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CALIFORNIA BIOMASS COLLABORATIVE

WORKSHOP  
ENVIRONMENTAL REGULATIONS AND IMPLICATIONS FOR  
BIOMASS MANAGEMENT IN CALIFORNIA

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

2 8:52 a.m.

3 DR. JENKINS: Sorry for the delay here, but  
4 thanks for staying with us. Small change in the agenda  
5 this morning.

6 I'm Bryan Jenkins with the University of  
7 California. I currently direct the California Biomass  
8 Collaborative. And it's a pleasure to see all of you  
9 here today. Thank you for coming.

10 This is the workshop we're having on  
11 environmental regulations and implications for biomass  
12 management in California. This workshop is part of a  
13 roadmap design process that we're working on with the  
14 state in order to tell us how we're going to get from  
15 where we are now with our current practices for biomass  
16 to this more sustainable vision that we have for the  
17 resource in the state.

18 We're going to produce from this workshop a  
19 whitepaper which will discuss the various issues that  
20 are part of this workshop and some beyond this. We are  
21 having this workshop primarily to invite and obtain  
22 your input to this roadmap design process in this  
23 whitepaper preparation to really get a good idea of  
24 what the concerns are from your perspective with  
25 respect to environmental issues and biomass management

1 and development.

2           There are a couple of people who really have  
3 been very active in putting this workshop together.  
4 Not me. I stand up here this morning to introduce this  
5 workshop, but Rob Williams, the speakers here, of  
6 course, have been in contact with Rob Williams. Many  
7 of you know Rob sitting down here. He is primarily  
8 responsible for putting this workshop together,  
9 organizing it and will be primarily responsible for  
10 putting the results together and preparing the  
11 whitepaper.

12           Martha Gildart has also been involved in  
13 this process quite heavily. Gary Matteson of the  
14 staff, and Rizaldo Aldas, who's a graduate student  
15 working with the Collaborative, have also been involved  
16 in this process.

17           The purpose of this workshop, as I  
18 mentioned, is really to obtain your input on  
19 environmental issues with respect to biomass. We're  
20 all, I think, very much aware of the environmental  
21 benefits to come from better utilization, better  
22 management of biomass in the state. And that's not our  
23 primary purpose here today.

24           Our primary purpose is really to understand  
25 whether we can actually achieve these benefits within

1 the broader context of the overall environmental  
2 objectives for the state. That is, there are some  
3 issues associated with conversion of biomass and other  
4 management techniques for biomass. And we really want  
5 to try to understand what those are, get your input on  
6 those; understand from your perspective, as well as  
7 ours, what needs to be accomplished within the near  
8 term and in the longer term in order to create the  
9 sustainable biomass management and development.

10 The structure of the workshop is fairly  
11 simple. We have two main panels in the morning. These  
12 are primarily intended to stimulate discussion, provide  
13 some background. There are keynotes, one of which  
14 you're having to listen to me right now instead of  
15 somebody who would be much more dramatic about telling  
16 you what the perspective from the state is, and that's  
17 Mr. Desmond, who's Chair of the California Energy  
18 Commission.

19 We do have Susan Brown who will tell us  
20 about the activities of the bioenergy interagency  
21 working group, which is charged with developing a more  
22 consistent state policy for biomass. And there's some  
23 activity there, if you will refer to midmorning, just  
24 before the break.

25 And then we have a second panel which will

1 give us industry perspectives as well as local  
2 government and public agency and environmental  
3 community perspectives on this issue of environmental  
4 management for biomass.

5 Lunch will be on your own, so I hope you all  
6 brought enough funds for that.

7 And then we have the afternoon keynote in  
8 which Mr. Hickox, who's the former Chair of Cal-EPA,  
9 will talk to us about the environmental issues related  
10 to financing biomass projects.

11 Rob will then go through some instructions  
12 for you on the breakout sessions. There are three  
13 breakout sessions this afternoon, and these serve as  
14 the core, really the heart of this workshop. And this  
15 is where we are really interested in obtaining your  
16 opinions, your views on the environmental issues that  
17 are key to the development and management of this  
18 resource.

19 So those will run for 90 minutes in the  
20 afternoon, from 2:00 to 3:30. We hope you all will be  
21 here to get your input to those breakout sessions. And  
22 Rob will give you more details on those later.

23 We'll come back, we'll have reports from the  
24 breakout sessions. There are some excellent  
25 facilitators for these breakout sessions. We'll have

1 reports from the facilitators. And then wrap up. And  
2 we should be out of here by about 4:30.

3 So that is the structure for the workshop.

4 And just to let you know, so you can plan on it, if you  
5 haven't seen the newsletter, the last newsletter from  
6 the Collaborative, we also are having the January  
7 forum, the Third Annual Forum will be in January; it  
8 will be on January 26th. It will be in Fresno.

9 Following will be in association with a couple of other  
10 bioenergy or biomass workshops from UC Merced and from  
11 CIFAR, an organization at UC Davis. So there will be  
12 quite a bit of discussion on biofuels and other biomass  
13 topics at the annual forum in January. So we hope you  
14 can make that, as well.

15 And with that I'm going to turn it over to  
16 Rob who will introduce the morning panel. Rob.

17 MR. WILLIAMS: Thanks, Bryan. Well, could I  
18 have the panel 1 speakers come on down and have a seat  
19 on the panel here.

20 And the first speaker this morning is from  
21 the California Energy Commission; it's Mr. Paul  
22 Richins. He's the Environmental Office Manager. He's  
23 going to give us a short quick talk on power plant  
24 permitting, but also some information on the CEQA  
25 process. So, Paul.

1           MR. RICHINS: Good morning. It's good to  
2 see all of you here this morning. I've been asked to  
3 give a presentation on the permitting process. Some of  
4 you may ask, well, why someone from the Energy  
5 Commission here, because most of your facilities  
6 probably would not come to the Energy Commission for  
7 our licensing process.

8           But I think I have some information that  
9 I'll talk about a local process, I'll talk about the  
10 Energy Commission's process. But primarily I'll talk  
11 about some lessons learned that we've experienced over  
12 the years on projects that have entered into the  
13 licensing process and then for some reason got  
14 sidetracked, got delayed for a variety of reasons.

15           And so I want to talk about those. And  
16 those particular examples or those particular items  
17 will be applicable to whether it's strictly a biomass  
18 facility, whether it's a power plant -- a plant  
19 generating electricity from biomass, or a variety of  
20 other types of facilities.

21           So with that as an introduction, we'll move  
22 forward. Before I continue, the slides that I have up  
23 on the screen there are also in hard copy on the back  
24 table. So if you didn't pick up a set of slides, pick  
25 up some as you leave.

1           As I said, I'm going to cover Energy  
2 Commission licensing process; also local and county  
3 agency processes. Then some of the key issues that we  
4 see on licensing energy facilities. And then there's a  
5 chart in here on the components for success. And then  
6 avoiding delays, or lessons learned. And I think I'll  
7 spend a little time on that. And then just the last  
8 slide will be on some information and suggestions.

9           Just to make a comparison, the Energy  
10 Commission's process, the California Energy Commission  
11 license power plants 50 megawatts and greater. And so  
12 if your facility is a fairly large facility then you  
13 would work with us on our licensing process.

14           If your facility is a power plant that's 50  
15 megawatts or less, or it's not involved in the  
16 generation of electricity, you would be working with  
17 your local either city or county planning office. And  
18 they would have several techniques that they would use  
19 to determine what CEQA or environmental document would  
20 be required.

21           Depending on the project, depending on the  
22 issues, they would use an initial study. Many of you  
23 have maybe heard the terminology initial study or  
24 checklist. That's a technique that they have. Also  
25 they have a negative declaration or a mitigated

1 negative declaration. Or depending on the issues  
2 associated with your facility, the location and so  
3 forth, they may require a full environmental impact  
4 report, full environmental document pursuant to the  
5 CEQA.

6 In this process the local agency will do the  
7 environmental document, and then you will be required  
8 or responsible for going out and seeking or securing  
9 local permits.

10 In the Energy Commission's process we do not  
11 only the CEQA or environmental document, but we also  
12 issue the license. And so it's a consolidated process  
13 where the environmental document and the license to  
14 construct is granted.

15 And we have three processes there that were  
16 on that slide, a 12-month process, a six-month process  
17 and then an exemption process for the smaller plants.

18 On the 12-month AFC process, and this also  
19 applies to the six-month process, at the Energy  
20 Commission it's a consolidated process where we work  
21 with federal, state and local agencies. And all of  
22 those requirements, whether they're a legal requirement  
23 or they're environmental issues, are brought into the  
24 regulatory process. And from that then a permit is  
25 issued.

1           Some of the advantages of the Energy  
2 Commission process is that our process is fairly  
3 reliable and can withstand challenges. There's been a  
4 number of appeals to our decisions over the last 30  
5 years, and the appeal must go to the State Supreme  
6 Court. And every appeal has failed. And so the State  
7 Supreme Court has upheld the decision of the Energy  
8 Commission in every case.

9           You have a permit that you can take to the  
10 bank. So there's some regulatory surety by going  
11 through the Energy Commission.

12           And the two main things that we look at in  
13 the Energy Commission process, whether it's our six-  
14 month process or our 12-month process, is whether the  
15 environmental impacts have been mitigated; what are  
16 those impacts; and what is the mitigation. And then  
17 also there must be a finding as it relates to  
18 compliance with laws, ordinances, regulations, whether  
19 they be state, federal or local.

20           The process is open to the public and we do  
21 encourage public participation. And then another key  
22 feature is if there is a disagreement and there's a  
23 local or state law, the Energy Commission has the  
24 ability, if certain findings are made, to override a  
25 local law or state law.

1           And in the case of a power plant that you  
2 may have heard about, kind of the poster child for how  
3 difficult it can be to site a power plant, the Metcalf  
4 Power Plant in San Jose, which is now currently  
5 operating, there was a big disagreement between the  
6 developer and the City of San Jose.

7           And the City of San Jose did not want the  
8 power plant and was blocking the approval of the power  
9 plant. And the Energy Commission, during our licensing  
10 process, held hearings and then made findings, and  
11 overrode the decision of the local agency, that of the  
12 City. So the Energy Commission does have that ability.

13           The other process the Energy Commission has  
14 is the six-month process. And so this is similar to a  
15 mitigated negative declaration that the local agencies  
16 would do. And by law, we're required to complete the  
17 process and provide a decision within six months.

18           And likewise with the previous slide, by law  
19 we're required to come up with a decision within 12  
20 months.

21           What makes this unique is, I think, or the  
22 key element to this is that it's a project that should  
23 have few impacts. And I think one of the best ways to  
24 avoid impacts, as you can see at the top there, the  
25 slide is the three most important reasons is location,

1 location, location.

2 The Metcalf example that I gave was a  
3 location that the developer selected. It turned out to  
4 be a very long, arduous process. And many of the  
5 reasons for that is because of the location and some of  
6 the potential impacts.

7 Other projects that we've had at the Energy  
8 Commission have gone through very smoothly with little  
9 controversy; and have gone through in less than 12  
10 months. And also in the six-month timeframe. And I  
11 think the primary reason for that is because the  
12 developer selected a good location that had few  
13 impacts. They did good homework with the city or  
14 county that they were in, and they did their homework  
15 ahead of time and addressed the issues. And so the  
16 project went through fairly easily.

17 Then I'll just skip over this real briefly,  
18 but we also have an exemption process that if you're  
19 between 50 and 100 megawatts you can have the Energy  
20 Commission just do the environmental review. And then  
21 you would use that environmental document to get your  
22 local permits. And so we would not be licensing the  
23 project; we would just be doing the environmental  
24 review. And that's at the project developer's option,  
25 whether they want to use that process or not.

1           Then let's go to some of the permitting  
2       issues, and I think these would apply whether it's a  
3       power plant, whether it's any other type of facility in  
4       the state. And these would be applicable to whether  
5       you're going before the Energy Commission or whether  
6       you have a particular project that would go through a  
7       local agency permitting.

8           Air quality impacts and air quality issues  
9       have been an ongoing challenge. And what we have  
10      found, availability of air emission offsets and credits  
11      are a major issue. And in some of the air districts  
12      they're becoming less and less available. And so the  
13      costs are going up extensively. And I think we'll  
14      hear, the next speaker from ARB will talk about this a  
15      little bit more.

16          Public health and safety issues. We've run  
17      across that in some of our projects. And water supply.  
18      I think with the State of California and the water  
19      situation in the state, water issues are a big concern.  
20      And the Energy Commission is encouraging the use of  
21      reclaimed water where it makes sense. And that is  
22      helping quite a bit.

23          Biological resource impacts. The Threatened  
24      and Endangered Species Act. Those are issues that need  
25      to be addressed in any application or any location that

1 you select.

2 Zoning is important. If you need to go  
3 through a zoning change that adds time to your  
4 permitting process. So it's preferable that the  
5 project site be zoned appropriately for the facility  
6 that you're proposing.

7 If you're an electric generation project,  
8 transmission line constraints. If you want to tie into  
9 the transmission system, then a transmission  
10 interconnection study needs to be conducted by the  
11 utility that you're connecting with, whether it's PG&E,  
12 Southern California Edison, SMUD or whomever it might  
13 be.

14 Then there's some local issues that have  
15 been coming up. And, of course, you'll want to work  
16 with the local elected officials, the local planning  
17 department, and also any local community groups on what  
18 the local issues might be in that particular city or  
19 county.

20 This slide discusses some of the components  
21 of success. And I won't go through all of them, but  
22 I'll go through the left-hand side there. The site. I  
23 think it's real important to have a good site. And the  
24 top item there is have proper zoning. I mentioned that  
25 earlier.

1           Also know the issues within your community  
2           and try to be able to address those issues in your  
3           application. Local offsets for air quality. Use of  
4           reclaimed water. Have the site under your control.  
5           Those are all key elements for success in the licensing  
6           process, whether it's with the local agency or with the  
7           Energy Commission.

8           Then I have a couple slides on some lessons  
9           we've learned over the past about projects that have  
10          entered the licensing process and then come up short,  
11          or have been delayed for a variety of reasons.

12          And one item that the locals will want, as  
13          well as the Energy Commission, is that the project to  
14          be fully and adequately described. If you have to  
15          change your project halfway through the licensing  
16          process, any of the consultants working on the  
17          environmental documents, the city or county staff  
18          working on the project, that will set them back and  
19          will cause delays.

20          So make sure the project's adequately  
21          described. And if you don't have to change it, it's  
22          better not to change it. However, if you're addressing  
23          impacts, then we would encourage you to make changes so  
24          that you are being receptive and responsive to either  
25          local concerns or that of the local staff.

1           BACT, best available control technology. I  
2 would expect the ARB will talk about that in a little  
3 bit. But work with your local air district on what is  
4 BACT, or best available control technology, for your  
5 particular facility so this early work, early meetings  
6 is critical for air offsets, as well as for  
7 understanding their process and what they need to do,  
8 and the BACT levels. And they have BACT for each type  
9 of technology.

10           They indicate to me that I just have a  
11 couple of minutes here, so I'll quickly go through.  
12 You can see some of these other lessons learned on  
13 biological field surveys. And it's critical that these  
14 be performed during the appropriate season, whether  
15 it's a spring survey or other seasonal survey, when  
16 it's appropriate. And there's protocols, the U.S. Fish  
17 and Wildlife Service and the Department of Fish and  
18 Game have protocols for these surveys.

19           I'll skip over these last slides. And then  
20 just in closing there's some information on the Energy  
21 Commission's website that could be helpful. The energy  
22 aware guide is a guide for local licensing of projects,  
23 whether it be a power plant or in some other facility.

24           Also there's information on the Energy  
25 Commission's website. And then if you have a local

1 project, I encourage you to meet early with the local  
2 planning departments, going over what their rules and  
3 requirements are. And also meeting locally with any  
4 local interest groups.

5 And then if you're a larger power plant  
6 project, 50 megawatts and larger, I would encourage you  
7 to set up a pre-filing meeting with the Energy  
8 Commission. And also likewise meet with your local  
9 city, county agencies. And also with any local  
10 interest groups, so that you can understand where  
11 they're coming from, understand their concerns.

12 And so when you are ready to file an  
13 application, that that application can address the  
14 local concerns. Because that's where most projects run  
15 into some trouble, is they haven't fully addressed  
16 local concerns. And then it comes to the review  
17 process, and then a lot of people from the local area,  
18 come in, provide input. And then that could  
19 potentially cause either a change in the project, or  
20 delays in the review and licensing.

21 Thank you very much.

22 (Applause.)

23 MR. JENKINS: I'm going to jump in here for  
24 a minute. With the concurrence and generosity of the  
25 panel, we have our morning keynote speaker here. We'd

1 like to let him give his remarks if that would be  
2 acceptable to the panel.

3 All right, thank you very much. All right,  
4 our morning keynote is Mr. Desmond, who's Chair of the  
5 California Energy Commission. I'm sure most of you  
6 know Mr. Desmond. He was Deputy Secretary for Energy  
7 with the Resources Agency last year; and this year was  
8 appointed to Chair of the Commission.

9 He's been working assiduously on issues  
10 pertaining to biomass. And he's going to give us some  
11 perspective for today. Thank you, Joe.

12 (Applause.)

13 CHAIRMAN DESMOND: Well, first, let me thank  
14 the panel for allowing me to come in. I got off to a  
15 late start. It was about two hours worth of traffic  
16 this morning on the way in, so again I apologize for  
17 the delay, and I'll try and keep my remarks brief and  
18 focused on the subject of biomass.

19 But I thought what I would do is touch on  
20 several items, and that is to give you an update of  
21 what's happening with respect to both the  
22 Administration and the Energy Commission, and our focus  
23 on advancing biomass opportunities in California and  
24 across the west.

25 First, i think, most of you know that the

1 main objective of the state's energy policy is  
2 threefold. That is to insure, first of all, reliable  
3 and adequate energy supplies. Supplies considered both  
4 conservation, treated as a resource, and supply  
5 options, making sure that they're affordable to both  
6 businesses and homes.

7 And lastly, to make use of advanced  
8 technologies to improve the economic and environmental  
9 conditions here within the State of California.

10 And I really believe that in the area of  
11 renewable energy, which is a major focus of both the  
12 Governor and certainly the Energy Commission, and has  
13 been a focus of its Integrated Energy Policy Report now  
14 for the last several years, that biomass is a resource  
15 whose time is really coming. And I say that for a  
16 number of reasons.

17 I think the last time I addressed the group  
18 here on biomass I talked about the virtuous cycle. The  
19 fact that biomass, itself, has many many benefits.

20 And so first I'd like to acknowledge the  
21 work of the California Biomass Collaborative, the  
22 outstanding work, I think, in their June 2005 report  
23 that talked about challenges, opportunities and  
24 potentials for sustainable management and develop.

25 If you read through that report there's a

1 lot of great information contained in that. I think  
2 the challenge, though, is that there is so much  
3 information, and biomass has the opportunity to address  
4 benefits in many many areas that it's often difficult  
5 to get our arms around where do we begin to prioritize  
6 our efforts.

7 And so in that sense the focus has been on,  
8 this is going back about nine months now, to  
9 reinvigorate the California interagency biomass working  
10 group, in association with the work being led by Bryan  
11 Jenkins on making sure California's crafting a workable  
12 policy. And when I say policy, I mean a set of  
13 recommendations and actions as following in detail to  
14 further advance the development of biomass  
15 opportunities here within the State of California.

16 And in that sense I think that the support  
17 from biomass is evident in a number of different  
18 locations. California published its 2003/2004 updates;  
19 the Governor responded to those. And in his response  
20 he was quite specific, and I'll read you his quote.

21 The Governor said: I support the Biomass  
22 Collaborative and its potential for contributing to the  
23 diversity of energy resources, and have reinvigorated  
24 the interagency working group composed of state  
25 agencies with important biomass connections in order to

1 develop an integrated and comprehensive state policy on  
2 biomass."

3 "This policy should include electricity,  
4 natural gas and petroleum substitution potential. It  
5 should also reflect the substantial potential benefits  
6 such as reducing municipal solid waste, which a wide  
7 range of conversion technologies can capture."

8 "The Energy Commission's Public Interest  
9 Energy Research program should support this  
10 initiative."

11 That was in his August 23rd letter back to  
12 the Legislature in response to his comments. You'll  
13 also find in there that the Governor's calling for  
14 efforts to advance the development of transportation  
15 fuels. And there's a report that is due back to the  
16 Legislature in March.

17 So what I wanted to let you know is that  
18 since that time the various agencies have been working  
19 and meeting on a regular basis. When I say regular,  
20 every two weeks, which for state agencies is a pretty  
21 significant contribution and commitment to time and  
22 resources.

23 I've been attending those meetings, as has  
24 Commissioner Boyd, Mr. Jenkins, and many others from  
25 Integrated Waste Management Board, ARB, Air Quality

1 Management District, Ag, certainly the CEC Staff, and I  
2 won't list them all. But they have all been included.

3 And in that process it's quite clear that we  
4 are intending to move quickly to deliver a  
5 comprehensive report to the Governor and to the members  
6 of the Legislature and the public, by the end of March  
7 of this year.

8 And so what I wanted to say is that that  
9 plan is going to encompass a number of technology,  
10 policy and resource issues. And it's going to lean  
11 heavily on the work that has already been developed  
12 here in the State of California, and to a large degree  
13 by the work of the California Biomass Collaborative.

14 What I will tell you is that that report  
15 will include biomass for electric generation; biofuels  
16 for transportation, addressing both ethanol and  
17 biodiesel and other opportunities. It will address  
18 agricultural biomass residues and fuels; municipal  
19 solid waste; energy crops; wastewater treatment methane  
20 and sludge; farm animal waste; and biogas and landfill  
21 gas.

22 So we are seeking to bring together all this  
23 information into a comprehensive action plan.

24 Leveraging this work. Our focus, obviously,  
25 as I have said, will be on working with existing data

1 and with key California stakeholders from interagency  
2 biomass working group, as well as the California  
3 Biomass Collaborative, and federal agencies, including  
4 NREL, in order to craft that action plan which will  
5 then be documented and include an appended bibliography  
6 bringing together both a reference summary of all the  
7 information that we have, and the work that has been  
8 done.

9           What I will tell you is what's important is  
10 that the report focuses on actions in a manner that  
11 allows policymakers to make choices and to set  
12 priorities. And so we're looking at viewing the  
13 information that we already have, and what we also will  
14 be pulling together, in a number of different ways.

15           Those dimensions will include sorting the  
16 biomass opportunities by size, economic priorities;  
17 describing which opportunities are immediate, short  
18 term and longer term, including actions that can be  
19 taken by various California agencies within the next 12  
20 months, even if the results are not expected until  
21 farther out in the future. As well as legislative  
22 opportunities to consider modifying to advance biomass  
23 development opportunities.

24           We'll be sorting opportunities according to  
25 how they can be implemented, meaning administrative

1 action, legislative action, regulatory action,  
2 programmatic action and market mechanisms.

3 We'll also look to sort those resources by  
4 sector, agricultural residues and energy crops, forest,  
5 municipal waste and other, such as rendered and waste  
6 oils and animal biomass from the culling of herds.

7 We'll be sorting by end use, meaning  
8 electricity production, heating and cooling and  
9 transportation. And we'll sort and analyze it along  
10 the dimensions of technology, including a description  
11 of those technologies that are here and now versus  
12 others that will require the development of new  
13 technology and support for research and development.

14 And then lastly we will seek to capture the  
15 social economics of different opportunities,  
16 recognizing that this may be a more qualitative  
17 assessment.

18 The important point here, though, is that we  
19 are seeking to bring together into one document and one  
20 place a view by which all of us can take away from our  
21 different perspectives what those opportunities for  
22 advancing biomass are.

23 And so understanding the relative tradeoffs  
24 and priorities will be key. And so I simply wanted to  
25 update you here today to let you know that we continue

1 to work hard at getting this information together.  
2 That the Governor, the Administration, certainly the  
3 Energy Commission, and all the other state agencies,  
4 although I'm not speaking for them, their presence is  
5 reflective of their commitment, are, in fact, working  
6 hard to move biomass up in terms of its visibility and  
7 awareness with respect to meeting California's  
8 renewable energy portfolio standard challenge.

9 So I want to thank you for your time here  
10 today, and again, thank the work of the Collaborative  
11 and the panel. Thanks.

12 (Applause.)

13 MR. JENKINS: Thanks very much, Joe. I  
14 don't know if you have time for any questions, but we  
15 may have at the end of the --

16 CHAIRMAN DESMOND: I do, if you want. If  
17 you have questions I could do just a couple right now.  
18 Otherwise, I got to --

19 MR. JENKINS: Okay. All right, I think  
20 we'll let you off the hook today and forego the  
21 questions.

22 (Laughter.)

23 MR. JENKINS: Thanks very much. All right,  
24 I'm going to return the panel now to Rob.

25 MR. WILLIAMS: Okay, thanks, Bryan. And

1 that was an invigorating talk by Mr. Desmond. Glad he  
2 was able to make it.

3 So, our next -- we're going to have two  
4 speakers that are going to be kind of a tag-team.  
5 They're both from the California Air Resources Board.  
6 Mr. Dean Simeroth, who's Chief of Criteria Pollutants  
7 Branch, Stationary Source Division, will give a quick  
8 talk. And then he'll be followed by Beverly Werner.

9 And, so, Dean, come on up and I'll work on  
10 your slide.

11 MR. SIMEROTH: Good morning. This will be  
12 relatively quick, and if you were here last year  
13 probably slightly repetitive. But there is some new  
14 things that have happened since then.

15 As you may remember, we have, at the Air  
16 Resources Board, set motor vehicle specifications into  
17 the California Code of Regulations for the alternative  
18 fuels listed below. From methanol, ethanol, compressed  
19 natural gas, liquified petroleum gas and hydrogen. And  
20 the hydrogen specification is obsolete and will  
21 probably be revised over the next year or so.

22 And so may some of the others. Particularly  
23 we may update the E-85, the 85 percent ethanol, 15  
24 percent gasoline.

25 Use of biomass dry fuels. Well, they can be

1 used as gas-to-liquids; it can be either gasoline or  
2 diesel. Renewable diesels, biodiesel is the chief one  
3 of that at the moment. That can be as a blend.  
4 Biodiesels are being used as basically a 20 percent  
5 blend, although there are some lower level blends being  
6 used. I don't think currently there's much in terms of  
7 the 100 percent, at least in public fleets.

8           Ethanol again is E-85, which is what we  
9 consider basically a neat ethanol blend, or 5.7 percent  
10 of 10 percent or some combination in between there in  
11 terms of net percentage in renewable gasoline.

12           One of the things that has happened is that  
13 the federal energy bill passed this year, that removes  
14 the oxygen requirement for renewable gasolines. We  
15 haven't sorted that out yet. There are some  
16 mechanisms, legal gyrations we have to do to do that.

17           But then it puts a renewable fuels  
18 requirement for the use of ethanol and biodiesel that  
19 is a national requirement for all gasolines. And we're  
20 still sorting that out. Our fair share would be about  
21 500 million gallons per year of ethanol. We're  
22 currently using about 900 million gallons a year of  
23 ethanol. If that's going to change in the future,  
24 we're not sure. If it does change, it's probably going  
25 to change gradually with time.

1           Compressed natural gas. It can be from  
2 landfill gas, natural gas wells, agricultural waste  
3 conversion, forest products conversion. Keep in mind  
4 there are specifications for the purity of the  
5 compressed natural gas and what can and can't be added.  
6 So, you can't just produce a bioderived gas and call it  
7 compressed natural gas. You have to look at the  
8 specifications.

9           You can also use the biomass derived gases  
10 to produce electricity, as you heard. Biomass can be  
11 from landfills, wastewater treatments, anaerobic  
12 digestion, which you'll hear about in a little bit,  
13 burning of direct municipal waste, or pyrolysis,  
14 actually is a better term.

15           Benefits. You address waste disposal,  
16 mitigating environmental problems in doing that;  
17 enhances fuel diversity as you heard a minute ago;  
18 extend our energy supplies. Issues to be resolved,  
19 costs, supply, logistic. If you're going to put it in  
20 vehicles you got to get it to the vehicles. And our  
21 system today isn't set up for having a lot of different  
22 fuels being sent out to the vehicles. But we're going  
23 to be working on that.

24           Legislation, SB-975 provides that you can  
25 use 20 percent biodiesel and diesel blends. So it

1 takes care of any uncertainty on that, clears that up.  
2 That becomes effective January 1, 2006. But you  
3 already could basically do that already.

4 AB-1007 says by July 1st of '07 the Energy  
5 Commission, as the lead, and working with ARB and solid  
6 waste resource -- Solid Waste Board and the CDFR and  
7 other state agencies, develop and adopt a plan to  
8 increase the use of alternative fuels. Set goals out  
9 in 2012, '17 and '22. And evaluate the alternative  
10 fuels using lifecycle assessment and optimize  
11 environmental and public health benefits.

12 That's going to be a major challenge. And  
13 working with the biomass folks, looking at the forest  
14 waste. And that's probably going to be a template for  
15 some of this work we're looking at here. But that's  
16 going to take quite a bit of time and resources. And  
17 going to be an interesting project, and looking forward  
18 to that.

19 And with that I'll turn it over to Bev  
20 Werner to go forward through the second half of this.

21 MR. WILLIAMS: Thank you, Dave.

22 MS. WERNER: Good morning. I'm Beverly  
23 Werner, also with the Stationary Source Division. And  
24 the topics that I'm going to cover today are the  
25 permitting of biomass facilities by local air

1 districts; new source review requirements; typical  
2 emission requirements for biomass boilers, engines and  
3 turbines in California; emission reduction credits or  
4 offsets; distributed generation; and the ARB's  
5 certification program for permit-exempt distributed  
6 generation.

7           So the majority of biomass facilities in  
8 California will be permitted by the local air pollution  
9 control districts, as the Energy Commission  
10 representative indicated. If it's above 50 megawatts  
11 it'll go through their licensing process. But we think  
12 that most of the biomass facilities, as in the past,  
13 will go through the local air district permit process.

14           And that process is kind of a twofold step.  
15 It's a construction permit, authority to construct  
16 permit. And then an operating permit issued by the air  
17 district.

18           And then there's any kind of biomass energy  
19 facility that it's exempt from the district permitting  
20 process would be governed by the Air Resources Board's  
21 distributed generation regulation and I'll give you  
22 more detail on that in a few minutes.

23           Okay, so the new source review program is  
24 the one that governs the majority of components that  
25 have to be addressed from an air perspective. And new

1 source review is preconstruction. The two main  
2 components are the best available control technology  
3 and then offsets. And the BACT level is determined on  
4 a case-by-case basis. It's the most stringent, the  
5 most effective control in practice. And the  
6 determination is made, again, by the local air  
7 district.

8           And then if there are emissions after you've  
9 put on the best control technology, excess emissions,  
10 then those need to be offset with emission reductions  
11 from other sources of other pollution in the area.  
12 This allows industrial growth to occur in areas that  
13 don't meet the air quality standards.

14           For California BACT for biomass, for  
15 boilers, we looked at some recent examples. This slide  
16 shows the control and emission limits that has been  
17 required by recently permitted by boilers, although I  
18 shouldn't say recently. Most of the biomass facilities  
19 were permitted in the 1980s. We only have a few recent  
20 BACT determinations. In fact, the most recent BACT  
21 determination was made in Placer County -- we have our  
22 Placer County representatives here today -- for a new  
23 wood waste boiler.

24           That permit, in conjunction with the  
25 previous ARB clearinghouse, has a minimum -- a new

1 biomass boiler would be required to install selective  
2 noncatalytic reduction for NOx control, a multiclone or  
3 electrostatic precipitator for PM10, and flue gas  
4 desulfurization or limestone injection for SOx control.

5 And a typical -- this slide represents ARB's  
6 recommendation for best available control technology  
7 emission levels for a typical waste-gas-fired  
8 distributed generation technologies that would be  
9 required to get a permit from the local air district.

10 During the permit process the district will  
11 conduct an analysis and make a final determination of  
12 what combustion control measures constitute BACT. But  
13 these emission levels appear to be likely for a  
14 starting point for analysis.

15 Again, it's important to emphasize that BACT  
16 is a moving target. They look at the most current  
17 information available to make a determination.

18 Offsets, as I mentioned, are required for  
19 these are reductions of emissions that go beyond the  
20 air pollution control equipment. They're created by  
21 over-control of sources that are existing in the air  
22 district. And they are purchased by the facility from  
23 the facilities generating the credits. The market  
24 value varies based on the availability of credits in  
25 the area.

1           The Health and Safety Code also provides  
2     offset credit for the use of biomass. Specifically in  
3     considering the offset requirement for a facility that  
4     uses agricultural, forest, or similar organic wastes as  
5     biomass fuel in a boiler to produce electricity or  
6     cogeneration facility, a district can include  
7     incremental emission benefit that occurs if those  
8     wastes are otherwise not open-burned.

9           Okay, and then Rob Williams said that you  
10    might have questions about the ARB's distributed  
11    generation requirements. For those who don't know, DG,  
12    distributed generation, means electric generation that  
13    is near the place of use. In other words, it's not  
14    central power plant generation, it's outside that area.

15           Some examples of technologies that are  
16    likely subject to the DG certification requirements are  
17    microturbines, small reciprocating engines, external  
18    combustion engines and fuel cells.

19           In the year 2000 Senate Bill 1298 required  
20    that after January 1, 2003, every DG unit must be  
21    certified by the Air Resources Board or permitted by  
22    the local air district. It required the ARB to adopt  
23    uniform emission standards for DG that are exempt from  
24    local air permits, and establish a certification  
25    program for the technologies to meet those standards.

1           When speaking about biomass fuel DG  
2           applications we're typically talking about equipment  
3           operating on digester gas, landfill gas and oilfield  
4           waste gases.

5           So the certification regulation applies to  
6           actually to DG equipment manufacturers and not to  
7           individual applications. So someone purchasing  
8           equipment would have to buy certified equipment.

9           AB-1298 also required ARB to establish two  
10          levels of emissions standards for DG. The first had to  
11          reflect the best performance in practice for existing  
12          DG technologies and to be effective January 1, 2003.

13          And then by the earliest practical date the  
14          standards must be made equivalent to BACT for permitted  
15          central power plants. And a 2007 compliance date was  
16          chosen to give manufacturers a five-year leadtime to  
17          meet those requirements.

18          As I mentioned, the regulation affects  
19          equipment that is exempt from air district permits.  
20          So, again, we're thinking most of the biomass  
21          facilities will be going through the district  
22          permitting process. And that would be small engines --  
23          I'm sorry, but those equipment that would be exempt  
24          would be small engines, microturbines and fuel cells.

25          To date the Air Resources Board has

1 certified four microturbines to the 2003 standards, and  
2 four fuel cells and one microturbine have been  
3 certified to the 2007 standards.

4 We have no certified waste gas applications.  
5 And the question is why ARB used -- why hasn't ARB used  
6 any waste-gas certification. Basically the explanation  
7 is that our regulation allows for fuels other than  
8 natural gas to be used for certification process. But  
9 the waste gas composition is highly variable from site  
10 to site, season to season, and year to year.

11 Since we certify at the manufacturer's level  
12 for statewide applications, the question remains, is  
13 how do we do this for waste gases. So currently we  
14 can't -- we've asked the air districts to continue  
15 permitting these applications until that issue is  
16 resolved.

17 And this slide just shows the certification  
18 emission standards for DG for 2003 and 2007. As you  
19 can see, the 2007 standards are quite a challenge, and  
20 at least 90 percent less emissions than 2003. So we  
21 are going through a technical review process and there  
22 will be rulemaking activity occurring.

23 I've asked Mike Waugh, who's from our  
24 Stationary Source Division, and he's sitting right in  
25 the center of the room right there, to attend today in

1 case you have other specific questions about DG.

2 MR. WILLIAMS: Thank you, Beverly. So if we  
3 have a few minutes for discussion after this panel, and  
4 if there are DG-related questions for biofuels or  
5 biomass -- we've got a couple of experts, it looks  
6 like, in the room.

7 Okay, the next up is Mr. John Menke from  
8 State Water Resources Control Board. And among other  
9 things he's designated himself, I think, maybe as the  
10 biomass contact for wastewater water issues at the  
11 Control Board.

12 MR. MENKE: Good morning. Coming to this  
13 conference I knew there'd be a lot of people here, new  
14 faces to me, people maybe not familiar with the Water  
15 Board and how we function. So instead of a PowerPoint  
16 with the quick bullets, I've prepared a four-page  
17 outline that really has enough detail in it that even  
18 if you don't recall what I'm saying today you can go  
19 back and look at that and become pretty familiar with  
20 how we function in relationship to biomass resources.

21 It should be in your packet you got at the  
22 door. It's a handout that starts with a map on the  
23 cover, State Water Resources Control Board at the top.  
24 And you'll see at the top there contact information for  
25 me. If you have questions after you leave today or

1 somewhere down the road, just give me a call, maybe I  
2 can get an answer for you.

3 I don't know a lot about specific topics.  
4 For instance, they talk about landfills and generating  
5 methane from the landfills, enhancing that by adding  
6 more water to a landfill. I can find you a contact,  
7 though, at the State Board that does know about that.

8 Likewise forestry issues. I've got contact  
9 there for that. And so on. So keep the map handy. It  
10 also lists the regional board boundaries and the  
11 contact information for the regional boards.

12 I'm going to just go over this handout  
13 briefly to kind of give you an overview of how the  
14 Boards function and what our working relationship is  
15 now with the Biomass Collaborative.

16 In that handout, the first few paragraphs  
17 talk about the water boards. And probably the key  
18 statement out of there is the fact that we focus on  
19 protecting water quality by looking at the regulation  
20 of waste disposal.

21 The State Board has some different  
22 responsibilities. We get involved with interagency  
23 groups, work groups such as the Biomass Collaborative.  
24 We make presentations such as this one.

25 We get involved with water rights. For

1 instance, if you want to site a new biomass plant and  
2 it's going to be needing to take water from a nearby  
3 river, that's a water rights issue.

4 We have grant funds. And some of those  
5 grant funds may be available for use on research to  
6 investigate these biomass.

7 The regional boards, on the other hand, get  
8 involved with specific built facilities, that there's a  
9 proposal to build a facility. You look at what county  
10 and what part of the county it's located in. That  
11 gives you your regional board contact. And then  
12 they're the ones that review the actual proposal.

13 And there's some terminology in those  
14 handouts I'm going to keep using again. One is report  
15 of waste discharge. That's a mechanism by which a  
16 regional board will ask a proponent for information  
17 about what they're going to do and what wastes are  
18 going to be produced. How they're going to manage  
19 those wastes.

20 They then prepare waste discharge  
21 requirements. That's kind of our version of a permit.  
22 And that would describe how that facility has to manage  
23 those wastes.

24 And you all heard Paul mention initially  
25 about CEQA. The first agency to issue a discretionary

1 permit becomes lead for CEQA. On power plants I doubt  
2 that it would be the Water Board, but maybe on some  
3 related biomass issues they would have to be the lead  
4 agency for CEQA.

5 Both state and regional boards also are  
6 concerned about discharges of stormwater. I'm going to  
7 refer to that a little bit later on when we talk about  
8 biomass facilities. And that can be both from  
9 construction of facilities and from the ongoing  
10 operation of facilities.

11 I want to move now to the second part of the  
12 handout. It's in outline format and it does talk about  
13 wastes. I'm going to use two examples to kind of give  
14 you an overview of how we look at waste.

15 The first example being a dairy. Get  
16 somebody with 1000 dairy cows and he's got a lot of  
17 manure. If he takes that manure, scoops it up and  
18 takes it off to a landfill, that's a waste disposal  
19 activity. And we at the Water Board regulate the  
20 landfill. We're not regulating the guy bringing the  
21 waste to that site; we regulate the site where the  
22 wastes are disposed.

23 Same thing with the sewage treatment plant.  
24 When an industrial discharger puts a waste into a sewer  
25 system that goes to the plant, we're looking at the

1 plant. It's up to them to decide what wastes to  
2 accept, and to make sure they meet our discharge  
3 requirements that we placed on that facility.

4 Let's suppose the dairy, instead of taking  
5 the waste to the landfill, wasting all that good  
6 biomass, decides to reuse it as a beneficial product.  
7 He's going to apply it to cropland. Well, it's no  
8 longer a waste now; this is a beneficial reuse of a  
9 byproduct.

10 But if he doesn't do that application  
11 properly he can generate another waste. And this would  
12 be excess material applied to that cropland. So,  
13 again, when somebody proposes to discharge waste to  
14 land, we're looking at what's going to happen over time  
15 with that material after it's applied to the land.

16 Let's say he proposes to, instead of  
17 directly applying it as a semi-solid, to put it in an  
18 impoundment. And this is what most dairies do. Well,  
19 now we're concerned about seepage from that  
20 impoundment. There's another waste.

21 Let's propose to cover that impoundment and  
22 create a methane digester. And that's what a number of  
23 dairies are doing.

24 Not a lot of change in the impoundment; it  
25 still has the potential to leak. But now they're

1 capturing the methane, using that, and coming out of it  
2 with two new byproducts or waste.

3 One is a organic material that they can use  
4 as a soil amendment that might be sold. So we're  
5 comfortable with that. But there's an effluent that  
6 comes out of that digester. Again, that's our waste  
7 we're looking at that material to see how it could  
8 impact water quality.

9 Down in southern California they have these  
10 regional digesters that take waste from a number of  
11 dairies. Their effluent goes out to a line that  
12 connects to the sewage treatment plant. It's treated,  
13 and then goes to an ocean discharge.

14 We think that's great, and I'm going to talk  
15 about that a little bit later on when we get into  
16 possibilities for use of biomass.

17 Another example of waste I want to talk  
18 about is fores harvest. Somebody goes out to a forest  
19 and propose to harvest some timber. The got to fill a  
20 proposal for that. It's reviewed by a number of  
21 agencies, including the regional water board.

22 And in that timber harvest they may again  
23 product waste. They've got the material they cut off.  
24 They could leave it on the ground. That could be waste  
25 discharge to land. Or it could be a reuse of this

1 slash to help prevent erosion.

2 But let's assume that they take that  
3 material offsite and chip it up, and they're going to  
4 use it for biomass production. We look at that  
5 facility where that's going to occur because there's  
6 piles of this organic material. And we say, do we have  
7 a waste involved there.

8 Well, you have rainfall hitting that pile  
9 and runoff from that. There's a leachate. We got to  
10 make sure that doesn't impact water quality. Doesn't  
11 run off to the surface water.

12 Once (inaudible) entity, the cogeneration  
13 plant it's going to burn. We may have a couple waste  
14 issues here. We look at the ash that comes out of that  
15 plant. There's another waste. What's going to be done  
16 with that.

17 And maybe some of these plants need to use  
18 cooling water. And they're discharging that water back  
19 to a streamcourse, waterway. and we've got waste heat  
20 in that water. We want to make sure again that doesn't  
21 impact beneficial uses.

22 So, when you think about the water boards  
23 and you think about biomass plants, our focus again is  
24 on the waste management component. And we want to make  
25 sure that water quality is protected.

1           Going back to that digester at the dairy,  
2           somebody may propose to add additional waste into that.  
3           They may have nearby industrial waste such as comes  
4           from a food processing facility. And they want to  
5           increase the methane produced by the digester.

6           This is commonly done in Europe, and there's  
7           some digesters that take cheese plant waste here in  
8           California.

9           Again, once you alter the operation of that  
10          facility by adding in a new waste, the water boards are  
11          likely to ask for a new report of waste discharge. And  
12          they may revise those waste discharge requirements.

13          They're looking at, again, does this new  
14          activity impact the waste coming out. Do we need to  
15          change the way that we manage those wastes.

16          Moving on, I'll just kind of summarize  
17          again. If you look at biomass and the changes that are  
18          going to come. The water board should be involved if  
19          we have a change in the current waste management  
20          practices, if we introduce new waste and have new waste  
21          management practices.

22          I'd like to move on a little bit and focus  
23          now more on biomass and energy production. The state  
24          and regional boards really do not have a role in  
25          promoting the use of biomass for energy production.

1       What our role is to look at proposals and to try to  
2       identify areas where water quality protection is an  
3       issue, where we need to make sure that the proposal  
4       will protect water quality.

5               So I've listed in a handout a number of  
6       bullets. I think there's nine bullets. And they talk  
7       about the type of activities where the water board  
8       might be getting involved.

9               And I'd encourage you to look at those  
10       bullets when you have a break. And then this afternoon  
11       when we have a panel again focusing it at biomass  
12       issues, maybe some of those become questions you want  
13       to ask or things you want to focus on.

14              And as I said earlier, if you get questions  
15       later and want to call me, please do. We can talk  
16       about those issues.

17              But those are the rules that we're trying to  
18       take on right now as being available to work with the  
19       Biomass Collaborative, to work with people promoting  
20       biomass, and to try to help them get their permits in  
21       place, deal with some of these waste management issues.

22              I've also included in there some input I got  
23       from Tom MacDonald of the Energy Commission. He sent  
24       me an email and it was innovative. He said, you know,  
25       the water boards should be taking a proactive approach.

1 If you look at bioenergy there may be benefits to water  
2 quality, so you should be promoting the use of  
3 bioenergy.

4 And one thing he talked about was the use of  
5 ethanol. And he, I think quite correctly, pointed out  
6 that if we were using ethanol as opposed to gasoline or  
7 certainly gasoline with MTBE in it, we would have less  
8 problem with water quality impacts from potential fuel  
9 leaks and fuel spills.

10 However, I just don't see us going out and  
11 pushing ethanol from the standpoint of water quality  
12 protection. Again, our focus is not only telling  
13 people, don't have spills and leaks, but it's true  
14 ethanol would be a better material if it did  
15 accidentally spill or leak.

16 He did talk about reducing impacts to water  
17 quality by improving the management of wetlands,  
18 actually wildlands, by more biomass harvest. And this  
19 is something that we've talked about in other  
20 workgroups. If you can go in and remove biomass before  
21 you have a catastrophic fire, you can do that in a way  
22 that the impact on water quality is less than if you  
23 had that catastrophic fire.

24 So maybe we should be a little bit more  
25 proactive in trying to support biomass utilization from

1 a water quality perspective, talking about it's better  
2 to do the biomass harvesting utilization.

3 You know, that brings to a question. What  
4 is the value of using biomass. If you look at the  
5 energy sales of biomass from harvesting this wildland  
6 biomass it's probably going to look like a very good  
7 business venture. It's not going to return a number of  
8 dollars on your investment in today's market.

9 But we've got this value-added benefit of  
10 environmental protection. Air quality, water quality.  
11 So maybe we do need to set up some kind of a process to  
12 give some value to that biomass activity in addition to  
13 its value as an energy source.

14 He also mentioned using crop production in  
15 California, or biofuels. You know, to grow corn, we're  
16 not competitive with the midwest, so we import our corn  
17 for ethanol production in California. Maybe there are  
18 some specialty crops that would look good. We're  
19 certainly open to that.

20 I think our current regional board  
21 regulatory program can handle any kind of cultivation  
22 across -- what we'd have to look at, of course, would  
23 be a plant that would process that. And again, the  
24 process is in place to look at plants that would use  
25 those materials to produce a biofuel.

1           I did want to return a little bit to that  
2           situation with digesters from southern California where  
3           I mentioned they have a brine line. That's something  
4           we don't have in the Central Valley of California. We  
5           have a real problem with salty wastes, and those wastes  
6           not leaving our Valley.

7           We're concerned long term about the salt  
8           management. We'd love to see a wasteline that could be  
9           used for a number of wastes, everything from irrigation  
10          wastewater to effluent from a biomass treatment plant.

11          And one thought I have is that we could  
12          potentially combine these biomass facilities with a  
13          waste treatment facility. Again, looking at the fact  
14          that the biomass, by itself, may not be a good  
15          investment. But you've got a number of industries  
16          right now that are going to have trouble with their  
17          waste management practices.

18          They can't continue what they've been doing  
19          for a number of years. This being food processing  
20          industry facilities where they've been discharging  
21          waste to land, and now they're being told you can't do  
22          that.

23          So if, instead, the material would go to a  
24          facility that had both energy production from that  
25          waste, and then would further treat that waste using

1 some of the energy, to a form that could be more  
2 protective of the environment when it's disposed, that,  
3 I think, would be a really good thing.

4 Finally, want to talk on, in relation to  
5 that is credits. People talk about the value of air  
6 credits. And that's in some air basins, if you can do  
7 something to reduce air emissions you get credits for  
8 that. Those credits are valuable.

9 We don't have much of that type of a  
10 situation with water quality, but it doesn't mean we  
11 couldn't get something. Again, trying to get together  
12 a package of combining biomass utilization, energy  
13 production with environmental protection. Both from  
14 the standpoint of air and water quality.

15 So that wraps up my presentation. Again,  
16 we'll have opportunity after the panel concludes, for  
17 some questions and answers. And I'll be around for  
18 part of the day. Again, you've got my contact  
19 information.

20 So, thank you very much.

21 (Applause.)

22 MR. WILLIAMS: Thank you, John. Okay, now  
23 let's move on to Fernando Berton. He's a Section  
24 Manager with the California Integrated Waste Management  
25 Board in organics, one of the organics divisions.

1           MR. BERTON: Good morning, everyone. If I  
2 would characterize how our existing statutes and  
3 definitions affect biomass management in California, I  
4 think the best way to describe it would be confusing.

5           But before I delve into that I'd like to  
6 start off with a few important facts. The Board's  
7 latest waste characterization study that was conducted  
8 in 2003 showed that there are 40 million tons of  
9 municipal solid waste still being landfilled. Thirty  
10 percent of that material was organic in nature, and  
11 still has some value to it.           In addition, we  
12 conducted an infrastructure survey that looked at the  
13 compost and mulch industry. That 2003 survey showed  
14 that there were 170 permitted compost facilities that  
15 process 10 million tons of material. Forty-six percent  
16 of that material was used as alternative daily cover in  
17 landfills.

18           Now, we tend to rely, the Waste Board, we  
19 tend to rely on statutory definitions as a means to  
20 identify our sphere of influence. And the next few  
21 slides will touch on some of those definitions as it  
22 relates to biomass management in California.

23           To start off with, with Public Resources  
24 Code section 40191, solid waste -- you all know that we  
25 regulate solid waste facilities throughout California,

1 so we define solid waste in part as putrescible and  
2 nonputrescible, solid, semi-solid, or liquid wastes,  
3 sewage sludge, vegetable solid or semi-solid wastes.

4 Some of those descriptions, under the  
5 definition of solid waste, could also apply to the  
6 definition of what is biomass, as well. So cause a  
7 little bit confusion.

8 Additionally, in PRC section 40192, some  
9 facilities that take biomass feedstock are considered  
10 disposable facilities, even though there's no disposal,  
11 it's a land. For example, composting, gasification and  
12 transformation facilities are considered disposable  
13 facilities, but there's no disposal to land. However,  
14 the Waste Board does not regulate traditional biomass-  
15 to-energy facilities.

16 So how do our statutes define biomass  
17 conversion. Section 40106 defines biomass conversion  
18 as the controlled combustion for the production of  
19 electricity or heat of agricultural crop residues,  
20 bark, lawn, yard and garden clippings, leaves,  
21 silvaculture residue, et cetera, et cetera. You can  
22 see the slide.

23 Again, many of those materials could be the  
24 same sort of material that ends up in a compost  
25 facility, where a compost facility is regulated by the

1 Waste Board, biomass-to-energy is not.

2 So this means that biomass conversion  
3 facilities can process materials without Waste Board  
4 oversight. But processes such as compost or  
5 noncombustion technologies converting these same  
6 materials are or might be subject to Waste Board  
7 regulations and requirements.

8 The intent of the legislature concerning the  
9 use of conversion technologies, which I'll describe a  
10 little bit later, to process these materials is  
11 unknown. And may result in some confusion as to which  
12 facilities are regulated and which are not, which could  
13 have a direct implication on some of the environmental  
14 standards.

15 And what this does is it could create an  
16 unlevel playing field for those facilities using  
17 biomass as a feedstock.

18 Transformation is defined in our statutes,  
19 as you can see. Incineration, pyrolysis, distillation  
20 or biological conversion other than composting.

21 The way we look at it, transformation  
22 typically is used to mean incineration. But terms like  
23 distillation, biological conversion and pyrolysis do  
24 not involve incineration, per se. So it's kind of  
25 confusing.

1           Distillation, biological conversion and  
2           pyrolysis are technologies that could process biomass  
3           tree sources, as well. But, again, if they're under  
4           the transformation definition that means a solid waste  
5           facility. But if it's taking biomass feedstock, which  
6           is not, you know, typically landfill, then, you know,  
7           it's just very confusing. We've tried to point this  
8           out in a report to the Legislature.

9           Gasification is not included under this  
10          transformation definition because Assembly Bill 2770,  
11          which was passed in 2002, defined that separately,  
12          which is right there.

13          Gasification is defined as a noncombustion  
14          process that does not use air or oxygen and does not  
15          produce air contaminants or emissions, including  
16          greenhouse gases. Also there are no discharges to  
17          surface or groundwaters, and produces no hazardous  
18          waste.

19          Also included in the provisions for the  
20          definition are that all recyclable and marketable green  
21          waste material is removed prior to conversion. This  
22          same definition of gasification is in the renewable  
23          portfolio standard statutes as I believe solid waste  
24          conversion.

25          So what really this definition describes is

1 not so much gasification, by pyrolysis. And the  
2 Board's conversion technology report to the  
3 Legislature, which was adopted in May of 2005, pointed  
4 out this scientific inaccuracy. And we hope to have  
5 that rectified as quickly as possible.

6 Now, what are conversion technologies. I've  
7 mentioned that term a couple of times. Currently  
8 there's no statutory definition or regulatory  
9 definition for conversion technologies. So we've come  
10 to define it as noncombustion thermal, chemical or  
11 biological process, other than composting, that can  
12 take residual solid waste to produce electricity,  
13 alternative fuels, chemicals or other products.

14 Conversion does not include anaerobic  
15 digestion, biomass conversion, composting or  
16 incineration.

17 Again, interestingly enough, certain types  
18 of biological conversion such as anaerobic digestion or  
19 enzymatic hydrolysis or even acid hydrolysis could  
20 technically fall under transformation.

21 However, the Board has taken a position that  
22 at least with anaerobic digestion it's considered a  
23 composting technology.

24 The whole point here is to point out the  
25 lack of clarity in our existing definitions that needs

1 to be addressed. Or there are no definitions at all in  
2 statute. And that makes it difficult to move forward  
3 with effective management of our biomass resources.

4 The current statute treats some technologies  
5 as if they were incineration, but others as if they  
6 were not. This does create some inequities in how  
7 these facilities would be regulated and treated as far  
8 as they are used to address the feedstock.

9 Now, we had started -- the Waste Board had  
10 started on a regulatory package for conversion  
11 technologies, but we decided to hold off until we could  
12 deal with these statutory issues and provide some  
13 clarity in statute. Because even with those  
14 regulations, if they had moved forward, the confusion  
15 would still be there in statute. And basically statute  
16 takes precedence over regulations at this point.

17 Now, we do have some infrastructure  
18 challenges. The management of our feedstock is  
19 becoming increasingly difficult because of -- the  
20 infrastructure is under attack. We've got difficulty  
21 in siting or expanding existing composting facilities.  
22 Difficulty siting or expanding salt waste facilities  
23 that could potentially process the biomass resource,  
24 like transfer stations or materials recovery  
25 facilities.

1           We've got an increasing population that  
2           results in a greater demand for electricity. And we  
3           have renewable resources in the form of biogenic  
4           material still begin landfilled.

5           So the other thing is we've got more  
6           biosolids being produced. And that's a huge problem,  
7           how to manage biosolids. Land-spreading is  
8           disappearing, and co-composting of biosolids is  
9           becoming increasingly difficult.

10           So what do we do, do we send it to Utah and  
11           Arizona. I mean that seems to be the prevailing  
12           thought right now. So, we need to address those issues  
13           here locally.

14           The last time I spoke at a Collaborative-  
15           sponsored function I talked about zero waste, and that  
16           zero waste is about using all our resources to its  
17           fullest potential.

18           I also said that a big part of our success  
19           towards zero waste depends on insuring that existing  
20           and proposed laws and regulations do not pose a barrier  
21           in the zero waste California efforts.

22           Another part of that success is fully  
23           understanding the environmental implications of  
24           different technologies. And understanding the  
25           lifecycle implications of bioenergy and biofuels

1 production.

2           The Board did fund a lifecycle study that  
3 looked at different conversion technologies and  
4 compared them to the existing solid waste management  
5 methods. And the bottomline is that bioenergy  
6 production has a net positive environmental impact  
7 results when compared to landfill. So why not move  
8 forward with it.

9           We also have data to show that technologies  
10 for bioenergy production can meet environmental  
11 regulations. So how do we move forward.

12           As we strive to move, to use our resources  
13 to their fullest potential we have some questions to  
14 ponder. And you can talk about these in your breakout  
15 sessions this afternoon.

16           First of all, do we need definitions. Are  
17 they even necessary. Do we want, do we need  
18 prescriptive standards or performance standards. What  
19 do you believe is the best.

20           Would doing nothing lead to what I call the  
21 potential path of least resistance, and that's  
22 landfilling. These are things you could discuss in  
23 your breakout sessions this afternoon.

24           To quickly close, as I mentioned before, we  
25 have a growing population faced with limited resources

1 from the environment. We understand that our society  
2 and industrial systems must begin to mimic nature and  
3 move from primarily being linear to being cyclical.

4 Each material must be used as efficiently as  
5 possible, and must be chosen so that it may either  
6 return safely to a cycle within the environment or  
7 remain viable within the industrial cycle.

8 The only limiting factor is in our  
9 imagination, and I'd like to quote Albert Einstein  
10 here, and that is: Imagination is more important than  
11 knowledge. So use your imagination today, use your  
12 imagination this afternoon and see what successes we  
13 have tomorrow.

14 So, thank you very much.

15 (Applause.)

16 MR. WILLIAMS: Thank you, Fernando. And I'd  
17 like to give my appreciation and thanks to the panel.  
18 All these people are very busy, and I'm really happy  
19 that they're able to come spend the time and put the  
20 effort into making the presentations and sending them  
21 to me.

22 So, please, give another round of applause  
23 for our first panel this morning.

24 (Applause.)

25 MR. WILLIAMS: And we're not too far behind

1 schedule, so let's have a couple of quick questions if  
2 there are any questions out on the floor right now, if  
3 we can answer one or two or three.

4 If I could get you to come up here to this  
5 microphone and give your name and talk to the mike.

6 MR. WHAN: Hello; I'm Craig Whan with HotRot  
7 Composting Systems. And just maybe a question about  
8 how we define through our terms.

9 I'm just wondering is biomass is kind of an  
10 old, we can maybe say it's an old 20th century term,  
11 and we can maybe start looking at kind of bifurcating  
12 the feedstocks a little bit.

13 And we could start by maybe calling things  
14 renewable carbon resources or something. Biomass just  
15 seem to be kind of a dead weight term in a way.

16 (Laughter.)

17 MR. WHAN: And it's a problem. And if we  
18 can start looking at things in terms of waste that have  
19 to be disposed of, or things that actually have  
20 resource value, then we can start to, I think, generate  
21 some action about, as Fernando was saying, the  
22 terminology in our regulations.

23 We can start adopting regulations that can  
24 tend to these different terminologies. So, just an  
25 opening less audible thought there.

1 MR. WILLIAMS: Thank you.

2 MR. STEWART: My name is Jim Stewart with  
3 BRI Energy. One thing that I do want to say is that we  
4 should not assume that biomass-to-energy projects are  
5 not profitable. The new technologies for the 21st  
6 century are much different than what we've seen in the  
7 last 20 years certainly.

8 One of the things I'm concerned about is  
9 emissions credits are very difficult to get in  
10 California. And a number of projects have failed  
11 because they could not get emission credits.

12 And with our technology, for example, we  
13 could address the issues of agricultural residues that  
14 are now being prohibited from open field burning in the  
15 San Joaquin Valley. However we can't obtain emissions  
16 credits, if I'm correct, because under state statute if  
17 an emission has already been mandated by the  
18 Legislature to be eliminated, you can't get an emission  
19 credit for having solved the problem.

20 And I was just curious if that was correct  
21 and if this is something that state government intends  
22 to address.

23 MS. WERNER: You are correct that emission  
24 reduction credits have to be surplus to what are  
25 requirements. In the San Joaquin Valley recent

1       legislation is going to be phasing out agricultural  
2       burning, and therefore that makes them not -- that  
3       makes that not a surplus reduction that will qualify  
4       for an offset credit.

5               The whole philosophy behind that is that air  
6       districts have plans for achieving air quality  
7       standards, and they adopt and implement regulations to  
8       do so.

9               And the generation of an emission reduction  
10       credit actually allows another facility to emit. So  
11       you don't want to credit an emission reduction if it's  
12       already required by a regulation because the purpose of  
13       that regulation is to achieve the air quality  
14       standards.

15              There is recognition in the state that there  
16       are difficulties obtaining offsets and emission  
17       reduction credits. And there have been some efforts  
18       underway to try to identify surplus reductions that can  
19       qualify. It's not easy, but there is some work that's  
20       going on with the air districts and the Air Resources  
21       Board and the EPA.

22              MR. STEWART: Thank you.

23              MR. RAGSDALE: My name's Robert Ragsdale.  
24       I'm with Environmental Products. And I agree with the  
25       biomass terminology. It's kind of old. It goes to too

1 many different fields. And if we can maybe get  
2 definitions per product out there.

3 I mean you start talking about renewable  
4 energy, sustainable energy, using those words and  
5 getting that out to the public will be a lot better.  
6 And the pollutants.

7 They have a lot of new laws coming out, and  
8 it seems like it's going to pass through the appellate  
9 court and the central court system. So the new EPA  
10 should come through here in the next six months we  
11 hope.

12 But they have a thing out there called  
13 biosecurity where you transport your product around.  
14 They don't want to do that anymore. So talking about  
15 taking this up to landfills. They really don't want it  
16 on the highways.

17 Taking your dairy products from farm to  
18 farm, the USEPA standards say you have to do that on-  
19 house, on-property, in-vessel.

20 I want to know if you have any credits for  
21 that, for dairies. If they don't release any ammonia,  
22 or cut down on the ammonia releases, are there any  
23 credits to the farmers for that?

24 Every time I go on and look for it, it's for  
25 some big organization doing something like that. They

1 don't treat each individual dairy. But if you go to  
2 the Central Valley and you've got 10 million cows out  
3 there, they add up.

4 MS. WERNER: I was interrupted and didn't  
5 hear the entire thing, but you're saying that for  
6 dairies that their ammonia emission reductions, so  
7 shouldn't those qualify for credit?

8 MR. RAGSDALE: NOx, all of them.

9 MS. WERNER: Pardon --

10 MR. RAGSDALE: NOx, all of them.

11 MS. WERNER: Oh, okay. One of the things  
12 about dairies is that they haven't been regulated until  
13 recently under the SB-700. And under that legislation  
14 that required the Air Resources Board to define a large  
15 animal confined facility and air districts to develop  
16 regulations to control emissions from dairies, there is  
17 a provision that said that under that law that if a  
18 facility could not generate emission reduction credits  
19 that they wouldn't be required to provide emission  
20 reduction credits.

21 So, to date, I don't think any dairies have  
22 generated credits, offsets credits for sale. But that  
23 may be beneficial in the future because that means that  
24 they wouldn't qualify to be required to offset.

25 MR. RAGSDALE: How would they generate

1 those? How do they apply for them?

2 MS. WERNER: Well, you were talking about  
3 ammonia emissions? Or --

4 MR. RAGSDALE: Ammonia, NOx, SOx.

5 MS. WERNER: Okay. One of the things about  
6 ammonia is it hasn't been identified by most air  
7 districts as a precursor to PM10. We know it's a  
8 pollutant, but it doesn't fall into the same categories  
9 as NOx and VOC pollutants.

10 So there has to be a recognition in the air  
11 district that that's a precursor to the emissions that  
12 violate the air quality standards. So that's a  
13 first step that ammonia would have to go through.

14 The other pollutants, though, if there's a  
15 reduction in NOx emissions, the process is that the  
16 company would go to the local air district; go through  
17 an application process to prove that there are  
18 emissions reductions there that could be quantified,  
19 and can be identified as surplus to current regulations  
20 and enforceable.

21 And then the air district would go through  
22 an analysis of that, verify that there's reductions  
23 there, and then issue the credit to a company which  
24 then could either use it for themselves, or sell it to  
25 another company.

1                   MR. RAGSDALE: About a year ago Southern  
2 California Air Quality Management District had a  
3 stakeholders meeting. And they identified sulfur-  
4 based, and I think a nitrate-based pollutants coming in  
5 from factories and from cars.

6                   And then it comes over the mountains into  
7 Chino, and the pollutants actually goes down low. And  
8 when it hits Chino it combines with the ammonia and you  
9 get ammonia sulfate and ammonia nitrates, which is low  
10 ozone, which is a bad thing for respiratory disease.

11                   So they've actually done some documentation  
12 on that, on the ammonia.

13                   MS. WERNER: Yeah, in South Coast. Yeah,  
14 that's true, South Coast is the only district that has  
15 done that. And then I know in the San Joaquin Valley  
16 they haven't been able to make that same finding.

17                   MR. WILLIAMS: One more quick question from  
18 the floor here.

19                   MR. HAHN: Yeah, quick comment. Jeffrey  
20 Hahn from Covanta Energy. Unlike when we get paid for  
21 taking the waste at our waste energy plant in  
22 Stanislaus, in our biomass plants we have to buy it.  
23 So I would say to the Energy Commission, don't be  
24 nearsighted and just look in the state.

25                   But the U.S. Forest Service in their forest

1 management plans and their inaction to implement  
2 federal law to clear the forest is keeping the prices,  
3 along with the price of gasoline, if you've noticed  
4 your car fuel prices have gone up, so has trucking.

5 So from \$40 a bone dry ton to almost 60,  
6 it's expensive to get biomass. And it's very limited  
7 because of some of the subsidies. So, please, just  
8 keep your eyes open for the Forest Service.

9 For Dean and Bev it's not quite as simple  
10 for permitting; remember there are new max standards by  
11 the federal government under part 60 and 63 for  
12 biomass, whether it's landfill or biomass boilers. And  
13 the local permit is not a simple local permit anymore,  
14 it's a title V, which encompasses a whole lot of other  
15 things, especially if you have to include ammonia under  
16 an RMP.

17 Thank you.

18 MR. WILLIAMS: Thanks. We have one question  
19 that came in on the email. I'll read it, but we  
20 reserve it for discussion maybe in the breakout  
21 sessions later.

22 So this is from Chuck White of Waste  
23 Management West in Sacramento. His question is, or  
24 comment: In the South Coast and Bay Area Districts  
25 solid waste landfill operators that are currently

1 flaring landfill gas have had problems securing permits  
2 for converting this gas to energy and reciprocating  
3 engines. This is because the districts seek to  
4 regulate these engines to the same emission standards  
5 applicable to fossil fuel or natural gas fuel engines."

6 "Unfortunately, landfill gas, due to  
7 impurities and quality fluctuations, it is much more  
8 difficult to attain these standards. Thus, from a  
9 regulatory standpoint it ironically appears to be more  
10 attractive to continue flaring the landfill gas instead  
11 of using it beneficially to generate energy as a  
12 substitute for fossil fuels."

13 "So, is there anything that can be done to  
14 convince the districts to be more flexible in the  
15 permitting of reciprocating engines burning landfill  
16 gas to encourage rather than discourage this activity?"

17 So, thanks for the question, and I will try  
18 to talk about that later this afternoon.

19 So, thanks again to the panel. You can take  
20 your seat in the audience.

21 (Applause.)

22 MR. WILLIAMS: Now, we'd like to move ahead  
23 and hear a talk from Susan Brown of the California  
24 Energy Commission. She'll be speaking about the  
25 bioenergy working group.

1 MS. BROWN: Thank you very much, Rob. My  
2 name is Susan Brown and I must say, Chairman Desmond  
3 made my job very easy since he's given you a very good  
4 preview of the work of the bioenergy working group.

5 But I'm going to take a little bit different  
6 tack in the ten minutes I have now before the break,  
7 and I'm going to talk to you today about the value of  
8 biomass in meeting multiple policy objectives and  
9 provide an overview of some of the other parallel  
10 initiatives going on today in state government.

11 I must say I'm one that wears many hats.  
12 For the last 15 years I've spent most of my time in the  
13 area of transportation fuels. For over two years I  
14 have focused on the issue of climate change. And I was  
15 the lead staff for a climate change advisory committee  
16 of the Energy Commission. There are a couple of my  
17 members here in the room, Cynthia Cory with the Farm  
18 Bureau is one that is here present.

19 I've also been very active in the Governor's  
20 Climate Action Team. And only about six weeks ago did  
21 I assume responsibility for coordinating the activities  
22 of the bioenergy interagency working group.

23 I'm also pleased to note that many of our  
24 members of the working group are here in the room. And  
25 I'd like them to just raise their hand if they wouldn't

1 mind, so that you all know who they are. Steve Shaffer  
2 is here from the Department of Food and Ag; you've  
3 heard from Fernando Berton. Dr. Valentino Tiangco is  
4 here from the Energy Commission. Doug Wickizer is  
5 hiding in the back of the room; he's with the  
6 Department of Forestry. John Menke from the Water  
7 Board.

8 We're here present, we're here to listen to  
9 your concerns and come up with what we could feel is a  
10 workable plan for increasing use of biomass in  
11 California. So, please get to know us and spend some  
12 time talking with us in the break.

13 But I want to talk to you again about the  
14 broader policy context surrounding the use of biomass  
15 in California. I'm going to review briefly with you  
16 the Governor's direction to us. I may speak a little  
17 bit about recent state legislation. I would be remiss  
18 if I didn't provide some insights into the Integrated  
19 Energy Policy Report, which is a biennial report which  
20 the Energy Commission prepares for the Governor and the  
21 Legislature on current trends and issues in energy.  
22 And lastly, I'll speak briefly about the bioenergy  
23 working group.

24 First, a little bit about climate change and  
25 why bioenergy has to be viewed in the larger context.

1 California ranks very high in emissions in greenhouse  
2 gases. We are the sixth largest economy in the world,  
3 the 12th largest greenhouse gas emitter in the globe.

4 We, every year, emit over 500 million tons,  
5 metric tons of carbon dioxide equivalent gases. And  
6 these emissions are large and growing, largely due to  
7 population and economic growth.

8 The transportation sector is the largest of  
9 the sectors, largest source of greenhouse gases as  
10 shown in the next slide. Followed by the industrial  
11 sector. And in third place is the electricity sector  
12 with roughly 10 percent from out of state, and 10  
13 percent from instate greenhouse gas emissions.

14 For that reason the Governor, on June the  
15 1st, announced his greenhouse gas leadership  
16 initiative, and with this executive order, the Governor  
17 established statewide greenhouse gas reduction targets.  
18 And the targets are listed here.

19 The Secretary for Cal-EPA is responsible for  
20 leading the coordinating effort to implement the  
21 Governor's climate change targets. And bioenergy is  
22 one of the strategies in the form of either biofuels or  
23 even methane recovery from landfills, that's being  
24 pursued by the Climate Action Team. And the reason for  
25 that is that we believe the use of bioenergy also

1 provides greenhouse gas reduction benefits.

2 In the area of transportation we know that  
3 the demand for gasoline and diesel in California  
4 continues to grow. As a nation-state we consume 43  
5 million gallons of gasoline per day, and 8 million  
6 gallons of diesel fuel. And the state's demand and  
7 appetite for transportation fuels increased almost half  
8 over the last 20 years.

9 The Energy Commission, in its forecast, is  
10 predicting that the use of gasoline will grow to 48 to  
11 52 million gallons per day by 2025, and similarly  
12 diesel demand will continue to be large, growing to  
13 almost 14 million gallons per day.

14 And the projected demand for transportation  
15 fuels continues to grow, even with the impact of the  
16 motor vehicle standards to limit greenhouse gas  
17 reductions from vehicles.

18 In our Integrated Energy Policy Report the  
19 Commission remains very concerned about the growing  
20 relationship between retail price spikes and weaknesses  
21 in our state's petroleum infrastructure. That is the  
22 growing gap between demand and supply.

23 And it's a fact that since the 1960s no new  
24 refinery has been sited either in California or the  
25 U.S. as a whole. And this is putting increasing

1 pressure on import facilities, especially in southern  
2 California where the highest and best use is not  
3 petroleum.

4 Biofuels then remains one of our key supply  
5 options that can address the growing need for  
6 additional supply.

7 To that end, Governor Schwarzenegger has  
8 directed the Commission to take the lead in crafting a  
9 workable, long-term transportation fuel plan. And the  
10 first phase of that plan is due in March of next year,  
11 and will focus almost entirely on biofuels.

12 In addition, the Legislature has also  
13 provided direction to the Commission and to the Air  
14 Resources Board. As early as 2000 we produced a joint  
15 Energy Commission and Air Board report on ways to  
16 reduce California's petroleum dependency. And among  
17 the recommendations is increasing the use of  
18 alternative fuels, including biofuels.

19 More recently, and I think Dean Simeroth  
20 already mentioned this, AB-1007 directs the Energy  
21 Commission to develop a plan on alternative fuels by  
22 June of 2007.

23 Specific to the issue of biofuels the  
24 Integrated Energy Policy Report contained a number of  
25 specific findings, which I think are important to the

1 discussion that you're going to have this afternoon.

2           The first is we recommend applying what  
3 we're calling a portfolio approach to alternative  
4 transportation fuels, which would give -- build in some  
5 flexibility in how you measure the net benefits versus  
6 the single pollution focus which exists today. So  
7 examining the effect of such fuels like biodiesel, and  
8 biodiesel blends in particular, should be viewed in a  
9 different context. So this is something that were  
10 advocating through the bioenergy interagency working  
11 group.

12           We also recognize there are multiple  
13 benefits of fuel diversity, energy security and climate  
14 change that can be derived from the use of these fuels.

15  
16           And lastly, one of our key recommendations  
17 involves establishing a state renewable fuel standard,  
18 not unlike the federal standard that was established  
19 last year, which would require that a percentage of  
20 diesel sold in California be biodiesel, renewable  
21 diesel, and establish a state procurement policy which  
22 would favor the use of biofuels.

23           Specific to the issue of biomass, or  
24 renewable carbon fuel someone mentioned, the Governor  
25 has also directed the Commission to develop an

1 integrated and comprehensive state policy on biomass.

2 As Chairman Desmond has already mentioned,  
3 we continue to support the work of this Collaborative  
4 through the Public Interest Energy Research program,  
5 the bioenergy interagency working group is beginning to  
6 meet very frequently. In fact, we're meeting again  
7 tomorrow. And we are directed to include in our plan  
8 fuel substitution, that is substitution in electricity  
9 and natural gas and petroleum fuels arenas. And again,  
10 the issue of multiple benefits.

11 Again, Chairman Desmond has already covered  
12 most of this, but we are looking for synergy. What  
13 we're looking for is ways that California state  
14 energys, through an interagency approach, can address  
15 barriers and propose solutions.

16 The membership, as already stated, is six  
17 key agencies, many of the representatives are here  
18 today, and you just heard from a panel of those  
19 representatives, and the California Energy Commission  
20 is leading this effort. And Commissioner Jim Boyd is  
21 actually the Chair of this interagency working group.

22 And by March we expect to have a series of  
23 recommended action items. And those action items will  
24 involve ways to expand the use of biomass, biogas and  
25 biofuels; identify particularly near-term or immediate

1 actions that California agencies can take to advance  
2 this issue; expanding the market for urban, ag and  
3 forestry residues; and identify and removing  
4 unnecessary regulatory requirements.

5 So it's my hope that in the discussions this  
6 afternoon that we will get to the bottom of some of the  
7 key issues; with your input we can move ahead.

8 But in the meantime we will continue to meet  
9 regularly to achieve consensus among the California  
10 participants. We will be planning a public process  
11 after the first of the year, possibly in conjunction  
12 with this Collaborative. And a draft report and  
13 recommendation will be made available to you for your  
14 review in March.

15 So, with that, let me assure you that the  
16 issue of biomass and biofuels is gaining momentum in  
17 California. Again, the convergence of policy  
18 objectives dealing with greenhouse gas reduction, fuels  
19 diversity and using our valuable wastes to produce  
20 products that we can actually use, including energy  
21 products, is of prime importance to us.

22 So, again, I want to thank you for having me  
23 here. I know it's break time, but I'd love to take a  
24 couple of questions. And I see that, Ken, you've got a  
25 question, so come on up.

1           MR. KRICH: It's great that the interagency  
2 group is moving again very rapidly. I wanted to just  
3 ask if one thought is being considered.

4           To do the research on electricity and  
5 biomass you have Public Interest Energy Research funds.  
6 You can use public goods energy research natural gas  
7 funds to develop substitutes for natural gas, working  
8 on biogas and so on.

9           Is there any thought to coming up with some  
10 research funds that would be focused on transportation  
11 alternative being paid for as those other funds are  
12 paid for by ratepayers, the transportation funds would  
13 be supplied by users of transportation fuel.

14           So any thought for that kind of an issue in  
15 the Legislature?

16           MS. BROWN: Yes. The answer is yes. We're  
17 advocating the imposition or the creation of a  
18 transportation public goods charge. We're advocating  
19 that very strongly in many circles. And we believe  
20 that similar to the surcharge on electric ratepayers,  
21 we'd like to see a transportation surcharge imposed on  
22 gasoline and diesel sales to fund research, development  
23 and demonstration.

24           So, yes, we're absolutely advocating that as  
25 an option.

1                   Yes, sir.

2                   MR. STEWART: Here I am again, Jim Stewart  
3                   from BRI.

4                   Michael Wang of the Argon National  
5                   Laboratory, who is one of our great authorities on  
6                   emissions from various fuels, recently reported that  
7                   the CO2 emissions from gasoline, blended with  
8                   cellulosic ethanol, not ethanol from corn but  
9                   cellulosic ethanol, which includes MSW, even a 10  
10                  percent blending would result in a reduction in CO2  
11                  emissions from automobiles by 85 percent, the same as  
12                  if it was E-85.

13                  One of the things that I believe is very  
14                  necessary from state government is to adopt a  
15                  coordinated policy of measuring all of the emissions,  
16                  alternative emissions, that are dealt with by the  
17                  utilization of MSW, for instance, as a fuel for a  
18                  waste-to-ethanol, or waste-to-electricity plant.

19                  Right now it's very very focused on the  
20                  waste, itself, and the regulation of the waste. But  
21                  what we need is a comprehensive overview of greenhouse  
22                  gas emissions and all other emissions, such as  
23                  emissions from landfills, methane gas flaring and all  
24                  of these, to see what the total offset is by the  
25                  utilization of MSW as a fuel for energy.

1           If you were to adopt that policy we would  
2     have a totally different view of some of the regulatory  
3     policies that we are trying to deal with in building  
4     these plants.

5           MS. BROWN: Well, I couldn't agree with you  
6     more. I think what you're talking about is what we  
7     call a multimedia or multi-attribute approach. And  
8     we're certainly mindful of that. And the work we plan  
9     to do under the AB-1007 directive actually looks at the  
10    full fuel cycle effects of some of these fuels.

11           So, stay tuned. We're working on that type  
12    of analysis. I hadn't thought specifically about MSW,  
13    but we're looking broader across a menu of fuels. So  
14    that's a very good point.

15           And we are very mindful of the excellent  
16    work of Michael Wang.

17           Looks like my time is up. It's time for a  
18    break. Thank you very much.

19           (Applause.)

20           MR. WILLIAMS: Thanks, Susan. Okay, we have  
21    time for a very short break because we want to get back  
22    on track at 10:45.

23           The second panel speakers, I'd like you to  
24    try to get together with Pat Sullivan, if you haven't.  
25    So, Pat is towards the back of the room. Raise your

1 hand, Pat. If anyone hasn't met him yet, get together  
2 with him.

3 And there are extra information packets at  
4 the back of the room if you didn't get one when you  
5 came in.

6 (Brief recess.)

7 MR. SULLIVAN: Okay, we're going to get  
8 started with the second panel of the morning. I'm Pat  
9 Sullivan from SCS Engineers. I'll be moderating the  
10 second panel. I'm on the Executive Board of the  
11 Collaborative.

12 The panel number two this morning is going  
13 to bring a different set of perspectives on the same  
14 issues of biomass energy. You heard from the  
15 regulatory agencies earlier this morning. Now you're  
16 going to hear from industry, as well as the  
17 environmentalist groups regarding their perspectives.

18 Our first speaker on panel number two is  
19 Phil Reese. Phil is the Chairman of the California  
20 Biomass Energy Alliance. They are the major industry  
21 group representing the solid fuel biomass facilities in  
22 California.

23 Phil.

24 MR. REESE: Good morning. As Pat said, I  
25 represent the industry, that is that part of the

1 industry which is the solid fuel biomass electric  
2 generating facilities in California today.

3 Today there are 29 operating biomass  
4 electric generation plants producing approximately 600  
5 megawatts of output for sale to the electric grid.  
6 These 29 plants are distributed in 17 different  
7 California counties. There are 11 idle biomass plants,  
8 which have shut down, but not for environmental  
9 reasons, so I'll leave my ranting and raving as to why  
10 the plants have shut down for another venue.

11 The current plants operating today are  
12 consuming about 7.7 million tons of biomass material a  
13 year. Now, this is down considerably from the 10.2  
14 million tons that was consumed in the 1994/1995  
15 timeframe. In addition to the idle plants, which are  
16 capable of restart, there have been quite a number of  
17 the biomass plants in California that have been  
18 dismantled.

19 The gentleman from the Air Resources Board  
20 this morning was commenting on the permitting of plants  
21 greater than 50 megawatts. Well, there's never been a  
22 biomass plant that has gone through the Energy  
23 Commission permitting cycle because none have ever been  
24 bigger than 50 megawatts.

25 And I would submit that there'll never be a

1 biomass facility, whether it's energy generation or  
2 fuel production or whatever, that will be larger than  
3 the equivalent of 50 megawatts. For the simple reason  
4 that the size of the fuel shed or the feedstock shed  
5 gets too large for sizes about 50 megawatts. You  
6 simply can't afford to move the raw material from  
7 distances greater than that.

8           Now, I've noted there has been some very  
9 good discussion this morning on the transportation  
10 fuels. I'd just let the group know that it's the cost  
11 of the transportation fuels today, I'm speaking of  
12 diesel, that is leading to a curtailment of generation  
13 of the existing power generation biomass plants this  
14 year, this calendar year, of about 12.5 percent. Due  
15 to the cost of reaching out to the fringes of each  
16 plant's fuel shed. We simply can't afford the cost of  
17 collecting and trucking the fuel from greater  
18 distances.

19           We have asked the Energy Commission for some  
20 relief from the public goods charge to cover the  
21 skyrocketing diesel costs. My plant is paying a 20  
22 percent surcharge on our fuel to cover our truckers'  
23 additional costs.

24           The 12.5 percent curtailment this year, if  
25 nothing else changes, is likely to be larger next year.

1 And I'd simply note that that is going backwards in  
2 terms of compliance or progress toward the state's  
3 renewable portfolio standard.

4 Let's talk about the environmental barriers  
5 briefly that is the subject of today. I want to talk  
6 about two categories, and I've called them the  
7 discretionary environmental barriers, and the  
8 ministerial environmental barriers.

9 Now, take what I'm saying with the knowledge  
10 that there really hasn't been a substantial biomass  
11 facility permitted in this state since 1989. So, the  
12 true permitting difficulties and barriers were  
13 experienced some long time ago.

14 Also consider that some of what I say is  
15 applicable to any large-scale industrial facility, not  
16 only to biomass. But let's speak of the discretionary  
17 environmental barriers first. And I'll do that with  
18 two factual stories as examples. A long example and a  
19 short example.

20 The long one is that a number of years ago  
21 in Mendocino County an applicant held a contract with  
22 PG&E for a 25 megawatt biomass plant which was located  
23 within the city limits of the City of Willits at the  
24 request of the city, so that the city could enjoy the  
25 tax benefits to be produced by having a large

1 industrial facility within its boundaries.

2 Well, after about a year and a half of  
3 permitting work, engineering work, design work, a full  
4 environmental impact report, the city planning  
5 department produced a proposed permit with a  
6 substantial number of conditions designed to mitigate  
7 environmental impacts.

8 Well, the evening came for the city council  
9 to hold a hearing to approve the planning staff's  
10 proposed permit with conditions. And one very very  
11 long evening. I would say 200 of the constituents of  
12 the city council approached the podium and proceeded to  
13 give a litany of environmental objections to the  
14 proposed project.

15 Such things as belching pollution, spewing  
16 smoke, pouring toxics into the air. Even a claim that  
17 the emissions from the cooling tower would give  
18 everybody in the city Legionnaire's disease.

19 About 4:00 in the morning the city council  
20 exercised their discretionary environmental authority  
21 and turned down the project. That ended it. The  
22 project was never built.

23 Now, my shorter example takes place in  
24 Madera in the Central Valley. We held a 49 megawatt  
25 contract with PG&E, and approached the city planning

1 director for a normal preapplication meeting. And the  
2 young fellow who was the planning director was sharp as  
3 a tack and very straightforward. And he told us that  
4 we would get a fair and timely review of our  
5 application for a conditional use permit. But we  
6 wouldn't get it; we were wasting our time.

7 I was somewhat taken aback and said, why's  
8 that. And he said the people of this county don't want  
9 you screwing up the environment. Before anybody had  
10 even looked at it.

11 Well, that's the discretionary environmental  
12 problem that biomass plants, that we have today.  
13 Direct combustion plants. We burn the wood chips to  
14 boil water to make steam. Steam turns the steam  
15 turbine, which turns the generator which makes  
16 electricity.

17 Every plant in the state is fully compliant  
18 with their permit conditions from the local air  
19 regulatory agencies, and with the water-related permits  
20 and with the waste management permits, et cetera.

21 But now let's come to what I call the  
22 ministerial permits. And by ministerial I mean if you  
23 meet the regulations you get your permit. Well, there  
24 are perhaps five brief ones.

25 First, in the permitting of a point source

1 of emissions such as a biomass plant, we would like to  
2 see a true netting of the emissions. Recognition for  
3 the reduction in emissions that occur if the biomass  
4 material were left to its alternate fate, such as  
5 landfilling, leaving it in a forest, or leaving it in  
6 the field, or burning it.

7 We'd like to observe that quite a number of  
8 the plants, especially those in the Central Valley, and  
9 including mine in the Coachella Valley, were permitted  
10 based on the reduction of agricultural open burning.

11 As was mentioned a few minutes ago, with  
12 phase-out of legal open burning, no new plant could be  
13 permitted based on the reduction of agricultural open  
14 burning.

15 Emission reduction credits, several people  
16 have said they're hard to get. I will tell you that  
17 they are literally not available in the southern  
18 California area. Several weeks ago for another client  
19 we wanted to buy 10 pounds per day. And the quote was  
20 \$40,000 per pound per day.

21 In the large sizes necessary for a  
22 substantial biomass facility, they're not available in  
23 southern California. And expensive in other places.

24 Now, in the past seven or eight years  
25 there's been a number of application amendments for

1 alternate fuels submitted. And each of those has had a  
2 required source test or test burn by the local agency.  
3 My plant wanted to burn railroad ties, and even though  
4 there are two other plants in California burning  
5 railroad ties, we were forced to do a very expensive  
6 test burn.

7 We would suggest that there be a statewide  
8 recognition for fuel permitting if it has been done  
9 elsewhere in the state.

10 And lastly, some of our organization members  
11 are being told by the air regulatory agencies that they  
12 are planning to phase out startup exemptions on  
13 pollutant concentrations.

14 Well, a solid fuel plant can't live without  
15 a startup exemption from the concentration of criteria  
16 pollutants in the exhaust gas. It can certainly meet  
17 the pound-per-hour limits. But if the startup  
18 concentrations are not exempted, there will simply be  
19 no solid fuel plants.

20 Thanks.

21 (Applause.)

22 MR. SULLIVAN: Thank you, Phil.

23 Our next speaker is Necy Sumait. She's the  
24 Manager of Regulatory Affairs for Arkenol. Arkenol is  
25 a leader in the development of cogeneration, ethanol,

1 acid hydrolysis, and other energy facilities.

2 Nocy, take it away.

3 MS. SUMAIT: Good morning. My topic is for  
4 biofuel of the regulatory and environmental issues.

5 Fuels -- biofuels are fuels made from plant materials.

6 We're all familiar with biodiesel and ethanol. My  
7 perspective comes from the ethanol industry, so -- but  
8 I think all the discussion will pertain to both.

9 Biodiesel is made from rape seed, soybeans,  
10 restaurant grease. There's approximately 30 million  
11 gallons per year being sold in the U.S. Ethanol's  
12 right now primarily from corn, approximately 3.7  
13 billion gallons per year sold in the U.S.

14 While there is some corn-to-ethanol plants  
15 that have been proposed here in California, in fact I  
16 think one is just about ready to start up, the future  
17 for ethanol in California lies in being able to convert  
18 the cellulose that's found in MSW, in forest residues,  
19 in agricultural residues, all the biomass resources  
20 that's available to us.

21 And I also want to echo the earlier comment  
22 by I think Jim that biofuels production is lucrative,  
23 otherwise, you know, it's been so hard, but it is  
24 really an economic venture. And, in fact, they've got  
25 people lined up for the second plan.

1           And the technologies are already available.  
2       Sometimes we, you know, I seen some of the publications  
3       that says the future lies in cellulose, but the  
4       technology's not yet there.

5           The reason we don't have any right now is  
6       really because of the financing structure that these  
7       plants need to go through. We need to have long-term  
8       commitment from creditworthy feedstock suppliers. We  
9       need to have price-certain purchase commitment for the  
10      ethanol that we're selling. And we need to get that  
11      from customers that are used to buying on the spot or  
12      annual contracts.           And we need to have lots of  
13      guarantees for the yield conversion.

14           And then lastly, the two issues that are  
15      really the focus for today, is that the lengthy and  
16      expensive permitting process, particularly in  
17      California. And that while we have a lot of nice --  
18      they fall short of jump-starting the industry.

19           From a facility in siting and permitting  
20      issues I will talk from lessons learned from Arkenol's.  
21      We actually did successfully permit a biomass-to-  
22      ethanol plant in California to convert rice straw to  
23      ethanol. This was in the mid-90s to the late 1990s.  
24      And we also did that in conjunction with the California  
25      Energy Commission.

1           We obtained all of the permits from all the  
2 various agencies. Some of the issues that we  
3 encountered that I think might be helpful to share is  
4 the lead agency jurisdiction for the environmental  
5 review. In this case it was CEQA.

6           It was done through the Energy Commission  
7 because it was a cogeneration facility that had a  
8 natural gas plant. So we entered into a memorandum of  
9 understanding with the Sacramento County, who has  
10 jurisdiction over the ethanol plant, and the California  
11 Energy Commission with jurisdiction on the natural gas  
12 power plant.

13           So, we were able to avoid duplication in the  
14 public hearings, the public notices. We ended up with  
15 one comprehensive document that addressed the issues  
16 from which the various agencies that issue permits; the  
17 conditional use permit; the rezone; the authority to  
18 construct; the waste discharge requirements. They were  
19 all being issued from the CEQA document that the Energy  
20 Commission produced.

21           The issues that we also encountered during  
22 the permitting process, some of the agencies, you may  
23 find, may not be fully staffed to handle some of the  
24 nuances of the technologies. The Energy Commission had  
25 to hire a third-party consultant to handle some of the

1 issues related to the ethanol plant, the perception  
2 that there were issues bigger than they are.

3 And at the end of the day everything was  
4 fine. But they actually had to go out and source the  
5 review for that.

6 The air emission reduction credits, the  
7 availability and the cost. That goes across the board  
8 for any project in California. And that's going to  
9 continue to be the hurdle to getting these plants built.

10 Zoning. In some jurisdictions an ethanol  
11 plant could be ag-related, could be in an ag zone. In  
12 our case in Sacramento County it requires heavy  
13 industrial. So you're bringing ag residues, but you  
14 need to have that land zoned heavy industrial.

15 Clearly the environmental benefit of using  
16 the biomass and the management of the solid waste was  
17 not accounted for at all in the permitting. Nor were  
18 the environmental benefits from use of the products.

19 In the case of rice straw we were reducing  
20 emissions from -- field burning, but that wasn't part  
21 of the equation when we were going through the  
22 permitting process.

23 So, just some considerations for the  
24 developer in going through these projects. Just, you  
25 know, project design, just eliminate all the

1 environmental issues to begin with. Make the project  
2 such that it doesn't have any real issues that would  
3 just create hurdles in the permitting process.

4 Another requirement is establish the  
5 schedule. Time and money. We spent millions of  
6 dollars and we still didn't get the plant built. For  
7 reasons not because of environmental or licensing, but  
8 for those reasons I put on the first slide, that the  
9 financing structure is such that it was very difficult  
10 to get that project going.

11 I ask the regulatory agencies to consider in  
12 going through and licensing these facilities to  
13 acknowledge that there needs to be coordination among  
14 all the agencies, especially if there are multiple  
15 jurisdictions. And at different levels, at the state  
16 or the local levels.

17 And there also needs to be an  
18 acknowledgement of the benefits of the biomass  
19 utilization. Avoidance open field burning; the  
20 extension of landfill life; reduction in forest fires;  
21 compliance with landfill diversion mandates; compliance  
22 with -- standards, greenhouse gas emission reductions.

23 You know, somehow all of these benefits need  
24 to be put into the decisionmaking process, and maybe,  
25 you know, -- the electricity reports for power plants,

1 for a needs assessment. Maybe this could be a  
2 justification to be an override if there's a NIMBY  
3 issue in larger projects.

4 As we've shown in successfully permitting a  
5 rice straw-to-ethanol plant, the environmental issues  
6 related to the siting, it's difficult, but it's  
7 manageable.

8 But what we need to do, I think, is that we  
9 need to take the environmental benefits of using  
10 biomass that we can have sound policy; so that we can  
11 really have sustainable biomass management. So we can  
12 actually go and figure out what all these other  
13 permitting issues are. Otherwise, none of these other  
14 projects will actually -- will even get to the  
15 permitting, that we can figure out how to help them.

16 For instance, CARB adopted regulations to  
17 look at greenhouse gas emissions from new vehicles.  
18 That could have been an opportunity to bring up fuels  
19 component. You know, the greenhouse gas reductions  
20 benefits of ethanol. It's well documented and well  
21 known. A renewable diesel fuel standard; a renewable  
22 fuel standard could have been a part of that  
23 policymaking process.

24 The use of ethanol in reformulated gas is  
25 largely regulated by the predictive model. There's

1     been so much debate about the slight increases in NOx  
2     and the evaporative emissions from VOC, that we lose  
3     all of the significant benefits of ethanol in reducing  
4     all the other criteria pollutants and the toxic air  
5     pollutants.

6                 So it seems worthwhile to suggest that we do  
7     this portfolio approach in which we can develop a more  
8     flexible regulatory structure that considers total  
9     emissions impact and benefits of all the criteria  
10    pollutants and toxic air contaminants.

11                So ask why today why 10 percent ethanol is  
12    okay everywhere else but California. So it's time for  
13    California to really look at putting more ethanol in  
14    the system.

15                E-85 is another way to quickly bring a  
16    transportation fuel to market in the state. You know,  
17    there's like three, maybe four E-85 pumps. I believe  
18    they're in air bases, military installation. But  
19    certainly the cars are here now.

20                The Energy Commission representative talked  
21    about some of the global climate change policies and  
22    goals that are before them. Specifically, we want to  
23    reduce our nonpetroleum fuel use to 20 percent by 2020.  
24    Well, if we don't do anything, we're starting at 6  
25    percent, and that's largely ethanol in reformulated

1 gasoline. But E-85 is right here.

2 We can implement a reviewing station  
3 strategy for E-85. There are already 250,000 flexible  
4 fuel vehicles in California, a few million in the U.S.  
5 Ford just announced that they're going to get into  
6 production another 250,000 FFVs. You know, California  
7 can call up Ford and tell them, we'll put in the pump  
8 stations for you so we can put in E-85.

9 So I think we need to encourage flexible  
10 fuel vehicle production, as well. It's always, you  
11 know, the excuse of the chicken-or-the-egg, which one  
12 goes first. It doesn't have to be that way. By having  
13 flexible fuel vehicles, consumers can have the choice  
14 in putting either gasoline or alternative fuel. It's  
15 just this chicken-and-egg, it's just I think continued  
16 excuse to delay the implementation of E-85.

17 And lastly, you know, I keep telling  
18 the -- ethanol is energy, too. But when you go to the  
19 PIER program there's no money there for transportation  
20 fuels. So I think somehow when the working group gets  
21 together, I think it's important to set aside some  
22 money if the goal is to increase transportation fuel.  
23 To also put a public goods surcharge or something that  
24 will fund transportation fuels.

25 To go back to the issue in siting, I just

1 got reminded that if we're short of air emission  
2 credit, how about mitigation fees. And those  
3 mitigation fees go to fund clean energy projects.

4 Why biofuels. Bryan said earlier that, you  
5 know, all the environmental benefits of biofuels are  
6 already documented, so I won't address them here. And  
7 clearly they are. It's an integrated solution to waste  
8 management, particularly if you're using cellulose,  
9 economic development and energy security.

10 And it's time that consumers have choice in  
11 their fuel. The recent hurricanes showed our  
12 dependence on oil and gas. We had -- EPA and CARB had  
13 to have waivers from reformulated gasoline regulations  
14 just to ease the pain.

15 Energy prices are predicted to remain high.  
16 And ethanol is really okay. All the problems that were  
17 expected from converting from MTBE to ethanol didn't  
18 happen. Ethanol helps to extend our fuel supply.  
19 Before ethanol, MTBE was put in gasoline at 11 percent.  
20 Now it's only put in at 5.7. We were already importing  
21 before MTBE, so we're importing a lot more now.

22 It's just time for the U.S. to act. The  
23 renewable fuels program, as Susan Brown had mentioned,  
24 is gaining momentum not only here in the U.S., but  
25 worldwide. And several countries are getting on the

1 bandwagon. Japan is now home to the first plant that  
2 demonstrates a California technology, to produce  
3 cellulose from ethanol. We want to do (inaudible) here  
4 in the U.S.

5 And hopefully the other plants are starting  
6 to align that maybe now is the time to do it.

7 I want to end with just sharing a story of  
8 the Brazil model. This summer, nationwide, so many  
9 articles printed an interview with a woman, Carolina  
10 Rossini, and they talked about how Brazil was  
11 successful after decades of planning in getting away  
12 from petroleum.

13 In the 1970s with the Middle East embargo,  
14 Brazil was importing 80 percent of their crude. They  
15 were bankrupt. They made a decision to kick the import  
16 habit. And that's with government intervention. Loan  
17 guarantees, production credits, et cetera.

18 Ethanol blends were introduced. By 1985  
19 more than 90 percent of all cars produced in Brazil  
20 were designed for alcohol use. The '80s when gasoline  
21 prices were falling, the ethanol supplies from the  
22 drought led to poor sugar harvest, which means a  
23 decrease in ethanol, those policies were put to the  
24 test.

25 But by 1990s when there were again rising

1 energy prices, they decided to do something different,  
2 and that is let's not rely on Middle East oil nor on  
3 the farmers for our fuel supplies. Give consumers the  
4 choice. There is no longer any technical or cost  
5 challenges to producing flexible fuel vehicles. E-85  
6 is here and it's available.

7 So now, because of decades of planning, all  
8 of the gasoline in Brazil has a minimum of 22 percent  
9 ethanol content. They have a viable domestic ethanol  
10 market with tremendous export potential that's  
11 employing a billion Brazilians.

12 And this woman that got interviewed,  
13 Carolina Rossini, she has a choice of either putting in  
14 \$4 and spending \$4 a gallon for gas, or half that for  
15 home-grown fuel.

16 California can do it, too. We have the  
17 cars; the fuel is here. We need a few pumps. And it  
18 just might happen. But it's going to take leadership  
19 and commitment. And I hope that the working group  
20 begins that and it gets carried to our Legislature.  
21 And we, too, can have energy security in a few years.

22 Thank you.

23 (Applause.)

24 MR. SULLIVAN: Our next speaker is Kay  
25 Martin. Kay is the Vice President of the BioEnergy

1 Producers Association. They're an industry advocacy  
2 group promoting the commercialization of biofuel,  
3 biopower, and other conversion type technologies. Kay.

4 MS. MARTIN: Good afternoon -- no, it's  
5 still morning, isn't it? Seems like afternoon. I'm  
6 Kay Martin with the BioEnergy Producers Association.  
7 And we're a coalition of private companies that are  
8 commercializing noncombustion technologies to produce  
9 power, fuel and chemicals from biomass and plastics  
10 materials.

11 We've also recently been joined by two large  
12 waste companies, NorCal and Republic. And the interest  
13 of those companies is getting in on the ground floor of  
14 new technologies that will help them maintain and  
15 expand their market share in the waste management  
16 business.

17 I'd like to focus my comments during this  
18 brief segment in three principal areas. One is  
19 reviewing the barriers that exist for the entry of  
20 bioindustries into the California marketplace.

21 Secondly, looking ahead to new regulatory  
22 frameworks that can both enable the siting of these new  
23 industries in California, and also advance  
24 environmental goals.

25 And then finally, moving from theory to

1 practice, how do we get these types of programs and  
2 industries on the ground in light of what is admittedly  
3 a very volatile and partisan political climate in  
4 Sacramento.

5 Fernando has already reviewed some of the  
6 issues that we have to deal with in California statute  
7 with regard to the definitions of these technologies.  
8 And they represent somewhat of anachronism. Actually  
9 conversion technology is a category that refers to very  
10 diverse industrial processes. But this category has  
11 been rather arbitrarily created through the drawing of  
12 regulatory domains in the Public Resources Code.

13 But our Association is interested in  
14 developing technologies in this noncombustion area for  
15 the production, as we've said, of power fuel and  
16 chemicals.

17 And for better or for worse, we've been  
18 categorized into the regulatory domain of the  
19 Integrated Waste Management Board largely on the basis  
20 of the nature of our raw materials or feedstocks. And  
21 as Fernando mentioned earlier, the 1989 Integrated  
22 Waste Management Act did not anticipate these  
23 technologies and has some pretty confusing definitions.

24 Basically we've been merged with disposal or  
25 incineration at the bottom of the Integrated Waste

1 Management hierarchy. There was a new definition posed  
2 for gasification in 2002 when it appeared that one of  
3 these projects would go forward. But as it turns out  
4 this definition is not only scientifically inaccurate,  
5 but carries with it the additional burden that the  
6 project can have zero emissions.

7 In addition, none of these technologies are  
8 recognized for their beneficial use of materials in  
9 diverting from landfill and they're ineligible for  
10 diversion credit.

11 One of the things our Association has done  
12 in the past year is sponsor a bill, AB-1090, which is  
13 being carried by Assemblywoman Matthews, and this bill  
14 adds a generic definition for conversion technologies,  
15 and also removes the scientific inaccuracies in  
16 existing definitions. And it finds us a more suitable  
17 home in the Integrated Waste Management hierarchy which  
18 recognizes the beneficial use of these technologies in  
19 diverting materials from landfill; and also makes them  
20 eligible for diversion credit on a case-by-case basis,  
21 at the discretion of the Integrated Waste Management  
22 Board.

23 There is going to be a hearing, a interim  
24 hearing on this bill, conducted by the Assembly Natural  
25 Resources Committee in Los Angeles next Wednesday.

1 That's November 16, from 1:00 to 4:00 p.m. in the City  
2 of Los Angeles City Hall. And we encourage all of you  
3 to participate if you're in the area.

4 One of the things I'd like to emphasize in  
5 the latter part of my discussion today is that this  
6 whole issue of opening the California marketplace to  
7 bioindustries goes well beyond the waste arena. And  
8 what we're really talking about is the need for the  
9 development in this state of a comprehensive integrated  
10 bioenergy policy.

11 And so I was particularly pleased to see the  
12 Energy Commission report that's just come out, and to  
13 hear Joe Desmond's comments this morning. It appears  
14 that we're on the track of doing that.

15 And what this would entail, in my mind, is  
16 the need to develop permitting systems that are cross-  
17 media in scope and are also based on lifecycle  
18 performance of projects and industries. It would have  
19 to include incentives for industries to make the  
20 necessary investments in our state. And also we would  
21 need to create market demand by educating the public on  
22 the benefits, both environmentally and economically, of  
23 greenpower and green fuels.

24 I'd like to give you a couple examples of  
25 the permitting conundrums that we face for biomass

1 conversion technology industries in California.

2 One example, let's say, from the  
3 agricultural sector. Dairies are a key segment of our  
4 California economy. They're facing substantial  
5 regulatory obstacles now, or challenges. But it's an  
6 industry that we very much want to preserve in our  
7 state.

8 We also, on the other hand, want to attract  
9 alterative fuel industries such as ethanol. And these  
10 will likely commercialize first on the basis of corn,  
11 and hopefully then move on to biomass, cellulosic  
12 biomass feedstocks.

13 One model that's being developed in other  
14 states is to link up corn ethanol plants or ethanol  
15 plants generally with agricultural operations. For  
16 example, although most corn would be imported at least  
17 in the near term, it could be augmented by local corn  
18 in California.

19 And more importantly, we could take wastes  
20 from agricultural operations such as manures or  
21 processing rice from food operations, or fiber  
22 operations, and hook those up with a gasification unit  
23 which could then, in turn, provide a power source for  
24 the ethanol plant.

25 And the ethanol plant, in its production

1 process, would produce distillage grain which could  
2 then provide the dairy, in this case, with a source of  
3 high quality feed for cattle.

4 This type of synergistic business model  
5 makes absolute sense for both industries. It reduces  
6 the high cost of electricity for the ethanol plant; it  
7 reduces the high cost of manure management or waste  
8 management in the agricultural industry and the  
9 associated mitigation costs.

10 So, what's wrong with this picture? this  
11 type of model is being implemented as we speak in at  
12 least three other states, and I think two are pending.

13 In California I posed the question to the  
14 regulatory section of the Integrated Waste Management  
15 Board, could we do a gasification unit for manure to  
16 power these plants. And the answer is, well, that  
17 would probably fall into the Waste Board's  
18 jurisdiction; it would have to be permitted not as a  
19 power plant, but as a waste facility. And the reason  
20 is that manure is a solid waste, and gasification, as  
21 defined in the Public Resources Code now, requires a  
22 Waste Board permit. And on top of it, it would have to  
23 be a zero emission facility.

24 What happens then if we say, well, how about  
25 if we augment some of the fuel materials for this to

1 include municipal green waste, or nonrecyclable paper.  
2 Well, there's no provision in the state law which  
3 allows an exclusion for source-separated materials for gasification.

4 Well, but how about if we just say to heck  
5 with the gasifier, we'll go with a boiler. Then the  
6 Waste Board says, oh, well, that's not in our  
7 jurisdiction anymore. We don't regulate biomass burn  
8 plants. And so you'd have to go to somebody else.

9 So the bottomline is we have a lot of work  
10 to do to clear up jurisdictional authority. And so  
11 energy companies, like Panda Energy, who is one of our  
12 members, is not going to bother coming in and taking  
13 the risk in California until we figure this problem  
14 out.

15 Another example. When we moved to  
16 cellulosic biomass plants and we're looking at  
17 gasification technologies, or acid or enzymatic  
18 hydrolysis, or thermal depolymerization of animal  
19 rendering wastes, all of these feedstocks are viable  
20 raw materials for the production of alternative fuels  
21 in California.

22 But should we be permitting these facilities  
23 as solid waste facilities; or should we be permitting  
24 them as refineries. These are some of the questions we  
25 have to deal with in California to attract these

1 industries. They are being permitted as chemical  
2 plants in other states.

3 I think the larger question is something  
4 that has been brought up several times today, is that  
5 we need to move to some kind of cross-media format for  
6 permitting. and I think we need to do this on two  
7 levels. And this has been brought up in various  
8 questions today.

9 On the project level we have to be able to  
10 create an aggregate score card of the environmental  
11 footprint of a project. And we need to take a  
12 lifecycle approach of looking at them. On the one  
13 hand, project inputs; how intensive is the energy  
14 requirement; is it renewable; is it nonrenewable; what  
15 types of resources are going in; what's the water  
16 usage; what raw materials are being used; and what  
17 impacts are created through the extraction or  
18 production of those materials.

19 And on the outputs, is it a net energy  
20 producer; is it able to meet air quality requirements;  
21 what kind of wastes and in what amounts does it  
22 produce; and then finally, I think we would need to  
23 look at the ultimate end product, too. Is this end  
24 product environmentally benign, or is it a product  
25 that's going to create problems down the line at the

1 end of its useful life.

2 So out of this type of analysis we're able  
3 to get an appreciation at the project level of the  
4 environmental footprint, some notion of the energy  
5 balance, and this concept of a pollution portfolio  
6 where we can look at making tradeoffs across existing  
7 regulatory domains.

8 And then finally some notion of the  
9 sustainability of this project.

10 At the higher level, you know, one of the  
11 reasons why we want to look at a cross-media type of  
12 regulatory domain is to advance broader state policy  
13 goals. And so we have to go one step up. This is what  
14 Chuck White was talking about in his question that he  
15 emailed in. Or that Phil was talking about in  
16 recognizing the larger benefits of some of these  
17 projects.

18 So, we have to really look at comparing  
19 these projects, these industry portfolios with what  
20 they replace. What markets are being displaced by the  
21 products that are going to be produced by these  
22 industries.

23 And let's take an example. Let's say that  
24 we want to get serious about ethanol in California.  
25 And that we want to encourage the development of

1 ethanol plants at sources of existing biomass  
2 aggregation, both in the urban and the rural studies,  
3 so that what we're wanting to create is a large number  
4 of smaller refineries that utilize local feedstocks and  
5 are coupled with dispensing stations for those fuels,  
6 for the immediate area.

7 If we then look at what this industry would  
8 displace we're talking about displacement of petroleum  
9 refinery capacity and displacement of petroleum fuels.

10

11 If we then look at a comparison across the  
12 board between this industry and the one it replaces, we  
13 can begin to get some appreciation of the relative  
14 benefits on a larger scale.

15 For example, greenhouse gas benefits.  
16 Adding fuel supply to the state, certainly the  
17 advancement of renewable portfolios, which is another.  
18 I think the land use implications also are something  
19 that we seldom talk about.

20 Think for a minute about the long-range  
21 effects of large, centralized petroleum refineries,  
22 tank farms and marine terminals, which are focused  
23 largely in two areas, the Bay Area and the Los Angeles  
24 Basin.

25 Compare that with a more distributed system

1 of smaller refineries, smaller biorefineries throughout  
2 the state in both the rural and urban settings. What  
3 impact would this have on job/housing balance. What  
4 impact would it have on environmental justice issues.

5 All of these things need to be taken into  
6 account. Along with the economics. We can produce  
7 ethanol probably in about \$1.20 a gallon, probably much  
8 cheaper with cellulosic. Even though there's an energy  
9 loss when you compare ethanol to gasoline, with that  
10 type of price differential, with gasoline hovering up  
11 around \$3, this is more than made up for in terms of  
12 savings to the consumer.

13 If we can create this more enlightened, more  
14 enabled or enabling regulatory environment, then we can  
15 bring industry into the state and also enlist public  
16 support in a way that sees the benefit or the synergy  
17 between environmental and economic benefits.

18 As far as industry is concerned, why can't  
19 we have standard permitting guidelines for ethanol  
20 infrastructure projects just like those that are being  
21 proposed for the petroleum industry.

22 And we need to create incentives for  
23 industry to come into our state. And I won't review  
24 those, they've already been talked about earlier in  
25 terms of the financial incentives and the market

1 incentives.

2 And, of course, we need to educate the  
3 public. Bring them in line in terms of their knowledge  
4 of the environmental benefits, and the way that this  
5 can impact their pocketbooks.

6 Let me sum up by saying we've got some  
7 problems here in terms of getting there from here.  
8 None of these are new ideas. the Energy Commission has  
9 produced a number of excellent reports over the past  
10 five years or so. And all of the recommendations that  
11 we've talked about this morning have probably been  
12 touched upon in one or more of those reports.

13 So we've got a portrait of Jim Boyd standing  
14 here wondering how we're going to get some movement in  
15 the type of legislative climate that we have.

16 Well, one of the ways is to kind of operate  
17 underneath the radar, and at the behest of the  
18 Administration it's such a positive step that we have  
19 the bioenergy working group reconvened and working on  
20 these very important policy documents.

21 And I would encourage all of you to read the  
22 Integrated Energy Policy Report if you have not already  
23 done so. And, of course, we're looking forward to  
24 those new reports that are coming out in March.

25 But sooner or later those policy

1 recommendations are going to have to be implemented in  
2 one way or another. One way that the Bioenergy  
3 Producers Association would like to see them  
4 implemented is through an executive order process which  
5 brings attention to the issues and is very often a  
6 forerunner of legislation. We'd like to see this  
7 integrated bioenergy policy being promoted from the  
8 Executive Office. And also perhaps expanding the  
9 hydrogen highway concept to include an intermediate  
10 platform for biofuels.

11 And then finally, when it comes to the  
12 Legislature, this is a hard nut to crack. Our issues  
13 become tangled up in the bargaining on totally  
14 unrelated issues. And perhaps one of the ways that we  
15 can look at advancing our agenda is to look to some of  
16 the models in Congress. And that is to try to build a  
17 bipartisan caucus for bioenergy issues that can  
18 hopefully ride some of these policy initiatives through  
19 to fruition.

20 And perhaps the energy security and fossil  
21 fuel pricing can provide us some opportunity for  
22 coalition building on both sides of the aisle.

23 For those of you who are interested, please  
24 feel free to contact us and join us in our efforts to  
25 move this platform forward. And I thank you for your

1 attention today.

2 (Applause.)

3 MR. SULLIVAN: Our next speaker on panel two  
4 is Ed Wheless. Ed is from the L.A. County Sanitation  
5 District. He's in charge of their energy programs.  
6 The LA San Districts are one of the industry leaders in  
7 the development of landfill gas-to-energy and digester  
8 gas energy facilities at their landfills and wastewater  
9 treatment plants. Ed.

10 MR. WHELESS: I'm here to talk about biogas,  
11 in particular, digester gas and landfill gas. I'll  
12 spend just a few minutes talking about some of the  
13 projects at the sanitation districts. And then go into  
14 two environmental issues. And I just want to let you  
15 know I have photographs and graphs.

16 We consider our waste gas as not waste but  
17 opportunities. And we've exploited those to a large  
18 extent. In the Sanitation District's search,  
19 wastewater treatment needs of 5.1 million people in Los  
20 Angeles County. And that includes 78 cities,  
21 everything but L.A. City.

22 We take care of -- we run three solid waste  
23 landfills and take care of 40 percent of the total  
24 refuse disposal.

25 We generate almost 130 megawatts of

1 renewable energy. We sell most of that to Southern  
2 California Edison under long-term contracts. But we  
3 generate a lot of our own energy, 29 megawatts, that we  
4 use within our wastewater treatment plants. And right  
5 now we're buying about 12 megawatts of conventional  
6 power from Southern California Edison. We have plans  
7 to take that down this year very soon.

8 This is just a listing of the different  
9 plants we do have. We have 14 gas-fired power-  
10 generating facilities and two solid waste disposal  
11 facilities.

12 We've been at this for a long time. We  
13 built our first plant back in 1938. When we built our  
14 first sewage digester and we had our gas for the first  
15 time, we put in an engine and generated all our plant  
16 needs back then. And at that time, as today, we were  
17 more reliable than the local utility.

18 And we actually disconnected from Southern  
19 California Edison for several years. And then as our  
20 electrical needs increased, we had to go back onto the  
21 grid.

22 Some of our facilities, we have a 50  
23 megawatt power plant on landfill gas. Some of our  
24 newer plants, a fuel cell operating at a wastewater  
25 treatment plant. The new 250 kW microturbine, digester

1 gas. And some more microturbines on landfill gas.

2 Our latest plant is a new IC engine plant  
3 operating at our Point Hills landfill. It's going to  
4 start up in a couple weeks we hope, and serve one of  
5 our local treatment plants.

6 Why should we use biogas power. Well, it's  
7 a true distributed generation source. In the case of  
8 the wastewater treatment plants it's used onsite; in  
9 the case of landfills, it's used in the local  
10 community. So there's no transmission lines that have  
11 to be -- or transmission towers that are needed. And  
12 we don't have line losses. We also have cogeneration  
13 at our treatment plants, so it's an efficient use of  
14 the resource.

15 And finally, we see reductions in greenhouse  
16 gas emissions.

17 What's the difference between biogas and say  
18 petroleum or natural gas. Well, we have contaminants  
19 in the gas which make it difficult for after-treatment,  
20 so we have to spend more time and effort cleaning up  
21 the gas in the generating unit, itself. And, of  
22 course, we have (inaudible).

23 And the first point as far as environmental  
24 is that it's must-burn fuel. Once we've got the  
25 landfill gas or the digester gas, it has to be burned.

1 And we think that when you're putting in generating  
2 facilities that just the emissions from burning it --  
3 from the alternative of just burning it in the flare,  
4 should be included in the regulations.

5 If we flare it, NOx emissions, we have NOx  
6 emissions from the flare, itself. And then, of course,  
7 if we're generating power onsite using the biogas then  
8 we have an additional savings from the utility  
9 generation.

10 If we subtract that -- air emissions from  
11 the generating source, you can see here that the net  
12 emissions, even for the IC engine which is one of the  
13 higher emitting ones, we're right at the 2003 ARB  
14 limit. For BACT for gas turbines we're well below that  
15 limit.

16 And then as we go into some of the newer  
17 equipment and developing equipment we actually see that  
18 the generating unit, itself, becomes an emission  
19 control device. We actually end up with less emissions  
20 by generation than by not doing anything. This  
21 addresses what Chuck White was raising the issue about.

22 The third bar graph there is for existing  
23 microturbines that are around 9 ppm. We're working  
24 with solar gas turbines on a future gas turbine that's  
25 going to drop emissions down to around 5 ppm and have

1 even a greater savings.

2 And then, of course, as we go into the  
3 future, the 250 kW Ingersoll microturbine just  
4 certified to less than 1 ppm. And then, of course, in  
5 that same range as fuel cells.

6 There's also a reduction in greenhouse gas  
7 emissions from burning the biogas. If we take the  
8 residual solid -- I think that's obvious in wastewater  
9 treatments plants -- you take the gas instead of  
10 generating power and the emissions associated with  
11 that, we reduce the greenhouse gas emissions.

12 Even in landfill, we do the same thing. If  
13 we just took the solid waste coming out of a materials  
14 recovery facility, the residual materials; and if we  
15 put it in the landfill and generate power, we actually  
16 see a decrease in the greenhouse gas emissions.

17 Environmental issues. What we'd like to see  
18 is policies directed at recognizing the greenhouse gas  
19 reductions available from biogas and regulations. We'd  
20 like to see this concept of net emissions, so that the  
21 projects are a little easier to develop. And to  
22 receive the benefits of greenhouse gas emissions.

23 And the case of research and development,  
24 it's always nice to have people looking at things like  
25 biogas cleanup and then post-combustion controls.

1 Thank you.

2 (Applause.)

3 MR. SULLIVAN: Our next speaker is Alan  
4 Dusault. He's from Sustainable Conservation.  
5 Sustainable Conservation is an environmental advocacy  
6 group that promotes energy conservation and sustainable  
7 development. Alan.

8 MR. DUSAULT: Thank you. I'm going to try  
9 and be fast today; I know we're a little behind here so  
10 I'll kind of run through this quickly.

11 This just shows you three basic categories  
12 of biofuels. And recognizing current sources are  
13 typically from agriculture, although we will see the  
14 other sources come in, solid waste and others, I think,  
15 in the future.

16 And, again, most of this -- virtually all  
17 our biofuels come from out of state. We produce very  
18 little in California.

19 This just looks like the different  
20 opportunities here. Let me go back and just point out,  
21 one of the things we haven't done to realize the  
22 potential of biofuels is make an investment as a state  
23 in terms of incentives and regulatory certainty. The  
24 regulatory certainty questions and some of the issues  
25 related to that have been covered, but California

1 really needs to provide incentives for the construction  
2 of plants. And actually to get agriculture to invest  
3 in biofuel production.

4 Biogas or biomethane, let me just clarify.  
5 Biogas is sort of the raw decomposition you get from  
6 different sources. And to make a fuel, biomethane, you  
7 have to remove the CO2 and moisture and some other  
8 things. And that's very feasible.

9 Certainly there's benefits to using  
10 biomethane in terms of environmentally what you can  
11 achieve. But Sweden is actually running their vehicles  
12 on, they call it biogas, it's biomethane, upgraded  
13 biogas. And so it's something that's very feasible to  
14 do.

15 And I believe LA San looked at this, and  
16 you've done --

17 MR. WHELESS: We're doing it.

18 MR. DUSAULT: You're doing it, you're  
19 running some --

20 MR. WHELESS: Have been since '94.

21 MR. DUSAULT: Okay. So it's actually, it's  
22 doable here, it's happening. But there's not many  
23 examples of it.

24 And, again, it would be basically a CNG  
25 equipment vehicle you use biomethane for. Biomethane

1 is really the same as natural gas, but it's from  
2 renewable sources. Just to clarify that.

3 You could actually have a carbon-neutral CNG  
4 if you blended in 5 percent biomethane. But we need to  
5 create that industry.

6 In terms of biodiesel, again, you know, it  
7 can substitute for diesel. Typically in lower blends.  
8 Soybean is mostly what we use, as well as some animal  
9 fats. But we don't grow any of our own, or virtually  
10 none of our own biodiesel fuel.

11 And, again, the benefits are pretty  
12 substantial. The net energy benefit is notable here.  
13 When you look at ethanol it has a positive net energy  
14 yield, although it's arguable what it is. But it's  
15 pretty low. Whereas you got the three-to-one advantage  
16 with biodiesel. So it's a very good -- I think it's  
17 really the best fuel in terms of energy yields.

18 I'm not comparing it to cellulosic ethanol,  
19 which is not right now feasible, or commercial.

20 Let's see, we consume a lot of diesel and  
21 obviously could substitute biodiesel in blends.

22 NOx emissions is one of the primary  
23 barriers, or has been historically. That is when you  
24 burn biodiesel you get a lot of environmental air  
25 quality benefits, but there's a very slight increase in

1 NOx emissions. And that's enough to be a deal-killer  
2 for many in the environmental community, and the  
3 regulatory community.

4           However, the good news is you can reduce the  
5 NOx. And we actually have a project to do that. And  
6 we'll be demonstrating that.

7           And, again, California can grow its own  
8 biodiesel. And there's a project we're working with a  
9 grower in the Central Valley to do that. And we're  
10 hoping to use that as a platform to get other growers  
11 to start growing the fuel.

12           And we also have some plants coming online,  
13 in planning, in construction to process or to take the  
14 California or out-of-state seed and produce biodiesel.  
15 B-5 might be a good goal to go for in terms of a blend.

16           But I ask the question, shall we make the  
17 biodiesel from a California product. The answer here  
18 is yes.

19           Ethanol, we get almost all the ethanol used  
20 in California from the midwest from corn. The standard  
21 has been about 5.7 percent as an oxygenate. That  
22 requirement goes away with the energy bill, someone  
23 mentioned that earlier. But one of the things that can  
24 drive demand is if we can get a renewable fuel standard  
25 that would help certainly, but we have to have, in my

1 opinion, California production. If we're going to have  
2 an industry that's supportive of -- a constituency  
3 supportive of ethanol, we really need to be growing it  
4 in California.

5           There are some energy yield problems.  
6 There's some environmental impacts. And, again, this  
7 is not cellulosic, because looking at corn as an  
8 example. But you can make it from other crops, and  
9 yes, we can produce it in California.

10           We have some advantages. Longer growing  
11 season; higher yields; we can use some of the  
12 distillers grain for feed. And now with cellulosic,  
13 when that comes in, that will also give us some more  
14 options.

15           So, biofuels can be part of California's  
16 energy solution. Biofuels, like any fuel, hydrogen  
17 included, are not zero impact. Any fuel you talk  
18 about, you know, renewable or not, has environmental  
19 impacts.

20           What we're looking at is what is the  
21 relevant environmental impact of a biofuel, a renewable  
22 fuel, compared to petroleum, because that's really what  
23 we're comparing it against.

24           Obviously we need to do, as I said, we need  
25 California production. But what we really need more

1 than anything else is a partnership between  
2 environmentalists and agriculture to really help make  
3 this happen. And that's something we're working on.

4 We also need to validate the environmental  
5 risk and benefits. We believe they're positive and we  
6 should move in that direction. But obviously there's  
7 some concern by some sectors in the environmental  
8 community. I think those concerns can be addressed,  
9 but we need to be working on it.

10 That's all.

11 (Applause.)

12 MR. SULLIVAN: Our final speaker of panel  
13 number two this morning is Luke Tonachel. Luke is from  
14 the Natural Resources Defense Council. He's on the  
15 Program Staff there in terms of the air and energy  
16 issues that they face. And, of course, NRDC is  
17 obviously one of the preeminent national environmental  
18 advocacy groups. Luke.

19 MR. TONACHEL: Well, that's my last slide,  
20 so that's very optimistic of you. But, good morning.  
21 I think I have the disadvantage of being last before  
22 lunch, but you have the advantage of hearing all these  
23 other speakers before me, which means that a lot of  
24 what I'm going to talk about has been covered in a lot  
25 of ways.

1           So what I want to do is quickly go through  
2 sort of the vision that NRDC has for our transportation  
3 fuels from cellulosic ethanol. And I want to focus a  
4 little bit on a high blend strategy for ethanol. And  
5 make sure I clarify some of the discussion that was  
6 already made here today in terms of our view and moving  
7 forward in that direction.

8           So our vision for cellulosic ethanol as a  
9 transportation fuel has been laid out in an extensive  
10 report called growing energy, mentioned there on the  
11 slides. How biofuels can end America's oil dependence.  
12 That was authored by Nathaniel Green within our  
13 organization. He was the principal author, but he had  
14 contributing authors from all different organizations,  
15 academics, national laboratories, other environmental organizations.

16           The assessment that was done within that  
17 report focuses on using switch grass as the model that  
18 was used to understand how ethanol production from --  
19 cellulosic ethanol production from switch grass could  
20 be used to displace petroleum.

21           Now, when you look at that graph up there  
22 and you see that petroleum demand goes from, you know,  
23 about 140 billion gallons per year, and this is for  
24 gasoline for cars and trucks, and national level, 140  
25 billion gallons per year up to, in 2050, close to 280

1 billion gallons per year. That's roughly 9 million  
2 barrels per day of oil to 18 million barrels per day of  
3 oil. So, doubling.

4           The first and biggest chunk in terms of  
5 reducing oil consumption there is efficiency, so I  
6 don't want to -- want to make sure that it's clear that  
7 the biofuel strategy has to go along with a vehicle  
8 efficiency strategy. And there's a lot of technologies  
9 out there to do that. But, of course, that's not the  
10 focus of the discussion today.

11           The green section is in terms of a way of  
12 reducing oil dependency is the biofuel section. So,  
13 first of all, why cellulosic. Well, of course, as  
14 you've already heard about, there's the energy balance  
15 aspect and there's the greenhouse gas balance aspect.

16           So we want to make sure in our goal to  
17 reduce oil dependence, reduce climate change emissions,  
18 greenhouse gas emissions, and also we want to be  
19 focused on reducing air and water pollutants, anything  
20 that can threaten public health.

21           Now, when you talk of any of these biofuels,  
22 of course there's the growing the feedstock. And we  
23 would be concerned with whatever practices, you know,  
24 in terms of new fuels that go towards, or agricultural  
25 practices that go towards feedstock production, we'd be

1 concerned with reducing pesticide use, herbicide use,  
2 fungicide use, and fundamentally making sure that any  
3 nitrogen runoff in water supplies is reduced. And also  
4 that soil erosion is reduced. We'd also have  
5 goals for reduction in water use.

6 On the production side there's already been  
7 quite a bit of talk today about some of the regulatory  
8 barriers or challenges within siting plants and having  
9 a regulatory structure that recognizes the benefits of biofuels.

10 There are some environmental impacts, of  
11 course, to producing. There's nitrous oxide, VOC,  
12 carbon monoxide, particulate matter, emissions that  
13 occur during the actual production of the fuel.  
14 There's regulatory structure to deal with those, and  
15 emission controls, I think, are available to deal with  
16 the plants to control that.

17 What I want to focus on for the rest of the  
18 presentation is really the use of cellulosic ethanol.  
19 So, switching from a national perspective to a  
20 California perspective, what we see is an E-85 strategy  
21 for the use of ethanol.

22 And the reason for this, and it's already  
23 been mentioned or alluded to, is that E-85 avoids some  
24 of the air quality emission problems that you have from  
25 low blends.

1           Current models that are dealing with how you  
2           blend petroleum with low blends of ethanol, or below  
3           the 10 percent level, do realize increases in NOx  
4           emissions and permeation VOCs.

5           Now, fortunately ARB is going through a  
6           public process by which they are evaluating the  
7           predictive model and making sure that all of the  
8           factors within it carefully balance all the inputs to  
9           the model. And we'll see how that works out. But  
10          until we have clear assurance that a low blend strategy  
11          would not increase air quality problems, we focus on a  
12          high blend strategy or E-85.

13          We see E-85 as part of an alternative fuel  
14          strategy. And actually, as my colleague, V. John  
15          White, like to call it, it's the onramp to the hydrogen  
16          highway. It's the alternative fuels highway. And E-85  
17          will play an important role within that.

18          Some of the challenges. Obviously we've  
19          talked about an assessment that needs to be done to  
20          understand the full lifecycle balance associated with  
21          using any alternative fuel. E-85 from cellulosic  
22          ethanol needs to go through that assessment and be  
23          balanced against the other fuels, and hopefully we can  
24          set priorities in the state to encourage those that  
25          have the lowest greenhouse gas emission impact, and

1 also have the highest petroleum reduction capability.

2 Of course, the challenge with E-85 is that  
3 you've got to have demand. You've got to have vehicles  
4 on the road. And you need to have the infrastructure  
5 to put the fuel out there.

6 In terms of getting the -- a couple, you  
7 know, ideas to think about, and maybe that will go into  
8 the workshops later today, is that getting E-85  
9 vehicles on the road you need to look at what are the  
10 vehicles that are out there, and where are they, so we  
11 can properly site the first couple of pumps.

12 And then we could put into place some  
13 incentives to making sure that either private fleets or  
14 public fleets, especially local fleets that are not  
15 under the federal rules of buying alternative fuel  
16 vehicles, that they understand the benefit of  
17 alternative fuel vehicles and they buy in mass, and  
18 potentially put together state programs to help  
19 encourage that.

20 And that would lead to also fleet  
21 specifications if we look at making sure that within  
22 our specifications that those people that are buying  
23 flexible fuel vehicles in bulk, that they understand  
24 that they're getting vehicles that can meet their  
25 needs.

1           There's also the option of putting in place  
2 a mandate. In other words, requiring that all the new  
3 car sales or new light truck sales, or both, within  
4 California a certain percentage of those are flexible  
5 fuel. That would give us, you know, quite an incentive  
6 to ramp up the number of vehicles very quickly within  
7 California.

8           I wanted to point out that actually within  
9 ARB's regulations for greenhouse gas emissions on  
10 vehicles, there is an alternative fuel vehicle  
11 compliance mechanism; so that there is an incentive  
12 there right now to meet those regulations, to provide  
13 them through alternative fuel vehicles.

14           Just another possibility that I think should  
15 be thought about is that in California we have this  
16 zero emissions vehicle program. And if you could work  
17 towards making flexible fuel vehicles, P-ZEV or partial  
18 zero emission vehicle capable, then you could put them  
19 in the same mix in terms of getting certification for  
20 P-ZEV credits, or ZEV credits.

21           And there's a lot of talk right now about  
22 plug-in hybrid electric vehicles. And if you can get a  
23 plug-in hybrid flexible fuel vehicle that meets P-ZEV  
24 standards then you have quite an incentive for car  
25 manufacturers within the state, or selling into the

1 state.

2 In terms of getting the infrastructure out  
3 there, proliferating the pumps, there's tax incentives  
4 in the recently passed Energy Policy Act of 2005.  
5 There's also, within California, regulation that sets  
6 off a trigger when a certain number of vehicles, and  
7 right now it's around 20,000 actually, alternative fuel  
8 vehicles are sold in the state, there's requirements on  
9 the fuel manufacturers to start putting in alternative  
10 fuel pumps.

11 We need to take another look at that  
12 regulation. It also has to make sure that there is a  
13 value seen in terms of the air quality improvements by  
14 putting in place that fuel. So part of this assessment  
15 that will happen as part of AB-1007, we'll realize  
16 those benefits.

17 And then finally another hurdle is that, you  
18 know, E-85 pumps need to be certified in California.  
19 Right now there's an evaporative standard on pumps that  
20 hasn't been certified. And so there's a potential for  
21 an industry and government partnership.

22 Finally, I just want to talk quickly about  
23 some of the sources of funding for R&D to push  
24 cellulosic forward. The Energy Policy Act of 2005 does  
25 -- it authorized close to \$2.2 billion in funds that

1 can go to environmental analysis and demonstration  
2 plans for cellulosic ethanol.

3 The key here, of course, is that the money  
4 is authorized, not appropriated. And so California  
5 could play a role in pushing the Governor to make sure  
6 that those appropriations are made.

7 And then also within that, looking within  
8 the regulation and coming up with specific projects to  
9 accomplish, California should really do its part to try  
10 to fight for some of those funds.

11 As already has been mentioned today, a  
12 transportation fuel public goods charge would help fund  
13 this transition. And also it was also mentioned the  
14 CEC PIER program. SB-76, which was passed in July of  
15 this year, signed into law in July of this year,  
16 actually has a section. Of course, we know the PIER  
17 program is focused on electricity production industry,  
18 but they actually put some wording in that law that  
19 says that the ratepayer benefit that could be  
20 researched through this program includes things like  
21 energy efficiency and alternative fuels.

22 So we need to take another look at that and  
23 see if there's an opportunity within that program to  
24 fund some research here in California.

25 Thank you very much.

1 (Applause.)

2 MR. SULLIVAN: That concludes our second  
3 panel of the morning. Let's give them all another  
4 round of applause for donating their time.

5 (Applause.)

6 MR. SULLIVAN: As with the first panel,  
7 we're a little behind schedule, but we do have some  
8 time for a few questions before we break for lunch.

9 So if you do have questions for the panel  
10 please make your way to the mike and you can ask those.

11 MR. MENKE: John Menke with the Water Board.  
12 A question on the landfill gas production done in Los  
13 Angeles. Are you doing anything to increase the  
14 production of gas by like adding moisture to the  
15 landfill? Or is that all naturally produced?

16 MR. WHELESS: No, we're not. We have rather  
17 large landfills that have been operating for quite some  
18 time, and so we're not looking at the concept of  
19 bioreactors right now.

20 MR. SULLIVAN: The industry, as a whole is.  
21 And in fact the California Energy Commission has  
22 sponsored several projects to promote bioreactor  
23 landfills and enhanced energy recovery that occurs with  
24 the bioreactor landfill.

25 In fact, the representative from Yolo County

1 is here, and they've been one of the primary  
2 beneficiaries of the CEC's money. And they have one of  
3 the few active bioreactor landfills in California.

4 MR. CALDWELL: I'm Jim Caldwell with E3  
5 Regeneration, working on zero emission gasification of  
6 biomass.

7 And just wanted to emphasize the issue of  
8 clarifying definitions. Gasification and combustion  
9 are often confused. And some people think it's not  
10 combustion; some think it is. But if it's zero  
11 emissions what does it matter?

12 Second, on conversion of biomass to fuels or  
13 to energy, the issue really is not so bifurcated as  
14 people think. As you generate energy by gasifying  
15 biomass, including manure or landfill waste or MSW, the  
16 products you get are energy, heat and steam. And you  
17 also get carbon and hydrogen which can be made into  
18 alcohols like ethanol.

19 So, I'd like that we think in terms of the  
20 multiple uses and not wasting, but thinking about how  
21 we can get multiple products.

22 Thank you.

23 MR. BLISCHKE: Good morning. My name is  
24 Joerg Blischke; I'm with Metcalf and Eddy. And I'd  
25 like to entertain maybe a slightly different

1 perspective that has not maybe been brought up. And  
2 this is maybe more in the long-term perspective, but  
3 there has a lot of entertainment about different  
4 alternative fuels as far as transportation is  
5 concerned.

6 My question is in the bigger picture, even  
7 these vehicles wouldn't need to be built. And looking  
8 at currently we're on the verge of having depleted  
9 almost half of the fossil fuels, give or take five  
10 years plus/minus, maybe 20, we have -- and if we are  
11 going to produce new cars, these cars need to be  
12 produced with fossil fuels probably to manufacture  
13 those.

14 Do we really have the energy that is left to  
15 build this kind of infrastructure. Or do we really  
16 want to use building new cars that are really cars  
17 that's sustainable in the long run.

18 I mean you're talking about substituting  
19 fossil fuels with alternative fuel, with ethanol and so  
20 forth, but these cars, nonetheless, would have to be  
21 produced with fossil fuels.

22 So what I'd like to entertain is more a  
23 question, don't we need to focus more on restructuring  
24 alternative transportations rather than vehicles. Are  
25 vehicles, in general, really sustainable. Do we really

1       rather need to focus on creating a different  
2       transportation means, public mass transportation rather  
3       than still looking at individual passenger  
4       transportation.

5                 So, it's more a question rather than -- it's  
6       more my personal perspective. In the long term,  
7       looking at the fossil fuels we have right now, are we  
8       on the verge of having almost depleted half of it.

9                 And maybe we buy more time by looking into  
10       alternative means of transportation on the private  
11       vehicle sector, but does it really go out in 50, 100  
12       years from now.

13                So isn't it more meaningful to look at  
14       beyond private passenger cars into a more sustainable  
15       means of transportation, creating a different  
16       infrastructure, different zoning, shorter distances and  
17       so forth. That's more a question I have rather than a solution.

18                Thank you.

19                MR. SULLIVAN: Any other questions,  
20       comments? Okay, with that, we'll break for lunch.  
21       It's about 12:10 right now. We're still going to start  
22       at the 1:15 start with our afternoon keynote speaker.  
23       So, lunch on your own, and be here ready to start at  
24       1:15.

25                (Whereupon, at 12:08 p.m., the workshop was

1 adjourned, to reconvene at 1:15 p.m., this  
2 same day.)

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19 AFTERNOON SESSION

20 1:21 p.m.

21 MR. WILLIAMS: Good afternoon and welcome  
22 back to the afternoon session. We're going to listen  
23 to Mr. Winston Hickox speak in a few minutes. Toni  
24 Symonds, Deputy Controller Toni Symonds was  
25 instrumental in getting Mr. Hickox to come this

1 afternoon. And she prepared an introduction because  
2 she was going to give the introduction, but she can't  
3 be here today.

4 So let me start off here by saying that we  
5 are proud -- the Collaborative is proud to welcome our  
6 afternoon keynote speaker, Winston Hickox, former  
7 CalEPA Secretary and current Special Consultant on  
8 Environmental Investing to the California Public  
9 Employees Retirement Fund.

10 Having spent half his career in government  
11 and the other half in the private sector, Secretary  
12 Hickox has a unique insight into the emerging market of  
13 clean technology investments.

14 Many in this room, Secretary Hickox  
15 included, have long been committed to one, removing  
16 renewable energy into the mainstream; reducing waste  
17 through the creative reuse of materials; and bringing  
18 the production of biofuels and biopower to the market.

19 While we have been committed to these  
20 objectives, we've all wondered when the financial  
21 sector would fully engage on these issues. Our next  
22 speaker has some good news in this regard. Secretary  
23 Hickox will share with us how major institutional  
24 investors, like CalPERS and CalSTRS are beginning to  
25 wake up to the risks brought on by the climate change

1 and peak oil production, as well as the resulting new  
2 investment opportunities in clean technologies.

3 Just over a year ago Secretary Hickox joined  
4 CalPERS to assist them in charting a new greener path  
5 forward. Under his leadership and with the support of  
6 the Board of Trustees and the CEO, CalPERS has become  
7 the world's financial leader in the area of climate  
8 policy and the development of clean tech investments.

9 So we've included a copy of Secretary  
10 Hickox' biography in the packets detailing his  
11 accomplishments in environmental and the investment  
12 arenas.

13 So, please welcome and thank Secretary  
14 Hickox for taking this time this afternoon.

15 (Applause.)

16 MR. HICKOX: Thank you. This is my first  
17 chance to return to this good old podium since November  
18 of 2003 when I was invited to find other employment and  
19 retire. And so I come here pleased to have the  
20 opportunity to share with you just how I chose to use  
21 my time in retirement, because I think it fits very  
22 nicely with the focus of your workshop here.

23 And I want you to know that I took the time  
24 to download off the web and read a portion of this June  
25 2005 report, Biomass in California, Challenges,

1 Opportunities and Potential for Sustainable Management  
2 and Development. And I think that you're right on  
3 track for a lot of reasons, not the least of which is  
4 something that was a pretty important part of my focus  
5 in my time at CalEPA as the Secretary, which was more  
6 emphasis on attempting to look at California's  
7 environmental problems from across media perspective.

8 I can imagine it still remains an incredible  
9 challenge for people interested in the development of  
10 solutions to problems, and seizing opportunities  
11 associated with things like biomass, to still be trying  
12 to understand how to get the bureaucracy to at least  
13 work in harmony, if not in total concert with one  
14 another. So, my hat's off to you for continuing the  
15 effort.

16 Now, let me take this few minutes, 10, 15,  
17 20 minutes with you and talk a little bit about what  
18 I've been involved in at PERS. Because I think  
19 ultimately taking any effort to find new products, new  
20 services, new approaches to dealing with things in the  
21 economy, and biomass certainly is one of those,  
22 investment capital is going to be an important  
23 ingredient in moving forward and expanding an effort.

24 And so I think that what I'm about to share  
25 with you might be of help as you continue to work to

1 design a path to take advantage of biomass as an  
2 opportunity for either energy or products or other ways  
3 to deal with issues and problems that fall under the  
4 public policy domain, whether it's wastestream  
5 management or conservation of resources, or resource  
6 management practices, or whatever.

7 Inevitably there's likely to be an  
8 opportunity where investment capital and using or  
9 harnessing the free market system becomes a tool that  
10 you would want to take advantage of.

11 So I'm hoping that the time that we spend  
12 together today will help you better understand some of  
13 the efforts that are underway in this regard.

14 First, let me turn back the clock a few  
15 years and share with you some of the thinking that  
16 evolved when I became the Secretary for California's  
17 Environmental Protection Agency in early '99 because it  
18 offers a bit of a framework for why I chose to also  
19 come out of retirement for a second time and spend a  
20 little bit of time at CalPERS in the environmental  
21 initiative area.

22 The way that, you know, I've -- since we've  
23 basically put in place the building blocks for these  
24 initiatives I've had an opportunity to speak in a  
25 number of places across the country. And as part of my

1 introduction I tell people, as I'm wanting to share  
2 with you, that in the early '90s when I returned to  
3 this area of government, I had been a Senior Advisor to  
4 Jerry Brown in the '70s, the difference, the way I  
5 would characterize the difference in what I found is  
6 the following:

7           Increasingly there was this large scale  
8 environmental regulatory body called Cal-EPA -- about a  
9 billion-two a year in budget and about 5000 employees,  
10 it's shrunk a little since then, but not a lot -- was  
11 engaged in a battle. It was increasingly my lobbyist  
12 against their lobbyist, so to speak, it was my  
13 attorneys against their attorneys. And increasingly it  
14 was my scientists against their scientists, much to my  
15 chagrin.

16           And I would state for you that I believe,  
17 for the record, that over the last decade or decade and  
18 a half, more junk science has been produced than all of  
19 the rest of the junk science produced in the history of  
20 mankind.

21           And a lot of it, frankly, around a driver,  
22 and what I'm going to talk about today, which has  
23 already been mentioned, climate risk.

24           At any rate, the significance of that view  
25 that it was this ever-increasing battle, was also

1 brought into play in my mind, anyway, the concept that  
2 I had heard somewhere along the way, maybe in MBA  
3 school, I'm not sure what, but it's the 80/20 rule.

4 And the way I apply it here is that the  
5 entire process of command and control regulatory  
6 systems in pursuit of societal goals with regard to the  
7 environment and conservation of resources was rapidly  
8 reaching the 80/20 rule, which is that the first 80  
9 percent of any journey is infinitely easier than the  
10 last 20 percent. And it's a driver for what was going  
11 on in terms of this ever-increasing battle, my  
12 lobbyist, et cetera, against their lobbyist, lawyers,  
13 et cetera.

14 So I began to try and think about what we  
15 might try to do next to improve the chance of more  
16 effectively and efficiently attaining the societal  
17 goals that our programs have been created for.

18 And so in 1999 I wrote to the Chair of the  
19 PERS Board and the CEO and asked if they would be  
20 interested in collaborating with me to see if there  
21 wasn't some way to harness investment policy as a way  
22 to aid in our efforts to meet our goals and objectives.

23 And I got a pretty blow-it-off letter from  
24 my friends. One of the things I didn't mention and  
25 wasn't highlighted in my background is that for the

1 decade of most of the '90s and the latter part of the  
2 '80s I'd worked for a firm that provided investment  
3 advice to pension funds like CalPERS. And in fact, I  
4 managed the largest real estate portfolio on behalf of  
5 a pension fund in the country. We had a \$2 billion  
6 allocation of PERS money invested in real estate.

7 So, I had a -- and by the time I came to  
8 Cal-EPA I had served two, almost three years as a  
9 trustee on the Sacramento County Employee Retirement  
10 System. So I had some background and understanding  
11 about government and government regulatory systems and  
12 processes. And I had background and understanding  
13 about the investment world and how it made decisions.

14 And in many ways, I think, by the way, that  
15 background was of some value, and I didn't get myself  
16 in too much trouble as the Secretary of the EPA, and we  
17 actually got a few things done, like the Pavley Bill  
18 and RPS and a few other things.

19 But the bottomline is that I tried to enlist  
20 PERS as a support system of what we were trying to  
21 accomplish, and really didn't strike a chord.

22 Well, I continued to have us try to do some  
23 things that represented something beyond command and  
24 control structure. We emphasized environmental  
25 management systems, and we worked with companies in

1 several different sectors of the economy like in the  
2 grape grower industry to see if we couldn't encourage  
3 the regulated community to give some thought to how to  
4 reach societal goals without having to wait for a new  
5 layer of command and control regulation. But to  
6 measure their footprint and find new ways to lessen  
7 their footprint and do it in a way that was beneficial  
8 to the economic strength of their company.

9           And I think it was that experience that  
10 proved to be valuable, feasible. I still get, when I  
11 see the lobbyist for the grape growers, that, you know,  
12 they talk about what a great experience that was and  
13 how much it helped the industry.

14           So, when I retired and the folks at PERS  
15 asked me to join them, I had already had some  
16 conversations with a couple of constitutional officers  
17 that sit on PERS, Steve Westly now and Phil Angelides.  
18 And I had begun to talk to them about what I thought  
19 was opportunity for investment capital in the area of  
20 clean technology.

21           I began to talk about, you know, if you are  
22 managing a huge real estate portfolio, the idea that  
23 you could more economically make a concerted effort to  
24 improve energy efficiency and water conservation across  
25 the board, and test new technologies for accomplishing

1 goals in that area.

2 And so I agreed to join them in the summer  
3 of 2004 to help in the design and implementation of  
4 these initiatives. And it's been a fabulous  
5 experience. We've made an enormous amount of  
6 additional progress than we originally anticipated.

7 And I'd like to take now a few minutes and  
8 walk you through the four initiatives. And I would  
9 guess that the one that would be of most interest and  
10 most pertinent to your discussions here today would be  
11 the private equity investments in clean technology.

12 But I really would like for you to give a  
13 little bit of thought to all four areas of focus,  
14 because it helps build the entire story of what I think  
15 is potential with regard to the synergy between  
16 investment capital and government regulatory systems,  
17 and how it will affect economies and where this is  
18 leading.

19 I guess before I launch into a detailed  
20 discussion or somewhat detailed discussion of these  
21 four initiatives, I'd also like to share with you  
22 something that in many ways is more applicable when I'm  
23 speaking to a conference at Harvard of institutional  
24 investor types. But let me try it on you here, and see  
25 where it goes. And if I'm not clear or there's

1 questions as a result of it, at the end of my remarks  
2 I'll be glad to take some questions to explain it.

3 But people often ask what in the world is  
4 PERS doing thinking about focusing investments with  
5 regard to environmental aspects of companies, and of  
6 products in the marketplace. And I often head off that  
7 question with the following overview:

8 You know, I think that we're passing through  
9 an incredibly unusual time in the history of mankind.  
10 I really believe that. And what I mean by that is  
11 there are rare occasions from the perspective of  
12 investment capital which, pretending like you were a  
13 bunch of investment bankers, I would say to you that  
14 the world that lies ahead is likely to be fairly  
15 dramatically different as compared to the world in the  
16 rearview mirror immediately behind us.

17 And there are rare occasions when  
18 externalities that have the potential for large-scale  
19 impact on global economies and on investors, and  
20 obviously therefore on societies, as well, are as  
21 clearly visible as these are now.

22 And the two externalities that I think are  
23 huge that lie immediately over the horizon, and I'm not  
24 talking about next week or next month, I'm talking  
25 about what things are going to be like in the first

1 half of this century, the next two or three decades  
2 that lie ahead. And those two externalities are peak  
3 oil and global climate change.

4 And the risks associated with those two  
5 factors in the global economy are huge. And it's not -  
6 - investors like PERS \$196 billion pension fund, and  
7 CalSTRS, which is \$130 billion, between them almost  
8 \$250 billion in assets, or soon will be, they can't  
9 afford to just go into the world that lies ahead with a  
10 little bit of understanding and a lot of hope. And a  
11 lot of intellect, and a lot of ability to see what was  
12 in the rearview mirror behind them.

13 But they've got to begin the plan for what  
14 lies ahead and what these externalities will mean in  
15 terms of change.

16 And, in fact, in some of my early  
17 discussions with the trustees, it's not like I really  
18 had to sell the concept. They already were bought in  
19 by the time I arrived. But I shared with them my view  
20 that I had spent the last year and a half of my time as  
21 Secretary of the EPA in all of my speeches, if it  
22 wasn't the framework for my remarks, it was certainly  
23 my summation at the end, that I wanted to be remembered  
24 based upon three words: sustainability, indicators and  
25 education.

1           And I won't bore you with that entire  
2 speech. But let me just say that sustainability I  
3 shared with people, was an important concept and word  
4 that I wanted to be remembered in association with  
5 because I thought virtually all public policy needed to  
6 be looked at through the prism of the concept of  
7 sustainability.

8           While I thought it was unsustainable for  
9 there to be a geometric increase in the rate of  
10 childhood asthma in the Fresno School District, and  
11 many other similar kinds of environmental trends that I  
12 thought needed addressing and reversal, it's equally  
13 the case that you cannot continue to have an ever-  
14 increasing portion of the childhood population of this  
15 state without health insurance. That's an  
16 unsustainable trend in our economy and our state.

17           And if we look at our responsibilities as  
18 public officials, from simple perspective of better  
19 information, that was indicators, by the way, and  
20 trends and looking at what's literally not sustainable,  
21 what do we need to do to address it, I think we can  
22 find the will to do it.

23           Again, for example, in transportation it's  
24 unsustainable for us to have ever-increasing commute  
25 times. It can't go on forever. Pretty soon we'll get

1 in our car, get on the freeway and sit there, and come  
2 home from the freeway. We won't get there, won't get  
3 anything done. It's not a sustainable trend.  
4 Something will cause us to change.

5 In terms of global warming and climate  
6 change risk, and peak oil, we have, as I said, two huge  
7 externalities that are likely to make or break  
8 countries, make or break companies. And it's very  
9 important that investment capital try and figure out if  
10 it can find opportunity. And whether or not it can  
11 better measure risk and how to mitigate it, and hedge  
12 against it.

13 And that's basically the answer to the  
14 question. Why in the world would pension funds care  
15 about environmental aspects of companies and clean  
16 technology and things of that ilk. And again the  
17 simple answer is because the world that lies ahead of  
18 us is clearly going to be dramatically different from  
19 the world behind.

20 And by the way, I would share with you that  
21 breaking the thinking associated with the incredible  
22 value of the rearview mirror was easily the most  
23 difficult task that I had in the last 15 months in my  
24 term in office at CalPERS.

25 The problem is that they're so used to using

1     incredibly detailed and intense statistical methods to  
2     determine alpha, which is the variability of return, in  
3     association with beta, which is risk associated with  
4     that variability, and they're so focused on the  
5     rearview mirror that you literally have to hit them  
6     with a stick to get them to recognize that, wait a  
7     minute, while all of that information is valuable, and  
8     when I say to you, or let me reverse it, when the  
9     investment people said to me that the studies are  
10    inconclusive as to whether or not there's positive  
11    alpha associated with tilting a portfolio of  
12    investments towards the environment, and it's equally  
13    ambiguous as to whether it's beneficial or not, I  
14    constantly pushed back at them that they needed to  
15    rethink their view about the importance of their  
16    studies that give them some measure of alpha. Because  
17    it was so tilted on looking in the rearview mirror and  
18    it needed to look ahead.

19             All right, so with that general background  
20    as to why we would have an interest in doing this, let  
21    me go through the four initiatives that we put in play  
22    or are in the final stages of putting in play, with a  
23    little bit of emphasis on one that I think is most  
24    applicable with regard to your conference or workshop.

25             The first thing that the system did, the

1 Board of Trustees voted in March of last year to set  
2 aside \$200 million of the private equity portion of the  
3 CalPERS portfolio, \$250 million of the slightly less  
4 sized private equity portfolio at STRS to invest in  
5 clean technology.

6 And the form that it will take, just for  
7 basic understanding, is that these two systems can't  
8 afford to have the inhouse expertise to make individual  
9 investment decisions. So what we've spent the time  
10 doing and we've now committed \$165 million of the \$200  
11 million, is we will invest in funds.

12 And the range of funds and the range of  
13 expected return on investment varies based upon the  
14 risk that the capital can be subjected to. So early  
15 stage venture capital investments will likely realize a  
16 higher level of return and be exposed to a greater  
17 level of risk.

18 And clearly what many would like to hope is  
19 that we do this in California with a little bit of  
20 emphasis as well, is that we add to high tech and  
21 biotech clean tech as a space within the private equity  
22 realm where we'll grow an industry that will produce  
23 jobs and, more importantly, produce the technology of  
24 the future that's going to be necessary to meet a  
25 carbon-constrained world. And to substitute for

1 carbon-based fuels as peak oil begins to play itself  
2 out.

3           So, starting with early stage venture  
4 capital and middle and late stage venture capital, and  
5 also project financing, we move across a range of  
6 return expectations higher to lower. And we've  
7 invested in several firms in the earlier stage venture  
8 capital arena. And we've invested in one project in  
9 the project finance arena. And frankly, we think that  
10 the project finance arena is likely to be a good place  
11 for us to put capital because there's a shortage of  
12 capital and we can get -- it's supply and demand.

13           We can get higher returns than we would  
14 normally expect, not quite venture capital level  
15 returns, but getting there. Early stage venture  
16 capital is going to be looking at 28 to 40 percent  
17 returns. We're talking about returns more in the 15 to  
18 25 percent range. And with leverage we can do it in  
19 project finance.

20           And what we're talking about is project  
21 finance means investing in companies that are going to  
22 bring forth, it could be biomass facilities, it could  
23 be ethanol facilities, it could be solar energy  
24 facilities, where they'll buy and enlarge or construct  
25 and put in place new energy facilities.

1           And I think that one of the big drivers for  
2 this on the demand side is the renewable portfolio  
3 standard legislation that we put in place while I was  
4 Secretary at EPA. And that the current Governor has  
5 made every indication that he'd like to accelerate the  
6 pace of movement towards the implementation of the  
7 goals of that piece of legislation.

8           So, you know, we think that again it's  
9 necessity is the mother of invention. And in this  
10 case, the mother of all necessities is a carbon-  
11 constrained world. And governments are reacting with -  
12 - California's now one of 19 states, maybe more now,  
13 that have adopted a renewable portfolio standard.

14           And all we're doing with investment capital  
15 is trying to find an opportunity to invest based upon  
16 the winds and the currents in the economy that are  
17 being driven by public policy and by these overriding  
18 large factors that will affect the global economy.

19           The second area of focus in our  
20 investments -- and I'll be glad to answer any questions  
21 about private equity portion of this later, if you have  
22 any -- but, the second area of focus is in real estate.

23           CalPERS controls about \$15 billion worth of  
24 real estate and we've committed to a 20 percent  
25 improvement in energy efficiency over the next five

1 years. We'll do it on a cost effective basis, because  
2 that's our fiduciary responsibility. We won't take  
3 technology off the shelf and force it into every  
4 facility. It would not be fulfilling our fiduciary  
5 responsibility to do that.

6 But, depending upon the rate structure where  
7 the particular property exists it will create different  
8 payback periods and we'll experiment and push the  
9 envelope of understanding. We'll take new products and  
10 test them.

11 There's even the potential for cross-media,  
12 so to speak, or cross-investment category benefit to  
13 the system. For example, if in our real estate  
14 portfolio we test a water conservation device and find  
15 it to be beneficial and workable, the private equity  
16 group might consider investing in the company, bringing  
17 in, expanding its ability to bring more product to the  
18 market and realize a profit for the system in doing  
19 that.

20 So, we're structuring all of this so that  
21 there is some cross-fertilization of ideas between  
22 these areas of focus within the investment office at  
23 PERS.

24 So, we used 2004 as a base year. We asked  
25 all of our partners in the real estate program to

1 measure the energy consumption by building. We'll,  
2 through 2005, implement individual strategies. We'll  
3 benchmark it; determine what was successful, one more  
4 than another. And we'll create on a website for all of  
5 our partners a best practices list.

6 And what this does is it obviously improves  
7 the bottomline for these pieces of real estate and  
8 improves their value when it comes time to sell it. It  
9 saves us money in operating expenses during the time we  
10 hold the assets. And it pushes the technological  
11 frontier in terms of trying to manage and operate real  
12 estate assets on a cost effective basis in recognition  
13 of things like energy consumption and water  
14 consumption, as well.

15 The third area of focus that I'd like to  
16 share with you a little bit about is the one that we'll  
17 speak to the Board about this coming Monday. The Board  
18 last year also asked that \$500 million be set aside in  
19 the global public equities portion of the portfolio,  
20 which is in total about \$120 billion in size.

21 With the idea that we would try and find and  
22 hire some money managers to invest in a basket of  
23 stocks of companies that are viewed to be more  
24 environmentally responsible than others. With the  
25 expectation that over a period of time those companies

1 would likely prove to be better investments from our  
2 perspective.

3 This is the one where I talked about a  
4 moment ago that all of the studies are inconclusive.  
5 But for a good ten years Dominey and other firms have  
6 offered his kind of product in the mutual fund arena.

7 And among the things that personally, again  
8 based upon my background here, hope is accomplished by  
9 this is I do think we will realize a better return on  
10 investment over time, because I believe that  
11 environmental aspects of a company represents a proxy  
12 for good management.

13 And any stock picker will tell you that the  
14 most reliable indicator for picking good stocks among  
15 companies in a given sector is the quality of your  
16 management.

17 And I'm offering to you, without the highest  
18 level of proof, that good environmental stewardship  
19 practices of a company represents a proxy for good  
20 management. Therefore, I'm convinced, over time we  
21 will do better in the investment of this capital with  
22 this tilt towards environment.

23 But, even more importantly the message that  
24 it sends to the leadership or the management of  
25 corporations, both in the United States and around the

1 world, that institutional investors are putting some  
2 kind of a premium or a little bit of additional  
3 consideration in stock picking exercises on companies  
4 that are more environmentally responsible.

5           And what that term means we could spend a  
6 lot of time discussing. But among other things, it  
7 means a willingness to do a self evaluation about  
8 environmental footprint through something like an EMS.  
9 A record of nonviolation of government regulatory  
10 requirements.

11           And being innovative about how they can  
12 reduce their environmental footprint. And lastly, and  
13 not least at all, is some, particularly in certain  
14 sectors of the economy, a clear indication that they  
15 already recognize that the world that lies ahead is  
16 likely to be different than the world behind. And that  
17 they've already begun to restructure their company and  
18 refocus their company to be sure that they're  
19 sustainable over time.

20           And on Monday we will present, out of the 31  
21 companies that responded and the eight that we  
22 interviewed, the six companies that we've given the  
23 good housekeeping seal of approval that we're putting  
24 into a pool that we will ultimately give a portion of  
25 the \$500 million to.

1           And over time we'll measure their  
2 performance and hopefully other pensions funds around  
3 the country will follow us in this space and do this,  
4 as well.

5           By the way, let me jump back a moment and  
6 say that with regard to the private equity portion, the  
7 200 million of PERS, 250 of STRS, a consortium of  
8 northeast pension funds in May of this year agreed to  
9 join us with another 550 million. And there's out  
10 there a billion dollars worth of capital, attempting to  
11 find good investments in the private equity arena and  
12 this clean technology space.

13           And by the way, I often say that I think  
14 proportionality or concepts and descriptions that help  
15 to better understand proportionality help deliver a  
16 message or a topic better.

17           And when I tell you that 200 million of PERS  
18 out of 196 billion, that we're not betting the farm,  
19 you can sort of get the picture that it's a modest  
20 amount of money.

21           But, the amount of money that came into the  
22 space of clean technology from all sources, in terms of  
23 new private equity capital last year was just a little  
24 over a billion. So, you know, when I say that  
25 collectively we've got this commitment from these

1 pension funds and treasurers for a billion, I hope that  
2 they don't -- and the won't, they can't -- flood the  
3 market with it all at once.

4 Because what you'll end up doing is you end  
5 up with too much capital chasing too few deals. You  
6 erode the return expectation or return potential. And  
7 it would not be a good thing.

8 So what I guess I want to communicate by  
9 adding that bit of proportionality is that there's a  
10 lot of money coming at this right now, and there's  
11 almost equal demand, which is what you want. Some  
12 equilibrium between the supply of capital and the  
13 demand for it.

14 And I expect it to grow, however, fairly  
15 rapidly during the remainder of this decade because of  
16 the forces that I talked about in terms of the  
17 necessity that is created as a result of climate change  
18 risk and peak oil.

19 So I think we're where we ought to be in  
20 terms of the pace of investment. But we need to be a  
21 little bit careful, if we can, about that.

22 In the global public equities arena this 500  
23 million stands alone. Nobody else is doing this. But  
24 it will be an opportunity for a lot of these  
25 institutional investors who think about the need to

1 learn and be prepared for these externalities that will  
2 affect their portfolios, to be a participant. Because  
3 many of them don't even have private equity as an asset  
4 class, the smaller institutional investors like  
5 Sacramento County where I sit on the Board of Trustees.

6 We have real estate and equities. And the  
7 equities are split between domestic and international,  
8 and that's basically it.

9 So, the idea of being able to potentially  
10 steer a small portion of these portfolios and their  
11 investments in equities into companies that are more  
12 environmentally responsible, I think, will grow over  
13 time.

14 The fourth and last area, and then I'll wrap  
15 this up, was, for me, one of the most exciting and  
16 unexpected areas. And I'll try and be brief with this.

17  
18 It's called governance. Again, for the  
19 uninvolved in this area of business the nomenclature  
20 can kind of be a bit puzzling, but these pension funds,  
21 aggregated together, own a lot of stock.

22 Thirty years ago U.S. institutional  
23 investors owned 20 percent of all U.S. corporate  
24 stocks. Today, 30 years later, they own 50 percent of  
25 all publicly traded U.S. company stocks. And it's

1 going to continue to grow, go up.

2 As a result, an in consideration of the fact  
3 that asset allocation ends up being the most important  
4 decision in terms of affecting the outcome of a  
5 portfolio of investments, the pension funds, once they  
6 invest, have a hard time moving out of the investments  
7 that they're in because they need the diversification.  
8 Big important key.

9 And so 20 years ago they began to look at  
10 their stock holdings and say, well, we really can't  
11 sell this stock, but we're not real pleased with the  
12 performance. What can we offer as thoughts about the  
13 governance of these companies that we're invested in,  
14 and how can we help them do better, and so we'll do  
15 better as shareholders.

16 And it started, and has progressed, to  
17 conclude some fairly fundamental basic things that I  
18 think you all would think make sense. First thing they  
19 emphasized was the idea that shareholders should expect  
20 that the board of trustees of these corporations have  
21 sufficient independence from the corporate management  
22 that the interest of the shareholders are adequately  
23 represented.

24 So independence of boards has been a big  
25 push for institutional investors. It doesn't exist

1 everywhere, but -- and in fact it was probably the  
2 biggest part of the brouhaha between CalPERS and  
3 Disney. And guess who won. Disney's going to have a  
4 new president.

5 And the idea that shareholders ought to want  
6 to believe that somebody's looking out for their  
7 interest, to me is commonsense. And it's neither  
8 communism or capitalism, it just is the system and how  
9 to make it work with the right check and balance.

10 Another area of focus over the last decade,  
11 as a result frankly, of WorldCom and Enron, has been a  
12 call for the appropriate independence of audit firms  
13 auditing the books of corporations.

14 You probably read at least a little bit  
15 about this, that these big eight accounting firms were  
16 making more money from the companies that they were  
17 auditing doing consulting work than the audit. And  
18 then it started to cast some doubt about how willing  
19 they were to stretch to help the books work out for the  
20 management of the company.

21 And as a result of that we have Sarbanes-  
22 Oxley, and as a result of that we have a continuing  
23 ongoing effort to convince members of boards of  
24 directors of publicly traded companies that there  
25 should be sufficient independence of the audit firm.

1           Third area of focus more recently has been  
2 compensation. And, I won't, you know, spend a bunch of  
3 time on this, but plain and simply I think this  
4 represents commonsense thinking. If the value of the  
5 stock is going up like this, but the compensation for  
6 the key executives is going up like this, that's called  
7 nonalignment of interest.

8           And so pension funds have been, and other  
9 institutional investors, have been speaking to the need  
10 for better alignment of interest.

11           Now, I've tried to introduce a fourth area  
12 of focus in this governance arena called environmental  
13 aspects. And we've decided to focus in two areas  
14 because climate change, global warming, is driven  
15 roughly a third by the transportation sector, a third  
16 by the energy sector, and everything else a third,  
17 roughly.

18           So, we first, beginning in December of last  
19 year, we wrote to the auto companies that we own stocks  
20 in. CalPERS owns a little over \$900 million worth of  
21 stock in the auto companies, and CalSTRS about 600  
22 million. So between us about \$1.5 billion.

23           We wrote to the auto companies and invited  
24 them to come to Sacramento and explain to us why they  
25 were litigating over the Pavley bill rather than

1 implementing. They were chewing up our corporate  
2 resources litigating instead of inventing the car of  
3 the future.

4 Now, I assume the topic of the day that you  
5 again have some more proximity to me and my background  
6 and my role with this, but in case you don't know it, I  
7 had a key role in getting the Pavley bill passed here  
8 in California. So the irony of me having a chance to  
9 get another bite of that apple was just amazing. And  
10 it was, in fact, incredibly enjoyable.

11 Now, we invited them to join us on February  
12 14th of this year, appropriate day, to explain why they  
13 were doing what they were doing. And, of course, none  
14 of them showed up. And it's not a surprise.

15 Even though -- I'm sure it was Valentine's  
16 Day and they had to be home for their wives. But it  
17 was more likely that the auto alliance simply would not  
18 allow any remote chance of breakdown. And they just  
19 said, look, we can't come and talk to you, it's a  
20 subject of litigation; we can't discuss it with you,  
21 sorry.

22 And for those in the investment world that  
23 have a more right-leaning view of this, and wonder if  
24 this isn't just a bunch of waste of time, I tell people  
25 that it's true they didn't run and hide in the corner

1 and shiver and quake at what we did. But rest assured,  
2 we're like, I can't think of a better analogy, but  
3 we're like little Chihuahuas with our teeth sunk in  
4 their ankle. And we're not going to let go.

5 We will join every reasonable shareholder  
6 initiative and engage in the proxy fight. And hire  
7 proxy solicitors to pound home the message that we  
8 think we, as shareholders, will make more money when  
9 one of them emerges from the pack and produces the car  
10 of the future. And that they better get going with it,  
11 and stop fighting the inevitable.

12 And it's an interesting new ploy and use of  
13 the power of institutional investment capital to do  
14 that. And I don't know how it's going to play itself  
15 out ultimately. Like I said, I don't expect the auto  
16 companies to collapse and fall on their knees and  
17 capitulate. But, believe me, we're not going away.

18 The other area of the economy, the energy  
19 sector, we, PERS and STRS, joined with the carbon  
20 disclosure -- we joined the carbon disclosure project.  
21 We then joined with them to engage in an effort to do a  
22 detailed analysis of all of the companies in the energy  
23 sector to determine to what degree they are potentially  
24 at risk for being subject to a greater burden of  
25 responsibility to respond to a carbon-constrained world

1 and the need to reduce carbon emissions.

2 So, it's really, you know, we've tried to  
3 prod the SEC to simply enforce the existing regulations  
4 that require the reporting and annual reports of  
5 material risk. And we haven't had any success yet, but  
6 again, you know, things take time.

7 But the idea that by actively putting  
8 forward an effort to pull together this information, we  
9 think it will modify behavior, is not unthinkable.

10 So the summation of all of this is the  
11 following, at least from my perspective. I think that  
12 the world ahead is going to be different from a lot of  
13 different perspectives, and for a lot of different  
14 reasons.

15 Climate change risk is one. And peak oil is  
16 another. But I also think from this I hope you get the  
17 notion that investment capital is likely to see the  
18 world differently as we move forward as a result of  
19 this.

20 Again, proportionality, I want to try and  
21 emphasize that what we're doing, what I just described  
22 is in its very early stages. I think it's part of the  
23 fiduciary responsibility of the trustees of PERS to  
24 explore ways that they can take advantage of investment  
25 opportunities, as I've already mentioned. And

1 understand risk better so they can mitigate it.

2 And you might be interested to know, that as  
3 I started to say earlier, one of my early meetings with  
4 the boards of trustees, I said that sustainability was  
5 an important concept to me. I told those trustees I  
6 can't imagine an entity that more rightly should follow  
7 the concept of sustainability than a \$195 billion  
8 pension fund.

9 Because it needs to be here decades down in  
10 the future to pay a benefit. And they need to be  
11 sustainable and the choices they make in terms of  
12 investments needs to reflect sustainability so that  
13 they'll be around. And have sufficient capitalization  
14 to pay the benefits.

15 And I think that this represents an  
16 opportunity, as I started with all this, for investment  
17 capital to potentially be a source of part of the  
18 solution for the problems and issues and opportunities  
19 that you're attempting to solve for with your biomass  
20 workshop.

21 So, thank you again very much for the  
22 opportunity to be here today. I'd be glad to take a  
23 few questions if you still have time. Thank you.

24 (Applause.)

25 MR. MAZANEC: Hello. Frank Mazanec, LNG

1 Energy. Sorry, I enjoyed your comments thoroughly. I  
2 mean your presentation alone made today worth it. I  
3 really enjoyed them very much.

4 MR. HICKOX: Appreciate you saying that.

5 MR. MAZANEC: Have a specific comment. If  
6 one of the attendees here had a project that was fully  
7 developed, but it was a financial issue, you didn't get  
8 down to the specifics. You insinuated the money's in  
9 various funds.

10 Do you have any specific recommendations in  
11 terms of contacts where these type of projects can be  
12 presented, the specific action items that might be --  
13 if it met all of the all of the guidelines that you  
14 sort of laid out in your talk?

15 Thank you.

16 MR. HICKOX: Right. All right, here's how  
17 I'm going to answer this, and I could get myself into  
18 an enormous amount of trouble, but let's try it.

19 I have been willing to listen to the  
20 proposals from one-of opportunities for the system.  
21 And then try to better help the project proponent  
22 better determine whether it's likely to fit in one of  
23 these baskets or not.

24 And then put them in touch with the people  
25 who we give the money to to make the investment

1 decision.

2           You know, again, this fiduciary  
3 relationship, you don't hire a money manager or make an  
4 investment in a fund and then go tell them what to do.  
5 You just can't do that. It doesn't work.

6           But on the other hand, there's this delicate  
7 balance between well, NGEN is in Santa Barbara, do see  
8 NGEN. Or, let me -- and if I get 60 I'll shoot myself,  
9 but if I get three or four or five or six or something  
10 out of this, I'll buck up and do it. I'll sit down and  
11 meet; listen to the proposal; give you my reaction;  
12 tell you where I think it fits in the risk spectrum;  
13 tell you my thoughts about how to position the proposal  
14 to best be able to find a way to some of this capital.  
15 And that's what I'm willing to do.

16           You can find me at PERS. You'll be able to  
17 do it.

18           MR. HAHN: Just a quick question about the  
19 six firms that you've hired to invest in clean  
20 companies. How will we, as the public, be able to know  
21 who you've chosen, or how they've chosen them, to see  
22 in our mind whether they've made one, the right  
23 selection, and two, just to follow a company that you  
24 think is green?

25           MR. HICKOX: How cool is that? Look, the

1 website at PERS gives you the names of the companies  
2 that we've hired to do stock picking.

3 And let me just digress for hopefully 20, 25  
4 seconds. In the stock picking arena, 70 percent of the  
5 120 billion is invested in U.S. corporate stocks. The  
6 other 30 in international.

7 Seventy percent of that entire 120 billion  
8 is invested passively; 30 percent actively. The  
9 differential in those two terms means that in the  
10 passive investment arena they invest in -- they just  
11 buy the benchmark, S&P 500, Wilshire 1000, Wilshire  
12 5000. They just buy the benchmark. You can't beat the  
13 benchmark.

14 But prudent investing tells you you try.  
15 So, you hire money managers and some do for awhile; and  
16 then some don't. And you kind of change as that  
17 occurs.

18 So what we're talking about is investing  
19 this money with some money managers who are going to  
20 try and beat the market. And their tilt will be  
21 towards environmental companies.

22 You'll be able to see what companies they  
23 pick by looking at the separate account that they  
24 manage for PERS and the companies that they pick.

25 They're likely to pick a huge component of

1       whatever benchmark they're in, like the S&P 500.  
2       They'll either carve out some companies that they think  
3       aren't going to perform well because of environmental  
4       aspects on a going-forward basis. Or they'll slightly  
5       emphasize others that they think that will do well,  
6       based upon performance and decisions that companies  
7       have made.

8                     But you'll be able to find it.

9                     MR. HAHN: On the website?

10                    MR. HICKOX: Either on the website, or once  
11       you look at the website to see where to go in the  
12       global public equities area, you can ask for it. It'll  
13       be public information.

14                    No, no.

15                    MR. DUSAULT: I'll make it easy. You  
16       mentioned \$900 million --

17                    MR. HICKOX: I'm a board member, remember.

18                    MR. DUSAULT: I know, I know. You mentioned  
19       \$900 million was invested in the auto companies,  
20       CalPERS invested in the auto companies.

21                    Is that -- can CalPERS pull that money out?  
22       And depending upon your answer, I have a follow-up.

23                    MR. HICKOX: Okay. Obviously the answer is  
24       yes, they could. But this is going to take more than  
25       five seconds. It goes something like this?

1           Divestiture is always a way for investment  
2 capital to speak its mind. I told you a moment ago if  
3 you were listening in response to that question that 70  
4 percent of the money's in passive investments. A big  
5 chunk of the stocks that we own in the auto companies  
6 are stuck in those portfolios where it's passive. You  
7 just buy the benchmark and they happen to be part of  
8 the benchmark.

9           So, yeah, in theory we could. But, my time  
10 as a trustee has caused me to evolve to the following  
11 level of thinking. First, PERS lost \$600 million by  
12 ridding itself of tobacco stock. So it's going to  
13 think real hard before it does that again. It's not  
14 prudent, from a fiduciary perspective.

15           Secondly, it distorts the asset allocation  
16 model when you rid yourself. You got to fill something  
17 back with the same risk profile.

18           So, you also undermine the validation of the  
19 concept of governance if you're willing to easily chuck  
20 the stock. You should -- if you discipline yourself to  
21 say only on incredibly rare occasions would I divest  
22 myself of the stock, then it forces you to push to the  
23 limit your governance capacities, telling those  
24 companies you'd better produce a better car. You're  
25 still in the game, other than -- saying we sold you.

1                   Now, everybody would agree in this room,  
2   boy, I'll tell you, though, I sold sure would send a  
3   message. But you have to use it judiciously. And I  
4   hope that that brief explanation gives you the concept  
5   of the ying and yang of the consideration must follow.

6                   MR. DUSAULT: Well, it does, but if going  
7   back to your earlier comments about looking at the  
8   management of a company and how that's indicative of  
9   how well a company will do, if you see the auto  
10  companies, and we've seen that, that they're not very  
11  innovative. And that's been played out over a number  
12  of years.

13                   And most recently their stock is at junk  
14  bond status, or junk stock status. I mean, looking  
15  back to February, if you'd pulled that investment out,  
16  recognizing they're not managing the way they should,  
17  that may have been a good decision.

18                   MR. HICKOX: This is why I love you so much,  
19  and see you so often from the board perspective, the  
20  tenacity.

21                   UNIDENTIFIED SPEAKER: A chihuahua.

22                   MR. HICKOX: Exactly, he is the chihuahua;  
23  we should hire him.

24                   The answer is to that particular way of  
25  making the same argument again, is that you can't mark

1 a time. And once you come to that conclusion, believe  
2 me, there are an enormous number of studies that say  
3 you can't. When I say 70/30 split, the 30 percent is  
4 active management. In effect they're trying to do a  
5 little of that.

6 And virtually everybody that's tried to do  
7 it over a long period of time loses. Just there's --  
8 even though there's, particularly in the U.S. stock  
9 market, a fair amount of efficiency. Efficiency's a  
10 code word for information. You can't beat the market.  
11 So you don't mark a time. You just don't do it.

12 And that's the answer. You're going to have  
13 to believe me this time.

14 MR. DUSAULT: I'll believe you, but I have a  
15 good investment or two I'd like to talk to you about  
16 afterwards.

17 (Laughter.)

18 MR. HICKOX: All right. You and a lot of  
19 others.

20 MR. CALDWELL: Hi, Jim Caldwell from E3  
21 Regenesys. When you talk about carbon-constrained  
22 world, I think it seems to me that you're implying that  
23 coal and natural gas are following the peak oil model.  
24 And my research shows me that, yes, by 2020 those will  
25 be as prominent as peak oil. But you didn't mention

1       them.

2                   And second, when you talk about a carbon-  
3       constrained world, biomass is carbon-based, too.  So,  
4       in some ways, if we're going to educate people maybe we  
5       need to help distinguish those things.

6                   MR. HICKOX:  Look, if the point of your  
7       remarks is that all of what I said isn't totally  
8       friendly to biomass, I understand.  But I'm telling you  
9       the truth.  There are two huge externalities that are  
10      going to affect the global economy.  And there's going  
11      to be a time of transition.

12                  Look, there aren't enough people in this  
13      room, sorry.  I'm grateful that you're here, I love all  
14      of you, but I'm not going to really do damage to myself  
15      to say the following.  It's going to take clean coal  
16      and likely nuclear to get us through this century.

17                  Without enough sufficient additional  
18      degradation through carbon being thrown into the  
19      atmosphere that we really ruin the planet ultimately.

20                  But we're going to skate very dangerously  
21      close to it without digressing hugely.  The thing that  
22      I personally, as a nonscientist, just a lowly MBA, the  
23      thing I worry most about is the conveyor in the  
24      Atlantic Ocean and the flip.

25                  We could just as easily have a little ice

1 age in Europe if we're not careful. Because the rates  
2 of the melting of the ice cap on Greenland and in the  
3 Antarctic are such that it's really starting to become  
4 a serious concern for the latter part of the first half  
5 of the century.

6 So, you can't stop on a dime. We've got to  
7 move ahead. And I believe that particularly in this --  
8 I mean I could talk a long time about biomass. I spent  
9 an enormous amount of my time trying to keep in play  
10 the biomass facilities that produce electrical energy  
11 in California when I was Secretary because whether the  
12 shortage of electrical energy was real or contrived by  
13 Enron, it made sense to me that we ought to not be  
14 decommissioning potential sources of electrical energy  
15 when we were facing shortage in the marketplace,  
16 however small they were.

17 So, I think biomass-to-energy had a friend  
18 in me when I was Secretary of the EPA.

19 I also was deeply involved in the  
20 elimination of MTBE in gasoline and the subsequent  
21 creation of 900 million gallon demand for ethanol  
22 blended into California's gasoline supply.

23 I'm going to wrap it up, I promise.

24 But, I also was Secretary when we began to  
25 look more carefully at what our capacity to produce

1 liquid fuels was in California. And the demand. And  
2 how we were going to meet it.

3 And as far as I'm concerned, ethanol is not  
4 bad. It's, in fact, a potential help to us in terms of  
5 expanding the current gasoline supply.

6 And I would absolutely advocate for a  
7 renewable portfolio standard for liquid fuels in  
8 California, as well.

9 Now, I have friends in the environmental  
10 movement that aren't going to love me for that, but too  
11 bad. I also co-authored a paper with Mary Nichols  
12 calling for an LNG facility.

13 And when you've got Southern California  
14 Edison cutting deals to expand Four Corners and burn  
15 more coal, and cause damage, among other things, to the  
16 visibility in the Grand Canyon, it seems nonsensical to  
17 me that we don't look at these problems from a cross-  
18 media and from a broader perspective.

19 The simply answer is yes, I understand that  
20 biomass is a carbon-based fuel. But we got a ways to  
21 go; we got to take ourselves through the next two or  
22 three decades. And all of these energy sources will  
23 have a play. They just need to be a whole lot cleaner  
24 than they are now. And that's do-able with the kind of  
25 technology that I think we will fund the development

1 of.

2 Thank you very much for your time again.

3 MR. CALDWELL: Thank you.

4 (Applause.)

5 MR. STEWART: Can I ask one more quick  
6 question?

7 MR. WILLIAMS: Sure.

8 MR. STEWART: In the last week or two I've  
9 read two articles. One quoting the Chairman of Exxon  
10 Mobil who state that they believe that there is  
11 adequate fossil fuels to take care of the world over  
12 the next 20 to 30 years. And that they are not -- that  
13 it's not their need to invest in the development of  
14 alternate fuels, nor is it their policy. They are a  
15 petroleum company.

16 And I'm just wondering, are you using the --  
17 and also, in the light of what I said this morning with  
18 Michael Wang of the Argon National Laboratory stating  
19 that cellulosic ethanol, as compared to reformulated  
20 gasoline, would provide 85 percent reduction in CO2  
21 emissions from automobiles, if they're correct on that.

22 Are you at CalPERS using your tremendous  
23 economic resources to suggest to the energy companies  
24 that they be more responsive in terms of looking at  
25 alternate fuels and embracing them as part of their

1 policy?

2 MR. HICKOX: Yes.

3 (Laughter.)

4 MR. HICKOX: And I guess the only thing I  
5 want to say in addition to yes, is you know, one of the  
6 wonderful aspects of the society that we've tried to  
7 create for ourselves over the last few hundred years is  
8 this concept of freedom.

9 You know, I don't agree with Exxon Mobil,  
10 but by god, they get to do what they're doing. And  
11 over time they're either going to be right and  
12 successful as a financial model, or they're going to  
13 fail. It's just that simple.

14 And I believe that they're not making the  
15 same choices that some of their competitors are. And I  
16 feel more comfortable about where some of their  
17 competitors are going.

18 As I said in my remarks, we will carefully  
19 and diligently review all of the companies in the  
20 energy sector; and make judgments not about what  
21 products they should sell, or how they should position  
22 their company in the marketplace.

23 But most importantly and plain and simply,  
24 how do they look from our perspective in terms of their  
25 recognition of the world that lies ahead. And you can

1 measure that.

2 And, you know, Exxon Mobil's competitors,  
3 many of them, are handling it differently. BP has made  
4 an extensive effort to reduce its carbon footprint, and  
5 done so without cost, net cost, but profit. Not huge,  
6 but nonetheless, without cost.

7 And I think that's a better business model;  
8 and so do a lot of others. But, you know, the  
9 marketplace will determine that over time.

10 As institutional investors we just need to  
11 ask for sufficient information that we, along with  
12 others, can make choices.

13 And to touch on another aspect of your  
14 commentary, there is no doubt in my mind that cellulose  
15 ethanol will be an important ingredient in the liquid  
16 fuels marketplace. And it's been waiting for the magic  
17 bullet in terms of the enzyme that's cost effective in  
18 order for its production. And we're there, I think.  
19 Or close to it. Okay?

20 MR. HICKOX: Thanks, again.

21 (Applause.)

22 MR. WILLIAMS: Thanks very much, Secretary  
23 Hickox.

24 (Pause.)

25 MR. WILLIAMS: Trying to get our slides to

1     come up. I was going to give you some instructions and  
2     motivation for the afternoon breakout session, because  
3     we'd like to get some work out of this workshop now.

4             Okay, well, let's get down to the home  
5     stretch here of the afternoon of our workshop. So, in  
6     case you aren't aware, the goal of this workshop is we  
7     need to obtain stakeholder input on environmental  
8     issues facing sustainable management of biomass in the  
9     state, including just management of the resource, as  
10    well as improving or increasing products from biomass.

11            We're going to take these results and  
12    prepare a whitepaper examining the key issues. And  
13    this is all going to be used in helping design a  
14    roadmap for the state.

15            So, we're going to break out into three  
16    different sessions, or three different rooms -- groups,  
17    organized by resource. And each breakout group has two  
18    facilitators. So the forest group here is Doug  
19    Wickizer and Mark Nechodom. Agriculture group is  
20    Cynthia Cory and Steve Shaffer. And the municipal  
21    waste residue facilitators will be Ruth MacDougall and  
22    Brenda Smyth.

23            So we're going to break -- the largest  
24    group, whichever that -- we'll do a show of hands here  
25    in a few moments -- the largest group will meet right

1 here, stay here. The other two rooms are rooms 230 and  
2 240, which are out this door and down the corridor a  
3 little bit.

4 And I think there's a map around here  
5 somewhere, as well.

6 So, a couple of us on the staff here of the  
7 Collaborative, we've put together this, we're calling  
8 it a pro-and-con matrix, I guess, to help -- it's  
9 broken down by the different resources. It's in your  
10 information packet, I think in the left-hand pocket of  
11 your packet.

12 There's three different 8.5 by 14 sheets.  
13 These are environmental pros and cons that we've  
14 listed, a few of them. There's many many more, I  
15 think, for these different resources and different  
16 management type.

17 And it's organized by management of the  
18 resource without producing a product, as well as  
19 management of the resource with product.

20 The goal of these sessions are to produce  
21 lists of key environmental issues as you see them. And  
22 the things that need to be addressed in order to  
23 improve sustainable management of the resource in the state.

24 And also we'd like a list of recommendations  
25 that you may have.

1           So, this is just one of the matrices, but  
2           the three are in your packet. So when you break up and  
3           go to the different rooms, we'll have poster-sized  
4           version of these matrices up, and we'd like you to  
5           quickly go through and look at the pro and con  
6           environmental impacts or issues. Help us fill out  
7           that. Or, you know, remove some of them if you don't  
8           agree with them.

9           Work with the facilitators who are going to  
10          be taking notes and writing things up on a pad.

11          But some of the questions we want you to be  
12          thinking about as you look at the pros and cons, and  
13          start to develop or identify regulatory policy issues  
14          and start to develop your list that you'd like to  
15          present as key issues, are, for instance, what  
16          information are we lacking in management or performance  
17          of the technology, for instance.

18          Are the policies and regulations consistent,  
19          or are they adequate. Can you provide specific  
20          suggestions on how to change those or improve those.

21          What environmental issues need resolution to  
22          bring stakeholder groups closer together. There's  
23          disagreement amongst different groups about definitions  
24          or performance, et cetera.

25          What research and development is needed, if

1 any. What other efforts to expedite and improve the  
2 management of this material. And just how can we move  
3 forward to a more sustainable management system sooner  
4 rather than later.

5 And, again, the product of these breakout  
6 sessions are the listing of the key issues, as well as  
7 listing the ranking of recommendations.

8 And also in your packet is a one-page sheet  
9 of kind of outline or guidelines. And some of the  
10 questions, or key questions to think about. And you  
11 can write on this, and if something comes up later  
12 after you leave the workshop, and you can fill in some  
13 more answers, send it to us, email it to us, or call  
14 us. And we'd appreciate any input.

15 So, the schedule, we're getting about a half  
16 hour late start on our breakout sessions, so let's try  
17 to break out; go to the three different rooms; and try  
18 to finish up, wrap up around 3:10 from your moderators.  
19 And then report back here about 3:15 or 3:20 for a real  
20 quick wrap-up and report back from what the moderators  
21 came up with and you and the groups.

22 So, --

23 UNIDENTIFIED SPEAKER: Do you mean 3:10 or  
24 4:10?

25 UNIDENTIFIED SPEAKER: 3:10.

1 MR. WILLIAMS: I'm saying 3:10.

2 (Parties speaking simultaneously.)

3 MR. WILLIAMS: That's not enough time.

4 Okay, so --

5 UNIDENTIFIED SPEAKER: -- give us an hour

6 for each -- just an hour to do the discussion.

7 MR. WILLIAMS: Yeah, so come back about 3:40

8 with kind of a summary ready.

9 Okay, so let's do a show of hands. For the  
10 agriculture resource group, how many people are going  
11 to -- okay, that's about ten or so.

12 For municipal? That looks like the largest.

13 And then forest? Little bit smaller than  
14 agriculture.

15 So, again, the municipal group will stay  
16 here in this room. The forest, which -- room 340 --  
17 240, excuse me. 240 is down around the corner. And  
18 then the agricultural group is in room 230, also down  
19 around the corner.

20 And go to it. Thanks very much and hope  
21 it's fruitful for you as well as us.

22 (Whereupon, at 2:28 p.m., the workshop  
23 participants adjourned to smaller group  
24 breakout sessions, to return at 3:40.)

25 --o0o--

1 3:50 p.m.

2 MR. WILLIAMS: Okay, let's wrap up real  
3 briefly with some short reports back by moderators.

4 Ruth MacDougall from the municipal resource.

5 MS. MacDOUGALL: I thought you said I could  
6 be last.

7 MR. WILLIAMS: You said first, you asked to  
8 be first. Okay, you want to be last. Okay. Who's  
9 ready? Mark.

10 MR. NECHODOM: We'll do forestry.

11 MR. WILLIAMS: Mr. Mark Nechodom talking  
12 about the forestry breakout session.

13 MR. NECHODOM: Well, we were a wild group,  
14 as forestry people often are. Actually we had quite a  
15 number of people from air quality concerns in our  
16 group. And I'm sure everybody in their group  
17 experienced the same thing, which is you have such a  
18 diverse knowledge base sitting in the room that you're  
19 all trying to figure out your mutual definitions.

20 So, not only are we a wild group, but we are  
21 highly democratic, and therefore I made some autocratic  
22 decisions about what to do with the information we got.

23 We kind of tore apart the matrix a little  
24 bit, made some corrections. We assume that Martha and  
25 others will interpret the notes from our discussion.

1           What we thought would be useful is just to  
2 share with the larger group here a few of the key  
3 issues that came out without necessarily  
4 prioritization. We didn't feel appropriately deputized  
5 to develop policy priority recommendations. But here  
6 are a few of them. Hold up the scroll for my purposes.

7  
8           One is we find that there are real  
9 difficulties in siting demonstration projects that  
10 would be essentially proof of concept of very complex  
11 relations, as we've talked today, the multimedia kind  
12 of approach, or the net outcome kind of approach.

13           California has a real tough time siting  
14 things that may, in fact, involve technologies that are  
15 out of compliance. And therefore it's a bit of a  
16 struggle to get the R&D or RDNA kinds of projects on  
17 the ground. That's the demonstration part of it.

18           There's some awareness that there may be  
19 potential environmental impacts associated with changes  
20 in forest management practices should there be a strong  
21 emphasis in carbon sequestration. That is if you're  
22 changing the cycling of carbon. What was the term  
23 earlier today? The carbon resource, somebody said in a  
24 Q&A earlier. I thought it was quite a good term.

25           But if we start managing essentially for

1 volatile carbon resource in the forests, there may be  
2 other environmental impacts that we haven't yet really  
3 thought through very well.

4 We had a very lively discussion about  
5 whether wildfire is -- let me back up a little bit.  
6 Air quality compliance cannot be traded off for  
7 essentially a natural disaster. Did I capture that  
8 correctly? What the concern is that it's not like an  
9 oil spill to have a wildfire.

10 And one of the concerns, and again it was  
11 part of a very lively discussion, about whether or not  
12 therefore biomass power plant that has higher emissions  
13 than other prime power, could get credit for changing  
14 wildfire behavior.

15 I only note it here because it is a key  
16 issue, and I also note from my own work that it is a  
17 major public policy discussion going on now.

18 We also found a little bit of blending of  
19 issues. We were made aware that the next workshop, I  
20 guess, is a similar workshop on environmental, I'm  
21 sorry, economic impacts, something like that.

22 Anyway, that was the story we were told and  
23 we believed it. So, we tried to constrain ourselves to  
24 environmental impacts but we also found that there's a  
25 fair amount of bleed-over between economic and

1 environmental things.

2 One example would be the difficulty of  
3 getting homeowners insurance in high fire risk areas.  
4 Therefore, one of the recommendations was that when  
5 you're doing risk rating across multi-media or multiple  
6 risks, that you need environmental and economic needs  
7 to be addressed in, the term was, a decision matrix.  
8 That that really should be the way we approach things.

9

10 And that's pursuant to the discussion we  
11 heard a lot about today in essentially netting across  
12 multiple media.

13 I think we repeated a little bit here.  
14 Alternative standards for pilots. That is you've got  
15 to push the system a little bit; be out of compliance.  
16 Let's see, I think those are some of the same issues.

17 That's pretty much it. I think -- is that a  
18 fair enough representation of where we were and we'll  
19 leave the details with Martha and others to put it all  
20 together. But we had a good time.

21 (Applause.)

22 MR. WILLIAMS: Thank you, Mark. So there's  
23 two other groups left. Who feels more ready right now  
24 to speak a few moments?

25 Steve from the ag resources. Steve and

1 Cynthia, okay.

2 MR. SHAFFER: You know, these darn aggies,  
3 they're like herding kittens. So it was a lively  
4 discussion. We captured hopefully the high points and  
5 I've invited anyone who participated, if we missed  
6 something, and there's something compelling they wanted  
7 to add, to please do.

8 All right, let's see here. Trying to adhere  
9 to the cubbyholes that the Collaborative put together,  
10 and we probably didn't quite adhere to it, but we did  
11 the best we could to get all the major concepts down.

12 Issues, resolutions to bring stakeholders  
13 together. You know, the AB-1090 is pending. There are  
14 differences in opinions coming from the environmental  
15 community versus some of the aggies, municipal solid  
16 waste folks, what-have-you, in terms of the  
17 implications, the hierarchy.

18 And to have that, using this is as a vehicle  
19 to come to, I don't know if you can achieve consensus,  
20 but identifying that common ground. And so using 1090  
21 to do that in terms of conversion technologies, perhaps  
22 higher up that hierarchy.

23 I think part of this also was if some of  
24 these facilities can be defined as refineries and the  
25 feedstocks going into them are not considered waste.

1 That that's another way of overcoming some of the  
2 regulatory barriers that exist right now.

3 We've all heard it, we heard it this  
4 morning, and again it was just emphasized in this group  
5 in terms of needing to truly address the PUC  
6 regulations surrounding net metering grid access and  
7 interconnection to the grid.

8 Comprehensive review of regulations as a  
9 barrier to sustainability. And I think the example  
10 that was given is one more in the area of water quality  
11 that is really resulting in the salting out of a lot of  
12 agricultural ground because of some of the water  
13 quality regulations.

14 But it's a cross-cutting issue that maybe  
15 somewhat gets to the portfolio approach to air quality  
16 or air pollutants, as well. So this one also was  
17 highlighted.

18 Knowledge gaps, policies and regulations,  
19 are they adequate and consistent. Some of the  
20 recommendations that we managed to get down were expand  
21 systems analysis approach so something similar to the  
22 (inaudible) model in transportation fuels to all  
23 utilization strategies.

24 And I might ask for additional clarification  
25 because there was additional discussion of this. But,

1 again, for example, if biomass, orchard prunings are  
2 chipped and soil incorporated, what's the systems  
3 analysis of that versus chipping it, hauling it to a  
4 processing facility, and then utilizing that in terms  
5 of energy, rather than just going straight to a carbon  
6 sequestration.

7 And the cost, as well as the environmental  
8 implications.

9 Portfolio approach needed to take federal,  
10 local regulations into account. So that portfolio  
11 approach in addressing criteria pollutants, as well as  
12 greenhouse gases. But also looking at there are  
13 federal regulations as well as the state regulatory  
14 process, perhaps local regulations, also, that need to  
15 be taken into account.

16 And I don't know if Joel is still here. He  
17 had additional detail for that, but not seeing him wave  
18 his hand.

19 Process for consistent regulatory  
20 implementation. John Menke with the State Water Board  
21 was giving some examples that depending on the regional  
22 office within region V state water --or Regional Water  
23 Quality Control Board.

24 There may be differences from the three  
25 offices. There may be differences among staff. How

1 much can the State Water Board provide guidance to the  
2 regional boards. How much of a need for differences  
3 among the regional boards versus the benefits of having  
4 consistent regulatory policy and implementation of  
5 those regulations.

6 And so developing a process to at least make  
7 it more transparent, understandable and consistently  
8 applied.

9 Need for incentives.

10 MS. CORY: Actually, I'll help you there.

11 MR. SHAFFER: Okay.

12 MS. CORY: There was a couple suggestions.

13 One was to do kind of a farm commodity type of tax, and  
14 then use that money for technologies.

15 And the second one was kind of a green  
16 payment, like with the dairy. If they would either do  
17 it early or either, you know, go above and beyond  
18 compliance, that they would almost get kind of an  
19 incentive, a green payment type of thing to incent  
20 them.

21 MR. SHAFFER: So, sort of the flip side of  
22 the same coin. One would be an incentive, the other  
23 would be perhaps a tax at the consumer level on a  
24 gallon of milk.

25 MS. CORY: Across all farm commodities.

1 MR. SHAFFER: Right.

2 MS. CORY: I didn't suggest that, I want to  
3 make that clear.

4 (Laughter.)

5 MR. SHAFFER: And then as we were sitting  
6 there and reviewing the notes, review criteria for  
7 offset credits. And so, again, if there's a regulatory  
8 requirement now that eliminates -- just yank it out of  
9 my hand -- and that eliminates the ability to create  
10 and market these offset credits, is the system  
11 benefitting.

12 MS. CORY: And also the concern there was,  
13 you know, we talk about using offset credits or try to  
14 develop them, but then the earlier speaker said today  
15 that, you know, they're \$40,000, even if you could get  
16 them. But now that agriculture was being regulated and  
17 required to do these things, the offsets are really  
18 going to be nonexistent.

19 MR. SHAFFER: Research development and  
20 demonstration. Demonstrating dedicated energy crops  
21 and other systems such as algael or other aquatic  
22 systems that might provide value added opportunities,  
23 provide residuals that have less environmental impact  
24 or more easily managed, more consistent, things like  
25 that.

1 Environmental verification, pilot project.

2 This -- go ahead.

3 MS. CORY: One of the examples given was in  
4 North Carolina where they've done a lagoon project.  
5 And then Jamie from EPA was saying, in any case what we  
6 need is a large-scale environmental verification  
7 project.

8 We're kind of looking at a systems approach  
9 or we're looking at the energy supply, the inputs, the  
10 outputs, the water quality, the air quality, the whole  
11 nine yards.

12 MR. SHAFFER: And that might be facilitated  
13 as a model dairy. And funding a state-run model dairy  
14 where these vendors can come, demonstrate their  
15 technology, quantify the performance of those  
16 technologies, something like that.

17 Menu of technologies. Economically viable;  
18 must meet criteria standards. And I'm not recalling --

19 MS. CORY: There was just the point being  
20 made that instead of saying okay, especially with  
21 dairies, that we don't even know what the best  
22 available technologies are, because we don't know what  
23 the science, or we don't know where the emissions are  
24 coming off a dairy right now. What end of the cow  
25 they're coming out of, and what part of the lagoon, and

1 all that.

2 So, it's a little hard to say this is -- a  
3 methane digester is going to fix it. So, it was saying  
4 we wanted a menu versus saying just one best available  
5 technology will do it.

6 But that in any case, as they did down in  
7 the valley for the conservation management practices,  
8 they had a menu of things that people could do to  
9 reduce their fugitive dust. They need to meet a  
10 criteria and a standard, and they need to be  
11 economically viable.

12 But to encourage the regulators as we  
13 develop these new mitigation policies, especially for  
14 dairies to take that approach.

15 MR. SHAFFER: And there was an interesting  
16 discussion between the way the water boards approach  
17 these in terms of setting a performance standard. And  
18 the air board and AQMDs setting perhaps one or two, or  
19 whatever, best available control technologies rather  
20 than just setting the standard and let the industry  
21 respond with whatever technology they might feel is  
22 appropriate.

23 Trapping nutrients in biomass more  
24 efficiently. And that sort of gets back up, I think,  
25 to the same thing as the first one. Again, it's

1 looking at these new systems that may not be in place  
2 now that can close that nutrient loop or whatever. And  
3 perhaps provide, reduce the need for importing feed  
4 into the state. And utilizing the resources that are  
5 on the farm and available.

6 Is that it?

7 MS. CORY: Um-hum.

8 MR. SHAFFER: That's it. Any questions,  
9 comments?

10 MS. CORY: Did we miss anything?

11 MR. SHEARS: Cross-linkages.

12 MR. SHAFFER: Cross-linkages?

13 MS. CORY: You're right, how --

14 MR. SHEARS: Just to draw it out more  
15 explicitly.

16 MR. SHAFFER: Elaborate --

17 MS. CORY: Yeah, help us.

18 MR. SHAFFER: -- John.

19 MS. CORY: Because that was your deal.

20 MR. SHAFFER: Yeah.

21 MR. SHEARS: Well, 1090 -- yeah, AB-1090  
22 tries to deal with it, but just to draw it out a little  
23 more explicitly. We just wanted to make sure that  
24 across all of the groups that people, you know, look at  
25 whatever cross-cutting issues there are.

1           So, like in the environmental component with  
2 crop residues we talked about the fact that current  
3 sequestration may be a conflict with using crop  
4 residues, you know, for bioenergy use versus, you know,  
5 other soil quality issues.

6           And then another thing would be, you know,  
7 on the commercial side, more on the commercial side,  
8 things like food processing wastes and cogeneration  
9 with either dairy waste or municipal waste for  
10 anaerobic digestion.

11           That also sort of fell under the research  
12 needs task. So, just drawing that out a little more  
13 explicitly.

14           MR. SHAFFER: Good, thank you. Okay,  
15 thanks.

16           MR. WILLIAMS: Thanks, guys. That was very  
17 thorough and concise, also. And I'm also seeing some  
18 similar issues coming across different resource.

19           So now let's hear from Ruth MacDougall and  
20 what she learned with the municipal group.

21           MS. MacDOUGALL: Final presentation here.  
22 Well, we had a very lively group and we came up with  
23 six or seven pages worth of suggestions.

24           There were ten bullet points that were  
25 ranked as highest and a couple of medium-high. And so

1 I'll just let you know what those are.

2 First off, we wanted to place a value on  
3 externalities in order to offset some of the emissions  
4 of conversion technologies. Externalities like the  
5 societal benefits or environmental benefits that are  
6 provided.

7 And then also, let's see, another one,  
8 second is the state should set performance standards,  
9 not prescriptive standards, for conversion  
10 technologies. This is, by the way, in no certain order  
11 or anything.

12 And one of the points was that CEQA should  
13 prevail over public policy. In other words, you set  
14 those environmental standards, set the bar, but then  
15 stick to it. So the example that Phil Reese gave on,  
16 you know, the public politics kind of overriding the  
17 environmental review process, was very well heard.

18 And then third is that the Waste Board  
19 should reevaluate the waste management hierarchy to  
20 include conversion technologies. It should have its  
21 place.

22 We should also provide diversion credit for  
23 conversion technologies.

24 One suggestion was that ADC and landfill  
25 should be not provided with diversion credit. In other

1 words, if you're going to put it in landfill don't get  
2 diversion credit, you know, double-dipping.

3 We sometimes need to redefine the waste as a  
4 feedstock. Or if it's defined as a -- you know, once  
5 it becomes a fuel it's no longer a waste, it's a  
6 feedstock or a fuel. And therefore facilities should  
7 be considered as a nondisposal facility element.

8 And all of this, I think, will probably  
9 streamline the permitting process, you know, that sort  
10 of leads to a general desire to streamline permitting  
11 process. Although that got sort of a medium-high.

12 There a desire to have a research and  
13 development exclusion for projects, demonstration  
14 projects, so that we can provide data, you know real  
15 life data, and have something to kick the tires. I  
16 think Craig Whan called it, instead of amusement parks  
17 we should have amazement parks. And so we can actually  
18 go see some of these working conversion technologies.

19 And again back to landfills. A landfill  
20 directive similar to the EU has to either ban waste  
21 from landfills or reduce waste in landfills.

22 A medium-high was a more source separation  
23 of wastes.

24 And lastly, but not least, a renewable fuels  
25 mandate. A higher tariff for renewable energy for

1 biomass and others.

2 Okay, thank you very much.

3 (Applause.)

4 MR. WILLIAMS: Okay, well that gives me and  
5 Martha and Bryan and Rizaldo lots of work ahead of us  
6 to assimilate some of these comments and try to  
7 understand what you've all learned. Because I learned  
8 a whole heck of a lot today.

9 I do appreciate everyone coming. And if I  
10 didn't get to meet you personally or thank you for  
11 coming personally, let this be that.

12 And thanks to the moderators for the  
13 breakout sessions. And those are pretty much what I  
14 have to say to wrap up.

15 Again, we appreciate your time and effort,  
16 especially the breakout sessions, because that was  
17 probably the least fun for everyone in the audience.  
18 But we need to hear some of the information, because  
19 that's a lot of stuff to assimilate, and we don't know  
20 it all at this stage.

21 So, thank you very much. And I think Bryan  
22 might have some remarks, as well.

23 MR. JENKINS: I'll get my two cents worth in  
24 here. I do want to thank you for staying so late here.  
25 It is getting on towards sometime after 4:00. So I

1 appreciate that very much, and I do want to thank Rob  
2 and Martha and Gary and Rizaldo for doing this, putting  
3 this on. I didn't do very much.

4 So, I do want to thank them for that. Also  
5 Peter here for taking care of all the recording. And  
6 we'll look for another excellent transcript coming out  
7 of this. So everything you said and didn't want to  
8 have heard will be recorded and posted to the web for  
9 everybody to read.

10 If you have comments, anything following  
11 this workshop, we'd love to hear from you about it, any  
12 questions or comments. So, please do say something.  
13 Have a couple of questions right now, in fact, so why  
14 don't we do that.

15 I think, Jamie, you had your hand up first.

16 JAMES LIEBMAN (EPA): What will you do with  
17 all these policy recommendations that came out of  
18 today?

19 MR. JENKINS: Let me explain a little bit  
20 more about the process that we're in right now, and  
21 where this workshop fits in. And then maybe before I  
22 answer that question, did you have a similar question  
23 or --

24 UNIDENTIFIED SPEAKER: No. Just a quick  
25 question about the presentations, the PowerPoint

1 presentations made today. Will they be available on  
2 the website so that we can go back and get some of the  
3 specifics?

4 MR. JENKINS: The answer to that is yes. So  
5 let me address both questions at this point.

6 What we're doing with this workshop, it's  
7 part of this roadmap building exercise that I talked  
8 about. We're really trying to design for the state  
9 right now a roadmap for biomass development,  
10 sustainable management and development of biomass, what  
11 you've been involved with here, what the Collaborative  
12 has been involved with for the last two years.

13 We're certainly looking for additional  
14 stakeholder input in this process.

15 The proceedings from this workshop will be  
16 posted. All of the presentations that you saw today  
17 will be posted. The transcripts will be posted.

18 The only thing that won't be posted will be  
19 a direct transcript from the breakout sessions,  
20 themselves, because we did not create transcripts of  
21 those. But we will summarize the results as provided  
22 by the facilitators. Looks like we have some excellent  
23 notes on those breakout sessions, so we'll get out what  
24 we can of that.

25 But the specific recommendations, we'll be

1 back in touch with the facilitators to make sure that  
2 we do actually obtain good information on that.

3 So, all of that will be posted as the  
4 proceedings. You can look for elements of that to come  
5 up over the next couple of weeks.

6 Following this workshop there will be a  
7 whitepaper that will be prepared from these results as  
8 well as some other analysis that's being done on the  
9 environmental issues for biomass.

10 We will also have another workshop after the  
11 January forum, probably in the March timeframe. We  
12 will be looking to have a workshop on what nominally  
13 we're calling super-efficient, super-clean  
14 technologies, which will address some of the economic  
15 aspects that came up in this discussion; again, some of  
16 the environmental issues; but focus more on the  
17 technologies, themselves, and not so much necessarily  
18 on the specific policy issues, although those will also  
19 be involved, of course.

20 So there will be another workshop in about  
21 four to five months, so look for that coming up.

22 There also will be the January forum that I  
23 mentioned this morning. And so you can -- we will have  
24 some summary of this workshop at that forum, and we'll  
25 have some other discussion, as well, of course.

1           So, I don't know if that answers your  
2 question, but that is the process that we're in right  
3 now, to try to get out this roadmap. We very much want  
4 your input to know how we're going to get from where we  
5 are right now to where we really want to be with the  
6 sustainable vision that we have.

7           And with that I think I'll conclude my  
8 remarks. Again, thank you for coming; and thank  
9 everybody who was involved in this. And, again, if you  
10 do have any follow-on comments, there is the  
11 questionnaire, but feel free to contact us otherwise.

12           Have a good trip home. Thank you.

13           (Applause.)

14           (Whereupon, at 4:18 p.m., the workshop was  
15 adjourned.)

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CERTIFICATE OF REPORTER

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Biomass Collaborative workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 28th day of November, 2005.

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