
16 And if there was an openness to thinking about how we
17 handle exposure and hazard and dealing with it, we begin
18 to lose some of it in the very reductionist effort to
19 follow a procedure and not worry a great deal about what
20 it was you were really trying to do in regards to lower
21 risk.

22 If I think about life cycle assessment, life
23 cycle assessment in my mind followed some of the same
24 trajectories. And that is as we began to realize we had
25 to take account of the time factor of the chemical, how it

1 began in its life, and where it went in order to come into
2 use and then eventually where it went after use, I think
3 we started off on a very exciting trajectory of trying to
4 think about how we integrate that kind of concept into our
5 thinking about chemicals and chemical policy.

6 And again, here we finally achieved through SETAC
7 a pretty formalized procedure for doing risk assessment.
8 And indeed, today we have a lot of people who do great
9 risk assessments. But some of it has gotten to be very
10 formalistic and the arguments now have to do a lot with
11 just exactly what the boundary or the specifics on a
12 variable are and we're losing some of the creativity and
13 some of the bigger picture that I think people prefer to
14 use the term life cycle thinking as a way to try to say
15 yes, let's avoid that.

16 I think as we've faced the idea of the historical
17 moment we're in around alternatives assessment, we're in
18 some of the same kind of situation. We understand that we
19 need to think about how we actually move toward
20 non-regrettable solutions. How we think about what are
21 the alternatives to the substances of high concern. What
22 we're doing here in California is very exciting and what
23 comes out of California will be very important. So the
24 next couple of years as we work on this are going to be
25 critical and not having us develop not only here in

1 California, but I think around the professional world what
2 it is that this thing called alternatives assessment is
3 going to be.

4 I challenge us to come up with a way of doing
5 this that continues to maintain the flexibility and
6 openness for innovation and creativity, thoroughness and
7 good science, not create some kind of lock down system
8 which freezes us into a form alternative analyses
9 particular kind of approach. And I think that is going to
10 be a big challenge for us.

11 Bill noted -- and I just want to make this point
12 as we move forward here -- the department's goal is to do
13 these case studies, to try to wrap them up by 2012. We
14 still won't be asking for real concrete compliance
15 oriented risk -- alternatives assessments until 2014. So
16 we have time to do this and to do this correctly. So I'm
17 really looking forward to our discussion here today.

18 I'm pleased that we have the quality report that
19 we have from the university, and I'm very excited about
20 hearing from the author himself, one of the authors
21 himself about that. So happy to turn this over to Bob at
22 this point who's going to walk us through this and
23 introduce the author and introduce the report itself.
24 Bob, welcome.

25 MR. BOUGHTON: Thank you, Dr. Geiser, all of the

1 members.

2 And I think Maziar's comments didn't steal my
3 thunder so much as said a lot of the framework that I was
4 going to set for the reports. You've already heard most
5 of that. I won't go back over it.

6 But I will go over some of the thinking of the
7 time line and how we got to do the report. If you go back
8 a year or so ago when we first started doing the
9 regulations, recognizing that there wasn't a lot of staff
10 knowledge on AAs, we knew about TUIR. We knew about EPAs,
11 DFE, and some other people that were doing things, but we
12 weren't as knowledgeable as we needed to be.

13 We engaged Santa Barbara's folks. They have a
14 lot of background in business, economics, and decision
15 theory as well as LCA. And we first started with them
16 really working in the realm of help us find the
17 information that's out there to develop the regulations.
18 What are the tools that are available? What are the
19 standards? What's the methodologies? And we weren't
20 finding very much.

21 It's not the same as LCA where there are adopted
22 standards and guidance documents that are out there that
23 are potentially just roll out useful for people to do the
24 life cycle part of AA.

25 But for the overarching AA, there were bits and

1 pieces and some frameworks and they weren't complete.
2 They didn't cover everything that we needed to cover. So
3 we got to the point of recognizing that maybe the best
4 thing we should do to inform the department as Maziar
5 talked about for the P II work and to help inform the regs
6 in the future is to get this background document. Look at
7 the landscape, let us know what tools are out there, give
8 us a brief rundown on what multiple criteria decision
9 analysis is and kind of help set the stage. And part of
10 that comes down to a gap analysis as well. What's
11 missing? What's not out there? And that gives us an idea
12 of what our needs are.

13 So with that brief introduction, if there's any
14 questions specifically on the mechanics of the report, I
15 can address them. Otherwise, I'll turn over the mike to
16 Brandon Kuczenski from the Bren School, and he can briefly
17 go through the report itself and then we'll field
18 questions.

19 MR. KUCZENSKI: Hi, everybody.

20 It's an honor for me to stand here in front of
21 you or to the side of you and present my work.

22 So about a year ago, I was approached to write
23 this report on alternatives analysis, methods, models and
24 tools that are used to --

25 CO-CHAIR GEISER: Brendan, can you speak a little

1 closer to the mike?

2 MR. KUCZENSKI: I'm sorry.

3 So, yes. The task was to look at the method,
4 models, and tools that were used to perform alternatives
5 assessments and alternatives analysis on chemicals of
6 known concern in consumer products. So just want to talk
7 a little bit about what's in the report and what's not in
8 the report. I was surveying these tools and there is a
9 lot of different things available.

10 But obviously, the question of coming up with
11 alternatives and considering options and making decisions
12 about how to make products is something that businesses in
13 the private sector have been doing for a very long time in
14 a great variety of ways.

15 One of the things that the private sector does
16 not do as much of is make detailed reports to the public
17 about the methods, models, and tools they use to make the
18 decisions. So because of that, a lot of the content of
19 the report is biased towards NGOs and government agencies
20 that have produced these public reports. Just wanted to
21 clarify that.

22 I'm very excited actually to be here in front of
23 a Panel that includes both public and private oriented
24 groups and individuals to get feedback and hear comments
25 from the private sector.

1 So what is chemical alternatives analysis? It's
2 an emerging methodology for avoiding harm or potential
3 harm associating with chemicals of known concern. It's
4 just a way of thinking really about how to look for
5 alternatives. There's basically three main elements to
6 it. It begins with a recognition of an existing threat.
7 An alternative assessment is performed when you know there
8 is a chemical that has a problem with it, it's a potential
9 carcinogen, has (inaudible) toxin. There's some reason to
10 be concerned about it. And there are probably risk
11 assessment studies that have been done on it.

12 Or maybe there are not risk assessment studies.
13 There are studies that need to be done. There's some
14 awareness of some kind of a threat.

15 Alternatives assessment, alternatives analysis is
16 solution based. How can we accomplish the task this
17 chemical accomplishes in a way that may reduce risks or
18 may reduce hazards. And it's generally precautionary
19 approach. It's a way to seek safer alternatives based on
20 the existence of hazards rather than necessarily managing
21 the specific measures of risk.

22 There's two main objectives to address the
23 primary area of concern: Why is the substance a threat
24 and also to gather intelligence so that the substitution
25 that the alternative that is selected doesn't lead you to

1 regret the substitution later on. So in order to achieve
2 that goal, it's useful to adopt a life cycle perspective
3 to look at the entire life of the chemical where it
4 begins, where it ends, and the life of the product itself
5 as well.

6 This helps both in identifying potential
7 alternatives and also in understanding potential benefits
8 and drawbacks of different possible alternatives.

9 I'm just going to run through some brief history.
10 Much of this I'm sure you know already better than I do.
11 Ancient history to present, individuals, businesses, and
12 governments have been weighing possible alternatives since
13 the dawn of time. A little bit less far back in history
14 than ancient times, National Environmental Policy Act and
15 the California Environmental Quality Act established
16 alternatives assessment as a way to basically make
17 decisions about environmental concerns. That way turned
18 out to be very litigious and not necessarily efficient for
19 products.

20 The 1976 Toxic Substances Control Act established
21 a regulatory framework for individuals, but it turned out
22 to be difficult to take action on chemicals that were
23 known to be hazardous but maybe weren't characterized in
24 terms of their precise threats and risks.

25 This was later supplemented by regulations of a

1 different flavor that emphasized the public's right to
2 know, like California's Prop. 65 and the Emergency
3 Preparedness Right to Know Act that led to the toxics
4 release inventory.

5 The late 80s, the State started getting more into
6 the game. The California SB 14, the Hazardous Waste
7 Source Reduction and Management Review Act established a
8 procedure for companies that produce hazardous wastes to
9 review the processes they used to deal with them.

10 And the Massachusetts Toxics Use Reduction Act is
11 very far reaching, establishing a state specific version
12 of the TRI, a state institute to development alternatives
13 of toxics and comes up with ways to reduce the use of
14 toxics.

15 In the 90s, the BPA started to dedicate a great
16 deal of resources to address the short coming of TOSCA
17 developing voluntary measures to look at high production
18 volume chemicals of reducing data gaps in the early 90s.
19 There were huge volumes of chemicals produced that had
20 very little hazard information whatsoever. And a lot of
21 the biggest gaps have now been addressed through these
22 voluntary measures.

23 Design for Environment initiatives, the EPA
24 developed a cleaner technology substitutes assessment
25 which laid a foundation for a methodological search for

1 alternatives. It was a very comprehensive report.
2 Solidly risk based, but it really laid out a very
3 actionable framework to look at different processes.

4 1998, there was the Wingspread statement was
5 produced that establishes the search for alternatives as a
6 precautionary action or way to look for ways to reduce
7 harm without necessarily knowing the exact risks.

8 In that same year, Paul Anastas and Warner
9 published the Green Chemistry Theory and practice book
10 that introduced the field of green chemistry. And the
11 next year, Making Better Environmental Decisions was
12 published which describes alternatives assessment very
13 clearly.

14 The Lowell Center and TURI developed their
15 methodology for alternatives assessment. The five
16 chemicals review was a great example of alternatives
17 assessment in action. And a number of third party
18 resources that are interested in reducing the use of
19 toxics began to develop.

20 One of the major parts of chemical alternatives
21 analysis, first, define the product system under study.
22 What roll does the chemical of concern play in meeting the
23 products function and what's the nature of the threat it
24 produces. Then develop possible alternatives, think very
25 broadly about how the chemical comes into use, what it

1 does, other ways for doing it, other ways for approaching
2 what the product does, just about anything is a potential
3 alternative, process changes, management changes, process
4 or product redesigns.

5 Then perform an alternatives assessment in the
6 sort of Lowell Center sense. Look at the alternatives in
7 a methodological way. Rank them somehow and come up with
8 all the information that you need to really evaluate them.

9 Once you've done that, select a course of action
10 to follow. It isn't necessarily just picking one of the
11 alternatives and going with it. Obviously these are
12 products that are an established system. They're being
13 built. They're being distributed. They have customers.
14 They have capital investment. You can't just switch that.
15 But what you can do is lay out a path forward to develop
16 transition to possibly a cleaner way of doing things.

17 So alternatives assessment is really the core of
18 this and this is what the work has gone into the process
19 for studying an existing product system and different
20 options for doing it differently in ways that will improve
21 the toxics sense.

22 So common features of alternatives assessment
23 include the use of both quantitative and qualitative
24 information, diminished reliance on the results of risk
25 assessment, which has been the core of most chemicals

1 policy, but has its own problems. And the description of
2 the functional use of the chemical is a basis for
3 developing alternatives. And it's also best to be
4 included in a process of sort of continuous improvement.
5 Part of sort of an organizational move towards safer ways
6 of doing things.

7 Alternatives assessments are often modular. The
8 frameworks are modular, because as we've heard, no two
9 products are the same. No two product systems are
10 directly comparable, necessarily. So it's good to have
11 different components that represent different concerns and
12 a way to incorporate them. It's often helpful to involve
13 stakeholders. It's often helpful to involve the public.
14 The public needs to know when it's being presented with
15 hazards. That's the driving force behind a lot of the
16 right to know regulations that came out in the 80s. And
17 life cycle thinking could be very beneficial. As I
18 mentioned both to develop possible alternatives and to
19 sort of understand possible risks and benefits of given
20 alternatives.

21 So the EPA Design for Environment process I'll
22 just really briefly. Cleaner technology substitute
23 assessment was a very far-reaching very intensive
24 methodology for characterizing alternatives to a process.
25 Different ways basically drop in substitution for a

1 process.

2 Later, Design for Environment projects sort of
3 focus this down looking at ways to substitute chemicals
4 via the flame retardants study has been widely discussed.
5 And I think I saw this Table 4.1 on four different
6 presentations of the June meeting. So I thought I should
7 throw that in here. But what you can see from looking at
8 this is it's a quick look at a number of possible
9 alternatives. There's many different criteria along the
10 top. There's many different alternatives along the
11 left-hand side and it's a very visually immediate way to
12 look and see what information is available and what does
13 the information say about the different alternatives.
14 This is sort of like become the hallmark of alternatives
15 assessment is this visually accessible form of presenting
16 information about a wide variety of alternatives.

17 It's the same sort of target that's held up in
18 the Lowell center and the TURI alternative assessments
19 where they looked at, for instance, by Pernal (phonetic)
20 study. They looked at led and formaldehyde and three
21 other chemical groups. And they used data to track how
22 the chemicals were used and through intensive stakeholder
23 involvement of industry and the public developing
24 different ways to get those things done.

25 And the Lowell Center published an alternatives

1 assessment framework that really sort of articulated how
2 that process could be generalized. This is a chart that's
3 out of the five chemical study. You can see it's got the
4 same sort of form. There's the -- it's flipped. The
5 alternatives are along the top and the evaluation criteria
6 are along the side. But the same idea is there that the
7 visual immediacy, the pluses and minus, a qualitative
8 presentation of information in a way that it's actionable
9 to decision makers.

10 So that's really the next question is how to make
11 the decision what to do next? How do you decide? You've
12 got all these alternatives. It's possible one alternative
13 is going to be clearly better than all the others and
14 that's the one you should pick. But it's not likely
15 there's going to be one alternative that's superior to all
16 the other alternatives in all the other criteria. Either
17 it will be more expensive or more energy intensive or it
18 will require a chemical with a different problem or
19 something like that.

20 So the decision process is really where there's
21 the greatest options for different ways to proceed. It's
22 a fundamentally subjective process making a decision.
23 There's no way to make a rule that you have to make the
24 best decision, because the decision criteria are
25 subjective. Really, what you have to do is combine

1 objective measurements of performance on a number of
2 different criteria with the decision makers subjective
3 preferences which should be made clear.

4 A number of decisions, analytic tools have been
5 developed. And what those tools do, they're not meant to
6 provide a turn in the crank kind of solution to making
7 decisions. What they're meant to do is help decision
8 makers articulate their preferences and think about what
9 it is that's important, what it is they're trying to
10 accomplish, and what other relative merits of the
11 different trade offs.

12 So those can be qualitative or quantitative
13 approaches. They can involve theoretic or rules based
14 on specific conditions or they can be very quantitative.
15 They can be based on scores and weights and comes up with
16 a numerical answers. And 7.4 is bigger than 6.8, so you
17 choose 7.4. They can be somewhere in between. The point
18 is that they clarify the decision makers' preferences.
19 They clarify the relative preferences of different
20 stakeholders. They document the decision process. They
21 provide a transparent decision process and they provide a
22 platform for deliberation and decision in cases of
23 controversy.

24 So I just wanted to give an example here.
25 There's a lovely visual from the Green Screen that

1 developed that grew out of the EPA Design for Environment
2 project. And this is a strictly qualitative decision
3 framework using largely quantitative information. So at
4 each benchmark, there's different decisions you make. You
5 evaluate the chemical and see how far you can get with it.
6 And as far as it goes up the ladder, that's the score it
7 gets. And you want to get to the top.

8 Then there are other examples that don't have
9 such nice visuals, but there's the cradle to cradle
10 protocol that was developed by the MBDC Consulting Firm
11 and has now been released to California and it's going to
12 be used by the Green Products Innovation Institute to
13 evaluate products.

14 This is a combination of qualitative and
15 quantitative decision rules with a certain agenda. The
16 characteristics of this is the goals of the decision
17 makers who created this framework are clear and those
18 goals are built into the decisions.

19 Also wanted to mention the good guide, which is
20 an online consumer product database. They've taken a
21 strictly quantitative approach. They have 1100 different
22 criteria that they rank each product under and using a
23 partially opened partially secret framework, they turn all
24 those criteria and all those scores into a numerical
25 rating that the consumer can see. And then they can be in

1 the supermarket and they can see, well, this one got a
2 6.4. This one got a 7.8. So I'm going to choose this
3 one.

4 This has its benefits and drawbacks, but I just
5 wanted to outline the range of possibilities between a
6 strictly qualitative rule based decision framework and a
7 strictly quantitative score weight based decision
8 framework.

9 I also wanted to talk a little bit about life
10 cycle thinking which has been -- life cycle assessment has
11 been a bit of a lightning rod in this discussion, because
12 life cycle assessment according to the ISO standard can be
13 a very burdensome process. It can be an expensive
14 process. A lot of people do it. A lot of people know how
15 to do it. But it is not necessarily the sort of thing you
16 want to require everyone to do.

17 So the goal of life cycle thinking in
18 alternatives analysis is just to give a perspective on
19 where the decision sits in the products life cycle. So
20 there's usually one process that's under scrutiny is the
21 process that's performed by the company that's doing the
22 alternatives analysis. There's some role the chemical
23 plays in producing the product or there's some role the
24 chemical plays in the product's function. That's sort of
25 the minimal scope is this one process that's under

1 analysis. And there's all these other processes that lead
2 up to it that produce the materials upstream.

3 If you go further upstream than that, there's
4 extracting resources from the earth. You go down stream,
5 there's the product as it gets used by the consumer and
6 gets disposed. Does it get recycled? Does it go the
7 landfill? Does it dissipate into the environment? All of
8 those questions are up for consideration. And the
9 consideration for alternatives analysis is how big of a
10 scope do you want to consider. The larger scope you
11 consider, the more alternatives you might be able to come
12 across, but obviously the more intensive the analysis
13 process becomes.

14 So in conclusion, the recommendations in the
15 report are that we alternatives analysis practitioners use
16 the broadest possible scope in developing potential
17 alternatives, evaluate the function of a chemical in the
18 product with other ways to meet that function, and
19 consider both the practices of hazard and also
20 quantitative measures of risk. Alternatives should be
21 assessed based on a range of criteria. Criteria should be
22 complete, minimal, balanced, and operational. Look for
23 benefits and drawbacks throughout the life cycle and then
24 select the course of action in a way that's documented, in
25 a way that's transparent, and in a way that can be

1 returned to at a later time and reviewed in the process
2 and continue the improvement.

3 Thanks for your time. Any questions?

4 CO-CHAIR GEISER: Bob, do you want to add to
5 that?

6 MR. BOUGHTON: No, I don't have anything specific
7 to add to the presentation. I think what I found from the
8 report was that it was very informative, and I think it's
9 going to help us a lot at the staff level to really get
10 our arms around what's out there, specifically from the
11 public available information. And I think one of the
12 hopes that we have is that this group can help us then
13 begin to mine into some of the corporate information
14 that's out there and help us with these case studies so we
15 can see what other frameworks and methodology and
16 techniques are being used out there. We can add to this
17 knowledge base that we have right now. Thank you.

18 CO-CHAIR GEISER: Thank you, Bob. And thank you,
19 Brandon, for the presentation on the report. It was a
20 nice thorough presentation on the report.

21 Bill and I are just trying to clarify how I say
22 this, which is we would be willing to entertain a few
23 questions. We're trying to stay on time then. We would
24 encourage you not to do questions that are going to be
25 part of the discussion but just questions on

1 clarification. I know this has been hard before.
2 Questions on clarification of something that Brendan or
3 Bob said. So is that you, Scott or -- I'm sorry. A
4 clarifying question.

5 PANEL MEMBER JOHNSON: Again, this is a really
6 thorough report. So it's really a great document.

7 So one of the questions on your discussion of the
8 tools and the information tools, because those have been
9 developed and become more available just within the last
10 one, two, or three years. So in some of the retrospective
11 types of analyses, those types of informational tools were
12 not available. So in your review of this, did you
13 actually go in and access those tools and then look at the
14 functionality and how easy they are to use and are
15 user-friendly and so forth?

16 MR. KUCZENSKI: Some of them I did via European
17 Substance Information System is very comprehensive and
18 very widely used. I'm sure there are people in this room
19 who's companies use it to report to the European
20 authorities on chemicals they use. It's got a tremendous
21 amount of information on a very specific range of
22 subjects. Basically a collection of risk assessments,
23 which is a really very useful thing to have a single
24 public report that contains sort of like the risk
25 assessment -- the state of risk analysis for a given

1 chemical.

2 I found that system to be very easy to use and
3 very informative. The ETA actor database is under heavy
4 development, but it also aims at that same level -- even a
5 broader level of synthesis of gathering information I
6 think they said in the report every publicly available
7 database could be indexed. That is an awful lot of
8 information.

9 And what it comes down to, often an actor is a
10 list of links to a number of other resources. So then
11 what you get is you get the utility that all the other
12 resources provide. But it's less -- not quite as much
13 synthesis going on more collection. But that's still
14 under active development, so whereas the European system
15 is in commercial use.

16 Other tools, a lot of the tools on there, some of
17 them are fairly old. Some of them are very use specific.
18 I'm thinking of things like Ecotoc and I think LCA is in
19 the cool chapter, too. I certainly use LCA. So I think
20 of them in varying levels of depth. I've found them
21 generally to be useful.

22 Does that answer your question?

23 PANEL MEMBER JOHNSON: So at some point would you
24 be willing to, let's say, advise of which tools you would
25 actually use? Because all of those you would not go into

1 all of those?

2 MR. KUCZENSKI: That's right, particularly with
3 something like actor coming out, that is certainly a
4 one-stop shop. Eventually it will become clear what kinds
5 of information you're looking for. And then you just go
6 after that information.

7 I don't know that I'm the right person to make
8 that advisement. But I can certainly -- I certainly
9 intend to contribute to the development of the guidance in
10 that.

11 CO-CHAIR GEISER: We have a technical glitch and
12 that is that the webcast has gone done and as far as our
13 openness to the public is concerned, we should try to have
14 this meeting -- it's up.

15 MR. KUCZENSKI: My mother was watching. Did she
16 see --

17 CO-CHAIR GEISER: I'm noting that people are
18 putting up cards. There's obviously a lot of questions we
19 could ask Brendan and all. I could want to keep us on
20 track.

21 But I have at the moment Mike, Lauren, Tim, and
22 Art. And let's stop it at that point. But make your
23 questions, please very specific. Not general questions to
24 try to get the very specific thing so we can keep this on
25 track. Mike.

1 PANEL MEMBER WILSON: I'll do my best. Thank
2 you, Brendan.

3 So based on your assessment and your synthesis,
4 my question is what key needs do you see such as in data,
5 data requirements or metrics for guidelines and so forth
6 that would best be facilitated by government that would
7 support the stated goal of continuous improvement in
8 alternatives assessment?

9 MR. KUCZENSKI: I think the area that would be
10 sort of like the nexus of easiest to implement and most
11 helpful is very much along the lines of what the Green
12 Chemistry Initiative is looking at in terms of online
13 toxic information clearinghouse and the database about
14 just allowing different private actors to find work
15 they're doing and collaborate in areas where public
16 information makes sense.

17 I think there's difference between knowledge that
18 hazards exist and knowledge of the specific risks they
19 represent and the specific processes in which they're
20 used. Some of that information I think could be made
21 public and made usable by a number of different people.
22 I'm thinking here along the lines of collaboration up and
23 down supply chain how could that be facilitated. How
24 could information be encapsulated in a way that protects
25 confidential information but also provides necessary

1 information for these sorts of collaborations. I think
2 the online databases that are part of the Green Chemistry
3 Initiative, if they come together, could be very valuable
4 in that regard.

5 CO-CHAIR GEISER: Lauren.

6 PANEL MEMBER HEINE: A quick question and a
7 comment I'll delay for further discussion. I assume
8 Brandon will be part of the discussion, too. Is that
9 true?

10 CO-CHAIR GEISER: We're hoping you can stay for
11 after lunch, yes?

12 MR. KUCZENSKI: I'll be here for after lunch,
13 yes.

14 PANEL MEMBER HEINE: I very much enjoyed your
15 report and particularly the presentation. And I just have
16 a question. You presented some information in the
17 presentation that was not in the report. And some of that
18 I think --

19 MR. KUCZENSKI: Can you think of anything in
20 specific?

21 PANEL MEMBER HEINE: Yes, the newer DFE work.
22 You mentioned that. And that was actually a part of both
23 the large webinar and the first alternatives assessment
24 session that DTSC. But it was you only presented DFE work
25 up to the late 1990s. So I think that was missing. But

1 yet you presented it here.

2 So I'm wondering couple of things. Why is that
3 and how do we built on what you've done? Because I can
4 think of upcoming things that would add to what you've
5 already created and again I think it's an important piece
6 that's missing is this more recent DFE work. And also
7 input. I've got some input from DFE staff. I think
8 that's a very important thing currently missing and I
9 think maybe it feeds into a discussion of case studies.

10 MR. KUCZENSKI: Is this regarding the case
11 studies that I included in the back of the report?

12 PANEL MEMBER HEINE: I'm talking about the flame
13 retardancy partnership. The safer product labelling
14 program, the DFE criteria for safer chemicals, none of
15 that is in your report. And yet you presented it here.
16 So I'm wondering how we're going to align that.

17 MR. KUCZENSKI: The flame retardancy partnership
18 in particular I included here in response to comments.
19 Some of that didn't make it into the report because I
20 didn't consider it in the scope. You know, it was
21 difficult -- if you open -- it's like inviting a second
22 cousin to a wedding. If you open the gate too far,
23 everything that pertains to chemical suddenly becomes in
24 the scope. And I was really trying to limit it to
25 specifically things that looked at alternatives.

1 I can certainly re-visit that and there are
2 certainly areas that upon reflection I can see including.
3 But I don't -- there are definitely major initiatives from
4 the DFE program that I don't think fall in the scope of
5 alternatives assessment or of this report.

6 PANEL MEMBER HEINE: I'm pointing out that you
7 presented them here and within the scope --

8 MR. KUCZENSKI: Would there be --

9 CO-CHAIR GEISER: Thank you, Tim.

10 PANEL MEMBER MALLOY: That's okay. I'll talk to
11 Brandon separately.

12 CO-CHAIR GEISER: Art.

13 PANEL MEMBER FONG: Thank you for that
14 presentation. That was very nice and good job, especially
15 for coming up here from Santa Barbara to Sacramento of all
16 places.

17 You mention in your introduction that the content
18 of the report weighed heavily on NGO and public tools and
19 work. Could you just tell us briefly what process you and
20 Roland had used to get industry participation or an
21 engagement?

22 MR. KUCZENSKI: I did not make particularly great
23 effort to obtain participation from industry. I was
24 mostly working on my own and I approached this as a
25 research project. I'm not -- so I didn't take very many

1 steps to involve industry. And I think that clearly comes
2 through in the report.

3 But I also in the books that I did do, I found
4 that a lot of companies don't provide information about
5 the techniques they use. You know, there's not -- there's
6 a different mission to government work than industry work
7 on finding safer chemicals and the kind of information
8 that I found was -- I just didn't see including. So I
9 would be interested in further partnership.

10 PANEL MEMBER FONG: I think in this opportunity
11 it would be a great opportunity for you to network with
12 some of the industry representatives on this Panel, people
13 like Roger from Staples and so. He'll probably talk to us
14 during lunch.

15 MR. KUCZENSKI: I look forward to that.

16 CO-CHAIR GEISER: At this point we'll close the
17 discussion. Thank you very much for your clarifying
18 questions. And again, thank you, Brandon, for the
19 presentation on a report that was well received.

20 MR. KUCZENSKI: Thanks for your time.

21 CO-CHAIR GEISER: At this point, I think we'll
22 turn it over to Kathy, who will announce the break.

23 MS. BARWICK: We will take a 15-minute break.

24 But before we leave, two things.

25 Members of the public, if you'd like to make

1 comments, public comment period is right after the break
2 which will be 15 minutes long. If you would, please, at
3 the beginning of the break, see Nathan Schumacher, fill
4 out a comment card so we have an idea of how many people
5 would like to make comment and can better manage that
6 process.

7 Also for those of you on the web, we realize the
8 webcast has been up and down, but it's up now. So if you
9 can submit any comments in the next few minutes, it would
10 be greatly appreciated.

11 And finally as we take a break, I remind the
12 members of the Panel we conduct our business before the
13 public, that's on behalf of Joe Smith, my colleague at
14 DTSC, who helps me with those matters. So remember our
15 open meetings law.

16 And we'll take a 15-minute break. Let's come
17 back at quarter after. Thank you.

18 (Thereupon a recess was taken at 11:00 a.m.)

19 MS. BARWICK: We'll turn the meeting over to Dr.
20 Carroll who will be Chairing this portion of the meeting.
21 Please take your seats. Thank you so much.

22 CO-CHAIRPERSON CARROLL: Thank you, Kathy.

23 This is the part of the meeting that's dedicated
24 to public comment. I would ask that for those of you who
25 want to comment, remember that your comments are directed

1 to the Panel and not to DTSC and should be the sorts of
2 things we need to know in terms of conducting our
3 deliberations and offering our guidance.

4 Do we have public comment? It's hard for me to
5 imagine that you've come all this way without wanting to
6 say something.

7 MS. BARWICK: We would have one person who would
8 like to make comment. If you would come to the podium,
9 thank you.

10 CO-CHAIRPERSON CARROLL: Let's talk about the
11 grounds rules. Ansje, you've been here before. We're on
12 a three-minute or so comment schedule. And for the
13 remainder of the period that isn't used in public comment,
14 then we'll start a bit more of the discussion that we
15 truncated before the break.

16 Ansje, it's all yours. Go ahead.

17 MS. MILLER: My name is Ansje, A-n-s-j-e, Miller,
18 M-i-l-l-e-r. I'm with Center for Environmental Health and
19 Change Coalition, Californians for Health and Green
20 Economy. And I would have come all the way here to listen
21 to what's going on and make a comment. But I will make a
22 comment or rather hopefully ask some questions for the
23 Panel to consider.

24 As I was listening to the alternatives assessment
25 presentation, you know, I kept going back to why are we

1 doing this. And in the statute, the reason to do the
2 alternatives assessment is to inform the regulatory
3 response process.

4 And so to that end, what you'd really like to get
5 some thoughts from the Panel on are how do we think about
6 do we need this at all? Because when a company is making
7 something, I think it's really hard for that company to
8 speak outside of its self interest and addressing whether
9 the chemical or product is necessary at all. And so --
10 but I think in terms of protecting public health and the
11 environment, that's a very important question.

12 So a couple of other things that struck me is
13 that there are two things that are really important that
14 are -- outlined in the report. One is the necessity of
15 transparency and information and data. So that the
16 department can make accurate assessments and so that the
17 companies can make accurate assessments about how to move
18 forward. And then the other thing is that it seems like
19 it's really important for the department to come out with
20 a guidance document so that we have some sort of
21 consistent meaningful significant alternatives assessments
22 that come -- that come from this process that the
23 department can actually use. So those are my comments.
24 Thanks.

25 CO-CHAIRPERSON CARROLL: Wonderful. Thank you

1 very much.

2 Are there other public comments?

3 Please identify yourself.

4 MR. JACOB: Tom Jacob representing DuPont.

5 Just wanted to make a general comment and
6 express -- I guess in a way kind of a renewed concern over
7 the need to really seriously engage industry as our
8 thinking matures around alternatives assessment. You
9 know, this is a new dimension of chemical regulation
10 relatively. It is not a new dimension of activity. It's
11 been driving companies forever. Those of us who live off
12 of innovation certainly. The structure with which we go
13 about that, you know, will vary and it may or may not have
14 direct in applicability to the kind of regulatory form
15 that's evolving here.

16 But this is so hugely important as a regulatory
17 direction on which we're embarking here we have to play a
18 closer role as this more active role as this movement
19 particularly toward regulatory guidance evolves. And I
20 think we're going to have to devote some systematic
21 pressure and attention from all sides here to make sure
22 that that happens going forward, because we just -- I
23 don't think we can afford to allow this process to proceed
24 sort of independent of the reality check that honestly I
25 think only those of us who are in this industry

1 competitive innovation gain can bring to the process.

2 Thank you.

3 CO-CHAIRPERSON CARROLL: Very good. Thank you.

4 Other comments?

5 Mike, are there comments from the web?

6 MR. O'DOCHARTY: There is not.

7 CO-CHAIRPERSON CARROLL: I'll ask one last time.

8 Seeing none, we are now at 11:25 by my watch. We have
9 lunch scheduled from 11:40 to 1:00. What I'd like to do
10 is utilize perhaps the next 20 minutes or thereabouts if
11 there are further questions that might be asked about the
12 presentation that we had this morning. There's not enough
13 time to fully engage that conversation and because we
14 probably need to go off site for lunch I'm sure there's
15 enough time allowed.

16 So let me ask the Panel that question. Does that
17 sounds like a reasonable way to use the next 20 minutes or
18 so? Do you think you could fill that profitably and
19 finish the conversation after lunch? I'm seeing yeses.
20 Let's go ahead and do it that way then.

21 Perhaps more questions, comments about the UCSD
22 report and the presentation that we heard this morning.
23 Julia, go right ahead and then Jae, Tim, and Dale.

24 PANEL MEMBER QUINT: I just wanted to
25 congratulate you on the report. I thought it was very

1 informative and very well written, easy to read.

2 I didn't see it in the report, and maybe I missed
3 it. But list the methodologies or how you found the
4 various examples of alternatives assessment that you
5 profiled and critiqued in the report?

6 MR. KUCZENSKI: I did not list my methodology.
7 It was generally research and kind of studying.

8 PANEL MEMBER QUINT: Okay. One of the reasons I
9 asked is because I do think, you know, some of what
10 industry is doing, those industries that are coming up
11 with alternatives it would be very wonderful to know what
12 they're doing. And if it's not published, you wouldn't
13 find it if it's not available. So I'm wonder if --

14 MR. KUCZENSKI: I was looking at publicly
15 available information. And I think that accounts for a
16 big reason why there's not more industry information.
17 Because they certainly do reports constantly.

18 PANEL MEMBER QUINT: But most of us do use Google
19 and various other --

20 MR. KUCZENSKI: Yes.

21 PANEL MEMBER QUINT: Thank you.

22 CO-CHAIRPERSON CARROLL: Thank you.

23 Julia, Brandon, one thing very quickly. Your
24 slides will be available to us; is that correct?

25 MR. KUCZENSKI: As far as I know, they're

1 available now.

2 CO-CHAIRPERSON CARROLL: Jae, it's your turn.

3 PANEL MEMBER CHOI: Thank you, Bill. Thank you
4 for good work. And it makes my job easier to review.

5 In your paragraph I think you stated two
6 objectives of doing chemical -- alternative. One is one
7 kind of concern and a safety issue. Now, when it comes to
8 industry, yes, could be driven regulatory issues. That's
9 very true. But I think perhaps may be you could and you
10 would include force objective of doing this chemical
11 alternatives, which cost effectiveness I think is really
12 important. I think two points. One of them, you know,
13 that drive this kind of a cost effectiveness I think why
14 we sometimes do alternative -- you know, alternative study
15 and decision making. And the other one innovation. I
16 think still private companies, private sectors take great
17 pride in doing this kind of so-called proactive
18 alternatives. So that's my comment.

19 And then also page 79 and 80 under Design for
20 Environment, you took some effort in terms of getting some
21 case study or example of success. It's a good effort,
22 accept that one of the example you sited on the PWD, I was
23 not sure what the company tried to do, because the
24 technology of (inaudible) has been there for years.

25 And then in terms of led-free replacement, that's

1 coming to buy rojas, for example, and then, you know, so
2 called successful replacement or alternatives came into
3 the technology last three or four years. So I was not
4 sure what the case may be. So it may be that some
5 clarification from the company or their summary, if you
6 have not clearly understood. So that's my comment.

7 CO-CHAIRPERSON CARROLL: Thank you.

8 Brandon, response?

9 MR. KUCZENSKI: I can look further into that.

10 CO-CHAIRPERSON CARROLL: Very good. Okay. I
11 have Tim, Dale, and Joe. Tim, it's yours.

12 PANEL MEMBER MALLOY: Thank you.

13 And thank you for the report. I agree with
14 Julia. This was really informative and extremely well
15 written, which you don't often find in the same document.

16 So -- and I had a question. And this is brought
17 up by Maziar at the start had said this isn't just about
18 regulation. It's about creating a broader framework. But
19 it seems to me it is also about regulation. And one of
20 the things I'm curious about is the case studies and the
21 work that you have in here tends to focus on alternatives
22 assessment not in a regulatory environment.

23 And I'm wondering -- so for example, let me raise
24 three examples and ask you what you think about them,
25 whether you had considered them and left them out for one

1 reason or another like with this design environment like
2 you explained earlier or whether you didn't think they
3 were relevant or whatever. So three areas in which
4 alternative assessment is in place in a regulatory
5 environment. One, choosing remedial alternatives in the
6 super fund context where you can see -- when I read your
7 discussion of multi criteria decision analysis and the
8 different approaches, to me, it seemed to mirror exactly
9 EPA's use or the statute's use of threshold criteria,
10 balancing criteria, and then adjustment criteria, right,
11 the nine criteria for decision. And what's interesting
12 about that is some of these multi criteria decision folks
13 and the decision scientists have actually attempted to
14 apply it in that context.

15 The other one I'm curious about is the use of
16 inherently safer design in the industrial hygiene or
17 process safety management arena. Some people call it
18 inherently safer design. Some people call it inherently
19 safer technology. But just the concept and the
20 methodologies themselves which are in Contra Costa County
21 in California being implemented in a regulatory
22 environment and in New Jersey being implemented in a -- or
23 to some agree in a regulatory environment. So I'm just
24 curious about your take on those and -- I guess that's
25 really my question, your take. Are they relevant? Do you

1 not see them relevant or --

2 MR. KUCZENSKI: Yeah -- in this context they seem
3 relevant. I did not look at the super fund regulations at
4 all, because they seemed out of scope. As I say, it's
5 beginning to feel like the scope that I chose is
6 increasingly arbitrary. But that wasn't the case.

7 I really did try to chose combination of
8 chemicals -- I was looking I suppose at pre-consumer
9 applications. So that's why super fund really didn't come
10 in. But chemicals and alternatives together, in that
11 context, the inherently safer design certainly does seem
12 relevant and I will look into that.

13 Do you have any more specific references on that?

14 PANEL MEMBER MALLOY: Well, I can talk to you
15 about it. This was by no means a criticism of the report
16 or the scope of the report. It's more just kind of musing
17 and I'm kind of interested in what you think about --

18 MR. KUCZENSKI: I think when you start to look at
19 decision processes, there's a whole breadth of them. And
20 site remediation is definitely one of the big -- one of
21 the big areas application for decision theory.

22 So that's interesting.

23 CO-CHAIRPERSON CARROLL: Brandon, the point is,
24 if you didn't leave some gaps in the report, there would
25 be nothing for us to talk about and it would make this day

1 very boring. So thank you for doing that.

2 Dale.

3 PANEL MEMBER JOHNSON: So I already complimented
4 you on the report, so I won't do that again.

5 In listening to this now in relationship to your
6 ability to look at industry information and then also
7 listening to some of the public comments, one of the
8 concerns -- now I'm starting to get from this process is
9 our ability -- or the ability to actually do case studies
10 that are relevant in terms of proprietary information.
11 So, for example, in the draft regulations, there's a very
12 specific way to deal with proprietary information. It's
13 in there. It's a regulatory type of approach. In a case
14 study, you don't have that in any of the case study
15 approaches.

16 So my concern is that the case studies seem to be
17 kind of -- see if you agree with this. A case study
18 approach that we would be talking about over the next
19 couple of years will be dealing with information that's
20 publicly available. It's rehashing information that we've
21 gone over before so it's kind of a retrospective analysis
22 rather than prospective, even though, you know, I think
23 the idea here is for prospective analysis to really get a
24 framework for doing it.

25 But I think just listening to this now my fear is

1 that it will be retrospective. It will be public
2 information, and it will not include proprietary
3 information coming from industry. Can you comment on
4 that, on my fear on that particular aspect?

5 MR. KUCZENSKI: I think that's probably a
6 well-founded fear. I think proprietary information is
7 really at the heart of the challenge for this program.
8 And I think the challenge is to find out what form of
9 information can be made public without divulging private
10 information. And I think industry's response particularly
11 in the earlier response to TSCA was reflective. Any
12 information is proprietary information.

13 And the only risk assessment results that were
14 public were risk assessment results that were performed by
15 public agencies. I think there's not a reason to draw
16 such a hard line, but I think there's clearly a reason to
17 protect confidential information. And I think the case
18 studies -- possibly one of the results of the case studies
19 going forward, since this is a novel regulatory framework,
20 will be a way to develop a differentiation between what
21 needs to be kept secret and what can be made public.
22 Because people need to be able to make good decisions.
23 People need to be able to make informed decisions when
24 they're not part of private organizations.

25 But obviously, the private organizations also

1 need to maintain their competitive advantage. So I think
2 that could be a target of the case study development is a
3 way to exposure out which information can be made public
4 and which information can be kept back.

5 CO-CHAIRPERSON CARROLL: Bob, you want in here a
6 minute?

7 MR. BOUGHTON: I guess just kind of from a higher
8 altitude, a lot of the things that we're hearing of kind
9 of getting into scope creep on what Brandon was initially
10 supposed to do and really what they're all opening up is
11 what the next steps are. So continue with the questions,
12 but we were trying not to get conclusions in this report
13 that were leading to what the university thinks or
14 anything like that. Just kind of present the facts,
15 present what's out there. And then we will use that
16 information with your feedback and others feedback then to
17 go forward and figure out what the next steps are is
18 basically what this afternoon is.

19 So it's great to hear these comments, but I don't
20 think we're going to delve into a lot of these in the
21 report mostly because of getting it done in the
22 contractual time lines and remaining moneys available.
23 But we'll try to address what we can. And hopefully we
24 can put into the report a new section that talks about
25 considerations and next steps that will capture a lot of

1 this just to get it down there in the report.

2 Thank you.

3 CO-CHAIRPERSON CARROLL: I think all the comments
4 the Panel have made are fair. Whether they wind up in the
5 UCSD report or whether they wind up in your alternatives
6 assessment scan for case studies is really important.
7 It's to get these ideas out for people.

8 Let's see. I have Joe, then Dele, then Mike and
9 then Megan.

10 PANEL MEMBER GUTH: Thank you.

11 Well, I, too, found a report very readable and
12 appreciate that.

13 I want to just ask one fairly specific question.
14 You mentioned that companies have been doing alternative
15 assessments, you know, forever. And I think that Tom
16 Jacobs mentioned something along those lines, too, that
17 companies do and have been doing alternatives assessments
18 as part of their development processes for chemicals and
19 product development extensively overtime.

20 Now, I confess to a little bit of skepticism
21 about that. I think that's why we're here looking at a
22 regulatory process to require that. But in the event
23 that's actually true, it sort of occurs to me that it may
24 be that companies have developed alternatives assessment
25 processes and they regard those methods themselves as

1 confidential.

2 In other words, it's possible even to apply for
3 business method patents and that is a kind of intellectual
4 property that you can imagine. And it could be a
5 competitive value, you know, the way companies actually
6 assess chemicals for their safety properties.

7 So I guess my question to you is whether you
8 think it's actually true there are alternatives assessment
9 processes being used within companies that they are
10 reluctant to divulge.

11 And secondly, if that is true, maybe I would
12 invite DTSC to think about ways to maybe get that
13 information and may be able to embark on a process with
14 industry, which you actually undertake to keep whatever
15 processes they have confidential, but try to do an
16 exploration of what they're doing. And maybe there's some
17 aspect of what they're doing that could be contributed to
18 the public domain to form how to do this. So you're not
19 on that.

20 MR. KUCZENSKI: To the first point regarding your
21 skepticism, I think we can all agree there are some
22 companies that are better actors than others and the
23 regulations have to be written to the worst actors.

24 And with regard to the second point, I don't know
25 whether there are sort of protected versions of

1 alternatives assessment. But this is a case where the
2 knowledge is cumulative. If we were to produce a good
3 alternatives assessment framework -- there are good
4 alternatives assessment frameworks already existing, it
5 would become a resource that would supercede the
6 proprietary resources. And I think the proprietary -- I
7 really find it hard to comment on the hypothetical on
8 whether companies are doing their own thing.

9 I mean, the gentleman from Proctor and Gamble who
10 gave a talk in June at the Alternatives Assessment
11 Symposium let us in on Proctor and Gamble's approach to
12 life cycle assessment. And I think there is a difference
13 between sort of company-specific approaches and actually
14 patentable business method approaches. I think the
15 difference is more what one company does internally is
16 less relevant to other companies, not so much less
17 available to them.

18 CO-CHAIRPERSON CARROLL: All right. Thank you,
19 Brandon.

20 I see two flags remaining, Dele and then Mike.
21 And then we'll go to lunch.

22 PANEL MEMBER OGUNSEITAN: Thanks for covering the
23 qualitative and quantitative methods. So when I was
24 reading the section on integrated tools, I was expecting
25 that these are examples where those qualitative and

1 quantitative methods were integrated better than others.
2 But what the examples didn't seem to me to be consistent
3 with that definition of integrated tools. So I wondered
4 if you have a different definition for what you meant by
5 integrated tools.

6 MR. KUCZENSKI: Can you -- I don't have the
7 report in front of me.

8 PANEL MEMBER OGUNSEITAN: Oh, sorry. Green
9 screen which clearly included that. But the Quolenmore
10 (phonetic) educational in Germany and the Preo (phonetic)
11 for Sweden did seem to be integration of qualitative and
12 the quantitative.

13 MR. KUCZENSKI: No, they didn't do that so much.
14 But they took a qualitative approach to evaluating
15 substances in terms of their being rules and thresholds
16 that were based on quantitative data in most parts. They
17 were also based on qualitative data like R phrases and S
18 phrases.

19 I really meant just something that went one step
20 beyond the database approach where you have information
21 about chemicals to the something approaching a decision
22 approach that allows you to evaluate chemicals in a
23 systematic way. And those are also -- they don't go as
24 far as the tools I discussed in Chapter 5, which did
25 actually attempt to consider a system and then lead you to

1 a decision about it. Does that make sense?

2 PANEL MEMBER OGUNSEITAN: Yeah.

3 CO-CHAIRPERSON CARROLL: Thank you, Dele.

4 Mike, remember, you have the last question before
5 lunch. Use it appropriately.

6 PANEL MEMBER WILSON: So about a half hour. So I
7 guess in the report there is -- as we discussed here, this
8 overarching objective of the need for continuous
9 improvement in alternatives assessment and that is
10 essentially a fundamentally a collective process. And so
11 in summarizing your findings, your synthesis, you said
12 that the five things that government can do to facilitate
13 a collective sort of improvement in our knowledge around
14 alternatives assessment is the online database
15 facilitating collaboration among players, ensuring
16 transparency, facilitating information up and down the
17 supply chain, and then summarizing and encapsulating
18 information to usable forms to multiple users. That was
19 how I interpreted your conclusion.

20 And I'd like to just say that -- and this is sort
21 of with reference to Tom Jacob's comment that those
22 findings very closely track the testimony that was given
23 last month earlier by Hewlett-Packard before the three
24 assembly committees focused on alternatives assessment.
25 And what HP said was that this needs to be a

1 multi-stakeholder process, needs to be function based
2 using life cycle hazard assessment, transparent, enable
3 broad sharing of findings throughout industry. But then
4 most importantly, that additional perspectives and peer
5 review reach the best conclusions and the best science.
6 And more than any single company can achieve.

7 And so my question then is -- that to me is sort
8 of a coming together of ideas. And so my question is how
9 do you -- how can the State of California best facilitate
10 that process of collaboration, information sharing,
11 defining metrics and so forth from your view?

12 MR. KUCZENSKI: Well, that's a doozie. That
13 might be a lunch question actually.

14 I can't presume to say how the State of
15 California could best do that. I share -- sounds like HP
16 and I share some common views on the subject.

17 I think the thing that seems -- that speaks the
18 most to me at this is the question of peer review, you
19 know, that's my bread and butter. And I think in this
20 case the thing that makes that valuable is public review.
21 And it just gets back to what I was saying before; there's
22 key information that I think should be available to the
23 public so that we can distribute that process of decision
24 making to the people who -- to the end decision makers.
25 The consumers who use the products that contain the toxic

1 substances and the people who live near the places where
2 the toxic substances might be released.

3 You know, that's the ultimate multi-stakeholder
4 involvement is involving the general public. And leaving
5 the -- I mean this -- I don't want to tread outside of my
6 province, but I really think that finding the key
7 information that is going to be the most useful to the
8 most people and making that information generally
9 available has got the best chance of bringing all the
10 better ideas out from everywhere.

11 CO-CHAIRPERSON CARROLL: All right. Very good.

12 We are now at ten minutes to 12:00 by my watch.
13 I would like to try to start us at approximately 1:00
14 again, which is a little bit short on lunch. And if you
15 need more time, we can do it. But at least let's set a
16 goal of being back at 1:00.

17 Kathy.

18 MS. BARWICK: Just a couple of comments about
19 opportunities for lunch. Of course, there is a restaurant
20 here in the hotel. And also there's the Arden Fair Mall,
21 which you all saw when you came in.

22 The restaurants are mostly at the other end. If
23 you drive down the front of the mall past Barnes and Noble
24 on the left and right in there are a bunch of places to
25 eat. So I just thought I'd let you know that.

1 CO-CHAIRPERSON CARROLL: All right then. We'll
2 see you this afternoon, thank you.

3 (Thereupon lunch was taken from 11:49 to
4 1:10 p.m.)

5 CO-CHAIR GEISER: So here we are once again live
6 from Sacramento, California.

7 Panelists, we are into our afternoon discussion.
8 The way that we are going to organize this afternoon is
9 that we will discuss -- beginning with question one and go
10 down through questions four -- Maziar left short question
11 five and I will Chair the first part of this up to a break
12 around 3:00 and then we will follow up and see where we
13 are at that point and follow up. And Bill will do the
14 second half of the afternoon.

15 So let me just frame this a little bit. We've
16 heard the presentation on the University of California
17 Santa Barbara report. We began to clarify it. We've had
18 several comments to some of the things that might be added
19 to the report.

20 Question one asks does the UCSB report capture
21 the current state of affairs. I think we've kind of dealt
22 with that part. But I just want to make sure before we
23 move off of question one are there any key issues that we
24 should include in the report that are not there and this
25 would be just a quick catch up because already we

1 mentioned several items we think might be added to the
2 report. Bob did remind us that the report is roughly in
3 its later stages. So we're not looking for big
4 re-affirmation of the report. It's mostly just things
5 that might add to it at that point that you could think of
6 that we ought to spend a little time noting.

7 We'll take oh, say, 15 minutes on this and then
8 try to move into the later questions. Does that make
9 sense to people? Okay. I think we have Scott and Joe,
10 Megan. There is a reason for why I'm -- right in there is
11 hard for me to see. And Scott, keep your computer down
12 and lay low and I'll be able to see.

13 PANEL MEMBER SCHWURZMAN: Mine is a brief
14 question. It sounded like we all had a little bit of
15 confusion just because we weren't party to what the scope
16 of that report is. And so if we could see the detailed
17 scope that was asked for by DTSC, that would really help
18 me understand whether the kinds of things that I'm
19 considering as not in the report are just -- we would be
20 haranguing Brandon with and scope creep and things like
21 that. So if that could be made available to us, that
22 would be helpful.

23 CO-CHAIR GEISER: Okay. Joe.

24 PANEL MEMBER GUTH: To address your questions,
25 are there any key issues that we should include in the

1 report. I just want to pick up something, Ken, you
2 mentioned in your remarks which I think is important. And
3 that is you raise the problem that arises when a detailed
4 analytical methodology is developed that sometimes the
5 decision makers just end up adhering to that methodology.
6 And sometimes it's hard to step back and ask whether the
7 data gaps and things that are left out of it because of
8 lack of information is preventing the methodology from
9 actually leading to a good decision or not.

10 So I wonder -- I think there is a risk -- that
11 happens in a risk assessment/cost benefit analysis all the
12 time. It could definitely happen in this kind of process.
13 And so I wonder if there might be room for a little bit of
14 discussion about that issue in this report, which I guess
15 would contemplate is a recommendation there be built into
16 an alternative assessment some kind of analysis of I think
17 Bob mentioned gaps analysis or some kind of an assessment
18 of whether the alternatives assessment methodology is
19 actually capable of leading to a good decision given the
20 information that's available.

21 CO-CHAIR GEISER: Art.

22 Bill is keeping track. Was Julia up first?
23 Julia then.

24 PANEL MEMBER QUINT: I think this relates
25 probably to lack of methodology section, so I don't know

1 how the examples were chosen. But I think a real omission
2 is some of the pollution prevention work that has been --
3 that DTSC has participated in and that's been sponsored in
4 the state for a long period of time, some of which
5 involves consumer products. That isn't mentioned at all.
6 And we're talking about it's methodologies -- these are
7 projects that as I said DTSC has been a collaborator on
8 and funded some of these projects and so has CARB that
9 have led to real regulatory changes. So to not have that
10 in the report somewhere it seems to me is a big omission.

11 And I don't know if -- you know, they certainly
12 are available on the web, a lot of these reports and a lot
13 of this information. And DTSC has it on its website. So
14 it would fit that broad part of your methodology of
15 looking you know just through Google searches or
16 something.

17 So I guess if there isn't a reason not to have
18 that information in the report, because I certainly think
19 we should learn from that, then I think it should
20 definitely be included.

21 CO-CHAIR GEISER: Now Art.

22 PANEL MEMBER FONG: Thank you, Ken.

23 You know, one thing I thought about when I was
24 reading the report that I thought was missing and it was
25 during the setting the stage of why we're doing

1 alternative assessment or analysis. So I want to expand
2 on something that Jae and Tom Jacob touched on. And
3 that's the drivers for alternatives assessment.

4 Reading the report itself, the introduction, you
5 know, it really focuses on or emphasizes the fact that
6 alternatives assessment done because of regulatory
7 compliance. And while it's absolutely a key driver for
8 industry, you know, that's unfortunately not the only
9 driver. And many times it's not the most important
10 driver. So in wanting to really understand why industry
11 goes about doing alternatives assessment and more
12 importantly why we choose certain tools to doing
13 alternatives assessment, I think it might be important to
14 include in the introduction part of the report some of the
15 drivers in addition to regulatory compliance. And I think
16 Jae and Tom mentioned some of them. But some of the
17 things like innovation that improves technical
18 performance. That's one of the really major reasons why
19 industry starts considering alternatives assessments in a
20 lot of cases.

21 Again, you know, environmental factors,
22 improvements in other environmental factors besides what's
23 listed in terms of toxicity, certainly worker protection
24 and also I think Jae or Tom mentioned intellectual
25 property. And also another driving force for industry

1 initiating an alternatives assessment, it's a pressure
2 from a supply chain or availability of materials certainly
3 in terms of the high tech industry. One of the drivers
4 right now it's rare earth elements.

5 And so I guess limit my comment to that. And so
6 I think it might be important to really outline some of
7 the drivers for doing alternatives assessment, because
8 that will give the reader and certainly DTSC a much better
9 understanding of why it's done and also why specific
10 alternatives assessment tools or methods are used.

11 Thank you very much.

12 CO-CHAIR GEISER: Mike.

13 PANEL MEMBER WILSON: Okay. Thank you.

14 My sense is that there are two primary issues
15 that the report essentially is an analysis. And what's
16 missing and what I pushed Brandon to articulate was really
17 the synthesis of that analysis, which is essentially a
18 summarized conclusion of the key elements of building a
19 successful alternatives assessment process in the public
20 domain. And Brandon articulated five key elements that he
21 sort of gleaned from his research. I think those are
22 extraordinarily important. And again, they reflect the
23 findings or the testimony that HP gave and I think it's
24 important for us as a learning tool. So I'd like to see
25 that synthesis included in the report in brief form.

1 And then the second piece is the needs and I
2 think as Joe Guth just noted, what is it that we need to
3 meet those elements, the synthesis elements. So those
4 might be how do you deal with data gaps, metrics, best
5 practices, a distribution strategy, and transparency, for
6 example. So those are the two pieces that I think are
7 important and are valuable for decision making: Synthesis
8 and needs.

9 CO-CHAIR GEISER: Thank you, Mike.

10 Tim.

11 PANEL MEMBER MALLOY: Thank you.

12 I just wanted to support Julia's point about the
13 regulatory area. I have this underlying concern just
14 generally about the report. And also as you'll hear later
15 the case study approach itself that it's focused on
16 alternatives assessment done in a non-regulatory context
17 and that there needs to be more focused on what would it
18 look like in a regulatory context.

19 So another example like when you mention CARB,
20 I'm thinking about the phase out of perc in dry cleaning.
21 There's lots of documentation study done at UCLA and
22 elsewhere, but also the staff report by the CARB staff on
23 the phase out of perc where it may not be full blown
24 alternatives assessment the way that is laid out in the
25 document, but it certainly has all of these elements and

1 it shows it in action.

2 And I think there should be more attention given
3 to what are things other than the elements that are laid
4 out in this report that come into play when you're doing
5 it in the context of regulations. So transparency
6 obviously is important.

7 But so is implementability on kind of economies
8 of scale where you're going to have large numbers.
9 There's also the issue of what do you do for consistency
10 across companies. So if there are ten companies who are
11 producing the same product in a regulatory system, you
12 would expect to find some consistency in the outcome.
13 Whereas in the private based system, consistency is less
14 important. So I think it's more attention to what's
15 unique about the regulatory context would be important and
16 we've got lots of examples of where that's being done.

17 CO-CHAIR GEISER: Dale.

18 PANEL MEMBER JOHNSON: I suggest that you use a
19 commonly used type of terminology to describe the actual
20 analysis. And it's called case by case. So that you
21 don't get any confusion there's going to be steps one
22 through ten and every type of analysis. So case by case
23 was established in the international conference of
24 harmonization when -- and I was an industry representative
25 in that when we actually looked at harmonizing guidelines

1 for pharmaceuticals, biopharmaceuticals, biologics from an
2 international standpoint, Europe, United States and Japan
3 were the initial groups. And it became very clear in the
4 development and the guidance and the guidelines for
5 biologics that every one of those had to be done on a case
6 by case basis.

7 So the entire field then -- and this is true of
8 every regulatory agency within the world. The entire
9 field now deals with the terminology and the concept of
10 case by case. And that therefore there's never any doubt
11 that there's going to be a very specific way that you do
12 this. You do it this way for one thing. You have to do
13 it this way for another thing. So it's a commonly used
14 term and I would suggest incorporating that term into this
15 document.

16 CO-CHAIR GEISER: Thank you, Dale.

17 I don't see any other comments on this subject.
18 I just have a few myself. I'll just lay them out. Couple
19 of comments.

20 One is you call this "chemicals alternative
21 assessment" and use the term I notice CAA. You may notice
22 that we use the term "alternatives assessment." And I
23 think I understand the reason why the report uses that
24 term, because I think what it's trying to do is demarcate
25 from other kinds of alternatives assessment and make it

1 clear that this is alternatives assessment dealing with
2 chemicals. But it has the unfortunate quality of
3 suggesting that the only alternatives you would include
4 would be chemical alternatives. And I think that that
5 down side to the use of the term is of merit. I would
6 worry if it became talked about in California's chemical
7 alternatives assessment people began to read it as
8 chemical for chemical.

9 And so I encourage you to maybe find a way to
10 demarcate and sort of say this is about chemicals, but it
11 clearly speaks to the many other ways you could develop
12 alternatives that are non-chemical alternatives.

13 My second point is I felt like you -- the
14 report -- I'm sorry. I keep saying Brandon you alone.
15 But the report alluded to trade-off analysis, but it
16 really didn't say a lot about that. And it might be
17 worthy of another paragraph or two on trade-off analysis
18 as a part of alternatives assessment. And your general
19 thoughts on that might be very helpful in a report like
20 this.

21 The third area -- Mike, of course, thank you for
22 the very nice things you said about the whole -- the TURI
23 center work and generally I felt it was quite accurate and
24 so felt pleased to see you summarize it as well as you
25 did. There's just a couple of other initiatives you might

1 want to take a look at.

2 We did two alternatives assessment for the state
3 of Maine on mercury-containing products. And it might
4 be -- those are early ones it might be useful to take a
5 look at. And we also did an alternatives assessment for
6 the state of Washington on decabromodiphenyl ethers and
7 you might want to look at that as well, seeing as that
8 provides at least another couple examples in some cases
9 might even be useful as a case itself.

10 And my last comment is this past year the POPS
11 Review Committee under the Stockholm Convention drafted an
12 alternatives assessment of five part alternatives
13 assessment for petitioners to add additional chemicals to
14 the annex under the Stockholm treaty. And in order to do
15 that, they created a process for reviewing alternatives.
16 And particularly in those cases where criticism of the
17 condition suggests there were no alternatives are
18 requiring an alternatives assessment to show that there is
19 not an alternative to a chemical that is being proposed.
20 You might want to look at it partly, because it's an
21 international example and I think an interesting one as
22 well.

23 Other than that, I thought it was quite a good
24 report. So just some comments I hope are constructive.

25 I see nothing else on this subject so I think we

1 are -- sorry. Lauren.

2 PANEL MEMBER HEINE: Just a thought. I'm sure
3 Brandon is probably ready to have some closure to the
4 report at some point. So I'm wondering if you need some
5 clarity about what needs to be done in this draft and what
6 needs to be done moving forward since I think he did a
7 great job hitting a sweet spot and we can all think of
8 more things we can add to it. How do we do that without,
9 you know, bringing closure to this and thinking about what
10 to do next?

11 CO-CHAIR GEISER: I think it probably would be
12 useful to have Bob respond to that, if you could. Next
13 steps kind of --

14 MR. BOUGHTON: I think Brandon and I will sit
15 down and figure out how much budget is best. The contract
16 ends at the end of the year. So we really need to have it
17 finalized before then.

18 And there's -- you dropped in lots of ideas. So
19 we'll go through those, prioritize them, see what we can
20 do. And I'm really thinking that a lot of the things that
21 you've brought up are external to our original thinking on
22 this. But they're really valued. So I think we'll
23 capture them somehow in the next steps section or from the
24 report and from the comments what we've gathered is what
25 should be done for the future and to expand the work. I

1 don't at this point -- we don't anticipate another round
2 or going through expanding the report or jumping into the
3 industrial sector and looking at that at this point. That
4 might be something that we propose and move into next year
5 once there's funding and compete with the other green
6 chemistry work that we need to do.

7 So does that answer the question or -- okay.

8 Thanks.

9 CO-CHAIR GEISER: I think so. Joe.

10 PANEL MEMBER GUTH: Just a question about process
11 here. Suppose somebody's comments really didn't seem
12 worthy of bringing up to this group. Would it be
13 appropriate to e-mail Bob and Brandon, you know, a comment
14 for their consideration?

15 (Inaudible)

16 CO-CHAIR GEISER: Very good. Thank you.

17 If we can continue on with this discussion, this
18 next question is a somewhat larger question. It has to do
19 with really the next steps for the department after this
20 report. Maziar mentioned this morning the plan to develop
21 a series of case studies which would become informative in
22 the department's continued work. Continued work -- Maziar
23 did not -- he said it roughly, but I just wasn't to push
24 it a little bit. Continued work, one of the things that
25 alternatives analysis ahead for the department is a

1 guidance document.

2 And I asked Maziar if it was okay that I mention
3 that at this point. Just to remind us that there is a
4 substantial piece of work that the department needs to yet
5 due after the regulated regs are finalized which has to do
6 with the guidance document itself. And as you all know, a
7 lot of nuance is handled through guidance documents. So
8 the learning, the information that will be developed from
9 these case studies hopefully is not just kind of
10 interesting stuff for the department to better orient its
11 management of this issue, but it's also material that will
12 help to inform and assist in the writing of the guidance
13 itself.

14 So as you think about how to respond to this
15 question, question number two, what should be factors for
16 consideration making sure a compilation of alternatives
17 assessment case studies is robust, et cetera, should we
18 consider private public? Are there specific approaches,
19 tools? Are there specific examples of failures that we
20 should include? Please understand that this information
21 may become quite important to the later work in the
22 department as it advances.

23 So this is an open discussion on the case
24 studies. How can we give advise and help and assistance
25 in thinking about the case studies that are planned for

1 this next period?

2 Kelly and then Scott.

3 PANEL MEMBER MORAN: I actually have a bigger
4 comment. And I think we're going to probably have the
5 elephant in the room discussion here some. But it kind
6 sits on top of what I'm going to say about the case study
7 approach. And then I've got a couple comments towards the
8 case study approach.

9 The bigger comment here is one of the things
10 we're struggling with is that you can't regulate
11 creativity. And I think Tim is right on. We're working
12 through a process that's going to be a regulatory process.
13 And my mental construct for dealing with that is to
14 separate the creative design process from the more mundane
15 but very important alternatives assessment process. So a
16 creative design process might involve a lot of different
17 kinds of people in terms of what the product is doing,
18 where it's going. There we really benefit from
19 inspiration. There are -- I actually found the whole
20 cradle to cradle thing really out of place in the report
21 from UCSB. I really felt it just didn't fit in with the
22 other stuff there.

23 And the reason for that is that my experience was
24 that not having the ability to actually see what it has
25 been developed has been one of using it as inspiration for

1 design. And there are some other folks out there who also
2 give speeches and really do a lot of stuff to help inspire
3 people to really break apart from traditional practices
4 when they're designing products. And that's something we
5 can't regulate. We do not want to regulate. We want to
6 stimulate that. We want that to happen. And that is an
7 important part of the state's future. But it is not part
8 of a regulatory program.

9 So for me, I'm drawing a line between what's
10 creative, what's inspiring, all of that kind of stuff.
11 There is a huge and important place for that, that place
12 is not a regulatory program. Our regulatory program and
13 to the extent we're going the build towards that with our
14 case studies, we need to be thinking about the more
15 mundane specifics of how -- what are we going to do here
16 in terms of science and engineering in evaluating
17 alternatives and structuring that process in a way that
18 can work for a variety of different settings that, as Ken
19 mentioned, I think isn't going to be stagnant but will
20 grow and change in the future.

21 So when I'm saying mundane, I'm not saying
22 growing and changing. So we're -- I think that as we
23 think about what is a case study, we really need to focus
24 in on that stuff and not on the inspirational stuff. And
25 we need to always keep our brains on that, because that's

1 what we're heading. We're looking for concrete guidance
2 for things to do.

3 So within that, just a couple of comments on the
4 case studies. I see the case study exercise as being
5 really helpful in organizing our thinking if we do it
6 right to organize our thinking about how do we write the
7 guidance and that we need to really think about doing it
8 in a way that's going to help us get to that guidance.

9 And within that, one thing that I would think
10 would be a very useful thing would be in doing the case
11 studies to try to actually draw out what was the
12 conceptual model that was used in the process of doing
13 this alternatives assessment. And there's a life cycle
14 type model and within particularly examining what's in the
15 product use piece of that conceptual model, a lot of
16 people have a fairly good understanding of what the
17 conceptual model is for various environmental end points
18 for the manufacturing of a product and for its end of
19 life. And where we've really fallen down on the jobs for
20 product is a conceptual model for what's happening to the
21 product during its useful life, because that's the part
22 that hasn't been subject to our regulatory structure
23 before. So actually having conceptual models for each of
24 these and taking a look at them, what one will find I
25 think in doing that exercise is that there are some gaps,

1 in particular where we've had failures that I do hope we
2 include in that that we can see this failure is because we
3 missed this whole piece of the conceptual model.

4 The second thing I guess I'd like to say is that
5 in working towards guidance I think we probably need to
6 recognize that as we're thinking about this, we need to be
7 thinking about that guidance will probably wiped up
8 including modules. And what are we going to learn from
9 this case study approach should those modules be based on
10 specific product types or specific kind of environmental
11 end points or some of both. And that's something I'd
12 really like to see as this goes forward that I'm
13 envisioning that in the future we'll have different kind
14 of modules for doing these alternatives assessments that
15 are going to come from different kind of experts at
16 different universities and other places that will be the
17 starting points. So let's see what we can garner through
18 this case study exercise to help us with that.

19 PANEL MEMBER MATTHEWS: Ken, do we need to defer
20 to talk at all about Kelly's first point before I add
21 anything else on the pile?

22 CO-CHAIR GEISER: Go right ahead, please.

23 PANEL MEMBER MATTHEWS: Just making sure.

24 CO-CHAIR GEISER: Does anyone else want to add to
25 that issue that Kelly made?

1 PANEL MEMBER SCHWURZMAN: Can I just ask a
2 clarifying question about your use of the term modules?
3 Do you mean that an alternatives assessment ultimately
4 would be made up of several modules; is that what you mean
5 by the term?

6 PANEL MEMBER MORAN: It could be that way.
7 That's actually one of my questions that I think might be
8 answered through the case study exercise is whether we
9 need to be thinking about design modules towards different
10 types of consumer products since there is such a huge
11 physical array of products or whether we need to have
12 modules that are towards different types of environmental
13 end points or some combination thereof.

14 CO-CHAIR GEISER: Let's just move forward with
15 Scott.

16 PANEL MEMBER MATTHEWS: Just making sure.
17 I have just of been thinking about this question
18 sort of the most in terms of why I've been so quiet this
19 morning is Maziar sort of started with hinting at some of
20 the things such as making sure we look at failures and
21 thinking about these.

22 And as we were just discussing, I'm still unsure
23 exactly what we're going to sort of ask for in the end.
24 But something in line of demonstrations or case studies or
25 modules or however we define it I think is needed. And my

1 sort of thought was motivated by ensuring we have some
2 sort of like robustness matrix that has in a sense six to
3 eight case studies in the columns and a whole bunch of
4 these criteria in the rows and making sure that the cases
5 are hitting multiple of these criteria.

6 And I'm not saying anything knew we haven't
7 heard, but sort of tracking some of the criteria thought
8 that were both motivated by the Santa Barbara's report as
9 well as things we've been discussing that making sure that
10 we have representations of both successes and failures,
11 having qualitative and quantitative analysis use using,
12 for example, formulated and assembled products being
13 retrospective or prospective being regulatory or voluntary
14 or something else for that matter. Whether the assessment
15 or the module or the demonstration being discussed was
16 done by a public agency or a company, whether the data was
17 only public data and/or proprietary, whether the model
18 used was LCA or multi-criteria analysis.

19 My thought was in a sense if DTSC is able to sort
20 of put that together as sort of a guidance, it might be
21 easier to then sort of go out to bid so to speak for what
22 kind of case studies we thought we might need. And again,
23 I'm just journaling what we discussed earlier. But in a
24 sense if we could sort of hope that this robustness was
25 thus geared towards the idea of it we were going to try to

1 choose six to eight, we'd have as many checkmarks as
2 possible covered so that we don't have a -- we have no
3 example of a quantitative -- we have no example of a
4 qualitative study. I think that would be a problem.

5 CO-CHAIR GEISER: You speak to diversity.

6 Ann.

7 PANEL MEMBER BLAKE: So this isn't the first time
8 this group has tried to tackle something that's huge and
9 messy and it feels a little bit like trying to take
10 different cuts through a pile of jello. So I'm going to
11 take a different cut through the pile of jello that may
12 pick up some themes from people already who have already
13 spoken.

14 The struggle that I have with standards that I'm
15 striving to see emerge and what we are facing here is the
16 balance between having comprehensive set of criteria that
17 would apply to a whole variety of different end points --
18 health and environmental end points as well different
19 kinds of products as well the manageability and doability
20 of somebody who's trying comply with the standard and/or
21 review whatever submitted as an alternatives assessment.
22 So those are the two themes and the context I'm trying to
23 deal with here.

24 So I think what the approach to the case study
25 would be to assemble -- to go out there and assemble in

1 the model of the UCSB report, but in more practical detail
2 what exists out there in terms of models and playing off a
3 little bit what Scott just said and see what are the pros
4 and cons of existing tools and how broadly can they apply.
5 So make that's as comprehensive a collection of criteria
6 as possible and have case studies that may be this is sort
7 of Kelly's module idea, try to apply these in different
8 areas, different kinds of products, different kinds of end
9 points, different pieces in the life cycles. Because I
10 think right now we don't have one tool that exists that
11 covers all the things we're concerned about. But we do
12 have the pieces that probably would create a full picture.

13 So towards that, I think some of the pieces that
14 do exist are I'm seeing from pulling together something
15 like good guide or a purchasing environmentally preferable
16 purchasing standards, but there seem to be emerging
17 consensus criteria in various different areas, health
18 hazard assessment with areas of disagreement naturally,
19 but LCA, environmental end point. So that's something
20 that we can start putting into a comprehensive structure
21 of criteria. Then there are also back to the idea of
22 being comprehensive but may be not doable, many of us have
23 been looking at and potentially submitting comments on
24 underwriters labs, environment, new environment standard
25 that 80s standard on corporate sustainability which is

1 about the most comprehensive standard I have ever seen.
2 And then looking at it saying, okay, I'm really glad I
3 don't have to try to comply with this. So there's that
4 counterbalance right there. But that's an interesting
5 model in my mind because it builds on existing standards
6 and existing data sources. So that's an approach that I
7 think might be helpful also in this model.

8 Let's see. And a smaller detail. Models do
9 exist on assessing hazard while still protecting
10 confidential business information. I think that's
11 something we need to look into in more detail. But they
12 do exist for third party standards and that's probably a
13 helpful thing for us to be looking at at this stage.

14 CO-CHAIR GEISER: Tim.

15 PANEL MEMBER MALLOY: Thank you.

16 These are all great comments by the way.

17 I want to take just a second to get some context
18 to the comment I'm about to make, because I'm having some
19 concern both not so much about the report but from some of
20 Maziar's comments about what's coming down the pike that
21 there is a conflation of the notion of assessment and the
22 ultimate evaluation or the judgment of whether a
23 substitute is available and ought to be used. And so
24 Maziar pointed out, we ought to have -- we don't want to
25 pick one tool or another because it's going to depend on

1 the context. And I certainly agree with that.

2 So it seems like for making these comparative
3 assessment between different alternatives on a number of
4 criteria, it seems there ought to be flexibility there and
5 maybe a toolbox approach where, you know, you pick the
6 methodology for the comparison that best fits the
7 circumstances, although even there I think one would want
8 some type of decision role for choosing which toolbox
9 would be appropriate.

10 It shouldn't be just -- this is a regulatory
11 program. So it shouldn't just be left to the
12 discretion -- however well intentioned that discretion
13 is -- of the individual company, because it's a regulatory
14 program. There's both kind of public values involved and
15 there as also a desire for some consistency across
16 companies.

17 So it seems like even in the toolbox approach
18 that he had described today, there ought to be some
19 standards for when it's appropriate to use one approach
20 versus another. And that should be clear. And I guess
21 the sense that's where it's headed.

22 But I agree we need to pick case studies taht
23 allow us to answer that question as to what are the
24 general guidelines there. What I'm more worried about is
25 this value aspect of once you've lined up the criteria

1 with whatever metric you're using and methodology, the
2 judgment about doing trade-off analysis or choosing among
3 alternatives. And so that I think cannot in a regulatory
4 context be left to an individual company to make, but
5 rather there need to be fairly consistent decision roles
6 and values expressed in the method that's used that are
7 used across the board.

8 So I'm concerned about a set of case studies that
9 would look at only private companies acting and rather I
10 think there ought to be some of these case studies ought
11 to be looking at, for example, individual companies under
12 Massachusetts that were required to do toxic use reduction
13 planning. Refineries in California that were required to
14 do inherently safer technology reviews and focus not just
15 on the company, but also on that company as interaction
16 and the broader context in which they found themselves,
17 how the regulatory aspect, how they related to the
18 regulator, what were the standards used for making the
19 decision, and ultimate also what were the methodology s
20 that were used, multi criteria decision analysis, which
21 kind of checklist, whatever.

22 So that -- but ultimately, I think what ought to
23 come out of the case studies is not just informing us
24 about which metrics the use for figuring out, you know,
25 endocrine disruption or respiratory sensitivity and

1 qualitatively or quantitatively measuring those. But the
2 methodology for doing trade-off analysis.

3 And I really feel strongly that this should not
4 be left up to an individual company, nor should it be -- I
5 was a little concerned when I heard Maziar talking
6 suggesting that the third-party verifiers would
7 essentially be the decision makers and that the department
8 would then kind of like just make sure, you know, kind of
9 do a completeness check. Or maybe I misunderstood it, but
10 it sounded like they needed to did a completeness check or
11 just kind of like a some form of oversight, but that
12 that's not really for the department to get into, because
13 to me it seems like quite the opposite, that of all the
14 things that go on that ultimate decision about what
15 regulatory responses is appropriate, whether it's
16 switching to a substitute or some control, that seems to
17 me like that has to be based on consistent decision roles
18 applied by a public body that is accountable and
19 transparent and all those other things, not leaving it to
20 a third party verifier and to an independent company.

21 All this ties back to this notion of if I'm
22 right, if that's what it ought to look like, then for the
23 case studies to be really effective, they need a mix of
24 that so that we can play around with these notions in a
25 regulatory context.

1 CO-CHAIR GEISER: Lauren and then Bill.

2 PANEL MEMBER HEINE: I would like to agree with
3 what Tim just said about the trade-off piece and mention
4 that in the USB report it talked about how decisions
5 should -- it should address areas of concern and avoid
6 regrettable substitutions. And it seems to me that every
7 case study should answer those questions in some detail.
8 But that should be an important piece of every case study.
9 And also I think it would be useful in addition to having
10 case studies on articles and formulated products to look
11 at alternatives assessment, the scope of the alternatives
12 assessment and what case is it appropriate to improve the
13 existing product with the simple substitution. When it
14 can lead to the re-design of a product, when might it come
15 up with a new functionality, when might it re-design a
16 whole business system.

17 So you might want to begin to look at scale, too,
18 and not lead people to think every alternative analysis is
19 a simple chemical sub-use thing or is always a whole other
20 material. I think we need to sort of touch on those in
21 terms of examples.

22 But again, I agree with Tim. And I think whether
23 they're specifying what it means to move to a better
24 alternative or showing how it meets the principles that
25 Brandon laid out in the USC report, I think it's important

1 to address that.

2 CO-CHAIR GEISER: I have Bill, Julia, and then
3 Joe.

4 CO-CHAIRPERSON CARROLL: Thank you, Chair.

5 And this brings up for me sort of a difficult
6 time in the meeting. I realize we're talking about places
7 that you would go to do a case study of different
8 alternatives analysis. But there are some of us at the
9 table who have spoken already as part of the regulated
10 community who have in the back of our minds okay, how are
11 you really going to do this when it's all done.

12 And in fact, you have some language in a
13 regulation that you have as a draft out there that
14 eventually you will write some guidance on and how that
15 guidance will be arrived at, whether it will be done in
16 the same fashion of notice and comment as it's been done
17 with regulations, I have no idea how that's going to
18 happen, but it's very clear that all the guts of how this
19 gets done is going to be in this guidance, which will be
20 somewhere out of the regulatory process as we've known.
21 Because unless I've misunderstood this, we're going to
22 have all this done by about the 1st of January so this
23 Governor can take credit for it and we'll just sort of
24 merrily go on with our lives afterwards.

25 There is a bit of detail missing here that some

1 of us find a little disconcerting. If you go to the --
2 even the draft regs, okay, we talk about open source
3 alternatives assessments as opposed to those that are
4 required from the manufacturing, kind of touched on that a
5 little bit. And presumably, those could be produced by
6 anybody who has an interest in the topic so long as
7 they're peer reviewed and open literature. So what does
8 peer review mean in this context? Does it mean fact
9 checking? Does it mean you went through and checked all
10 of it or you simply reviewed it and said that kind of made
11 sense?

12 Is there a preference for an open source AA
13 versus one that's done by industry? My comment is sort of
14 the mirror image of Joe's having watched some of this and
15 recognizing that as a manufacturer if I put forward an
16 alternatives assessment, I'm not sure that there isn't an
17 inherent prejudice against my work, that it goes exactly
18 the opposite direction of what Joe is suggesting, that if
19 someone in a non-government organization brings forward an
20 open source AA, that that somehow has greater credibility
21 than the work that I've done.

22 And then if you have dueling AAs, maybe that
23 would be a good case study. If you can find AAs on the
24 same topic, how do you pick? And in fact, who picks?
25 That kind of gets down to some of the points that are

1 particularly important -- I've written out a lot of
2 comments, but I just want to touch on some of these other
3 topics.

4 Eventually you get to the point of some kind of
5 remedy. So there is labels. There's all sorts of things.
6 But at some point there is a remedy. And at some point
7 there may be an enforced substitution.

8 So I will guarantee you -- guarantee you that
9 just as there may be regrettable choices that have been
10 made in original products, there will be regrettable
11 substitutions. There will.

12 And my question is who bears the responsibility
13 and the liability for that? Is it the person who did the
14 AA? Is it the manufacturer who makes the revised product?
15 Or is it the person who made the decision that was the
16 substitution that was supposed to be made? Or is that
17 something we just leave for the courts at some later
18 point? And frankly I think there are a lot of issues here
19 that are going to wind up being left for the courts.

20 So particularly with some of these issues where
21 you will end up with dueling AAs, one from a manufacturer,
22 one from an open source -- and incidentally open source is
23 not equivalent to dispassionate third party. There has to
24 be some thought on not just how you make the decision on
25 multi-component analysis, but how you make the decision

1 one to the next and maybe even how you do some kind of
2 sensitivity analysis. If you take a look at the OEHHA
3 pre-draft language, there are 41 hazard traits with
4 somewhere in the neighborhood of 300 end points.

5 Now if presumably that interfaces into that
6 process somewhere, I defy you to do a sensitivity analysis
7 on that many variables. So if that's the case, then how
8 do you go about doing that in the context of this process.
9 And more importantly, how do you decide what the necessary
10 difference between one alternative and another is to make
11 a regulatory decision?

12 I realize this gets down into the weeds and is a
13 bit messy. But I have to tell you that this is the place
14 where we have our concerns. And I'll just reiterate we're
15 deeply concerned about the fact this winds up in a
16 guidance document that haven't been a part of this process
17 with the full sort of vetting that we'd like to have. So
18 with my apologies, thank you, Chair.

19 CO-CHAIR GEISER: Thank you, Bill.

20 Julia.

21 PANEL MEMBER QUINT: I guess it's more of a
22 clarifying question for me is when I hear the discussion
23 of the CAAs or the AAs, it seems to -- I mean, and
24 rightfully so, we want the aim with the alternative, set a
25 high mark for wherever you're going, something that's

1 really as close to the green chemistry principles as
2 possible.

3 But the regulation its as written, I mean, you
4 know, barring the hazard traits and the 300 indicators
5 that you just mentioned, you know, it's very -- you can
6 have an alternative that meets the regulation without
7 going through a very robust alternatives assessment.
8 There are many products out there, because I've looked at
9 them and I've compared them, that don't have chemicals of
10 concern and probably wouldn't be products of concern that
11 don't safety green chemistry principles. So why would --
12 I mean, you know, and some companies have a green website
13 and they have a non-green website. So they have safer
14 alternatives for the same products. And you know, and
15 these products a lot of them don't have chemicals of
16 concern in them. So the question would be why would they
17 do an alternatives assessment that would take them through
18 a life cycle analysis or life cycle thinking when they're
19 using acetone or something like that that isn't on a Prop.
20 65 list and that as far as I know would meet the
21 requirements of a -- would not be subject to the
22 regulation?

23 So I guess the question for me is when we talk
24 about and when we use these case studies that seem to
25 indicate a very depending, a very robust process for

1 coming up with an alternative, is it within the context of
2 the chemicals of concern and products of concern, because
3 for me, the alternatives relate to that. And there is a
4 wide berth, so to speak, of chemicals that would satisfy a
5 safer alternative, given the way the last version of the
6 regulation was written. Barring hazard traits -- and I
7 don't know what that would expand the scope. So we
8 might -- some of the things that fit now may not fit. But
9 if I were somebody who had a product that that would just
10 go through and come up with alternatives to that without
11 going through the process of alternatives assessment. So
12 there is a question in there somewhere.

13 CO-CHAIR GEISER: I have Joe and then Megan and
14 then Bruce -- not Joe. Megan, Bruce, Julie.

15 PANEL MEMBER SCHWURZMAN: The flags before me go
16 down, I also have some combination of questions and
17 thoughts.

18 One thing that's not entirely clear to me about
19 this project of undertaking case study is my
20 assumptions -- I'll just say my assumptions is that the
21 case studies would each be an analysis -- would each be an
22 analysis of a completed alternative assessment and the
23 decisions that were made on the basis of that alternatives
24 assessment, rather than a case study that is looking at
25 some product or chemical that needs substitution and

1 attempting an alternatives analysis on it.

2 So I'm going to assume it's the former, that each
3 case study is looking at an alternatives analysis that was
4 done trying to articulate the underlying assumption which
5 Kelly said which I think is really important, the scope of
6 it and how decisions were made on the basis of that. So
7 but that's something I could use confirmation of. But
8 that's what you're aiming for. Sort of a yes mostly from
9 Maziar -- okay.

10 I think one of the things that I would ask in
11 terms of -- you know, I think it's most helpful to go into
12 the prospect of setting up case studies with a very clear
13 idea of what we'd be trying to learn from them and without
14 that we're going to kind of end up with a bunch of
15 information and a bunch of documents.

16 And so to me, the fundamental question is what do
17 companies need to understand what a safer alternative is.
18 And then it's not just companies, it's also when I think
19 about at the Berkeley Center for Green Chemistry have been
20 increasingly approached by a whole variety of groups
21 asking in one way or another for us to serve the purpose
22 of doing alternatives assessment and that ranges from
23 federal government trying to look at some safer
24 substitutes in various contexts to a technology or
25 electronics company asking for alternatives assessment to

1 be done that are not contractual, that are in the public
2 realm so there is a place they could go for that
3 information, not just that they would contract to have an
4 alternatives assessment done. So that's an individual
5 company. It's a federal government agency.

6 There is another individual company saying there
7 is a process they want to improve and that's a very
8 specific one substance they're looking to eliminate or
9 chose something safer about.

10 So I feel like it's a worthwhile starting up
11 front with a very clear a process of articulating very
12 clearly what we're trying to learn from the case studies.
13 And I think the basic question there has to be what tools
14 do people performing -- making decisions on the basis of
15 alternatives assessment, what tools do they need to make
16 those decisions? And I think unless we start with that,
17 we're just going to have some kind of a bunch of
18 collections of case studies that may or may not sort of
19 accomplish the goal of what we need to learn for DTSC to
20 be able to create guidance.

21 CO-CHAIR GEISER: So I hear you saying that we
22 really need to be clear about the goals of the case study
23 enterprise.

24 PANEL MEMBER SCHWURZMAN: What questions do they
25 need to answer specifically, not just how do we do a

1 robust alternatives assessment. I think we're beyond that
2 point.

3 CO-CHAIR GEISER: Bruce.

4 PANEL MEMBER CORDS: This is kind of -- let's say
5 our formulators look at what I'm hearing and I kind of
6 built on what Bill said and what Julie just said. But
7 let's just, for example, say I'm Bob's Glass Cleaner
8 Company and I've got one product that's a glass cleaner
9 that contains a chemical and it turns out -- chemical of
10 concern in it that makes it a product of concern. If I'm
11 Bob, I go get some help and get that out of there before
12 it ever hits the process, right, which I guess
13 accomplishes one thing. It gets rid of a chemical of
14 concern. In Bob's Glass Cleaner. However, you don't know
15 just because he has something that wasn't on the list
16 doesn't mean it could be a regrettable substitution. So
17 either that or he goes the other way.

18 And let's say he doesn't have very many
19 resources. So he decides to submit to the assessment
20 process. The question I would have is who comes up with
21 the alternative? He's a small operator. He's going to
22 have to hire I guess somebody to come up with
23 alternatives, right? He's not Occidental.

24 CO-CHAIRPERSON CARROLL: We don't make that much
25 glass cleaner.

1 PANEL MEMBER CORDS: Then the next question is:
2 Who decides on what assessment process gets used on the
3 alternatives he's hired somebody to come up with? Who
4 decides then what's safer out of the ones, right? And
5 then the other question is who pays for all that? Does
6 Bob? Does Bob's Glass Cleaner Company pay for it? So if
7 I'm him, I'm going to make the switch before I ever get to
8 your process.

9 And I think that that -- I mean, there is an up
10 side to that obviously. People start getting those things
11 that are on that major chemicals of concern list out of
12 the marketplace. But how well -- how do we look at what's
13 been put in as replacement.

14 CO-CHAIR GEISER: But your point is if the
15 alternatives assessment is costly enough either in
16 resources or whatever, it may drive people to make the
17 substitution but not to pay attention to what was
18 substituted.

19 PANEL MEMBER CORDS: He may grab something that
20 is a functional equivalent or performance equivalent
21 without doing any assessment on it as long as it's not on a
22 bad actor list.

23 CO-CHAIR GEISER: Julie.

24 PANEL MEMBER SCHOENUNG: Mostly, I just wanted to
25 echo what several other people have said, Tim's comments

1 and Megan's comments about really setting a goal of what
2 these case studies are set to do.

3 And I liked Tim's emphasis on decision rules. I
4 really think that you can do alternatives assessment over
5 and over and up and down and right and left. But if
6 you're not getting to a point where they help you make
7 decisions about what's safer, then it's just a lot of
8 information collected on a lot of pieces of paper and
9 electronic files. So I think the need to have decision
10 rules.

11 But I was visualizing as he was speaking the
12 standard two-dimensional plot. And if it's not in that
13 upper right-hand quadrant, we don't look at it any
14 further. And Bill mentioned the 300 end points that I
15 tried to visualize the 300 dimensional trade-off plot.
16 And that doesn't quite work of course. And so those
17 trade-offs are clearly a key part. But I think if we can
18 at least determine that lower left-hand quadrant of the we
19 don't want those, that that will eliminate a lot of
20 alternatives and guide people to move towards that upper
21 quadrant of safer substitutions.

22 The other comment I wanted to make was in
23 response to Kelly's comment about the creativity side
24 versus the regulatory side. And I would hope that it
25 wouldn't pull the creativity side completely out of the

1 equation. I would help that indeed the alternatives that
2 can be considered could be way back at that design stage
3 where you're creating something completely new and just
4 saying, you know, we can't find an a alternative. We're
5 going to go for something completely new.

6 So I see why you want to make the distinction and
7 I can see that the regulation and the process of
8 compliance will lead to that creativity side hopefully
9 evolving industry and then academic circles and so on and
10 decision theory classes and so on. I would hope it could
11 still be there.

12 CO-CHAIR GEISER: I have a list that goes
13 something like this: Art, Tim, Dale, Kelly, Roger, Joe.
14 So Art.

15 PANEL MEMBER FONG: Thank you, Chair.

16 I just want to add one item to the summary of
17 parameters that Scott put together for us in terms of
18 parameters that are important to cover in these case
19 studies. And that is -- actually maybe Scott mentioned it
20 indirectly. It's the one related to cost, time, and
21 labor, because I think that's also addresses one of the
22 related to what Megan was saying about what are we trying
23 to learn from the case studies. And I think that's a very
24 important exposure for us to understand.

25 Thank you.

1 CO-CHAIR GEISER: Tim.

2 PANEL MEMBER MALLOY: I find myself in a unique
3 position of agreeing with Bill. I'm not sure how I feel
4 about that.

5 But this whole thing about the guidance, that's
6 another concern I had. So in California there is this
7 notion of underground regulation so that clearly guidance
8 is required in individual cases about what to do. But if
9 it gets too much like general open -- rules of general
10 applicability, there is a real risk that it's going to be
11 viewed as a form of regulation that has to follow the
12 normal regulatory path. So I would just kind of suggest
13 that the agency think long and hard about what process
14 they're going to follow, whether it's going to be -- if
15 you do decide it's going to be in the form of a guidance
16 that maybe you might consider following the Administrative
17 Procedures Act requirements anyhow, not only because may
18 be it makes sense because people want to have that
19 interaction, but secondly to protect the whole process
20 from getting dragged down and bogged down in litigation.

21 Along those lines, on the other reaction I had to
22 your point, Bill, was it made me think that Maziar, you
23 had described the guidance as a consensus-based process.
24 And that's kind of -- it keeps coming back to me that
25 clearly regulatory development ought to be as consensus

1 based as possible for lots of good reasons.

2 On the other hand, I just -- it makes me even
3 comfortable to think that the ideas we have to come up
4 with a regulation that everybody agreed with. One that
5 worries me as to whether you're ever going to reach that
6 point, but also the statute doesn't really kind of -- the
7 statute has some underlying principles in it. Sometimes
8 they're hard to find, but they're in there. So it can't
9 be completely consensus based. It ought to be -- there
10 has to be some I think on the part of the agency to kind
11 of set the tone and make the final decision. After
12 hearing from everybody on working with everyone, of
13 course. But still, to make a call and not leave it
14 completely consensus based.

15 On Bruce's point, I agree with him too that
16 that's an issue. And I thought it might have been
17 addressed in the draft or the discussion draft regs where
18 there was this notion of I felt there was a provision in
19 there that said if you switch out of a chemical of
20 concern, you have to do an alternatives assessment on that
21 switch out, even if the thing you switched to hasn't been
22 identified as a chemical of concern. So it's kind of --
23 you're not going to catch everybody, and I don't mean
24 catch in a pejorative term, because that's a totally
25 rational thing to do, right. But there's going to be some

1 I think where somebody will switch out and it will
2 avoid -- nobody notice or will fall outside of that rule.
3 But I think there's ways of protecting the integrity of
4 the system such that at least if you switch out -- so I
5 think that's an excellent point and one that has to be
6 thought through. I'm not sure what the final regs will do
7 about it. But it seems like a manageable implementation
8 issue.

9 CO-CHAIRPERSON CARROLL: Dale, you're next.

10 PANEL MEMBER JOHNSON: I agree with Tim, although
11 I can't remember which point that I was going to agree
12 with.

13 So there's a couple of different ways of using
14 case studies in relationship to guidances. And what I
15 want to try to understand is which approach you're
16 actually using.

17 So on one approach, you spend a lot of time and
18 you write the guidance as a draft document. And then you
19 use case studies to actually understand whether or not the
20 guidance actually works, how you revise the guidance from
21 that point, and then you go forward with it that way.

22 The other approach, which it kind of sounds like
23 you may be doing, is that you start with case studies to
24 inform you on how to write a guidance. The difficulty
25 with that is you become very narrow in understanding how

1 the guidance might work, the very specific examples that
2 you would use for case studies. And they may and they
3 won't cover all instances and you'll be left with somewhat
4 of a narrow type of guidance document.

5 So there is another approach that people will use
6 and that's to use the combination of both of those. So
7 start with case studies that are designed to help you
8 write a guidance, and then come in with case studies that
9 allow you to validate the guidance and then see whether or
10 not it works and allows you to revise them so you can get
11 to a final form.

12 CO-CHAIR GEISER: Thank you, Dale, for returning
13 it very clearly to the question of these case studies and
14 how they place. Very good.

15 So we have Kelly, Roger, and Joe.

16 PANEL MEMBER MORAN: And I'd like to echo what
17 Dale just said and add one more layer to that, which is
18 that I know the department has been interested in pursuing
19 some development of alternatives assessment with industry
20 groups. And I think that would be a really important
21 contributor to the development of the guidance is having
22 the experience of going through several of those. And I'm
23 hopeful that at least one of those will happen right away,
24 but the department will be able to find several
25 opportunities to be working on those in parallel with this

1 case study process, because there's nothing better than
2 getting in there and trying to do it with some different
3 kinds of products.

4 I came back around just to clarify a couple of
5 points. Maziar, before you got back, I did make a comment
6 that we can't regulate creativity. And it's going to be
7 really important in approaching this that we draw that
8 line between the creative part where we're thinking about
9 inspirational stuff and the more mundane science and
10 engineering and doing the alternatives assessment.

11 And I totally agree with Julie caught something
12 that I think you could have easily taken any comment to
13 mean I wasn't eager to see a broad range of alternatives
14 being considered. And actually I think her point is right
15 on target, we should be doing that, but looking at a broad
16 variety of things. And I thought the Santa Barbara study
17 did a really good job of making that point really clearly.

18 But I really feel the need to clarify for you,
19 Maziar, that what I was concerned about is that there is a
20 really important role for inspirational design changes,
21 real step changes in how we approach product design. But
22 that's not something you're going to be able to include in
23 this regulatory process. And there are lots of folks that
24 give inspirational speeches.

25 I saw the cradle to cradle thing as being kind of

1 out of place in this as compared to the other things where
2 there's real specific examples. And maybe there are. I
3 haven't seen those.

4 But so want to make sure that the case study
5 document as the department moves forward that we're
6 thinking about the more mundane doing the science and
7 engineering stuff and the department recognizes that we'll
8 draw off of that creativity, but that is separate. And
9 that's something -- I really am interested to have the
10 State say what is our role for stimulating creativity in
11 new products.

12 Just a couple more points. Bruce said something
13 I also really agreed with -- and I'm sad Mike Kurshner is
14 not here -- which is as soon as people see stuff on that
15 list of chemicals, they're going to trying to make those
16 changes. And that's actually a place where I see a role
17 for that open source alternatives assessment work. So
18 getting the timing of all of that right as the department
19 proceeds to manage the implementation of this is going to
20 be important.

21 There are probably going to be examples where
22 people as soon as they see the chemicals on the list and
23 we're waiting for the product on the list they're going to
24 be looking at reformulating. And that time frame is going
25 to be a great time frame for the department to be engaging

1 key industries to say hey, why don't you guys get started
2 on that.

3 And for me, I always want to clarify my vision of
4 the open source alternatives assessment is not as Bill
5 envisions, that it's just this thing that goes out there
6 that's competing, but rather it's a resource document that
7 each individual company would draw into its own assessment
8 and build off for its own private decision making within
9 the context of its specific product and market needs.

10 So I see it as a huge really great concept, and
11 I'm really excited the department has latched onto this
12 concept, because I think it could be very powerful for a
13 lot of folks.

14 And then finally back to the case studies. In
15 addition, I mentioned modules and the idea of looking for
16 those. I also heard Julia made a really great point about
17 the idea that some are easier than others. So it may be
18 that the department also on examining case studies I think
19 a lot are going to need to be done, like 25. And that we
20 also ought to be looking at tiering, some examples that
21 were easy decision and some that were hard and trying to
22 say is tiering going to be part of this guidance and
23 process as we proceed.

24 CO-CHAIR GEISER: I have Roger on the list next.
25 But given that Roger is going to speak, it reminds me that

1 one of the things we heard this morning about the U.C.
2 report is that it needed more examples of industry of
3 private alternatives assessment. So as you go -- as we go
4 around, can people a little bit how are we going to get
5 good examples of private alternatives assessments as well,
6 Roger, if you could add that to yours, it might be
7 helpful.

8 PANEL MEMBER MC FADDEN: Thank you, Ken.

9 I think we really need this AA to think a little
10 bit about this AA in this to use Tim's phraseology
11 regulatory environment. At the same time, in a innovative
12 or creative environment. There needs to be both of those
13 components.

14 So I'm suggesting that for case studies you
15 probably have a pretty good resource for those under the
16 regulatory side in California particularly, because of
17 California VOC CARB VOC regulations. It has driven
18 companies to have to reformulate, to have to comply. And
19 in doing that, they end up having to do these alternative
20 assessments whether they want to or not. It forces them
21 to have to look at that. So that would be one place that
22 you may want to look for some ideas for your case studies.

23 On the innovative and creative side, we need to
24 be careful here. There are plenty of creative innovative
25 products that contain chemicals of concern. So we need to

1 be careful not to think that something just because it's
2 been designed to be creative or innovative that somehow
3 it's going to be okay. That it's not going to contain
4 things that could be harmful to environmental or human
5 health.

6 So now from an industry, since you've tossed that
7 one out for me, I think it is important to engage industry
8 because that you have a vested interest, a real vested
9 interest in this economically in their organizations. And
10 I think if anyone is going to do anything about this in a
11 big way, it's this leadership company, this ten percent of
12 the companies that are going to do it, irrespective of the
13 regulations. They're going to comply because we all are
14 supposed to do that. But that ten percent always seems to
15 step up to the plate whether there is a regulation to tell
16 them to do it or not, because they see it as a competitive
17 advantage or opportunity to offer something of value to
18 the consumers.

19 So I think you should look at those, look at the
20 green chemistry award winners, for instance, the
21 precedential green chemistry award winners. Take a look
22 at those and see if there isn't some examples of what
23 they've done in this area of alternatives assessment.
24 They must have done those because their leadership
25 companies that would have probably not done this without

1 doing those assessments. See if you can get some help
2 there.

3 Thank you very much.

4 CO-CHAIR GEISER: Thank you.

5 Joe.

6 PANEL MEMBER GUTH: Thank you.

7 Just on the question of should we use private
8 versus public alternatives analysis processes, as I
9 mentioned earlier, I think the department ought to try to
10 get information about any methodologies for doing
11 alternatives analysis.

12 But I think it's hard to imagine sort of actually
13 using them or permitting them to be used in a way that
14 can't be reviewed more broadly. If we have -- it's one
15 thing to have data that we can't really perceive. But if
16 we can't even see the process that's used, that sort of
17 makes that whole decision -- you know, reduces the
18 transparency of the decision making process even another
19 level.

20 I also wanted to just say, I mean, I agree with a
21 lot of the things that Tim said and Bill said and Bruce
22 said. I think that it's very unlikely that there is
23 actually going to be a consensus around the kind of
24 alternatives analysis that should be done. And more
25 importantly, as Tim mentioned, the actual way to make

1 decisions and how to balance all the various concerns. So
2 I think that the kept is going to have to make some
3 decisions about that and I would say at least as a
4 guidance -- and I might even suggest going through the
5 regulatory process for some of the reasons that Tim
6 mentioned, because we've seen in the last ten years on the
7 federal level that while guidances are easier to
8 implement, they're also easier to change.

9 And I think some of the questions that are going
10 to be left by the regulations as far as we understand them
11 are important enough that they may be worth trying to put
12 through a regulatory process again.

13 And then finally, I would say I think that the
14 regulations did, in fact, have the drafts that we saw
15 provisions so that people can't just swap out a chemical
16 as soon as they see it appear on a list without reporting
17 to the department that that's been done. And so I hope
18 that's still in there. If it's not, I guess there's still
19 a couple more days to put it back in.

20 CO-CHAIR GEISER: Jae, I think you're next on
21 this.

22 PANEL MEMBER CHOI: Just, you know, Ken is very
23 anxious to get to how to start case study, that's what I
24 like to make some suggestions here.

25 The University study also showing page 79 and 80

1 I think if I recall about this Design for Environment, I
2 want to suggest, you know, take an Occidental Chemical
3 Company, Intel, HP, DuPont. They should have the Design
4 for Environmental document.

5 Now, the way we have Design for Environment, it
6 contains everything we discuss. So you can cut down all
7 of this complexity, but at the same time, you integrate
8 all this complex subject into one document. That's what
9 the Design for Environment. So some people may -- outside
10 industry may not understand a clear what a design for --
11 is coming from design for TFX or Design for Environment,
12 design for reliability, et cetera. To take all the
13 documents from representative companies, chemical company,
14 and the user company, Intel, HP, maybe Hoover, Apple, and
15 then you follow their documents and take out the idea from
16 there. And then you can start your case study.

17 CO-CHAIR GEISER: Lauren.

18 PANEL MEMBER HEINE: Thank you.

19 Couple of things. I wanted to respond to
20 something Joe said earlier, a colleague of mine whose name
21 I won't mention, said that they do alternatives assessment
22 all the time and for every year P&G, they just don't
23 always include inherent chemical hazard as part of the
24 alternatives assessment.

25 So this is I think it's really important this is

1 what we're talking about, that alternatives assessment is
2 not new. But how do we integrate these new kinds of
3 considerations.

4 And my modest friend here, Roger, didn't mention
5 that he actually developed a standard that he used for
6 internal product development called SEGC 114 that is used
7 to design all chemical products that Coast Wide
8 Laboratories makes. So the standard was tiered, but all
9 products had to meet a minimum requirement. And that
10 would have been well beyond containing anything like the
11 chemical of concern. And then were graded accordingly.

12 Now, this is an internal product development
13 standard. That's up on the Coast Wide website, right, for
14 any other manufacturer to use. So there is a nice very
15 specific example of an industry setting up a methods for
16 comparing alternatives at the chemical level and into
17 product development.

18 And finally, I think this goes with something
19 Rich Learoff suggested in his comments, another very
20 specific example of a case study might be to look at
21 industry program like SC Johnson Green Leaf. That's a
22 well-known program. But a consideration of how the pros
23 and cons of something like that might be elucidating as
24 well.

25 CO-CHAIR GEISER: Bill and then Dele.

1 CO-CHAIRPERSON CARROLL: Thank you, Chair.

2 There is another industry. We don't ordinarily
3 think about it in this context that may have some wisdom
4 from the perspective of looking at lots and lots of very
5 different variables and deciding alternatives and
6 formulation. That's the pharmaceutical industry where you
7 have all manner of things that go into deciding what goes
8 into things that you will invest a billion-and-a-half
9 dollars in trying to bring to the market. So you might
10 ask a little bit about tools that are used in the
11 pharmaceutical industry with respect to that.

12 Thank you, Chair.

13 CO-CHAIR GEISER: Dele.

14 PANEL MEMBER OGUNSEITAN: Thank you.

15 I point us to read (inaudible) response to the
16 private and public question on what to include. And I
17 actually agree with his insights on how to access some of
18 the private companies alternatives assessment which you
19 also mentioned the SC Johnson group.

20 But I'd like us to maybe spend a little bit more
21 time on the Question 2, 2, I guess the product types,
22 whether we should include formulated assembled as Maziar's
23 questions to us. And this confuses me a little bit.
24 Almost everything I've heard so far is talking about a
25 chemical of concern, and I don't know whether we've

1 changed what will trigger an alternatives assessment
2 besides a company or consumer notice a particular chemical
3 that poses a hazard or risk because of exposure potential
4 in a product. Why else would we pick a product that may
5 not have a chemical of concern?

6 So I just want some clarification about from
7 Maziar perhaps about what he's thinking outside of coming
8 from a chemical of concern to trigger the alternatives
9 assessment.

10 And I also tie that to the comment about calling
11 this AA versus CAA -- which I agreed with calling it
12 CAA -- from selecting a product that may not be
13 recyclable, for example, but maybe doesn't pose any other
14 risk or maybe NIG, the issues of concerns.

15 So I'd like us to maybe talk a little bit to
16 clarify for Maziar what this means for us.

17 ACTING DIRECTOR MOVASSAGHI: This is quick and
18 easy. 1879 called for prioritization of chemicals of
19 concern in consume are products. So if you all recall
20 from our flow chart, our prioritization is two steps: A
21 chemical prioritization and then also a product
22 prioritization. And a product under consideration, a
23 priority product by definition of a chemical of concern in
24 them.

25 But the priority product in our proposal becomes

1 the regulatory driver and moves into the alternatives
2 assessment arena. So those manufacturers of those
3 priority products which by definition of a COC will have
4 to do an alternatives assessment. But as was mentioned,
5 we recognize that companies also react to a list of
6 chemicals, so some actions can happen even before a
7 product is prioritized.

8 CO-CHAIR GEISER: Just a couple of comments from
9 me. Then I guess just -- it would be useful to look at a
10 range of case studies. I would hope that amongst that
11 range we do use example as educational is saying use
12 examples where a design change or some management change
13 or something else was substituted for a chemical so that
14 we look at a case that looks like a wide range of possible
15 alternatives and amongst those that I'm thinking of might
16 be that some of the Japanese firms that move I think their
17 electronic transformer whatever in the computer or
18 whatever it was in the laptop away from the surface of
19 the -- with the heat source in the laptop away from the
20 surface of the laptop in order to reduce the need for a
21 flame retardant in the surface, that would be an example
22 of one. But it might be a good example. And I think we
23 might just troll for some others that are design changes
24 or changes that took place. So let's make sure to include
25 those.

1 Another kind that I think would be useful to
2 think of is ones that were done by groups of firms rather
3 than by single firms where either a trade association or
4 sponsor as in some of what the semi-conductor industry
5 association has done in its road mapping might be
6 interesting to look at. And I think that Rich Liroff is
7 correct looking at -- suggest one other one and that is
8 Doug Poole from DuPont reminded me of the TURI, DFE wire
9 cable coating alternatives assessment looking at
10 alternatives I think it was to led pallets in the
11 surfacing on wire and coatings. That would be another
12 example where a group of firms got together to do that.

13 And then last, I would suggest looking at the
14 halogen free decision of Apple and the other computer
15 laptop computer manufacturers, because that I think showed
16 a pretty interesting example of kind of something that was
17 edging the industry forward as well. So those are some
18 ideas of ones that might be useful to look at.

19 Do we have other comments on the case studies
20 help in thinking about helping the department in how to
21 frame the next initiative on case studies?

22 Oh, Tim.

23 PANEL MEMBER MALLOY: I just -- we haven't really
24 talked about what we mean by case study. So like I'm
25 wondering maybe you could help Maziar by telling us a

1 little bit more of what you had in mind. Because when I
2 think about it, you said 20, 25 pages. So we've all seen
3 case studies where it's kind of just really descriptive.
4 Here is what they did. Here is how they did it. Here are
5 the outcomes. And that could be contrasted to a case
6 study that is more -- one might say analytical or
7 evaluative that looked at the process where there were
8 obstacles, barriers, so it's an evaluative case study or a
9 descriptive case studies. That's one thing that would be
10 helpful to get some clarification on and also think about
11 it when you're designing.

12 The other was what's the scope of it. Are you
13 looking purely at methodology or would you also be looking
14 at things like, you know, organizational aspects? So what
15 is it about particular kinds of management approaches that
16 make the methodology more useful or less useful?

17 And one thing that comes to mind is the
18 relationship between the alternatives assessment and kind
19 of resource allocation within the firm and the allocation
20 of you know even just kind of a line of authority through
21 the firm, who's doing the alternatives assessment. So
22 does that somehow increase the efficacy or the
23 persuasiveness. So there's a different -- the scope of
24 the case study itself I think it would be useful to define
25 that more. Because my personal kind of view of this is

1 that knowing a lot about how firms respond to a particular
2 methodological approaches is important in designing.

3 So like, you know, if you want a management
4 system of particular type, you might want to design it in
5 a way that's going to most empower the folks within that
6 firm who would be implementing it. So it seems like you'd
7 want to think about stuff like that. So I don't know.
8 I'm just kind of raising this in terms of it would be
9 useful to think those things through in terms of scoping
10 and design and ultimately those things are going to cost a
11 lot different, you know, depending on what the scope of
12 your case study.

13 CO-CHAIR GEISER: Any other comments on this?
14 I'm sorry, Michael.

15 PANEL MEMBER WILSON: I guess just a couple of
16 other things. One is that, you know, Air Resources Board
17 tells us that 164 million pounds of chemicals are sold
18 every day in products in California. And so it seems to
19 me it would make sense to make this as California centric
20 as possible that would be applicable to California
21 businesses purchasing chemical products. And if we have
22 data on what industry or what business sectors are most
23 chemical product intensive, to make these immediately
24 applicable to those sectors. That would be one.

25 And the other is many of those are small- and

1 medium-size businesses. And so devising case studies that
2 would demonstrate the applicable useful to small-medium
3 size operations without large staff to implement.

4 You know, the thing that keeps coming to mind for
5 me is as DTSC and also U.S. EPA struggled with trying to
6 transition the automotive repair industry away from
7 aerosol brake cleaning products to water wash systems.
8 There were case studies developed showing that if the
9 small shops would invest \$900 in the water wash systems,
10 over time, they could save money in the purchase of these
11 aerosol products.

12 But the fact was that the little shops were just
13 simply passing the two or three dollar cost of the aerosol
14 onto the customer. So that transition was never really
15 happened across the industry.

16 So it's just I think worth, you know, looking at
17 what we've done in the past and are there ways of
18 constructing these case studies in ways that could be
19 motivating and compelling to the small and medium size
20 companies in California.

21 CO-CHAIR GEISER: Julie.

22 PANEL MEMBER SCHOENUNG: Thank you.

23 This is just going back to a detail and that's
24 the acronym of the CAA. I guess the more I see it on the
25 paper in front of me, the more I'm bothered by trying to

1 come up with the simple label for what we're talking about
2 here today, which is very complex. And reinforcing what
3 Lauren says, that alternatives assessment has been around
4 forever and doesn't necessarily include what the LCA idea.
5 And I know we wanted to move away from LCA, because that's
6 too narrow. And I like alternatives better.

7 But I'd like you to think about trying to come up
8 with a different name. And I don't know exactly what that
9 should be if it needs to have the California Green
10 Chemistry Initiative as part of that title since it's
11 specifically targeted towards addressing how you're going
12 to do alternatives assessment to satisfy the regulations
13 or something. But the chemical alternatives assessment
14 takes out this idea of being able to design it out in a
15 bigger way and leaving any pneumonic in front of it takes
16 away the focus we're trying to put in here. So I would
17 just ask you to try to think of another acronym. But I
18 haven't yet thought of one. So I was hesitating to bring
19 it up again.

20 Thank you.

21 CO-CHAIR GEISER: If it comes up later, just
22 throw that out.

23 Any other comments here?

24 One thing that did strike me, and that is seeing
25 as the Green Chemistry Initiative has used this before,

1 and that is just calling out and asking for help from
2 California. I would be intrigued by the idea of just
3 putting out sort of an invitation for any firm in
4 California that wants to come in and show what they do or
5 already do in terms of alternatives assessment. I would
6 guess you would get a very interesting array of firms
7 coming in proudly wanting to show an example of how they
8 already do this.

9 And I know our experience -- I remember our
10 experience when we were first laying out the regs of the
11 Toxic Use Reduction Act and we were trying to come up with
12 a whole plan of -- substitution planning protocol and all.
13 And we just eventually threw out an invitation to the
14 Massachusetts firms to come in and show us an example of
15 it. And we were just stunned that the number of small --
16 particularly small firms that showed up with a really
17 brilliant example of how they were doing it. And you
18 didn't -- I mean, you just sat there and taped it. And it
19 was great. Sometimes just asking for help will get you an
20 enormous amount.

21 Dale.

22 PANEL MEMBER JOHNSON: Can I add something?
23 Because this actually happened to me a few years ago. And
24 it was any relationship to case studies and then
25 international guidelines, guidances. And so what -- and

1 you're dealing with proprietary information. And so the
2 concept was to create a symposium workshop and then
3 specific invitation were given to companies and various
4 scientists and so forth to come in and present their case
5 studies that were leading to the development of guidances.
6 The end product was going to be a book. So then the book
7 was published and then that was the incentive.

8 So it was obviously the incentive for the
9 scientist. But it was the incentive for the companies to
10 participate in this. So there would be this document that
11 really they could use it. They could use it in their own
12 ads or anything else they wanted to do that they
13 participated in this. They gave their proprietary
14 information and so forth. This was a company you used to
15 work for too, Joe.

16 So it was really effective and it led to -- and
17 it was a three-day thing. And it led to the development
18 of some very critical guidances. And again, I'll use that
19 term the case by case thing came out of those particular
20 documents. And everybody then participated and
21 contributed proprietary information that related to the
22 actual questions that were being asked. And they were
23 very specific guidelines from the group that organized the
24 symposium as to what had to be in the presentation and how
25 the actual publications were going to be structured after

1 that. It was a great idea.

2 CO-CHAIR GEISER: Lauren.

3 PANEL MEMBER HEINE: Unless you're trying to
4 change the topic, I'll add something here.

5 I think that's a great idea, Ken, doing a call.
6 I'm curious as to how much guidance you needed to provide
7 in order to get the kind of help you needed. So that's a
8 question. But I want to make one more comment. That's a
9 question for you. There's an organization that many of
10 you may know called Innocentive. They take on challenges
11 for all sorts of design problems. And they do offer for
12 free to NGOs, and I don't know about state governments,
13 but it might be worth exploring help in setting up
14 challenges and help in scoping the challenge because
15 that's the hardest part is knowing what exactly to ask
16 for.

17 So that might be an idea, doing something through
18 Innocentive, leading to a book publication or even just
19 features on the website. But I think that's a brilliant
20 idea to reach for help. I'm going to divulge in one quick
21 story.

22 A California composer read a piece of music and
23 videotaped himself conducting it and with instructions for
24 the sopranos and the tenors and put it out on YouTube and
25 people from all over the world responded singing. And

1 it's called virtual choir. And you can go to the website
2 and then he compiled all of the parts and can see each of
3 the singers from around the world. And he pulled it all
4 together into this beautiful piece of music.

5 And I'm thinking of Maziar conducting exactly
6 what is needed by industry to be able to pull in the right
7 kind of information for the case studies. So that's a
8 question for Ken about what do you need to do to get the
9 right information.

10 CO-CHAIR GEISER: I do have a little story on
11 that. Basically, yeah, we put out this sort of invitation
12 to come in and show us how you do a substitution plan on
13 hazardous chemicals, how do you do a plan on how you can
14 possibly find alternatives and then how do you do the
15 feasibility assessment and the economic assessibility and
16 all of that kind of thing.

17 And I remember us sitting there as we had an
18 array of firms that came in -- two of them Polaroid and
19 Digital, if you may remember firms like, that showed up.
20 And they both had brought in several people from their
21 production staff and all. And they were talking about how
22 much time and effort they put into their plan and all that
23 kind of stuff.

24 And then there was this little guy on the side
25 from -- I do remember it was Star Plating. And the guy

1 from Star Plating came in and he had a 35-page document of
2 his plan on how he was changing his plating bathes. And
3 these guys, Polaroid and Digital had just gone through
4 this thing about talking about the months of work. And so
5 we sort of -- this guy just put it out there. I remember
6 asking and say, "Geez, this is an amazing plan. How long
7 did it take you to do it?" And he said, "Well, it took me
8 a group of nights. I had to do it. It's true. It
9 probably took me about twelve nights to actually do the
10 whole thing. But seeing as I'm the owner of the firm, I'm
11 the manager of production, and I'm also the health and
12 safety manager, it didn't take a lot of talking about it."

13 All right. I think we've kind of come to the end
14 here of this section. We might want to take a break at
15 this. We have two more questions we want to take up, we
16 will take up immediately afterwards.

17 Kathy, do you want to salute us by reminding us
18 of our obligation at the break?

19 MS. BARWICK: I think you just did. But as we
20 recall, we perform our business in front of the public.
21 And so I just remind you of that. Thank you so much.

22 (Thereupon a break was taken from 2:45 p.m.
23 to 3:05 p.m.)

24 CO-CHAIRPERSON CARROLL: Okay. More or less
25 pounding down the home stretch, either because we've run

1 out of things to say or because we're coming to the end of
2 time, but either is good.

3 I'd like to call your attention for the remainder
4 of the afternoon so much as you choose to use of questions
5 3 and 4 particularly.

6 Question 3 is based on the discussion that we've
7 just had. Are there individuals that we should be
8 contacting to provide examples and participate in the case
9 study. I think you may have interpose that had into your
10 comments already. But I want to ask the question
11 specifically to make sure that you've had an opportunity
12 to bring that forward.

13 And then the second thing which might be meatier.
14 And actually Maziar, I need to get a little clarification
15 of this. Maybe I'm the only person who's so stupid as to
16 not understand it.

17 When you say how should continuous improvement be
18 factored into the AA process, do you mean in the process
19 of generating AAs or do you mean in the AAs themselves?

20 DIRECTOR MOVASSAGHI: I'll give you time to chew
21 on this cookie. But this is Bob's question.

22 CO-CHAIRPERSON CARROLL: I see. So this is the
23 case where it all flows downhill; is that correct?

24 DIRECTOR MOVASSAGHI: DTSC is a downward
25 delegating institution.

1 CO-CHAIRPERSON CARROLL: Fine. And a mindless
2 one it is.

3 So I guess I'll look over at the DTSC table and
4 see if anybody would like to field that question for us.

5 MR. BOUGHTON: So could you clarify the question
6 again? It had to do with the continuous improvement and
7 whether it was about --

8 CO-CHAIRPERSON CARROLL: About the process of
9 generating AAs or the regs or anything else associated
10 with process. But not the AAs themselves or continuous
11 improvement in AAs themselves, eg., I did it once, and
12 five years from now I'm going to do it again.

13 MR. BOUGHTON: Both.

14 CO-CHAIRPERSON CARROLL: Fine. Then I guess the
15 question that you'll be answering in almost any way you
16 choose to interpret it is how should continuous
17 improvement be factored into the AA process.

18 So take out your blue books and pen at this one.
19 Let's go back to Question 3, based on Question 2. Who are
20 specific individuals that we should contact to provide
21 examples and participate in the case study compilation?
22 Is there more that you'd like to add, people you would
23 suggest, people that have expertise?

24 Kelly, why does it not surprise me you're one of
25 the first flags up. Go right ahead.

1 PANEL MEMBER MORAN: My name doesn't start with
2 an A. Usually it's the As who have to go first. You're a
3 C.

4 Actually, I didn't want to mention specific names
5 in public, but I should mention that DTSC as Julia
6 mentioned has been involved with some good examples. One
7 of those is the analysis of the alternatives for wheel
8 weights. And I'm going to mention some things that aren't
9 necessarily complete in all aspects in terms of the
10 regulation, but I think they make really good place
11 studies.

12 The other ones it's been involved in are the
13 solvent substitution ones. So for dry cleaning and other
14 kinds of cleaning solvent, cleaning parts and so forth,
15 it's working right now on a project having to do with
16 marine anti-fouling coatings. I think there's some great
17 learning from how that's being approached and what's to be
18 done there. These aren't necessarily traditional AAs, but
19 I think they make really good case studies.

20 Somebody already mentioned the air pollution laws
21 for consumer products and there are -- I note that the ARB
22 is looking at what alternatives and in fact are
23 determining what's practical in terms of setting the
24 regulatory standard. So they're going through a process
25 that must be defined, and I'm sure there have got to be

1 good examples there, but I couldn't point to one that I
2 would say here pick this one as the best example.

3 Another organization that's been trying to do
4 work in alternatives assessment is the San Francisco
5 department of the environment. And Debbie is not here.
6 And a couple I've seen them do, they do a nifty look at
7 wood preservatives alternatives. And they've also done a
8 lot of work on alternatives for various products they're
9 trying to purchase, how to decide what the best one is.

10 And again, those are not necessarily complete,
11 but they're really practical examples. And might help
12 with some of these concepts of tiering, how far do we need
13 to go in some of these areas.

14 A couple that have been around for a long time
15 and there have been a number of different examples are
16 bags and diapers. And for bags, there's been a big debate
17 about plastic versus paper versus reusable bags. And I
18 think there's several competing assessments over the last
19 decade on that topic. And that would make a really
20 helpful case study, because as I mentioned earlier, I
21 think one of the key things that needs to get worked out
22 here is what is the scope of the alternatives assessment,
23 because one of the problems we had in alternatives
24 assessment in the past is people have scoped it to leave
25 out key things. So the differences in the outcomes of

1 these alternatives assessments have to do with the scoping
2 of the alternatives assessment. And that's why I think
3 having the case studies actually drawing out what is the
4 conceptual model that it was based on in each of the
5 steps.

6 And I'm finding this little drawing of conceptual
7 models I think it was a fancy term and they didn't know
8 what it meant for a long time. And I discovered my stupid
9 little drawings where you were pointing everything that
10 the different environmental media that they went that was
11 a conceptual model. And I'm now famous for drawing one
12 with a taxi cab in it for vehicle brake pads and I didn't
13 know it was a conceptual model from when I first drew it.
14 But I now am using the proper term.

15 And I think that goes through that exercise for
16 the case studies would be very enlightening in trying to
17 understand what the gaps are in different examples. So
18 that the bags version and the diapers disposable versus
19 cloth that might be near and dear to Maziar's heart. But
20 there have been several different versions of that with
21 different results. And those also highlight the
22 importance of the specific environmental issues and the
23 specific geographic location.

24 So one of the interesting -- one of the disposal
25 versus cloth diapers studies highlighted that water was

1 such an important piece of that equation that you are in a
2 place with lots of water that washing the diapers was not
3 such a big deal. If you were in a place with not much
4 water, that could actually be a fairly big deal in terms
5 of the life cycle impacts.

6 CO-CHAIRPERSON CARROLL: Just to clarify, Kelly.
7 And I'm familiar with both of those from previous history.
8 Those get more into the LCA kind of category than AA.

9 PANEL MEMBER MORAN: And that's actually one of
10 the issues that I think we have to work through here when
11 we're looking at examples we're trying to define what's an
12 LCA? What's an AA? How do those fit together? What are
13 the missing pieces?

14 I actually think that the department needs to
15 think fairly broadly here, because we're trying to make
16 something that's doable. But at the same time, we're
17 trying to capture that whole life cycle. And how that
18 works together is I think part of what we can learn from
19 this case study thing.

20 And then lastly, Department of Pesticide
21 Regulation even though it's pesticides and they're not
22 included do alternatives assessment on a regulation back
23 in the 90s for copper based root killers and Tri-butyl tin
24 cooling water additive alternatives. So they did their
25 version of what they thought was a full alternatives

1 assessment for those two functions. And it's just another
2 interesting example of what was included and what wasn't
3 included.

4 CO-CHAIRPERSON CARROLL: Thank you, Kelly.

5 Maziar, you want to get in here for a second?

6 DIRECTOR MOVASSAGHI: I've been trying to ask
7 this question because it's come up -- I think I've heard
8 this. What if we break up this AA compilation into two
9 sections: Some case studies about chemical alternatives
10 assessment and then say half a dozen of those and half a
11 dozen LCA case studies? Would that -- two volumes of the
12 same compilation, two segments? Or is that too much of an
13 artificial cut-off?

14 CO-CHAIRPERSON CARROLL: Julie, you're next.

15 MR. BOUGHTON: Can I --

16 CO-CHAIRPERSON CARROLL: Bob, go ahead.

17 MR. BOUGHTON: Something real quickly. We
18 actually are underway developing case studies for LCA with
19 U.C. Berkeley right now wrapping small contract up with
20 them. So I think that will help inform some of the LCA
21 side. And that will be looking at how to properly do
22 functional unit definitions and defining how to properly
23 scope those types of things through case studies will show
24 good cases, bad cases where it blue up, things like that
25 if we can find enough. So some of that may be done is my

1 point.

2 CO-CHAIRPERSON CARROLL: Thank you, Bob.

3 Let me just review the bidding very quickly. I
4 have Julie, Dale, Lauren, Roger, and Art in that order.

5 Julie, it's all yours.

6 PANEL MEMBER QUINT: I'll be very brief. I just
7 want to follow up on what Kelly said and put a name to a
8 lot of the California work, including the marine project
9 which I think is a really great example and say that
10 please contract Dr. Katy Wolf of the Institute for
11 Research and Technical Assistance, who has done a lot of
12 the pollution prevention work that DTSC has collaborated
13 on and has worked very successfully.

14 We talk about industry and not having access to a
15 lot of the things that different industries are doing.
16 And in her work, she has collaborated with numerous
17 industry not only regulated industries, but people who are
18 the chemists who are developing alternatives.

19 So I think there is a wealth of information
20 from -- and a lot of the work has lead to regulatory
21 change and a lot of it has been focused on consumer
22 products. So I think a person to a lot of the California
23 work would be dubbed to Katy Wolf.

24 CO-CHAIRPERSON CARROLL: Thank you, Julie.

25 Dale.

1 PANEL MEMBER JOHNSON: Yeah, just got an e-mail
2 from a colleague of mine who's watching the webcast. This
3 relates to what do you call this. She said why not call
4 it Safer AA, which would be consistent with the
5 regulation. So rather than CAA, safer AA.

6 CO-CHAIRPERSON CARROLL: Thank you, Dale.
7 Lauren.

8 PANEL MEMBER HEINE: I'm going to pass.

9 CO-CHAIRPERSON CARROLL: Okay. Roger.

10 PANEL MEMBER MC FADDEN: To question three, just
11 some suggestions here. Some of these chemicals of concern
12 have been brought into the news, companies have been
13 having to face this over the last several years, examples
14 would be led in the paint on toys. My bet would be that
15 you make it two AAs there. May be a failure, one, on how
16 did the led get into the paint on the toys, because I
17 suspect the companies never intended that one to happen.

18 And then what have they done subsequently within
19 their organizations to correct that. That might be really
20 interesting to pursue that if they're willing, again,
21 takes a willing partner in this to be willing, you know,
22 to share that. That could be useful.

23 Another would be cadmium in jewelry companies are
24 dealing with that one right now. Even small companies are
25 having to deal with that one.

1 Another one is non phenol ethoxylates.
2 Washington Toxics Coalition did a study many years ago,
3 decade or so ago, identifying NPEs and must have done some
4 alternative assessments, because they came out with quite
5 a large list of alternatives back in those days that I
6 look at a decade ago and begin to replace the NPEs. Those
7 might be good places.

8 And they were may be most current one that EPA's
9 DFE is dealing with now is Besphenol A, not in drinking
10 containers or baby bottles, but in thermal paper. The
11 idea of some of the thermal paper makers have already
12 found alternatives. They might share their thinking
13 because they're doing that in EPA's DFE now where they're
14 beginning to share some of their thought processes around
15 when they use to make these determinations ahead of the
16 regulations. They're not regulated by the way to take BPA
17 out of thermal paper, so there's no regulation currently
18 that would prohibit them using it.

19 But we're finding now about 30 percent of the
20 thermal paper doesn't contain BPA. So that means there's
21 been an industry move away from that. Might be
22 interesting to pursue that as well. So there's just a few
23 ideas, suggestions where you might try looking.

24 CO-CHAIRPERSON CARROLL: Thank you, Roger.
25 Art.

1 PANEL MEMBER FONG: One suggestion I have, it's
2 in terms of alternatives assessment it's what Tim said,
3 try to find case studies in which it's related to a
4 regulatory context. And I think there is a good one out
5 there, and that's related to the alternatives assessment
6 of LCA related to led-free salt or in the context of the
7 restrictions on certain hazards substances EU directive.
8 The industry here, the electronics industries, with
9 experts on the Panel with Julie and Dele on the Panel so
10 we can add to this is electronics and IT industry actually
11 had a fairly long, you know -- several years realizing
12 that's going to happen. And started looking for
13 replacements and looking -- doing alternatives assessment
14 and LCAs and, you know, from an outside perspective, you
15 would think it would be relatively straight forward.

16 Led is, you know, shown to be hazardous, so
17 finding a substitute would be relatively -- that would
18 have (inaudible) environmental characteristics, you would
19 think that would be relatively straight forward.

20 And this also leads to a comment that Ken made
21 about looking at case studies which were done by trade
22 associations or, you know, multiple partners. And this
23 specific case of the led-free solvents, it was done not
24 only by trade associations a number of them.

25 And the one that I like to point out is the INEMI

1 group, International Electronic Manufacturing Initiative.
2 And also it was done by individual companies. So you have
3 kind of like comparison that you can make in terms of AAs
4 and LCAs. And you know, case studies that shows that in
5 fact it turns out to be an extremely complex study. It
6 was not a single drop in replacement. And that in fact
7 what works, what function equivalent, it's very specific
8 on different applications.

9 And even though, you know, the environmental
10 impact part of it is that turn out that, in fact, if you
11 do an LCA or do an AA that takes into life cycle thinking,
12 the led turn now out to be as bad as some of the --
13 sorry -- turn out to be just as bad or even -- or in some
14 cases just as bad in some cases in fact not quite as bad
15 as some of the alternatives that are out there.

16 So I think that maybe in the case study that
17 would be provide illustration or many of the parameters
18 that we talked about. And also specifically on the cost
19 that was involved in doing this from the industry
20 perspective and how to incorporate those changes and the
21 cause of them. Retrofitting equipment or putting new
22 equipment in. So I think that might be a case study that
23 would provide a lot of information.

24 Thank you, Chair.

25 CO-CHAIRPERSON CARROLL: Thank you, Art.

1 I have Ann, Lauren, Art, your flag. And yes,
2 you.

3 PANEL MEMBER BLAKE: Some of the things Kelly
4 mentioned made me think of a couple of others. Specific
5 ideas, Julia said something this morning about including a
6 pollution prevention examples, and I would definitely
7 second that. I believe also there was an appendix at the
8 Science Advisory Panel report that the Science Advisory
9 Panel that preceded us with a lot of alternatives
10 assessments that might be worth going back to and looking
11 at, including San Francisco's environmentally preferable
12 purchasing. I think environmental preferably purchasing
13 from city and state level would be very important because
14 there are clear decision criteria that were laid out. So
15 that's someplace we can go.

16 San Francisco, specifically, the dry cleaning
17 alternatives assessment that they did, which built on a
18 lot of existing alternatives assessment on dry cleaning,
19 and others around the state.

20 What that does is it brings in both the cost and
21 performance issue so this transitions both in purchasing
22 for cities and also provides the information for
23 businesses so they can make a decision about different
24 alternative technologies. And they included the
25 regulatory impacts of regulatory impacts as well as

1 environmental and human health impacts.

2 One more specific example that kind of crosses
3 the LCA/AA boundary is compostable food packaging. A lot
4 of cities have done alternatives assessment, life cycle
5 assessments, and that has fed into a regulatory decision
6 as well as around both businesses purchase and consumer
7 purchasing. So that's alternatives for expanded
8 polystyrene. So those two specifically -- I know Seattle,
9 in particular, has a very detailed LCA on the choices for
10 alternatives to EPS.

11 CO-CHAIRPERSON CARROLL: Thank you, Ann.

12 Lauren.

13 PANEL MEMBER HEINE: Thank you.

14 One project that I think will be interesting to
15 watch is the European project called the subs port. It's
16 www.subport.eu. It's a project to builds an Internet
17 portal to create a state-of-the-art resource on safer
18 alternatives to chemicals identified through REACH and
19 water regs. So it's a million dollar EU project to create
20 an Internet portal for alternatives assessment. I'm not
21 sure exactly how far along they are. But that would be a
22 good one to watch. There's a fellow named Lothar Lissner
23 who runs that out of Hamburg, Germany.

24 And another comment that gets to the LCA versus
25 SAA or whatever we're going to call this process, I think

1 we really need to think hard about this continuum between,
2 well, sometimes LCA is a subset of AA and sometimes I see
3 it as a continuum where when is it important to do LCA and
4 when is it important to do even CAA and how do we know
5 when one is sufficient. And that's a really important
6 question, because if you can make a simple substitution to
7 do an LCA is overkill, but you could also create some very
8 negative consequences by substituting one chemical for
9 another as we talked.

10 So I think it's important to go back and look at
11 the DFE decision logic. They've already put a fair amount
12 of thinking into identifying when is it -- when can you
13 identify safer alternatives? When do you do an LCA? When
14 do you just do a CAA and help people make informed
15 decisions? And when do you focus on best practices and
16 green chemistry challenges? Those are really I think
17 important things that we need to map out because
18 otherwise -- so I think getting at your question about AA
19 and LCA and some hybrid as well.

20 And a really good contact there is a woman named
21 Kathy Hart. She does all the LCAs for DFEs. She's one of
22 the two people I know who's sort of a hybrid in terms of
23 knowing about LCA and chemical alternatives analysis. So
24 Kathy Hart at U.S. EPA Design for Environment.

25 CO-CHAIRPERSON CARROLL: Thank you, Lauren.

1 I'd like to jump in here just for a couple of
2 seconds. There are two or three little things I'd like to
3 pick up. First of all, as was previously noted, there are
4 people who are in the business of doing alternatives
5 assessment in some fashion or another. And I think the
6 idea of calling those in is good. But I wouldn't limited
7 it to the state of California. You may find there are
8 other people who have products that are available to
9 people in California but are not necessarily located here.
10 I know you know some of these people compliance
11 strategies. Some of the other -- it's worth asking them
12 to question to show what they have.

13 Second, in terms of the LCA versus AA part of it,
14 I want to -- I think I want to support what Kelly and
15 Lauren have said. You know, LCA gets the wrap of being
16 very rigid and depending on how you choose to do it a
17 methods of obfuscation. I would argue that focusing too
18 narrowly is a similar kind of obfuscation where you choose
19 to leave what could be major impacts out and simply choose
20 to ignore them by focusing on something that's more
21 convenient and better in front of you.

22 So I think -- I'm not quite ready in any sense to
23 give up the idea of LCA type tools for the sort of
24 flexibility that we've talked about with alternatives
25 assessment. And frankly, to some extent, that flexibility

1 scares me, because I'm hoping that's going to be something
2 of a data driven process. And I think over the course of
3 time once again looking at it from my sort of peripheral
4 perspective, some things could pass into the marketplace
5 by asserting they're greener or by having some rather
6 dubious claims to being greener that haven't been
7 demonstrated. So from my perspective, you shouldn't get
8 into the game with less data, that you should be rewarding
9 more data rather than less.

10 So I wanted to pick up those three things and
11 I'll check to see if there's any more that you have on
12 this question.

13 I'm sorry. I didn't see you. Go ahead.

14 PANEL MEMBER SCHWURZMAN: Thank you very much.

15 My comment is circling back to something I said
16 before but triggered by what I've heard from other people.
17 So I hope it's relevant at this point.

18 What I was thinking about a little bit more was
19 how you prepare the ground for making case studies and be
20 helpful to the department and back to this issue of sort
21 of defining what we want to learn from them. And I'm
22 thinking even of sort of a standard list in a sense that
23 we could -- the department could develop or with plenty of
24 people's input that gets to some of the criteria that
25 Scott had started to outline and that other people have

1 added and those would be sort of questions that you answer
2 in a case study. And they would be ones like what was the
3 driver or the motivation for this alternatives analysis?
4 What was the scope of it? How much did it cost? Who
5 performed it? How did that group or that person look for
6 alternatives? How big was the scope of the -- how wide
7 was the net cast? What was the outcome and how did they
8 make decisions on the basis of the information? Was it
9 qualitative? Was it quantitative?

10 That kind of thing could get us -- we could do
11 case studies that actually got sort of -- that then became
12 readily comparable, because I'm thinking about what
13 happens next after the case study documents are produced
14 and someone has to then do like a meta analysis which is
15 looking it all those case studies and saying what do we
16 learn from this.

17 And there has to be something that is consistent
18 enough among the case studies that it's easy to learn from
19 them. So I was sort of playing in my mind with starting
20 with that list that Scott suggests and then others have
21 added to including like how easy was it to perform. How
22 long did it take? That sort of thing that would make it
23 easy to take lessons from the case study documents.

24 CO-CHAIRPERSON CARROLL: Thank you, Megan.

25 Mike.

1 PANEL MEMBER WILSON: Well, that was the point
2 that I was about to make as well in that I'd like to sort
3 of fly the California higher education flag for a second,
4 both within the CSU and community college and U.C. systems
5 in not only I think -- as a resource for setting the
6 framing the way Megan has described that I think is
7 essential some sort of launching these case studies so
8 we're looking through a common lens.

9 But as well as an investment within DTSC and sort
10 of a long term inoculation and stimulation of expertise
11 within California in this arena, which we're going to
12 need, both in terms of existing personnel within the
13 higher education system and the students that are in that
14 system. So I would call on DTSC to remember that resource
15 within the state.

16 CO-CHAIRPERSON CARROLL: Very good.

17 Yes, I saw Joe's flag.

18 PANEL MEMBER GUTH: I want to suggest maybe the
19 department consider the following. We've heard a little
20 bit today, and I've heard some off-line discussions, some
21 people feeling that while a lot of this is the kind of
22 work that already goes on, companies are already doing
23 alternatives assessment, you know privately. There are
24 required under different regulatory regimes, reaches
25 requiring a lot of activity to be undertaken. So the

1 charge is that California is requiring another
2 bureaucratic process that's duplicative or isn't going to
3 add much to things that are already going on out there.

4 So I wonder if the department might explicitly
5 take that on by trying to look for alternatives assessment
6 that are, in fact, being done either privately under other
7 regulatory regimes and actually put those on the table as
8 part of looking at case studies for what is actually being
9 done that is required out there or is being done for
10 whatever reason. And let's take a look at those and
11 see -- because I don't think we want to require something
12 that's duplicative. That's actually happening. We ought
13 to find that out. And if it's not happening, then it
14 would be good to sort of establish that, that what we're
15 looking for from California is not, in fact, duplicative
16 or is not being done in a significant way out there
17 already.

18 CO-CHAIRPERSON CARROLL: Thank you, Joe.

19 And I don't see any flags at this point. Have
20 you punched yourself out on this one?

21 PANEL MEMBER OGUNSEITAN: I'll make one last --

22 CO-CHAIRPERSON CARROLL: I was hoping for a yes,
23 Dele. But go ahead.

24 PANEL MEMBER OGUNSEITAN: It's to echo the reason
25 for the compilation. If it's to give examples for

1 industries who may want to do alternatives assessment,
2 then we have to organize the compilation in such a way.
3 It would be important then to go to industries that have
4 examples and request to have their alternatives assessment
5 processed and results included in the compilation. So I
6 think if it's targeted at prospective industries that are
7 going to be covered by the regulation, then it's a good
8 idea to provide examples how to do it and how not to do
9 it, which includes the successful ones and the
10 non-successful ones.

11 CO-CHAIRPERSON CARROLL: Very good. Thank you.

12 All right. Let's move on to the question of
13 continuous improvement construed in any way you would
14 like. What should be done to incorporate continuous
15 improvement approaches into this? Dale?

16 PANEL MEMBER JOHNSON: Let's come up with a
17 definition of continuous improvement.

18 CO-CHAIRPERSON CARROLL: Why don't you nominate
19 one?

20 PANEL MEMBER JOHNSON: I'm not going to.

21 CO-CHAIRPERSON CARROLL: Coward.

22 But it's a reasonable question. When I read you
23 this question just as it's written how should continuous
24 improvement be factored into AA? What does continuous
25 improvement mean? Construe it any way you like.

1 Lauren.

2 PANEL MEMBER HEINE: With environmental
3 management systems, continuous improvement is always
4 getting closer and closer to the goal, to the policy. And
5 I think that's something we haven't talked a lot about.
6 When we talk about impacts, are they leading indicators or
7 lagging indicators. So where are we trying to go with
8 this? Are we trying to go towards product with low
9 hazards that are recyclable? Can we begin to define what
10 the goal looks like? And that's a challenge, because
11 metrics can support you towards a vision or they can just
12 support you measuring things. And it's very important I
13 think -- you can't really know what you're continuously
14 improving unless you know what you're going towards. So
15 that's just -- so I guess that's my main point then.

16 CO-CHAIRPERSON CARROLL: Thank you.

17 Ken, then Tim, then Megan, and then Julie. Ken,
18 Tim, Megan and Julie.

19 CO-CHAIR GEISER: Okay. This is just a note
20 again from my experience in Massachusetts on the idea of a
21 periodic updating of things. When we wrote the
22 legislation in Massachusetts, we wanted firms to do
23 planning. We wanted those plans to be updated as new
24 information became available or as personnel became
25 smarter or new options appeared or whatever.

1 So the patterns that we wrote into the law was
2 that the plans, the toxic use reduction plans, were to be
3 done, were to be completed four years after passage of the
4 legislation and then updated every other year thereafter.

5 And our experience of doing the planning was that
6 the first round of planning turned out to be very
7 innovative and draw out lots of examples of options that
8 could be tried and really quite on the whole quite
9 substantive assessments. And certainly when that kind of
10 maturity the second round which was two years later, that
11 seemed to improve even more, because people were really
12 trying hard. They learned things. They actually learned
13 more and all and sort of gotten more matured in the
14 process. But after about that period, we began to see by
15 the third round, fourth round, fifth round, every other
16 year began to be less and less successful at introducing
17 new ideas and new options.

18 And we found instead what we were beginning to do
19 is build up a certain amount of resentment in the
20 regulated community that they were being forced to do sort
21 of what they saw as kind of make work exercises that were
22 no longer effective. So however we think about this, it's
23 important that we sort of do some early efforts to
24 re-visit alternatives assessment in ways that advance that
25 certainly over the first couple of -- first period.

1 What one doesn't want to be stuck with is some
2 kind of repetitive situation that simply is not going to
3 continue. So I think you've got to have a trigger in
4 there for re-evaluation by the state as to the value of
5 any continued re-visiting of the alternatives assessment
6 to determine whether they are in fact -- whether that
7 re-visiting actually improves things.

8 CO-CHAIRPERSON CARROLL: Tim, are you passing?

9 Thank you. I have Megan next.

10 PANEL MEMBER SCHWURZMAN: Thanks. Just put a
11 little conceptual framework -- oh, good. Kelly is here.
12 I thought she wasn't here -- around this difference of
13 what continuous improvement means. It seems like we're
14 talking about two different kinds. I think, Bill, this is
15 what you were referring to earlier.

16 One is the continuous improvement of updating any
17 individual alternatives assessment to reflect either new
18 science on hazard or technological improvements that is
19 availability of new alternatives. And that I think is
20 addressed by this updating and renewal of assessments that
21 Ken was then referring to, problems of diminishing returns
22 and all of that. But that's sort of a separate issue. So
23 one aspect is updating an individuals alternatives
24 assessment to reflect new science or new available
25 technology.

1 And the other is updating the alternatives
2 assessment process to incorporate new methods. And where
3 the former is dealt with by a requirement to renew
4 alternatives assessments, the latter is dealt with by
5 evolving guidance documents and dissemination of new
6 methods. That's how in my kind I'm framing this how is it
7 you deal with continuous improvement.

8 CO-CHAIRPERSON CARROLL: Thank you.

9 I have Julie and Julia. Dele and Roger.

10 PANEL MEMBER SCHOENUNG: I agree completely with
11 what Megan just said and that conveyed part of what I
12 wanted to say. But going back to my two-dimensional
13 decision matrix, I would think of a continuous improvement
14 as making that acceptable quadrant smaller with time so
15 that the decision rules that Tim referred to earlier get
16 perhaps tighter with time and that industry had the
17 opportunity of it.

18 At some point, whether that's because of
19 additional hazard information or methods or whatever the
20 mechanism is, I think that DTSC has to have the room to
21 change their decision rules with time as well and make
22 that quadrant smaller and smaller so we're moving to
23 things that are completely safe in an ideal word but not
24 quite possible to be.

25 CO-CHAIRPERSON CARROLL: Thank you.

1 Julia.

2 PANEL MEMBER QUINT: It's a variation of the same
3 theme. The whole thing is dynamic. We have a chemicals
4 policy that's broken so we have new things coming, unless
5 we change almost everything, you know. We're focusing on
6 a group of chemicals of concern and then priority products
7 and our -- you know, the extent to which the alternatives
8 assessments will be improved upon will depend on how many
9 of those priority products actually we remove from the
10 market.

11 But at the same time, we have new chemicals being
12 developed that aren't on a list and those sorts of things.
13 So I think we have to have good base line data and good,
14 you know, be very clear about where we are starting so
15 that we have some measures of our success, because there's
16 so many things in play right now in terms of chemicals and
17 those that we're now targeting versus, you know, new ones
18 that we're continually finding getting new hazard
19 information on. So I think it's really important to
20 set -- be very -- be very clear about where we are now and
21 what we're hoping to try to achieve with this regulation.
22 And use -- and measure -- so that we do know if we area
23 being successful. One scenario is that in my world is
24 that, you know, people who now have chemicals of concern
25 and products will just not -- no longer make those

1 products. So we don't get to the safer alternatives
2 assessment or LCAs or something like that.

3 So we get to know what we're actually changing
4 here. And whether or not people are doing alternatives
5 assessment, whether or not we're moving towards LCA versus
6 just drop-in substitutions, that sort of thing.

7 So at any rate, I would be very clear about what
8 we're trying to change, where we are now and try to have
9 an evaluation process built in along the way, because that
10 will either lead us to amending what the regulation or
11 will be success stories, which I think both are very
12 important.

13 CO-CHAIRPERSON CARROLL: Thank you, Julie.

14 Dele.

15 PANEL MEMBER OGUNSEITAN: Thank you.

16 One way to build the expectation that
17 improvements will be included in the alternatives
18 assessment is how to structure the results and the
19 presentation.

20 So I give a very good example of an extremely
21 expensive and extensive alternatives assessment for tin
22 led in the electronics industry. And one of the things
23 that became clear is that there are many question marks
24 for several metals that could be proposed as alternatives.
25 Bismuth is always one of these. And it turned out we

1 didn't know enough about Bismuth. There is a table in
2 this report also I think it's on page 77 from the TURI
3 assessment on Bismuth replacing led ammunition. But
4 what's obvious is that there are many question marks on
5 Bismuth. But we can fill that in data becomes available.

6 Dropping alternatives may just have led and
7 Bismuth and nothing else. But if you have a series of
8 alternatives, even those with question marks, it invites
9 research to produce information that can then be input
10 into such tables so at some time in the future you can
11 look at the same table and make a different decision about
12 what's better than led.

13 So if we require that the information be
14 presented, there are several alternatives considered, even
15 those without information existing. It invites
16 opportunities to improve it.

17 CO-CHAIRPERSON CARROLL: Thank you very much.

18 Roger.

19 PANEL MEMBER MC FADDEN: Thank you, Bill.

20 I think what we want to avoid is continuous
21 erosion. What I mean by that is continuous improvement of
22 our aim, but we want to ensure that we don't have
23 continuous erosion. What I mean by that is a product or
24 alternative that's found that goes into a product that's
25 designed a certain way, along comes someone who's going to

1 change the process that that particular product is made by
2 or change a source on that material.

3 And so I think what we want to do is be sure that
4 the continuous improvement triggers -- I like the word
5 trigger -- is triggered by whenever there is credible
6 evidence that a chemical in the product, whether it was
7 done at the initial point of the alternatives assessment
8 or not -- at any point that we find there is a chemical of
9 concern, it could pop up on the list for instance, then
10 there ought to be some requirement to do an alternatives
11 assessment at that time.

12 Another would be a new use for the product.
13 Maybe the alternatives assessment was done based on
14 certain applications or uses of the product if
15 fundamentally there's any change in the use of that
16 product, there ought to be at least a flag that comes up
17 that says we should do it again.

18 Another would be any new hazard information that
19 becomes known through scientific studies, again it goes
20 back to the credible evidence piece I was talking about.
21 Or a process change in the way reformulation, if you will,
22 of the product. These are all kind of suggestions on what
23 might be the triggers to -- that make you want to require
24 them to take another look at it.

25 CO-CHAIRPERSON CARROLL: Thank you, Roger.

1 Dale.

2 PANEL MEMBER JOHNSON: Okay. I'm going to weigh
3 in now.

4 So typically, continuous improvement is metric
5 based. So you establish certain types of metrics whether
6 it's from a management standpoint, process standpoint or
7 the overall goal you're trying to get to.

8 So in this concept, you're really stuck with two
9 different things. And what everybody has been discussing.
10 You're stuck with the idea of continually improving the
11 process of doing something. And it's very easy to have
12 metrics based on that. But clearly in my mind, the
13 continuous improvement is on the overall goal. So it
14 relates to the state of California and its ability to
15 reduce hazardous chemicals within products and so forth.
16 And so that's what you're attempting to get to. All the
17 other stuff is part of process and management and your
18 ability to apply certain types of resources.

19 But in my mind, from a continuous improvement,
20 you've got to step back and look at what the end goal is
21 and how you're actually getting there and making sure
22 that -- I forgot who said this. But making sure you're
23 actually on an up slope as opposed to sawing on a level or
24 going on a down slope.

25 CO-CHAIRPERSON CARROLL: Thank you, Dale.

1 Kelly.

2 PANEL MEMBER MORAN: I'm going to comment on both
3 of the pieces that Meg defined for us. And I think most
4 of the conversation has been around an individual
5 business's practice for improving its products and revised
6 viewing.

7 And I think Ken's point is really compelling,
8 that after a while when you just ask people to do the same
9 thing over and over again, they just start sending you the
10 same report. And I think we've probably had exhaustion in
11 SB 14 similarly here in California.

12 But I'm intrigued by an example that I learned
13 about from the automotive industry. They have an
14 independent nonprofit entity that certifies as mostly
15 safety standards for a whole variety of products that are
16 parts that go into a car. And this AMECA organization
17 struggled over the last several decades of doing that with
18 the length of time the certification would be good for.
19 And after going longer and shorter, the thing landed on
20 three years as their certification time frame. And the
21 reason for that was that even though it was the same
22 product and the same test, there were enough changes in
23 suppliers for at least automotive engineering parts that
24 there would be different results on a meaningful fraction
25 of the products tests after three years as compared to the

1 original test.

2 So for example, for a brake pad, they would do a
3 braking safety test that required putting on a dynamometer
4 and doing a series of things. And there would be
5 different results for on average, enough parts that it
6 would be worth doing that. So for me, that's interesting.

7 It also might be informative that for different
8 industries there are probably different time scales for
9 that supplier change behavior to just occur. So it may be
10 there's one magic bullet answer for all parts. And that's
11 also something the department will have to think about.

12 But I'd actually like to comment on the
13 continuous improvement in terms of the methods of practice
14 here. I think all of this is motherhood and apple pie.
15 But although I understand and recognize the concerns that
16 Bill expressed and Tim and others echoed about having a
17 lot of this -- the actual details of how alternatives
18 assessment works through guidance, as a professional, I
19 think in a growing and emerging field like this I think
20 it's probably the only way.

21 So I'm pleased the department is taking the tact
22 of establishing the framework in regulations. And I see
23 the importance of working on that guidance and approving
24 that guidance and taking it through public process and
25 that there may be a point at which we learned enough --

1 and Maziar has talked about this before -- that we're
2 going to need to update the regulations and move some
3 other things into the regulation.

4 So I see that relationship there. But I think
5 that it's important that the department plan that will be
6 updates in the guidance and that the guidance that also
7 there should be updates in the pieces that feed into that.
8 So we talked a little bit about the potential tierings and
9 various modules for doing this kind of thing. So those
10 may get developed by a variety of different parties over
11 the coming years and the department may pick and point and
12 say this one, this one, this one is our best practice in
13 this area and a new one will come out and the department
14 might point at a new one and say best practice in this
15 area. So there's going to be some of that.

16 And some of that continuous improvement will come
17 through another step, which is the DTSC acceptance of the
18 alternatives assessment. So when DTSC is doing its
19 review, if it does work plans, I'm hoping that's not going
20 to be a big step. But when it's reviewing alternatives
21 assessment, it's going to define what's okay and what's
22 not. And it is reality that that's going to be moving
23 target and that's got to freak -- if I'm a business
24 person, the moment I hear Kelly saying that, I'm saying
25 oh, I'm going to freak out.

1 So the department is going to have the signal
2 what's acceptable and not practice through this pointing
3 at accepted guidances and also probably through its work
4 on open source alternatives assessment with industry
5 groups. And when that's done, the department will say
6 here's this standard. We're going to be expecting that
7 from now on a minimum of this in this kind of area. So
8 guidance, tiering, department acceptance, working on the
9 open source alternatives assessment.

10 And I know funding is just a huge issue here.
11 But I think it is going to be important to be investing as
12 a state in the growth of the practice in this area. So
13 growth of the training and methodologies, the publication
14 of examples, and that means some investment in university
15 and other work that's done in the public interest. It
16 should grow the methodologies and practice.

17 CO-CHAIRPERSON CARROLL: Thank you, Kelly.

18 I'd like to jump in here for a minute, because I
19 have to confess that there is for this question there is a
20 bit of this that I don't understand.

21 From my perspective, the continuous improvement
22 part of this goes to the process. I will guarantee you
23 that whatever process you put in place at the beginning,
24 you will find after doing this for five years that there
25 is a bunch of stuff that's there that you either don't

1 have to do any more and you should eliminate it or there's
2 things that need to be added to improve it.

3 To me, that's where the process improvement
4 comes. And once again, forgive me as being a part of the
5 regulated community. But there is a part of this
6 discussion that I frankly don't understand. If I have a
7 chemical of concern in a product of concern and I do any
8 alternatives assessment and I find a preferred alternative
9 that does not use a chemical of concern and I substitute
10 it, I'm done. I don't ever have to do that again until
11 something else is found to be a chemical of concern.

12 So I think it's wonderful that you'd love me to
13 update my alternatives assessments, but what would I be
14 doing? Deciding whether to go back to where I was to the
15 chemical concern? There's a route into this with
16 regulation.

17 And if what you are telling me is if I have a
18 chemical of concern in a product of concern once in the
19 history of time and now I'm subject to doing this over and
20 over and over again every three years no matter what I do,
21 then I'm out. I'll never make that product again and
22 Julie is absolutely right.

23 Tim.

24 PANEL MEMBER MALLOY: Well, I can see your point
25 in the kind of the narrow example that you used. But

1 there's other scenarios that you can do an alternatives
2 assessment, have a chemical of concern say a carcinogen,
3 may be do a substitution with something else that's also a
4 chemical of concern, but not as much of a concern.

5 CO-CHAIRPERSON CARROLL: Different story.

6 PANEL MEMBER MALLOY: So you'd have to think --
7 and the other thing is you could have a chemical of
8 concern and there's not a substitute, but you change
9 something about your process and later on there is a
10 substitute there is better than changing process.

11 So really, the concern you have about oh, I'm
12 out -- it may very well be that folks would say if you
13 substitute with a totally innocuous chemical, say
14 switching from perc dry cleaning to wet cleaning might be
15 an example of that, that you're not going to be regulated
16 and maybe people might -- it wouldn't require somebody to
17 keep going back and looking for other approaches to it.

18 One could imagine that you want some kind of
19 finality. But I think that's probably going to be --
20 it's just a guess. But my guess is that's not going to be
21 the standard outcome of a lot of these alternatives
22 assessment that you're more likely to have a second or
23 third best solution in which case it does make sense to
24 kind of think at some reasonable level you're going to be
25 going back and re-looking at that as technology change for

1 all the reasons that have been discussed.

2 CO-CHAIRPERSON CARROLL: I'm going to respond,
3 Tim, if that's all right.

4 PANEL MEMBER MALLOY: With the Chair.

5 CO-CHAIRPERSON CARROLL: We'll have to ask the
6 Chair then. Oh, he says it's okay.

7 I agree with you in the scenario that you've
8 given, but my only reminder is this is a rule and there
9 are ways in and there are ways out. And what you describe
10 is sort of the temporary way out, where you've done
11 something other than a direct substitution. So I think
12 both of our examples are correct. And that what you said
13 if you still had the chemical of concern and a product of
14 concern, you probably are going to wind up with having the
15 opportunity to re-think this further along the line.

16 On the other hand, if you don't, you don't have a
17 way in the first place. Joe, did you want in here? No.
18 I thought I saw your flag. Roger.

19 PANEL MEMBER MC FADDEN: I'll enter a little bit.

20 What's important here is to have triggers
21 identified on what drive it. Because I agree, I don't
22 think it should be based on some type of a time line. You
23 do it once of year. You do it every two years, every
24 three years. I think that's unworkable for a lot of
25 reasons, probably one of them being your own resources

1 internally at DTSC to be able to manage that. But
2 certainly it would turn off certain innovators of products
3 to be less likely to want to play.

4 But I do think the idea of having triggers in
5 place so that there is something clearly defined to the
6 maker of these products that will tell them that when this
7 occurs, then we would expect another alternatives
8 assessment to be done as a fair end point. Because I
9 think these changes do have and product have life cycles.
10 Like human beings have life cycles. We're born and we
11 live for a long time and we're replaced. And products are
12 that way too, hopefully always by a better person, by the
13 way.

14 But I think that products are that way, too. We
15 have a life cycle. And we know that in business, that
16 we're going to have to replace those product sooner or
17 later because they're going to wear out. They're going to
18 get to the end.

19 Our competitor is going to come up with a better
20 widget. So we're going to have to stay ahead of them. So
21 that will self correct in some ways, because when we
22 re-make that product, it will be likely we'll have to do
23 an alternatives assessment on that new product.

24 But I think I do agree with both points here. I
25 think trying to do it on a time line, I don't think is

1 very work able, but certainly to have triggers makes a lot
2 of sense.

3 CO-CHAIRPERSON CARROLL: Roger, are you
4 attempting to define a person of concern then at some
5 point or another?

6 PANEL MEMBER MC FADDEN: I don't dare go there.

7 CO-CHAIRPERSON CARROLL: Okay, Mike. I see your
8 flag.

9 PANEL MEMBER WILSON: Well, I agree with Julie
10 and Dale's comments and others about the importance of
11 defining a base line of metrics, first off.

12 But I think maybe more broadly the question seems
13 to me to be intrinsically linked to the process that's
14 going to be defined in the regulation. And what's it that
15 we're doing here that's going to stimulate companies to
16 do alternative assessments? It's going to be imbedded in
17 the regulation in some way.

18 And so my concern is that what we're going to end
19 up with is that's the regulation comes out, that the bar
20 will be simply too low for companies to claim an
21 exemption, that there is no suitable alternative. And so
22 it sort of stops there.

23 And so as a remedy to that and to sort of
24 motivate continuous improvement, my assistance is that the
25 regulation has to continually raise the bar for exemptions

1 and it has to make any exemptions claimed public. And
2 that in doing -- making a claim for exemption public and
3 up on the DTSC website, for example, you then signal to
4 the market that here is a -- here is a substance for which
5 a company has claimed there is no suitable alternative,
6 and that stipulates activity out in the market.

7 CO-CHAIRPERSON CARROLL: Thank you.

8 I don't see any more flags. Is there more that
9 you want to add on this topic?

10 No, then I guess I'll end that question. I'm
11 going to have to stall for a minute, because we need
12 Maziar to come back in the room. There he is.

13 There was at least some discussion of the cost of
14 this process. And I'm curious to know if any of you have
15 any thoughts on what the cost of doing this sort of
16 alternatives assessment that you imagine in your mind
17 would be and what's either what it is or what would be
18 reasonable.

19 CO-CHAIR GEISER: The question was there was the
20 cost of doing these case studies.

21 CO-CHAIRPERSON CARROLL: Oh, the case studies
22 too, yes. I see, too tough a question.

23 PANEL MEMBER OGUNSEITAN: I don't know if Art has
24 information on the INEMI alternative assessments. But
25 it's a 600-page report. And I think it's millions. I

1 don't --

2 PANEL MEMBER FONG: As Carl Seagon would say,
3 billions and billions. No, actually it was millions and
4 millions.

5 CO-CHAIRPERSON CARROLL: Not surprising what with
6 the cost of the case studies?

7 Maziar, forgive me. I got the question
8 secondhand, and this just goes to show you when you filter
9 it through other people, you have an understanding gap.

10 DIRECTOR MOVASSAGHI: The question is may be the
11 academics can help is what's a ballpark for case study?

12 PANEL MEMBER OGUNSEITAN: The report was about
13 \$1,200 to buy the report and then to distill it something
14 that presentable.

15 PANEL MEMBER WILSON: Yeah, I mean, I think to
16 your first question -- and I guess as Art is saying, I
17 mean, that was sort of the motivation behind the
18 pharmaceutical round table, that companies realized they
19 all had some basic processes they needed to find safer
20 alternatives. And so they pooled their resources and sort
21 of, you know, dealt with the cost in that way.

22 And so that seems to me as many of us have said,
23 a way also to not only reduce costs but generate
24 continuous improvement by DTSC facilitating that kind of
25 process. Similar actually as to what U.S. EPA has done on

1 Design for Environment with the flame retardant and so
2 forth, pooling that collective knowledge.

3 CO-CHAIRPERSON CARROLL: I have Kelly, Lauren,
4 and Tim.

5 PANEL MEMBER MORAN: I'm going to give you the
6 consultant answer, which is it depends on the scope. And
7 I'm actually really serious. What I heard in the
8 discussion today were a number of suggestions for the
9 scope and I actually -- my personal opinion is that you
10 would need quite a few of these case studies. So it's
11 going to be an exercise on what budget you think is
12 reasonable and how you scope it out to do that. I would
13 urge the department to try to get more examples that you
14 can cover a broader range of things. And then define very
15 carefully what the scope of the case studies are so that
16 the case studies will all be similar. Some folks had
17 mentioned that.

18 And to think a bit about what are the most
19 important things you want to learn about these studies
20 that will in form the development decision making next
21 steps about how you're going to go with the guidance. The
22 more carefully you scope it, the less expensive it will be
23 up to some point, because the more uncertainty there is,
24 the more research there will become. So that's kind of an
25 exercise. And as a consultant, I would never give you a

1 price on this.

2 CO-CHAIRPERSON CARROLL: Lauren.

3 PANEL MEMBER HEINE: I think the answer is always
4 going to be it depends. And it's again that spectrum
5 between a chemical alternatives assessment to an
6 alternatives assessment that includes full life cycle
7 assessments. And also whether the alternative case
8 studies involves volunteers and stakeholders or whether it
9 involves, you know, pure research. So it's a huge -- I
10 mean, it's hugely variable.

11 But I think a couple of points. I think the DFE
12 projects may be on a per chemical basis are eight to
13 \$10,000 per chemical on one of the partnerships. But
14 again, all the partners are volunteers. You have to pay
15 for staff time to manage it. But they also do life cycle
16 assessment. So I think it would be good to contact them
17 and find out what does it actually cost to do a full life
18 cycle assessment. What does it cost for these individual
19 chemical alternatives assessment. I think you could
20 probably get some pretty good numbers there.

21 And if you're doing -- I know we had a lot of
22 conversation about really defining what is the list of
23 things we need to include in the case study. But to do a
24 more descriptive project, you could probably -- you know,
25 we did one on electronic companies that moved away from

1 halogen flame retardants. CPA has a project called
2 Greening Consumer Electronics, and that was probably six
3 case studies for about 100K, including printing and
4 communication. So I think you can go from that to the
5 billions and billions for the quality of the Dr. Fong
6 engaged in risk assessment.

7 CO-CHAIRPERSON CARROLL: Okay. Thank you,
8 Lauren.

9 Tim and Roger.

10 PANEL MEMBER MALLOY: So, of course, yeah. The
11 it depends part is a given.

12 Coming at it from the academic standpoint,
13 there's certain ways in which projects can be leveraged.
14 So like I'll speak to like Bren School at U.C. Santa
15 Barbara. I know I should be talking about UCLA.

16 But give you a good example, we have Masters
17 students who often do projects, and they're really
18 sophisticated projects. And that's a fairly inexpensive
19 way of getting a lot of research done on it. And then of
20 course there are some costs associated with it. But it
21 keeps your costs down. And then there's usually faculty
22 sponsors to work with. That's one possibility.

23 At UCLA, we have a number of people who are
24 actually interested in this kind of thing. So we've got
25 folks over at the Business School at the Institute and the

1 Environment and in the public health school who would
2 bring like various disciplines and then during the
3 environmental engineering programs students are required
4 to do a problem course. So that's something that could be
5 leveraging and essentially the students are getting the
6 benefit of working on a project like this. It reduces the
7 costs somewhat.

8 I mean, there's still cost associated with the
9 student time. But you know, there's value to it. So
10 there's ways of structuring things like that in the
11 academic world because we get some value added to them as
12 well. You know, you're getting value from it.

13 CO-CHAIRPERSON CARROLL: Thank you, Tim.

14 Roger.

15 PANEL MEMBER MC FADDEN: That's exactly where I
16 was going, Tim.

17 Couple things. One, might be interested to know
18 what the cost of this particular report was here, because
19 this may give some insight into what the cost might be.
20 This is very similar I would guess in dimension and size
21 to what a case study might look like or a series of case
22 studies.

23 The other is that there's business case studies
24 then we all had them done on companies I've worked for
25 before, Bren Business School, University of Oregon,

1 examples right down exactly where Tim was going. What a
2 great use, first of all, of resource. It's already there.
3 And credible, accepted by consumers very considerably. So
4 I think that would be something to pursue for your case
5 studies.

6 For the AAs, I also think academia could play a
7 role in this. And Ken, you probably have insights. You
8 know, you've done them at your university before and know
9 these costs at least what the old costs were with the
10 deflation today and those is probably half the price,
11 right? But I mean, we should leverage that brain power.
12 We should leverage that resource.

13 And I'm talking to my business colleagues as well
14 here. We should leverage that. There is a lot of
15 credibility there. If our companies aren't large enough
16 to have Dr. Fong, you know, to be on our staff, we're
17 picking on you -- I'm sorry -- then what are we going to
18 do? I think smaller companies do leverage that and have
19 academia do those AAs for them.

20 CO-CHAIRPERSON CARROLL: You know, Art, based on
21 the advertising you're getting this afternoon, I think
22 it's time for you to hang out your shingles.

23 Ken.

24 CO-CHAIR GEISER: Just a comment on the five
25 chemicals study that we did at TURI. We spent quite a bit

1 of time negotiating with the Legislature over exactly what
2 it was going to be, which chemicals it was. At the very
3 last moment, they said about how much would it cost. And
4 Allen Becker and I from the Institute started looking at
5 each other and said "Oh, roughly maybe 50,000 a piece or
6 something like that." I can only tell you I was later to
7 regret that moment. Thank God the Institute was well
8 funded on other things, because it was definitely more
9 than 50,000 for those studies. It was a significant more.

10 But I don't have a good way to answer the
11 question on the case studies other than to say I really
12 strongly urge you to think about this academic connection.
13 It seems to me this is such a ripe way to excite both
14 faculty and students within the university of California
15 or the California higher ed community in this. This is
16 such a great way to do outreach.

17 And it takes a little bit as any of us know --
18 university knows, little bit of trick as to how to do it.
19 You first of all have to do it on a semester by semester
20 basis or something like that. But the pay off in terms of
21 faculty getting excited about this and in terms of
22 students I think is terrific. So I really like that idea.

23 CO-CHAIRPERSON CARROLL: Thank you, Ken.

24 I don't see any other flags here. One of the
25 reasons that you can tell that it's perhaps time to turn

1 it over to Maziar for some remarks is we appear to have
2 driven most of the public off. There are still a few
3 people who either have fallen asleep and are still here
4 because of it, but I want to thank you all for coming and
5 sitting through this.

6 Maziar, would you like to take it from here?

7 DIRECTOR MOVASSAGHI: I think Bill is discounting
8 the millions and legions of fans that are watching and
9 listening on the web.

10 CO-CHAIRPERSON CARROLL: I'm sorry. I'm sorry.
11 That's true.

12 DIRECTOR MOVASSAGHI: They're undoubtedly
13 literally tons of them. Millions of people.

14 Thank you for the comments. I expected to hear a
15 little bit of well, it depends, especially based on the
16 conversation we had earlier.

17 And it's funny, that, Ken, you mentioned the use
18 of academia. If I recall from our last meeting Lauren had
19 actually great idea to maybe pick a chemical or a process
20 on approach and actually give it to different teams and
21 differs university or teams comprised of different
22 universities to compete and see what kind of approaches
23 come about it. So we'll I think we'll tap into that a
24 little bit.

25 Some of us had also been thinking about it's time

1 for the State to maybe getting engaged in this kind of
2 endeavor. So maybe we can kill a couple of birds with one
3 stone, both engage academia and develop these case
4 studies.

5 A couple of comments. As I mentioned in the
6 beginning part of the day, I was hoping that tomorrow we
7 would have time to take a little bit of a breather and
8 think about and plan for the transition in the next year.
9 And to a large degree also speaks to how we interpret the
10 use of this body and where this body is going to be going
11 beyond the discussions we've had. So I think it's apropos
12 for me to talk about this, because this will be our last
13 meeting at least for this calendar year and for this
14 administration, because elections are around the corner
15 and then after that we have to get into transition issues.
16 And we've already been for warned that we have a
17 significant amount of various bureaucratic drills come
18 about.

19 So a lot of what we've discussed over the past
20 year and a half have really been mostly around
21 recommendation number five of the Green Chemistry
22 Initiative and AB 1875. We've only had one meeting on the
23 toxic information clearinghouse and only one meeting on
24 the expansion of pollution prevention, two of the other
25 six planks of the Green Chemistry Initiative.

1 We're very well aware that we're -- it's square
2 one of implementation of the Green Chemistry Initiative.
3 We have much more to discuss, much more to talk about as
4 we're moving forward with the clearinghouse and expansion
5 of pollution prevention. We need to talk more about R&D
6 and tech transfer, because one of the things that I think
7 came up peripherally today is what did -- a company comes
8 up with a process or a substitute and there's examples of
9 cross licensing going on, but also examples where this
10 kind of a horizontal dissemination just happens by itself.
11 Is there a role for government or not? Advances in
12 workforce education. We've talked I think about higher
13 education facilities, but in this day and age what about
14 worker trainings at the junior colleges or some of the
15 companies. So this is a long list of we recognize there's
16 more work to do. And this body is the best suited body to
17 give advise to the department.

18 So what I will be putting in my transition
19 document to my successor, hopefully it could be me, but I
20 also realize between me and the Governor, there's many
21 layers of politics. One of the things I will be putting
22 in the transition document this body needs to be convened,
23 re-convened, in 2011 and 2012. And the next director
24 really needs to pick a couple of the recommendations and
25 focus on them. It takes that kind of an effort and really

1 takes a two-year effort to really implement any one of
2 these recommendations of the Green Chemistry Initiative.

3 So if I'm around, similar to what we did this
4 year but a little bit more pre-planning at the beginning
5 of the year, the first quarter we're going to reconvene
6 this body, talk about our agenda and plan for the coming
7 year, which initiatives we're going to be working on. By
8 that time, the administration is going to be more set.
9 The Legislature will be set. And we'll get an idea of
10 what the appetite for change is and in addition to some of
11 the meaty stuff we talked about today, the guidance
12 documents, the compilations.

13 And let me talk about some of the stuff that got
14 said a little bit, because we are at a time where I can
15 tell you that next week you will be receiving an e-mail
16 from me that will kick off the formal rulemaking process
17 and you will get the revised draft. So I think it's a
18 little bit apropos for me to say I'm very heartened by a
19 lot of what I heard, because we've captured it. Maybe not
20 to 100 percent agree, maybe not exactly the way it's
21 envisioned by the presenters today.

22 But when we talked about evaluative actions and
23 substitutions, we've addressed that. We believe -- I was
24 teasing Tim during the break that we always as regulators
25 like hearing from stakeholders that we need to step in.

1 So we've made it very clear I think in this new draft that
2 the decisions on regulatory responses are our decisions.
3 It's government's decision. This is one authority we
4 cannot delegate. Technical issues, advise and guidance we
5 might, but regulatory responses are decisions because
6 government is the only entity suited that would balance
7 stakeholders. At this point of the process, that kind of
8 a balancing game needs to play.

9 There was also some discussion about the healthy
10 tension between creativity and the need for robust
11 engineering systems thinking and implementation. I think
12 we've also taken that into account by allowing time for
13 firms to adapt during the prioritization process before
14 more stringent regulatory requirements come in. I think
15 it's intended to balance those.

16 And a lot of what was said was the recognition
17 this needs to be a dynamic process. And as much as we're
18 asking -- this is DTSC talking. We're going to go asking
19 firms to re-think and re-design and re-approach their
20 processes. We've really done the same for ourselves as
21 regulators and recognize that we will have to go through
22 continuous improvement loops. This regulation that's
23 going to come out that we're going to go through the
24 formal rulemaking process, will probably be revised within
25 a five-year window probably because the way we look at the

1 pace of advances in this arena has moving logarithmically.
2 So we have to make these changes. So businesses are going
3 to have to make this continuous improvement, and it was --
4 I was heartened that some mentioned that part of
5 continuous improvement means process improvement. And
6 that's really to a large degree on our shoulders as well.

7 The last thing I wanted to say was just a
8 personal note of thanks from me to a lot of you. I
9 haven't gotten to know some of you very well and that most
10 of you wear two or three hats.

11 On top of that, your parents, your civic
12 engagements, I really want to thank all of you for being
13 committed to always being available to me and to DTSC
14 staff when we reached out to you all for examples, for
15 guidance. Sometimes what we thought is a simple question
16 actually ended up being a very long discussion, long
17 e-mails that I know are not easy to write. So I really
18 just wanted to express thanks, because I know I've learned
19 a lot by talking to you all.

20 I know I think I can be speaking for a lot of
21 folks at DTSC. They look forward to these meetings
22 because I'm guaranteeing you Monday mornings we have green
23 team meetings. There's a lot of food for thought.

24 So I really want to thank you all for putting in
25 this time, coming from far distances and putting up with

1 Sacramento weather sometimes. I really, really appreciate
2 that.

3 And I hope you all stay engaged with whoever my
4 successor is, because this department does a lot of
5 different stuff from hazardous waste, to cleanup
6 remediations to toxic and products, to emergency response.
7 It is a very challenging department. And whoever the head
8 of this department is might not have my crazy passion for
9 this issue. And I think this body one of the things
10 that's going to fall on you all is to make sure that my
11 successor keeps as focused on this, because it's very new
12 and it requires leadership focus.

13 So just a long way of saying thank you very much
14 for really committing to us over the past year and a half.

15 CO-CHAIRPERSON CARROLL: Very good. Thank you,
16 Maziar.

17 Kathy, do you have any last bits of things to say
18 to us?

19 MS. BARWICK: I do, indeed.

20 I'd like to echo Maziar's thanks. I want to
21 thank everybody on the Panel for being so easy to work
22 with. As your staff member, I've really enjoyed meeting
23 all of you and getting to know you all. And I will be
24 continuing to manage this process as far as I know through
25 the next year or so. So thank you so much for being so

1 easy to work with.

2 If anybody is working with me on their travel
3 issues, if you have stuff to give to me today, that's
4 great. Otherwise, I'll be following up with you next
5 week. And if you would please leave your name tag and
6 table tent right on the table and we'll pick them up and
7 put them away for next time. Thanks so much.

8 CO-CHAIRPERSON CARROLL: Thank you, Kathy.

9 And I'll close this by saying, Maziar, thank you
10 to you for the time you spent on this and on a personal
11 basis for being a good sport and a good soul.

12 I want to thank all the members of the Panel on
13 behalf of the Chairs. And Ken, you're welcome to jump in
14 here too. But on behalf of the Chairs and Debbie who
15 isn't here, thank you for your engagement and for your
16 willingness to put up with us as nominally attempting to
17 lead this group, which at sometimes I wonder if we don't
18 fall a little bit behind and have to run ahead. But it's
19 been good to work with you. And I will look forward to
20 doing so again. And without objection, we're adjourned.

21 (Thereupon the Panel adjourned at 4:21 p.m.)

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1 CERTIFICATE OF REPORTER

2 I, TIFFANY C. KRAFT, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
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10 I further certify that I am not of counsel or
11 attorney for any of the parties to said hearing nor in any
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13 IN WITNESS WHEREOF, I have hereunto set my hand
14 this 21st day of September, 2010.

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