

MEETING
STATE OF CALIFORNIA
AIR RESOURCES BOARD

JOE SERNA, JR. BUILDING
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
BYRON SHER AUDITORIUM, SECOND FLOOR
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SACRAMENTO, CALIFORNIA

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9:04 A.M.

JAMES F. PETERS, CSR, RPR
CERTIFIED SHORTHAND REPORTER
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APPEARANCES

BOARD MEMBERS

Ms. Mary Nichols, Chairperson

Dr. John R. Balmes

Ms. Sandra Berg

Ms. Dorene D'Adamo

Ms. Lydia Kennard

Mrs. Barbara Riordan

Mr. Ron Roberts

Dr. Daniel Sperling

Dr. John Telles

Mr. Ken Yeager

STAFF

Mr. James Goldstene, Executive Officer

Mr. Tom Cackette, Chief Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

Mr. Michael Scheible, Deputy Executive Officer

Ms. Lynn Terry, Deputy Executive Officer

Mr. John Courtis, Manager, Alternatives Fuels Section

Mr. Bart Croes, Chief, Research Division

Mr. Bob Fletcher, Chief, Stationary Source Division

Ms. Nargis Jareen, Population Studies Section, Research
Division

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APPEARANCES CONTINUED

STAFF

Mr. Tom Jennings, Senior Staff Counsel

Ms. Annmarie Mora, Manager, Research Planning and Climate Change Outreach Section

Mr. Dean Simeroth, Chief, Criteria Pollutants Branch

ALSO PRESENT

Mr. Will Barrett, American Lung Association

Mr. Eric Bowen, Tellurian

Mr. Altacir Bunde, Popular Movement of Peasants, Brazil

Mr. Jonathan Burke, Westport Innovations, Inc.

Mr. Todd Campbell, Clean Energy

Mr. Julian Canete, California Hispanic Chamber of Commerce

Mr. Frank Caponi, Sanitation Districts of Los Angeles

General Wesley Clark, Growth Energy

Mr. Brooke Coleman, New Fuels Alliance

Mr. Will Coleman, Mohr Davidson Ventures

Mr. Geoff Cooper, Renewable Fuels Association

Mr. Tom Darlington, Air Improvement Resource

Mr. James Duran, CMCC

Mr. Bob Epstein, Environmental Enterprises

Mr. Randal Friedman, United States Navy

Mr. Jerry Frost, Kern Oil & Refining Company

Mr. Martin Fuentes, California Hispanic Chamber of Commerce

APPEARANCES CONTINUED

ALSO PRESENT

Ms. Danielle Fugere, Friends of the Earth

Mr. Claus Fuglsang, Novozymes

Mr. Will Gardenswartz, EdeniQ

Mr. Remy Garderet, Energy Independence Now

Mr. Steve Gondola, Sacramento Hispanic Chamber of Commerce

Mr. Joshua Gruen, Western States Goods Movement

Mr. Gary Grimes, Paramount Petroleum

Mr. Anibal Guerrero, San Fernando Valley of the
Mexican-American Political Association

Mr. Tom Fulks, Neste Oil

Mr. Matthew Hargrove, California Business Properties
Association

Mr. Thomas Hertel, Global Trade Analysis Project (GTAP)

Mr. Christopher Holly, Alberta Energy

Ms. Bonnie Holmes-Gen American Lung Association

Mr. Rick Hyndman, Canadian Association of Petroleum
Producers

Mr. Tom Jacob, DuPont

Mr. Ruben Jauregui, Latino Business Association

Mr. John Kabatack, National Federation of Independent
Business

Mr. Greg Karras, Communities for a Better Environment

Ms. Naomi Kim, CalEPA, AB 32 Environmental Justice
Advisory Committee

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APPEARANCES CONTINUED

ALSO PRESENT

Mr. Jamie Knapp, Environmental Coalition

Mr. Ted Kniesche, Fulcrum

Mr. Tom Koehler, Pacific Ethanol, Inc.

Mr. Nick Lapis, Californians Against Waste

Mr. James Larson, Pacific, Gas & Electric

Mr. Marc LePage, Consul General, Canadian Consulate
General

Mr. Edwin Lombard, California Black Chamber of Commerce

Mr. Gregory Luli, Verenum

Mr. James Lutch, Simple Fuels Bio-Diesel

Mr. Kenneth Manaster, Pillsbury, Winthrop, Shaw, Pittman

Mr. Mark Martinez, San Joaquin County Hispanic Chamber of
Commerce

Mr. Kelly McKechnie, Western Growers

Mr. Jay McKeeman, California Independent Oil Marketers
Association

Dr. Robert Meagher

Mr. Peter Mieras, Jeffer, Mangels, Butler and Marmaro LLP

Mr. Taylor Miller, Sempra Energy

Mr. David Modisette, California Electric Transportation
Coalition

Ms. Patricia Monahan, Union of Concerned Scientists

Mr. Ralph Moran, BP

Mr. Craig Moyer, Western Independent Refineries
Association

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APPEARANCES CONTINUED

ALSO PRESENT

Mr. Simon Mui, Natural Resources Defense Council

Mr. Tim O'Connor, Environmental Defense Fund

Mr. Michael O'Hare, University of California, Berkeley

Mr. Justin Oldfield, California Cattlemen's Association

Mr. Brant Olson, Rainforest Action Network

Mr. Max Ordonez, California Hispanic Chamber of Commerce

Mr. Alan Osofsky, Rogers Trucking, West State Alliance

Ms. Amisha Patel, California Chamber of Commerce

Mr. Charlie Peters, Clean Air Performance Professionals

Mr. Shankar Prasad, Coalition for Clean Air

Mr. Pete Price, California Natural Gas Vehicle Coalition

Mr. Michael Redemer, American Biodiesel

Ms. Cathy Reheis-Boyd, Western States Petroleum
Association

Ms. Susan Reid, Conservation Law Foundation, Protecting
New England's Environment

Mr. Robert Richards, Kern Oil Refining Co.

Ms. Dorothy Rothrock, California Manufacturers and
Technology Association

Ms. Andrea Samulon, Rainforest Action Network

Ms. Sophia Sarabia, Center for Race, Poverty & the
Environment

Dr. Robert Sawyer, University of California, Berkeley

Mr. Gary Schoonyan, Southern California Edison

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APPEARANCES CONTINUED

Mr. Steve Shaffer, Environmental Consulting for
Agriculture

Mr. John Shears, Center for Energy Efficiency and
Renewable Technologies

Mr. Matt Solomon, Northeast States for Coordinated Air Use
Management (NESCAUM)

Mr. Rick Souza, Weber Distribution

Mr. Dwight Stevenson, Tesoro

Mr. Mark Stowers, POET

Mr. Russell Teall, Bio-Diesel Industries

Mr. Sven Thesen, Better Place

Mr. James Uihlein, Chevron

Mr. Sanjay Varshney, California Small Business

Mr. Joel Velasco, Brazilian Sugarcane

Mr. Larry Weitzman, Mountain Democrat

Mr. Chuck White, Waste Management

Mr. Paul Wuebben, South Coast Air Quality Management
District

Dr. Sonia Yeh, University of California, Davis, Institute
of Transportation Studies

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1 PROCEEDINGS

2 CHAIRPERSON NICHOLS: Good morning, everyone.
3 We're ready to begin. If people will take their seats.

4 While everybody's getting assembled here, I'm
5 going to make this request. And I will probably reiterate
6 it a few times during the course of the day when we
7 actually get into the hearing.

8 But several people who watch our proceedings on
9 webcast have complained that both witnesses and Board
10 members and staff don't get close enough to the microphone
11 and they have a hard time understanding us when they're
12 trying to follow our proceedings. So I'd like to remind
13 everyone to please not only put your face right up to the
14 microphone, but also speak loudly and distinctly if you
15 can please.

16 Good morning. The April 23rd, 2009, public
17 meeting of the Air Resources Board will come to order.

18 We begin our proceedings with the Pledge of
19 Allegiance, if you'll all please stand and face the flag.

20 (Thereupon the Pledge of Allegiance was
21 Recited in unison.)

22 CHAIRPERSON NICHOLS: And the clerk will please
23 call the roll.

24 BOARD CLERK VEJAR: Dr. Balmes?

25 BOARD MEMBER BALMES: Here

1 BOARD CLERK VEJAR: Ms. Berg?
2 BOARD MEMBER BERG: Here.
3 BOARD CLERK VEJAR: Ms. D'Adamo?
4 BOARD MEMBER D'ADAMO: Here.
5 BOARD CLERK VEJAR: Ms. Kennard?
6 Mayor Loveridge?
7 Mrs. Riordan?
8 BOARD MEMBER RIORDAN: Here.
9 BOARD CLERK VEJAR: Supervisor Roberts?
10 BOARD MEMBER ROBERTS: Here.
11 BOARD CLERK VEJAR: Professor Sperling?
12 BOARD MEMBER SPERLING: Here.
13 BOARD CLERK VEJAR: Dr. Telles?
14 BOARD MEMBER TELLES: Present.
15 BOARD CLERK VEJAR: Supervisor Yeager?
16 BOARD MEMBER YEAGER: Here.
17 BOARD CLERK VEJAR: Chair Nichols?
18 CHAIRPERSON NICHOLS: Here.
19 BOARD CLERK VEJAR: Madam Chairman, we have a
20 quorum.
21 CHAIRPERSON NICHOLS: Thank you.
22 I have a few announcements before we get started.
23 Just to remind people, that anyone who wishes to testify
24 should sign up with the staff who are outside the
25 auditorium. And we appreciate it if you include your name

1 on the speaker card. We will be imposing a two-minute
2 time limit today because of the volume of speakers. And
3 we're going to try to be strict about this. We appreciate
4 it if people put their testimony in their own words rather
5 than reading their written testimony, since we read it
6 anyway and it goes into the record.

7 I want to point out the emergency exits at the
8 rear of the room; and remind people that if there is a
9 fire alarm, you're required to leave the building and go
10 down the stairs and out into the park, and not to return
11 again until there's an all-clear signal.

12 I'll also be making this announcement again
13 later. But apparently we now have screens available so
14 that people can see where they are in the witness list
15 order. So this ought to minimize confusion and allow
16 people to schedule necessary comfort breaks but still be
17 here when their name is called to come up and testify.
18 And we hope that people will keep their eye on those
19 screens.

20 Okay. We will now begin with our customary first
21 item on the agenda, which is the health update.

22 Mr. Goldstene.

23 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
24 Nichols. Good morning, Board members.

25 In past health updates, staff has presented

1 MS. JAREEN: Asthma is the leading cause of
2 chronic disease in U.S. children, according to the Center
3 of Disease Control's National Health Interview Surveys.

4 During an asthma attack, the airway constricts,
5 swells, and becomes congested. This leads to tightness in
6 the chest, wheezing, and difficulty in breathing. In
7 severe cases, asthma attacks can be deadly.

8 In 2005, an estimated 16 percent or 1.5 million
9 children in California had been diagnosed with asthma at
10 some point in their lives. The prevalence is rising -
11 four years earlier it was 14 percent. As a comparison,
12 the rate of attention-deficit/hyperactivity disorder is
13 approximately 6 percent in U.S. children and the rate of
14 childhood diabetes is only .2 percent in the U.S.

15 The cost of treating children with asthma in
16 California is estimated to be around \$500 million per
17 year.

18 Air pollution plays a well-documented role in
19 asthma. An estimated 280,000 episodes of asthma and lower
20 respiratory symptoms results from fine particulate matter
21 exposure in children 7 to 14 years of age in California
22 each year.

23 A growing body of evidence indicates that
24 traffic-related pollutant exposure can increase the risk
25 for asthma and worsening of asthma symptoms.

1 --o0o--

2 MS. JAREEN: So a question that remains is: Can
3 ambient air pollution be linked to asthma onset? That is,
4 does air pollution only worsen symptoms in children with
5 existing asthma or can it be linked to new cases of
6 asthma?

7 This is the topic of our health update today.

8 --o0o--

9 MS. JAREEN: The findings I am going to discuss
10 today are the latest to come from the Southern California
11 Children's Health Study, the longest U.S. investigation
12 into air pollution and children's health.

13 Originally funded by ARB, this study has tracked
14 children's respiratory health since 1993 and is currently
15 being funded by the National Institute of Environmental
16 Health Sciences.

17 The study looked at the air pollution impacts on
18 6,000 children recruited from 12 southern California
19 communities chosen for their different pollution profiles.
20 PM2.5, PM10, constituents of PM, ozone, NO2 and acid vapor
21 were measured in each community during the study period.

22 Measurements from these children included annual
23 lung function tests and the administration of
24 questionnaires. Several ground-breaking results and over
25 100 peer-reviewed articles have emerged from this study.

1 --o0o--

2 MS. JAREEN: The study we are presenting today
3 involved a subset of 217 children, 10 to 18 years of age,
4 with no doctor-diagnosed asthma at the beginning of the
5 study, living in 11 communities from the Children's Health
6 Study. New asthma cases were reported annually through
7 questionnaires during the eight-year follow-up of the
8 children. NO2 monitors were placed outside the homes of
9 the children as a marker of traffic for two weeks in the
10 summer and two weeks in the winter season.

11 --o0o--

12 MS. JAREEN: The study found that asthma onset
13 was positively associated with traffic pollution. An
14 approximately 30 percent higher risk of asthma onset was
15 seen in children living in communities with higher NO2
16 exposure.

17 The study was limited by the fact that NO2 was
18 monitored at the homes of the children for only two weeks
19 per season. Other limitations include the lack of
20 monitoring data for other pollutants at children's homes,
21 the relatively small number of subjects, and the use of
22 questionnaire rather than direct verification of new
23 asthma cases.

24 --o0o--

25 MS. JAREEN: Additional evidence for the link

1 between air pollution exposure and the asthma onset comes
2 from an earlier report from the Children's Health Study.
3 In that report researchers found new diagnosis of asthma
4 in exercising children in communities with high ozone
5 concentrations.

6 Also, two other reports from the Children's
7 Health Study found increased prevalence - that is,
8 children already diagnosed with asthma - in children
9 living near higher traffic roads and freeways.

10 --o0o--

11 MS. JAREEN: In conclusion, evidence is beginning
12 to emerge that exposure to traffic-related pollutants may
13 influence asthma onset. Although, NO2 was the monitored
14 pollutant in this study, NO2 may only be a marker for some
15 other component of traffic pollution that is associated
16 with traffic impacts on asthma. Identifying the actual
17 components of traffic pollution responsible for the health
18 impacts observed is, in fact, the subject of intense
19 study.

20 However, continued reduction of traffic exposure
21 in children is expected to reduce asthma symptoms and
22 asthma prevalence in this susceptible population.

23 This concludes the health update. We would be
24 happy to answer any questions.

25 Thank you.

1 CHAIRPERSON NICHOLS: Are there any questions or
2 comments from the Board?

3 Dr. Telles, did you have your hand up?

4 Sorry. No.

5 BOARD MEMBER TELLES: I can make a comment.

6 I think it's very helpful to point out that
7 asthma onset's probably related to air pollution in
8 certain circumstances. However, reviewing this article
9 when you -- I talked to you over phone -- I think
10 unfortunately that it's extremely weakened by the fact
11 that it's done by questionnaire and not by some kind of an
12 objective measurement. I don't know if Dr. Balmes feels
13 that way. But I think this type of article, it obviously
14 wasn't published in one of the big journals, because --
15 like maybe the Journal of Medicine or something like that,
16 probably because of that type of thing. They may not
17 accept something based upon questionnaires rather than
18 objective measurement.

19 CHAIRPERSON NICHOLS: Dr. Balmes, do you want to
20 comment?

21 BOARD MEMBER BALMES: Well, this was published in
22 Environmental Health Perspectives, which is the top
23 environmental health journal. And actually, while I agree
24 with you, it's nice to have physiologic testing to verify
25 that someone truly has airway responsiveness as we see in

1 asthma, this is actually standard operating procedure to
2 use, a self-report of doctor diagnosis of asthma. It's
3 been pretty well epidemiologically validated. There was
4 actually a very careful study in Italy showing that, if
5 anything, it underestimates asthma, because a number of
6 kids probably really have asthma but they'd never been
7 diagnosed.

8 So, I don't think that's a particularly serious
9 weakness.

10 And it's just one of many studies now that are
11 showing effects of traffic on kids. It's important, and
12 this is evidence of new onset asthma.

13 But actually the bigger burden on health is
14 exacerbations of preexisting asthma in kids. And there's
15 a lot of literature supporting that.

16 And now there's increasing literature, some of
17 which I've contributed to, with regard to adult asthmatics
18 having exacerbations or lung function decrements related
19 to traffic exposure.

20 So I think we really know that there's a linkage
21 from all the studies combined. What we need to better
22 understand is what are the specific mechanisms --

23 There's my hospital beeper going off.

24 (Laughter.)

25 BOARD MEMBER BALMES: -- specific mechanisms and

1 the specific components of traffic that lead to these
2 exacerbations and perhaps onsets so that we can better
3 control the problem.

4 CHAIRPERSON NICHOLS: Well, I guess my concern
5 about this type of study is more about the exposure data
6 than it is about the accuracy of the health reporting,
7 which is that sticking an NO2 monitor, you know, in the
8 street in front of somebody's house may or may not be a
9 very good measurement of what they're actually being
10 exposed to.

11 BOARD MEMBER BALMES: I think that since most
12 people use a traffic metric in terms of distance to
13 roadway or average traffic density in a buffer around the
14 home, the fact that they actually had a pollutant marker
15 for traffic, even if it isn't necessarily --

16 CHAIRPERSON NICHOLS: -- is better than the
17 previous studies moving forward.

18 BOARD MEMBER BALMES: Exactly.

19 CHAIRPERSON NICHOLS: Well, that's helpful. But
20 I guess, you know, from the perspective of those of us who
21 actually live in cities and not too far away from heavily
22 traveled areas, you know, what you're trying to hopefully
23 get to is some better measurement of how far away do you
24 need to be? Does it matter if you're elevated or if the
25 roadway is under you? You know, all that sort of thing.

1 So it would be really neat, I think -- I can't
2 think of a better way to describe this at the moment --
3 but if our researchers could focus in a little bit more on
4 the -- on how we really get a better picture of what
5 difference it -- I realize the issue right now is just can
6 we link it to onset of asthma. But we've got to get to
7 the point I think where we can tell people something about
8 this exposure issue.

9 BOARD MEMBER BALMES: I totally agree. And I
10 think a lot of people are putting time and money into
11 trying to figure out how to better measure traffic
12 exposure.

13 CHAIRPERSON NICHOLS: Great.

14 Okay. Well, I always have lots of good ideas for
15 our researchers.

16 Do you have any final comments, Mr. Goldstene?

17 EXECUTIVE OFFICER GOLDSTENE: No. Clearly we
18 need to continue to keep doing research in this area.

19 CHAIRPERSON NICHOLS: And speaking of research, I
20 think our next item is four research proposals that are
21 before us for approval.

22 So we'll shift staff at the table here and move
23 to the next item.

24 Thank you very much. It was a good presentation.

25 All right. We'll introduce the next item.

1 EXECUTIVE OFFICER GOLDSTONE: Thank you, Chairman
2 Nichols.

3 The research to be covered by the proposals
4 before you today has been developed from the concepts
5 approved by the Board in July as part of the annual
6 research plan. The proposals support the Board's missions
7 of protecting the public from health effects of air
8 pollution and addressing the causes of air pollution.

9 Specifically, this research will help the Board
10 understand how particles affect cardiovascular and
11 neurological health, how particles are formed from
12 precursor pollutants in the atmosphere, and how to
13 encourage residential energy users to voluntarily conserve
14 energy.

15 Annmarie Mora from our Research Division will
16 make the presentation.

17 Annmarie.

18 (Thereupon an overhead presentation was
19 Presented as follows.)

20 RESEARCH & CLIMATE CHANGE PLANNING SECTION

21 MANAGER MORA: Thank you, Mr. Goldstone.

22 Good morning, Chairman Nichols and members of the
23 Board.

24 We have four research proposals for you to
25 consider this morning.

1 --o0o--

2 RESEARCH & CLIMATE CHANGE PLANNING SECTION

3 MANAGER MORA: As Mr. Goldstene indicated, these proposals
4 were developed from the concepts presented in the Annual
5 Research Plan, which was approved by the Board in July
6 2008. ARB staff worked with collaborators to develop
7 research concepts into proposals, which were externally
8 reviewed through the Board's Research Screening Committee.

9 ARB staff continue to look for co-funding
10 opportunities to conserve the State's research dollars.
11 And these studies substantially leverage outside
12 resources, including data and other federal resources,
13 from a \$4.1 million National Institute of Environmental
14 Health Sciences' funded study as well as financial support
15 from the South Coast Air Quality Management District.

16 The overhead rate for these projects is only 9
17 percent, which is far less than normal government-approved
18 overhead rates of 45 percent.

19 --o0o--

20 RESEARCH & CLIMATE CHANGE PLANNING SECTION

21 MANAGER MORA: The proposed research supports Board
22 priorities related to health, State Implementation Plan
23 support, and climate change.

24 Now, I'll describe the context and objectives of
25 the four proposed research projects, beginning with Health

1 and Exposure

2 --o0o--

3 RESEARCH & CLIMATE CHANGE PLANNING SECTION

4 MANAGER MORA: A \$4.1 million study, primarily funded by
5 the National Institute of Environmental Health Sciences,
6 with contributions from ARB and the South Coast Air
7 Quality Management District, is currently underway to
8 investigate how elderly subjects with coronary heart
9 disease are affected by PM2.5 and ultrafine particle
10 exposures at four sites in California.

11 Proposed research involving exposures to air
12 pollution in elderly subjects will extend ongoing work to
13 include analysis of heart rate variability, one of the
14 strongest predictors of future cardiac events.

15 Of the \$235,000 contract request by Air Board
16 staff, South Coast is expected to contribute \$85,000. At
17 relatively low cost, results from this research will shed
18 light on important health outcomes in a vulnerable
19 population in California.

20 The second health-oriented study investigates
21 effects of ambient particulate matter on the central
22 nervous system. Results should help us understand whether
23 and how ambient aerosol exposures induce neurological
24 effects.

25 --o0o--

1 RESEARCH & CLIMATE CHANGE PLANNING SECTION

2 MANAGER MORA: We recommend one study to support State
3 Implementation Plans for particulate matter.

4 --o0o--

5 RESEARCH & CLIMATE CHANGE PLANNING SECTION

6 MANAGER MORA: To support control of PM, we recommend for
7 funding a project that would use experiments in a
8 well-controlled environmental testing chamber to improve
9 models that predict secondary organic aerosol formation.

10 Since these compounds can account for more than
11 70 percent of PM on highly polluted days, accurately
12 predicting SOA formation is essential to developing
13 cost-effective control strategies as well as understanding
14 how ozone control strategies may affect ambient PM
15 concentrations.

16 This study takes advantage of a unique \$3 million
17 testing chamber facility funded by the U.S. EPA.

18 --o0o--

19 RESEARCH & CLIMATE CHANGE PLANNING SECTION

20 MANAGER MORA: We propose to fund one climate-change
21 related research project.

22 --o0o--

23 RESEARCH & CLIMATE CHANGE PLANNING SECTION

24 MANAGER MORA: Residential energy consumption accounts for
25 14 percent of California's greenhouse gas emissions. And

1 mission to understand health impacts of exposures to
2 particles, improve planning that will reduce public health
3 risks from PM, and mitigate greenhouse gas emissions
4 through voluntary measures in the residential sector.

5 We recommend that you approve these research
6 proposals.

7 CHAIRPERSON NICHOLS: Thank you, Ms. Mora.

8 Do we have any questions on any of these project
9 proposals from any of the Board members?

10 If not, can we vote on them as a group then?

11 BOARD MEMBER BALMES: Does somebody need to make
12 a motion or --

13 CHAIRPERSON NICHOLS: Would you please.

14 BOARD MEMBER BALMES: I move that we accept the
15 research proposals.

16 BOARD MEMBER RIORDAN: Second.

17 CHAIRPERSON NICHOLS: Okay. We have a second.

18 A motion and a second.

19 All in favor please say aye.

20 (Ayes.)

21 CHAIRPERSON NICHOLS: Opposed?

22 Very good. Thank you very much.

23 All right. One more research-related item then.

24 And that changes to the Screening Committee.

25 EXECUTIVE OFFICER GOLDSTENE: The Screening

1 including the annual research plan that is considered by
2 the Board each summer.

3 --o0o--

4 RESEARCH & CLIMATE CHANGE PLANNING SECTION

5 MANAGER MORA: After six years of service, Dr. Robert
6 Devlin of the U.S. EPA is resigning from the Research
7 Screening Committee. We've prepared a formal resolution
8 to thank Dr. Devlin for his dedication. And I'd like to
9 read a few highlights describing his contributions.

10 Dr. Devlin has been instrumental in the success
11 of the Board's health effects and exposure research
12 programs, and the Board has substantially benefited from
13 his expertise in toxicology, molecular and cellular
14 biology, and mechanisms of adverse health effects.

15 He continues to serve at the forefront in
16 synthesizing human exposure and toxicological research
17 needed to address important air quality issues. Among his
18 many distinguished achievements, he has received multiple
19 awards from the United States Environmental Protection
20 Agency for scientific and technological achievement, as
21 well as for commendable service to protection of public
22 health, and was recognized by the American Journal of
23 Respiratory, Cell, and Molecular Biology for authoring one
24 of the most highly cited articles ever published in the
25 journal.

1 --o0o--

2 RESEARCH & CLIMATE CHANGE PLANNING SECTION

3 MANAGER MORA: To replace Dr. Devlin, we recommending Dr.
4 Dan Costa for RSC appointment.

5 Dr. Costa has four years' experience in his
6 current position as the National Program Director for
7 Clean Air Research at U.S. EPA's Office of Research and
8 Development.

9 As Program Director, he works to integrate U.S.
10 EPA's air research activities to cohesively address
11 information needs of offices, regions, states, and tribes
12 responsible for protecting air quality.

13 In previous positions, he has managed U.S. EPA's
14 PM Program and served as a toxicologist with active
15 research in air pollutants' adverse effects on healthy and
16 on susceptible populations, including effects on the
17 lungs, heart, and nervous systems.

18 He has been recognized 11 times with science and
19 technology achievement awards for outstanding research in
20 toxicology and physiology of health effects induced by PM
21 and ozone.

22 Dr. Costa also holds professorships at North
23 Carolina State University as well as the University of
24 North Carolina, Chapel Hill.

25 --o0o--

1 RESEARCH & CLIMATE CHANGE PLANNING SECTION

2 MANAGER MORA: In conclusion, staff recommends addition of
3 Dr. Dan Costa to the RSC, with voting status effective at
4 the next RCS meeting. This will allow the RFC to continue
5 to operate with its full contingent of 11 voting members.

6 CHAIRPERSON NICHOLS: Thank you very much.

7 I recently had an opportunity to visit with the
8 Research Screening Committee when they were meeting in
9 Sacramento and watched them in action. And I am impressed
10 again - I had not had a chance to meet with the current
11 committee in quite a long time - at how hard these people
12 work and how much service they give us, and particularly
13 at how it brings together a group of people with very
14 divergent backgrounds and expertise who manage to talk
15 across disciplinary lines and actually reach decisions,
16 which is a very challenging thing to do since it's really
17 like people speaking different languages sometimes coming
18 together.

19 But I do personally want to express my
20 appreciation for Dr. Devlin's service and to recommend Dr.
21 Costa, because I think both their expertise as researchers
22 and their role within U.S. EPA, which has been such an
23 important partner to the Air Resources Board over the
24 years in trying to make sure that we're spending our
25 scarce research dollars as effectively as possible, is

1 really important.

2 Any other comments?

3 Dr. Balmes.

4 BOARD MEMBER BALMES: Well, just a) I think was a
5 ten-plus year veteran of RSC, so I understand what's
6 involved.

7 And I also agree that Bob Devlin did a super job.

8 Dan Costa is a person I've known professionally
9 for 20 years, and he's a superb addition to the Research
10 Screening Committee.

11 And I think it does allow us better chances to
12 leverage our research dollars if we can be working to some
13 extent in tandem with the EPA. So I'm very supportive of
14 this choice.

15 CHAIRPERSON NICHOLS: I'll take that as a motion.

16 BOARD MEMBER BALMES: That's a motion.

17 CHAIRPERSON NICHOLS: Do we have a second?

18 BOARD MEMBER RIORDAN: Second.

19 CHAIRPERSON NICHOLS: All in favor please say
20 aye.

21 (Ayes.)

22 CHAIRPERSON NICHOLS: And opposed?

23 Very good.

24 All right. With that important work behind us,
25 it's time to move forward on our major activity of the

1 day, which is the proposed low carbon fuel standard. And
2 I believe we have the staff for that item here, if we can
3 get people moved into position.

4 We're actually a little ahead of schedule this
5 morning. But I trust there's no problem with us moving
6 this item since it's a staff report that we'll be
7 beginning with today. And I think we will need the time.
8 I'm quite sure we will, yes.

9 Well, let me just say a few words of introduction
10 here. The Low Carbon Fuel Standard is a program that was
11 actually initiated through an Executive Order in January
12 2007. And the staff has been working on it for more than
13 two years to bring to us the product that we have today.
14 So we all know the transportation sector is responsible
15 for more greenhouse gas emissions than any other sector in
16 California, not to mention of course its role in causing
17 the health-based air pollution that we've just been
18 talking about for the last hour or so.

19 The emissions from this sector have traditionally
20 grown in California at a rate that far exceeds even our
21 growth in population. And it has led to a host of
22 environmental problems as well as increasing our
23 dependence on a single energy source, that is, petroleum
24 with a variety of attendant economic and security problems
25 that flow from that dependence.

1 The Low Carbon Fuel Standard that we're
2 considering today is a key element in California's
3 multi-pronged approach to changing this trend. This
4 effort involves three major areas of work that deal with
5 the three major sources of emissions.

6 The first of course is the California Clean Cars
7 Program, which will cut global warming emissions from the
8 vehicle fleet by about 20 percent in 2020 when a program
9 is finally in force.

10 The second is a focus on land use and
11 transportation planning as required by SB 375. A
12 relatively new area for the Air Resources Board, but one
13 which is rapidly becoming a focus of a great deal of our
14 activity.

15 And then, finally, the focus on fuels through the
16 Low Carbon Fuel Standard that we're considering together
17 today.

18 These efforts work together to create a paradigm
19 shift, not only in addressing global warming but also in
20 breaking our dependence on petroleum, increasing energy
21 security, improving our economy, and meeting our public
22 health goals at the same time.

23 Of course today we're considering only the fuel
24 aspect. Standing alone, however, the Low Carbon Fuel
25 Standard will deliver 10 percent of the emissions

1 reductions that are needed to meet the goals of AB 32.

2 The Low Carbon Fuel Standard also represents the
3 world's first regulation to comprehensively deal with
4 greenhouse gas emissions from transportation fuels. It
5 establishes a performance-based framework. And using
6 market-based mechanisms, it will achieve emissions
7 reductions while preserving flexibility, driving
8 innovation, and enhancing consumer choices.

9 The Low Carbon Fuel Standard also is designed to
10 promote greater investment in a wide variety of low carbon
11 fuels, such as electricity, sustainable biofuels,
12 hydrogen, and natural gas.

13 It's intended to cut dependency on petroleum by
14 20 percent and reduce our need to import oil by even more
15 than that.

16 And, finally, the hope in this project is that it
17 will provide a road map for other states and the nation to
18 pursue similar efforts. And, indeed, I'm very pleased to
19 see that the Waxman-Markey bill that's currently under
20 consideration in the House of Representatives does include
21 a provision for a low carbon fuel standard, which I think
22 is clearly based on the approach that California is
23 taking.

24 By the volume of the comments that we've already
25 received on this item, I can anticipate that today's

1 hearing is going to be lengthy. And I anticipate that
2 we're going to hear a variety of different points of view
3 on how best to design such a standard. We realize that
4 this proposed regulation is far reaching, that it's
5 innovative, and complicated. And, consequently, I want to
6 make it clear that the Board is going to be paying very
7 close attention not only to today's oral comments but also
8 to the written comments that we have received and to the
9 staff testimony. And I'm sure that Board members will
10 from time to time have questions.

11 But as we focus on the details, and there are
12 many in this regulation, we also need to keep the big
13 picture in mind; that is, that we are attempting here to
14 set in motion something which is going to take many years
15 to implement. And I want to emphasize that, as well as
16 the point that, although the science basis for this rule
17 is robust - and it is also controversial, we know that,
18 and we will hear many comments about exactly how well
19 formed it is - I think the Board members are all
20 sufficiently experienced in these matters to understand
21 that models are models. They are not the same thing as
22 real-world experience, but that we use models to make
23 decisions on. We also know that we need to keep
24 perfecting those models and to keep improving the science,
25 and that it is the Board's responsibility to do that,

1 especially with a program as far reaching as this one.

2 It's also important for us I think to realize
3 that we will as a board be continuing to be involved in
4 this item. We will be setting in motion something that
5 clearly has major consequences, as I've described in these
6 brief remarks. But we will be back repeatedly, this Board
7 and successor boards, in the decade ahead as we learn from
8 and adapt to changes in the real world.

9 Nevertheless, it's time to start at least the
10 discussion.

11 So, Mr. Goldstene, I will now ask you to begin
12 the staff's presentation.

13 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
14 Nichols.

15 As you stated, staff's been hard at work for the
16 past two years to develop the Low Carbon Fuel Standard.
17 During this time we have built a dedicated and extremely
18 knowledgeable team that has conducted an extensive
19 technical evaluation, advanced the science of life cycle
20 analysis, and engaged in a continuous and wide ranging
21 outreach process with stakeholders from across the
22 spectrum.

23 Our team has studied the feasibility of meeting
24 the standards on the proposed schedule, estimated the
25 program's costs and environmental impacts, and completed

1 the scientific peer-review process required by State law.

2 The proposal we are recommending today is the
3 result of that effort, and it provides the policy
4 framework and the technical elements needed to implement
5 the world's first Low Carbon Fuel Standard.

6 These efforts have enabled us to create a
7 proposal that will harness market forces and innovation to
8 cut greenhouse gases and set California on the track to
9 use an increasingly large and diverse set of sustainable
10 transportation fuels.

11 Staff has also been diligent in soliciting,
12 listening to, and responding to a vast number and variety
13 of stakeholder comments throughout the process.

14 The proposed regulation has been through 16
15 workshops and several revisions and now reflects many of
16 the more than 200 comments we've received.

17 Furthermore, staff will continue to work with all
18 those affected by and interested in the Low Carbon Fuel
19 Standard going forward. In fact, today we will be
20 recommending several additional changes in response to
21 stakeholder suggestions, including adding a second formal
22 periodic review of the program and several more carbon
23 intensity values for additional fuel production pathways.

24 As you know, many other states and nations are
25 looking to follow in California's footsteps. We will be

1 fully coordinating California's efforts with those of the
2 United States Environmental Protection Agency, the
3 northeast states and European nations as they design
4 programs to further reduce global warming emissions from
5 transportation fuels.

6 This is an exciting program, one that we believe
7 will continue California's long history of leadership and
8 innovation to improve our environment and sustain our
9 planet.

10 I'll now ask Wes Ingram from our Stationary
11 Source Division to make the staff presentation.

12 Thank you.

13 (Thereupon an overhead presentation was
14 Presented as follows.)

15 CHAIRPERSON NICHOLS: Well, thank you very much.

16 And I see, Mr. Ingram, you're surrounded by help.

17 (Laughter.)

18 CHAIRPERSON NICHOLS: I want to refer to the
19 effort that went into designing this rule. You can see a
20 small representation of the ARB people who've work on this
21 rule. And some of them had more hair and it was a darker
22 color when they started working on this effort.

23 So welcome and thank you.

24 MR. INGRAM: Thank you for the introduction, Mr.
25 Goldstene.

1 Good morning, Chairman Nichols and members of the
2 Board.

3 --o0o--

4 MR. INGRAM: In today's presentation I will
5 provide you with an overview of the staff's proposal. The
6 general topics I will address are presented on this slide.

7 --o0o--

8 MR. INGRAM: My first topic will cover what the
9 LCFS will accomplish.

10 --o0o--

11 MR. INGRAM: As you all know, AB 32 requires
12 significant greenhouse gas reductions by 2020. The
13 Governor's climate goals require even greater reductions
14 by 2050.

15 A major - and growing - source of greenhouse gas
16 emissions in California is transportation. The primary
17 factors affecting transportation emissions are:

18 The amounts and types of transportation fuels in
19 use;

20 The efficiency of motor vehicles; and

21 The number of vehicle miles traveled.

22 --o0o--

23 MR. INGRAM: The needed greenhouse gas emissions
24 reductions are shown in this graph. By 2020, emissions
25 must be reduced to 1990 levels, a 40 percent decrease. An

1 80 percent reduction is required to achieve the 2050 goal.

2 --o0o--

3 MR. INGRAM: These three pie charts show that
4 transportation emissions have been growing in California
5 relative to emissions from other sectors. Unless
6 reductions are achieved in the transportation sector, it
7 will continue to be the largest contributor to total
8 emissions in the State.

9 --o0o--

10 MR. INGRAM: In recognition of the need to reduce
11 transportation emissions, Governor Schwarzenegger
12 established the Low Carbon Fuel Standard in January of
13 2007. During the spring of summer of 2007, and at the
14 direction of the Governor, the University of California
15 completed a detailed analysis concluded that such a
16 measure was feasible. In June of 2007 the Board approved
17 the LCFS as a discrete early action measure, and staff
18 proceeded with measure development, culminating a two-year
19 effort by releasing the staff's proposal in March of 2009.

20 --o0o--

21 MR. INGRAM: The LCFS establishes a durable
22 framework for transitioning to lower carbon fuels. This
23 transition will be driven by fuel and vehicle technology
24 innovation incentives built into the regulation. The LCFS
25 framework can serve as a model for the creation of similar

1 standards at the regional and national levels and is
2 designed to be easily extended into the post-2020 period.

3 --o0o--

4 MR. INGRAM: In terms of emissions benefits, the
5 LCFS will achieve a 10 percent reduction in the carbon
6 intensity of transportation fuels by 2020, and a 16
7 million metric ton decrease in transportation sector
8 emissions by 2020. These emission reductions represent
9 about a 10 percent share of the total reductions needed to
10 meet the AB 32 2020 target.

11 --o0o--

12 MR. INGRAM: The LCFS will also reduce the
13 State's dependence on petroleum. By substantially
14 increasing the use of advanced transportation fuels, the
15 LCFS will displace about 3 billion gallons of petroleum by
16 2020. Most of the advanced fuels that will be in use in
17 2020 will be the fuels shown on this slide and that are
18 not used in significant amounts today. Note that
19 crop-based biofuels continue to play a role in the LCFS
20 through 2020.

21 --o0o--

22 MR. INGRAM: One reason we are confident that the
23 LCFS will stimulate the development of advanced low carbon
24 fuels is that venture capital is already flowing to
25 California. This graph shows that between 2005 and 2008

1 the flow of investment dollars to fuel innovation projects
2 has risen steeply. We expect this trend to continue. In
3 addition to these investments, there was been an almost \$1
4 billion investment by major oil companies for the
5 development of advanced biofuels.

6 --o0o--

7 MR. INGRAM: As shown in this graph, the two
8 primary strategies for reducing transportation sector
9 greenhouse gases, the Pavley Program and the LCFS, will
10 collectively reverse the upward trend in
11 transportation-related greenhouse gas emissions in
12 California.

13 --o0o--

14 MR. INGRAM: So now, here is how the regulation
15 works.

16 --o0o--

17 MR. INGRAM: The regulation is designed around
18 comparing a given fuel's carbon intensity against a
19 baseline consisting of the carbon intensities of 2010
20 gasoline and diesel fuel. Carbon intensity expresses a
21 fuel's greenhouse gas emissions per unit of energy,
22 typically expressed as grams of carbon dioxide per
23 megajoule of energy. A 10 percent reduction in the carbon
24 intensities of both gasoline and diesel fuel are required
25 by 2020. As shown in the next slide, the regulation

1 establishes annual limits which decrease gradually during
2 the first few years, but then accelerate in the last few
3 years.

4 --o0o--

5 MR. INGRAM: The compliance schedule is shown in
6 this animation. As you can see, slow, modest reductions
7 are called for through 2015, followed by an increasingly
8 greater year-to-year reduction between 2015 and 2020.
9 This compliance schedule is designed to give fuel
10 providers the time they need to develop and bring to
11 market the necessary low carbon fuels.

12 Finally, staff expects that the downward trend
13 that characterizes the out-years can be sustained into the
14 following period.

15 --o0o--

16 MR. INGRAM: The major responsibility for
17 complying with the LCFS rests with refiners and biofuel
18 providers. Providers of certain fuels may choose to opt
19 in in order to earn compliance credits. These fuels,
20 shown on this slide, already meet the 2020 carbon
21 intensity requirement.

22 --o0o--

23 MR. INGRAM: Multiple compliance options,
24 including market mechanisms, are available to fuel
25 providers under the LCFS. They may provide a mix of fuels

1 with a carbon intensity equal to the current annual LCFS
2 standard. They may provide a mix of fuels with a carbon
3 intensity that is below the current standard. They may
4 provide a fuel mix that exceeds the standard but submit
5 purchased or banked credits sufficient to make up the
6 difference between the carbon intensity of the providers
7 fuel pool and the current annual standard.

8 --o0o--

9 MR. INGRAM: In general, however, the mix of
10 fuels provided in California must contain more lower
11 carbon fuels. These fuels must displace higher carbon
12 petroleum and crop-based biofuels.

13 --o0o--

14 MR. INGRAM: As with any regulation, there are
15 compliance and enforcement provisions, and this regulation
16 is no exception. Some of the key provisions are listed on
17 this slide.

18 --o0o--

19 MR. INGRAM: The next section of the presentation
20 addresses one of the more important and challenging
21 aspects of the regulation - the role of life cycle
22 analysis.

23 --o0o--

24 MR. INGRAM: Life cycle analysis is a process
25 whereby the greenhouse gas emissions associated with all

1 phases of a fuel's life cycle - production, storage,
2 transport, and use - are combined into a single carbon
3 intensity value. The Governor's Executive Order requires
4 ARB to consider the use of life cycle analysis. The
5 University of California concluded in its feasibility
6 reports that fuel carbon intensities need to be
7 established through life cycle analysis. The following
8 slides illustrate the key features of the life cycle
9 process by showing how it is applied to two fuels -
10 gasoline and corn ethanol.

11 --o0o--

12 MR. INGRAM: The application of life cycle
13 analysis to fossil fuels - gasoline, in this case - begins
14 by quantifying the emissions associated with extracting
15 the crude.

16 --o0o--

17 MR. INGRAM: Next, the emissions associated with
18 refining the crude are quantified. And, finally, the
19 emissions created when gasoline is used to power vehicles
20 are quantified.

21 The carbon intensities from each of these steps,
22 including all necessary transportation, are then summed to
23 produce gasoline's overall carbon intensity of 96 grams of
24 carbon dioxide per megajoule of fuel energy.

25 The next slide presents the analysis for the most

1 common biofuel, ethanol produced from corn.

2 --o0o--

3 MR. INGRAM: Applying life cycle analysis to corn
4 ethanol is similar, but a little more complicated. First,
5 the emissions associated with growing the necessary corn
6 are quantified. Emissions from land use changes, which
7 result from the diversion of food and feed crop acreage to
8 fuel crop production, are also estimated.

9 Next, biorefinery emissions are quantified, along
10 with a credit to account for the livestock feed which is a
11 co-product of the ethanol production process. Co-products
12 are credited because they meet a demand that would
13 otherwise have to be met by a separate
14 greenhouse-gas-generating process.

15 After it has been refined, the ethanol is blended
16 with gasoline and used as vehicle fuel. The life cycle
17 analytical frame considers the tailpipe emissions from the
18 ethanol portion of the blended fuel to be offset by the
19 carbon dioxide that was originally extracted from the
20 atmosphere by the corn.

21 These emissions, including all
22 transportation-related emissions, sum to 97 grams of
23 carbon dioxide equivalent per megajoule of fuel energy,
24 which is the average carbon intensity for corn ethanol
25 used in California today.

1 use change.

2 As the sizes of these squares indicate, corn is
3 the single largest U.S. crop, accounting for about 30
4 percent of all cropland in 2007. American corn exports
5 are also extremely important to the rest of the world.
6 The U.S. accounted for about two-thirds of world corn
7 exports in 2007-2008.

8 --o0o--

9 MR. INGRAM: When you disturb land, large
10 quantities of greenhouse gas emissions are released. This
11 is because plants and soil store large amounts of carbon,
12 and this carbon is released during land conversions.

13 --o0o--

14 MR. INGRAM: As shown on this slide, plants and
15 soil store significant amounts of carbon, around two
16 thousand billion metric tons. This is significantly more
17 than is stored in either the atmosphere or in the world's
18 proven petroleum reserves.

19 Every year land use change around the world
20 releases about half as much carbon to the atmosphere as
21 does the use of petroleum products.

22 --o0o--

23 MR. INGRAM: We now move to the next item on our
24 list of reasons for considering land use change. Carbon
25 is stored in and released from both above- and

1 below-ground sources.

2 --o0o--

3 MR. INGRAM: Here we see how much carbon dioxide
4 is released when an acre of grassland is converted. About
5 15 metric tons is released from the above-ground portion
6 of the vegetation. Another 30 metric tons is released
7 when the soil is disturbed through cultivation, for
8 example. The total carbon dioxide released comes to about
9 45 metric tons.

10 --o0o--

11 MR. INGRAM: Our last point in this series
12 addresses how biofuels affect the carbon cycle. Here, we
13 find that current biofuels take decades before there is a
14 net greenhouse gas benefit.

15 --o0o--

16 MR. INGRAM: When one acre of cropland is
17 diverted from the production of corn for food or livestock
18 feed to corn for ethanol, about 3/10 of an acre of
19 grassland and forest is converted to agriculture to make
20 up for the lost food production. This land use conversion
21 releases about 30 metric tons of carbon dioxide to the
22 atmosphere.

23 --o0o--

24 MR. INGRAM: The original one acre of cropland
25 produces enough corn for about 400 gallons of ethanol,

1 analysis was conducted under the auspices of Dr. Tom
2 Hertel, the Purdue researcher who developed the model,
3 along with collaborators from the University of
4 California.

5 We are pleased to have Dr. Hertel here today, and
6 have asked him to make a short presentation regarding his
7 work with GTAP.

8 --o0o--

9 MR. INGRAM: In running the GTAP, we used the
10 best available data inputs; performed multiple sensitivity
11 runs; presented results at workshops and received and
12 responded to comments on those results; determined the
13 amount, type, and location of land use changes; and
14 calculated the carbon intensity of land use change.

15 --o0o--

16 MR. INGRAM: The GTAP operates by using standard
17 economic principles to determine how many acres of land
18 must be converted to agricultural uses to replace the food
19 commodity shortages created when biofuel crops replace
20 food crops. The model works by starting with the number
21 of acres diverted from food to fuel crops - 2.5 million
22 acres in the slide.

23 --o0o--

24 MR. INGRAM: That total is first reduced because
25 sufficient land is simply not available at an economically

1 viable price.

2 --o0o--

3 MR. INGRAM: The total land requirement is then
4 reduced to reflect the co-product credit. For example,
5 livestock feed co-products from ethanol production reduces
6 the needed feed from other sources.

7 --o0o--

8 MR. INGRAM: The next land requirement reduction
9 reflects higher food prices caused by the expansion of
10 corn. As more core is demanded, its price will rise. The
11 shortfalls created when corn displaces other crops will
12 also increase food prices. Higher food and livestock feed
13 prices will reduce food consumption.

14 --o0o--

15 MR. INGRAM: The downward trend in the total land
16 requirement is reversed when new land is converted to
17 agricultural uses. Newly converted land is almost always
18 less productive than existing farmland, or else it
19 probably would be existing farmland. To make up for this
20 productivity shortfall, somewhat more land is needed in
21 order for production to meet demand.

22 --o0o--

23 MR. INGRAM: The total land requirement is then
24 further reduced because higher corn prices cause corn to
25 be more intensively cultivated on existing farmland,

1 resulting in higher yields.

2 The final result is a total land conversion
3 requirement of about .7 million acres.

4 --o0o--

5 MR. INGRAM: As mentioned in a previous slide,
6 the land use change carbon intensity values were chosen
7 from among a range of sensitivity run results. This slide
8 shows where staff's selected value lies within the range
9 of the most reasonable values obtained from this series of
10 runs.

11 As you can see, the ARB proposed value of 30 for
12 corn ethanol is somewhat below the midpoint of our series
13 of sensitivity runs. This slide also places staff's GTAP
14 results within a larger range founded by results obtained
15 by the Renewable Fuels Association and by Tim Searchinger
16 in his 2008 science article.

17 We feel that our recommended value is very
18 reasonable, falling, as it does, somewhat below the
19 midpoint of this wider range.

20 --o0o--

21 MR. INGRAM: This slide shows the results of our
22 analysis. As you can see, the land use change shown in
23 the light blue is a significant part of the total carbon
24 intensity.

25 --o0o--

1 MR. INGRAM: This slide compares today's fuels
2 with the next generation of advanced biofuels and other
3 fuels such as electricity and hydrogen. While lower
4 carbon corn and sugarcane ethanol are able to generate
5 some credits towards achieving the standards represented
6 by the dotted line, advanced biofuels, electricity, and
7 hydrogen have significantly lower overall carbon and have
8 little or no land use change emissions.

9 --o0o--

10 MR. INGRAM: All fuel life cycles were analyzed
11 similarly under the LCFS. That analysis revealed that
12 land use change contributes to carbon intensities of
13 certain biofuels. To date, staff has identified no
14 significant indirect effects from fuels other than
15 biofuels. But the analysis in that area is ongoing. We
16 have shared our assumptions and results openly and have
17 fully considered all the comments and suggestions we have
18 received.

19 --o0o--

20 MR. INGRAM: By way of summarizing this last
21 series of slides, I'd like to point out that life cycle
22 analysis provides the key to identifying and transitioning
23 to truly low carbon fuels. The life cycle analysis must
24 be comprehensive and include all significant effects,
25 including land use change. The GTAP model represents the

1 best available science for estimating land use changes.
2 As such, we have conducted the requisite comprehensive
3 analysis.

4 Furthermore, staff's analysis was generally
5 supported by peer reviewers. Even so, staff recognizes
6 that additional study is useful and is proposing to form
7 an expert workgroup to refine the analysis on an ongoing
8 basis.

9 --o0o--

10 MR. INGRAM: I will now summarize the results of
11 the economic and environmental assessments.

12 --o0o--

13 MR. INGRAM: The economic analysis was done on a
14 cost-of-compliance basis. This means that we evaluated
15 what it would cost for fuel producers to meet the
16 standards. Staff estimates that the proposed LCFS will
17 result in overall savings between 2010 and 2020 as
18 alternative fuels displace more expensive petroleum-based
19 fuels.

20 These estimated savings are dependent on crude
21 prices and production costs of the alternative fuels.

22 ARB recognizes that there are uncertainties in
23 the analysis. For example, if crude prices stay low and
24 the cost of biofuels are more expensive than estimated,
25 the LCFS may result in a cost of a few cents per gallon.

1 --o0o--

2 MR. INGRAM: Cellulosic ethanol will play a role
3 in meeting program goals. This graph shows that there has
4 been significant progress in this reducing the estimated
5 cost of commercially producing cellulosic ethanol. ARB
6 used estimated production costs that are consistent with
7 these technological advances.

8 --o0o--

9 MR. INGRAM: The environmental analysis confirmed
10 that the LCFS will reduce transportation sector emissions
11 by 16 million metric tons by 2020. This equates to 10
12 percent of the reductions required under AB 32. The
13 analysis revealed no significant adverse environmental
14 impacts that would not be mitigated.

15 In addition, criteria pollutant emissions will be
16 reduced if electric and hydrogen-powered vehicles replace
17 conventional vehicles in sufficient numbers.

18 --o0o--

19 MR. INGRAM: Staff is proposing to undertake two
20 additional measures to help ensure that the program
21 doesn't create additional environmental impacts.

22 First, staff will develop a best practices
23 guidelines document for use in siting new fuel facilities.
24 This document will assist local permitting agencies with
25 the identification of state-of-the-art emissions controls

1 for new facilities. A completed document is expected by
2 December of 2009.

3 Second, staff is proposing to develop a workplan
4 and recommendations for addressing the broader issue of
5 sustainability of fuel production. The plan is expected
6 by December 2009, while the recommendations should be
7 completed by December of 2011.

8 --o0o--

9 MR. INGRAM: The Low Carbon Fuel Standard will
10 coexist with federal biofuels requirements. The next few
11 slides will compare the two programs.

12 --o0o--

13 MR. INGRAM: The Federal Renewable Fuels Standard
14 mandates the production of specific volumes of biofuels
15 with lower carbon intensity than those available today.
16 Although the corn ethanol currently in production faces no
17 improvement mandates, new corn ethanol facilities must
18 reduce the carbon intensity of their product by 20
19 percent. Cellulosic biofuels must show a 60 percent
20 carbon intensity reduction over current fuels. All other
21 new biofuels must demonstrate a 50 percent reduction.

22 Although these reductions will help reduce
23 greenhouse gases, they will provide only a 3 percent
24 reduction in carbon intensity, roughly about one-third of
25 the benefit of the California program.

1 --o0o--

2 MR. INGRAM: Under the federal program, the
3 amount of advanced biofuels -- the amount of advanced
4 fuels, shown here by the green shaded area, increases
5 significantly by 2020, whereas the amount of conventional
6 corn ethanol remains relatively stable at about 15 billion
7 gallons.

8 --o0o--

9 MR. INGRAM: This is a bar graph representation
10 of the data presented in the previous slide, showing the
11 ramp-up of advanced biofuels.

12 --o0o--

13 MR. INGRAM: Projected LCFS volumes are seen here
14 to be a reasonable proportion of the federally mandated
15 volumes.

16 --o0o--

17 MR. INGRAM: In summary, the California --

18 CHAIRPERSON NICHOLS: I just want to be clear
19 though, that this regulation that your proposing does not
20 mandate any volume of ethanol or any other fuel.

21 MR. INGRAM: Correct. In fact, we considered
22 pointing that out.

23 CHAIRPERSON NICHOLS: Good.

24 MR. INGRAM: In summary, the California program
25 builds upon the federal program. However, there are

1 package.

2 --o0o--

3 MR. INGRAM: As part of our next steps to
4 implement the program, the staff's proposing to:

5 --o0o--

6 MR. INGRAM: Establish the specific requirements
7 for the credit trading program.

8 Continue to work on the carbon intensities,
9 including the completion of several additional fuel
10 pathways, develop guidelines governing the submission of
11 data and documentation by fuel providers seeking approval
12 of carbon intensity values for new and improved pathways,
13 and identification of pathways that have little or no land
14 use effects.

15 Finally, staff expects to continue coordinating
16 with regional, national, and international organizations
17 who are considering developing low carbon fuel standards,
18 with the overall objective of harmonizing our efforts.

19 --o0o--

20 MR. INGRAM: We would now like to summarize our
21 presentation and present our recommendations to the Board.

22 --o0o--

23 MR. INGRAM: Today's proposal will reduce
24 emissions from transportation fuels by 10 percent by the
25 year 2020. The analysis shows that land use changes is a

1 significant and positive contributor to the life cycle
2 greenhouse gas emissions of some biofuels and must be
3 included in the life cycle analysis.

4 The proposal complements the federal Renewable
5 Fuels program, while providing greater greenhouse gas
6 reductions. And the program is structured so that it can
7 be extended into the post-2020 period.

8 --o0o--

9 MR. INGRAM: For the reasons we have presented,
10 we recommend that the Board adopt the proposed regulation
11 with staff's suggested modifications.

12 --o0o--

13 MR. INGRAM: At this time, I'd like to turn the
14 presentation over to Dr. Tom Hertel from Purdue
15 University. Dr. Hertel created the GTAP model and
16 currently heads the organization which maintains it.

17 Dr. Hertel.

18 DR. HERTEL: Where should I speak from?

19 (Thereupon an overhead presentation was
20 Presented as follows.)

21 CHAIRPERSON NICHOLS: It's attached to the
22 proposed resolutions packet, with the yellow cover on top.
23 I think it should be at your desk --

24 BOARD MEMBER RIORDAN: There is an attachment.

25 CHAIRPERSON NICHOLS: -- at the very back.

1 BOARD MEMBER RIORDAN: There is an Attachment B.

2 And that's the one, correct?

3 CHAIRPERSON NICHOLS: Yes, correct.

4 Okay. Welcome

5 DR. HERTEL: Chairman Nichols, thank you for
6 having me here. It's an honor to be addressing the Board
7 on this important issue.

8 Can you hear me Okay?

9 CHAIRPERSON NICHOLS: Get a little closer.

10 DR. HERTEL: A little bit closer?

11 CHAIRPERSON NICHOLS: Yeah.

12 DR. HERTEL: Just give me the signal, good.

13 So could we have -- perhaps the PowerPoint is
14 being ramped up here.

15 I thought I would make my comments -- well, as
16 have many of you, I've received a lot of comments
17 favorable over the last few months. It's been a hotly
18 debated issue, the land use impacts. And that's what I'll
19 focus on.

20 And so I thought I would share with you my
21 thinking as an academic who's worked in this area for
22 about 20 years what some of the strengths and limitations
23 are of the framework we're using. And the PowerPoint is
24 geared around that, along those lines.

25 So, shall I just go ahead and continue, or do you

1 want me to wait --

2 CHAIRPERSON NICHOLS: It's up to you.

3 How are we doing here on getting this thing teed
4 up.

5 It's not coming up at all. Oh, dear.

6 DR. HERTEL: Do you have the white thumb drive
7 there?

8 CHAIRPERSON NICHOLS: We can pause for a moment
9 here while we get our technology in order.

10 BOARD MEMBER BERG: And then do we have a copy of
11 this presentation?

12 CHAIRPERSON NICHOLS: I don't think we have it in
13 the slide -- in printed form.

14 BOARD MEMBER BERG: Okay. Thank you.

15 CHAIRPERSON NICHOLS: No, we don't.

16 BOARD MEMBER RIORDAN: Madam Chairman, maybe at
17 some point in time, this morning, we could get a copy of
18 the presentation of the PowerPoint. Do you see that as
19 possible?

20 CHAIRPERSON NICHOLS: That would be a good idea.

21 EXECUTIVE OFFICER GOLDSTENE: We'll do that.

22 CHAIRPERSON NICHOLS: All right. Mr. Goldstene
23 says that could happen. It will be done.

24 BOARD MEMBER RIORDAN: That's helpful.

25 CHAIRPERSON NICHOLS: Yes, it is.

1 Let's see. While we're working on this
2 presentation here, I have a list of 45 witnesses. I
3 assume there's more coming. And I want to make sure that
4 people were told that there was going to be a two-minute
5 limit on oral testimony.

6 Was that clear to those who signed up?

7 It's stated in the agenda. Because normally in
8 the past we've given people three minutes. And this a
9 change.

10 We have the discretion to change the time one way
11 or the other.

12 All right. Well, we'll see how it goes.

13 BOARD MEMBER TELLES: Dead time here.

14 CHAIRPERSON NICHOLS: Yes.

15 BOARD MEMBER TELLES: Can I just make a

16 comment --

17 CHAIRPERSON NICHOLS: Please.

18 BOARD MEMBER TELLES: -- because it's kind of
19 upsetting to me. That when there is a supplement added --
20 this is a complicated thing to review. I've spent a lot
21 of time reviewing this. And there's lots of sections here
22 this refers to. This would take me about an hour to
23 review, at least. And I really don't appreciate having a
24 supplement added without us having a chance to review it
25 before.

1 I think the process is not right. And I feel
2 that my duty on this Committee is to review all the
3 documents. And then at the last moment you add a
4 supplement, and it's just very upsetting to me.

5 EXECUTIVE OFFICER GOLDSTENE: Well, I apologize
6 for that, Dr. Telles. We've been working, I think as you
7 know, very closely --

8 BOARD MEMBER TELLES: You could Email me, you
9 could fax me. I would have read it last night. I would
10 have reviewed it. But don't give it to me on the day of
11 the hearing.

12 CHAIRPERSON NICHOLS: Are we ready now?

13 Okay. Great.

14 DR. HERTEL: Okay. Great.

15 So it's a pleasure to be here.

16 And let's start with the first slide here.

17 --o0o--

18 DR. HERTEL: So I think the overriding strength
19 of the GTAP framework is the database. As can be
20 appreciated by this Board, when it comes down to policy
21 analysis, it's all about the data in terms of being
22 credible. That's where it starts.

23 So GTAP is, first and foremost, a global database
24 describing bilateral patterns of international trade,
25 production, and consumption for the economy across the

1 board, for every region of the world.

2 --o0o--

3 DR. HERTEL: Assembling a high quality internally
4 consistent peer-reviewed global database is a tall order.
5 And it's accomplished with the help of leading
6 international agencies and member agencies. There are 26
7 in all, and they serve on our advisory board. And they
8 review our work every year. And they spend one year
9 vetting the database before it's released to the public.

10 There are also many national contributors from
11 this large network. We couldn't do it without them as
12 well.

13 --o0o--

14 DR. HERTEL: Another strength of the GTAP
15 framework is its flexibility. Whereas there's one GTAP
16 database, there are actually many GTAP models. So when
17 you say GTAP this, GTAP that, that's not particularly
18 meaningful, because each new policy application requires
19 modifications of the framework.

20 So you need a flexible framework such that it can
21 be modified, for example, to deal with co-products, a very
22 important part of this debate; to deal with
23 agro-ecological zones, the grouping of land around the
24 world into categories where products compete with one
25 another. It's important to know whether this feedstock,

1 corn, for example, is competing with soybeans or with
2 orange groves or something else.

3 So modification of the model for the application
4 in hand.

5 Estimation of new parameters. A key parameter in
6 this whole debate is the substitution of elasticity -- the
7 elasticity of substitution between ethanol and other
8 fuels, for example, that had to be estimated.

9 And adding new data. The land use data has been
10 particularly important here.

11 So each extension needs to be validated. In this
12 case, the model that CARB is using has been peer-reviewed
13 and is forthcoming in the leading agricultural economics
14 journal and the leading energy journal.

15 --o0o--

16 DR. HERTEL: Another strength of the GTAP
17 framework is ease of use. These modifications are
18 facilitated by the careful documentation of the core
19 framework.

20 The large user community has permitted a whole
21 software industry to evolve that supply tools for people
22 doing GTAP modeling. And it's I think -- personally I
23 think it's pretty remarkable that we were able to provide
24 a version archive that could be loaded on to a computer in
25 Sacramento in short order and run on a computer here with

1 And so a lot of the critical work that's been
2 done lately has been clearly -- from my point of view,
3 sitting in academia without having a particular agenda one
4 way or the other, it's been interesting to see the
5 different sides play with the different parameters. So
6 there are those who focused on the environmental side
7 who've argued that we're overstating the yield response
8 and that the land area conversion should be larger. And
9 those on the industry side have focused on a different
10 parameter relating to yields, and they emphasize that.

11 If you'd go to the next slide please.

12 --o0o--

13 DR. HERTEL: So this is this yield response. So
14 if I were King Solomon, I might say "I'll give you both
15 what you wish for." And as it turns out, it doesn't
16 change the results dramatically, because these are
17 offsetting effects.

18 But the point is that there is uncertainty,
19 fundamentally there will always be uncertainty in these
20 economic parameters. And that can be -- the uncertainty
21 can be reduced by investing over the longer term in
22 research to be done in academia and taking -- you know,
23 taking time, publishing, peer reviewing the work, we can
24 reduce the uncertainty. We'll never eliminate it.

25 --o0o--

1 DR. HERTEL: There's one aspect that's gotten a
2 lot of attention in the media or in the Internet
3 exchanges. And this has to do with the baseline.
4 Everyone would like a baseline somewhere in the future -
5 2015, 2022 perhaps if you're EPA. Of course we don't know
6 what the world will look like in the future. And
7 projecting the future adds another important source of
8 uncertainty.

9 The GTAP database is always out of date. Our
10 board members are always complaining that this is out of
11 date. Why is it out of date? Because the national
12 statistics we get from them, the international statistics,
13 are out of date. That's not something we can repair.
14 Once we finalize the base year, we spend a year vetting
15 these data with the board members. So it's a long
16 process.

17 So inevitably we're going to be working with
18 out-of-date information. We need to come to grips with
19 that, we need to accept it.

20 The problem is compounded in this case because
21 the special version we're using requires us -- it's very
22 important to know what the corn yields are elsewhere in
23 the world and how that compares to the U.S. If you take
24 land out of the food system in Iowa, do you need five
25 hectares in Africa or two hectares somewhere else to

1 replace that? This is a critical issue.

2 There's only one published global database with
3 spatial resolution on harvested area and yields. And
4 that's also out of date.

5 So we're having to work with this issue. And
6 there are several responses.

7 --o0o--

8 DR. HERTEL: One is to improve the underlying
9 databases. Please invest in this. If you're putting
10 resources in this direction, that has to be done in the
11 long run if you're taking the long-run view.

12 Recognizing the fact that we face these
13 limitations are -- the approach we've taken has been to
14 work with the authentic older data that's been vetted,
15 everyone understands - better the Devil you know than the
16 Devil you don't - and make adjustments after the fact that
17 are transparent and easy to alter.

18 That's the approach we've taken.

19 Another approach would be to take a complicated
20 model, like the dynamic GTAP model, project it forward a
21 decade or two, and do the analysis then. Of course then
22 you don't -- it's not clear what ground you're standing
23 on, because everything's changed. And this is an approach
24 others have taken in this area, and my feeling is they
25 haven't worried enough about what they're changing, what

1 they're not changing, how their assumptions about the
2 future are flavoring their analysis. So I think -- we've
3 taken a conservative approach. I think it's the right
4 approach.

5 --oOo--

6 DR. HERTEL: The last side.

7 In summary, models help identify key sources of
8 uncertainty. We need to invest subsequently in research
9 to narrow that range. We won't eliminate uncertainty.
10 That's the nature of the business.

11 ARB, EPA and others must invest resources in this
12 area, must take a long-term view. Too much -- there's
13 been too much short-term emphasis over the last few years,
14 not enough long-term emphasize in terms of funding.

15 Models are just models. I think the Chairman
16 said that as well a few minutes ago. In the end, expert
17 use in judgment are required to get sensible outcomes.

18 ARB must invest in staff capacity in this area.
19 It's a new area. Other GTAP consortium members who use
20 this for decision making, say, the International Trade
21 Commission in Washington, for example, they have a staff
22 of a dozen people who've been to the GTAP course. Half
23 dozen of them are really expert in this area. You need to
24 be thinking about that scale of investment if you're going
25 to take this seriously in the long run. It's not

1 something one can do overnight. And so just underscoring
2 the importance of long-term investments in this area.

3 Thank you.

4 CHAIRPERSON NICHOLS: Just a couple of questions
5 for you. First of all, are you going to be with us for
6 the duration here if we need to ask you questions later?

7 DR. HERTEL: My pleasure. I'll be here all day.

8 CHAIRPERSON NICHOLS: Thank you very much.

9 Well, I just had a couple of initial questions
10 then.

11 You mentioned entities that are using this model.
12 Is this a model which is also available to nonprofit
13 organizations or to business entities if they want to use
14 it as well?

15 DR. HERTEL: Absolutely. Indeed, our advisory
16 board includes some -- they're not all public agencies.
17 Some nonprofits. And amongst the user community, there
18 are many private sector users, many consultants using it.
19 And over the last year, say -- well, over the last six
20 months since ARB's been making information available,
21 we've seen an explosion of analyses using GTAP by others,
22 using the version now that's recently been made available
23 on the website.

24 So this is available. The Europeans are using it
25 heavily for land use analysis as well. We've participated

1 recently in some conferences there. And so it's being
2 used globally and it's being -- as I say, the model is
3 being modified and evaluated and peer reviewed and
4 hopefully --

5 CHAIRPERSON NICHOLS: -- constantly.

6 DR. HERTEL: -- continually improved.

7 CHAIRPERSON NICHOLS: And there are other models
8 out there you mentioned, and the staff mentioned in their
9 report, that EPA is using two other models that are
10 designed to do similar kinds of analysis.

11 Can you give us a really brief summary of what
12 the --

13 DR. HERTEL: Sure. I think a brief summary of
14 what -- they're using -- they've been in this business for
15 a longer period of time, and they had a longstanding
16 relationship with an excellent researcher named Bruce
17 McCarl from Texas A&M. And he has developed something
18 called the FASM model. Over a long period of time he's
19 worked with EPA on that.

20 The problem for this issue is that it's only a
21 U.S. model. So he can say something about what happens in
22 the U.S. but not the rest of the world.

23 So when this issue hit the science magazines
24 circuit, they realized they needed to go beyond that. And
25 we weren't working with that group at the time, and they

1 resorted to another model, which they've tried to put
2 these pieces together as best they could. And I think
3 that no one's really happy with the way those have come
4 together, but it's what they could do. And that's where
5 they are. Once you're well down a path, you don't want to
6 reevaluate. We have been interacting with them. I was at
7 a workshop in January, kind of an in-house workshop,
8 evaluating this. EPA is actually funding these three
9 modeling groups. We'll have a session at the Professional
10 agricultural economics meetings this summer that I'm
11 organizing to try and narrow the differences, to try and
12 identify what each framework has to say about these key
13 areas of uncertainty.

14 So we're working with them. That's very
15 important. But, you know, they've done the best they can
16 under a high pressure situation.

17 And so they would not be able to meet the
18 standard -- CARB standard, which is have models here in
19 Sacramento that can be run and can be run by others. At
20 least one of those models, maybe both, take weeks -- one
21 of them takes weeks to run. It takes a group of experts.
22 It's not portable. So it wouldn't meet your standards.

23 It has other excellent features, but it wouldn't
24 meet your criteria there.

25 CHAIRPERSON NICHOLS: Okay.

1 STATIONARY SOURCE DIVISION CHIEF FLETCHER:

2 Chairman Nichols, we have one more small
3 presentation from Dr. Michael O'Hare when you are ready
4 for that.

5 CHAIRPERSON NICHOLS: Okay. Are there any
6 questions right at this moment?

7 Yes.

8 BOARD MEMBER BALMES: So you mentioned the
9 uncertainty analysis aspect of your work. And I thought I
10 heard a recommendation to CARB to not focus as much on
11 point estimates and consider confidence intervals. And I
12 was wondering -- I'm comfortable with that concept, but
13 I'm not sure about the rest of the Board. And could you
14 expand on that a bit, just briefly.

15 DR. HERTEL: So, you know, I'm not -- I'm not in
16 the position of having to implement the Low Carbon Fuel
17 Standard. So I'm kind of freeing myself from that for a
18 moment and asking how other people we work with in policy
19 making, in the trade policy area, for example, how have
20 the more sophisticated users, say, at the International
21 Trade Commission, how do they adopt this?

22 They present their results as confidence
23 intervals. So they say, "Well, you know, we're 95 percent
24 confident that this" -- "that these land use emissions lie
25 between this grams per megajoule and this grams per

1 megajoule." So I mean if that bound doesn't include zero,
2 that's telling you something right off the bat.

3 If it, you know -- it may -- you can evaluate
4 that within the context of what you're doing. But that's
5 the kind of statement that I'd like to see users pressing
6 the analysts for.

7 Our recent publications, no one will publish this
8 stuff without confidence intervals on the results. They
9 say, "Hey, we know these parameters are uncertain. Do the
10 uncertainty analysis and a systematic sensitivity
11 analysis. So I think it's very important. That's the way
12 the science has moved. I think that's the way
13 forward-looking policy -- decision makers such as those at
14 ARB should be moving in that direction too.

15 CHAIRPERSON NICHOLS: Okay. Thank you.

16 Yes.

17 BOARD MEMBER D'ADAMO: I had a question on the
18 international corn yield database that you're using. You
19 indicated that it was outdated. What is the date of that
20 document?

21 DR. HERTEL: There was a project that took place
22 over ten years' time combining the UN Food and
23 Agricultural Organization, the International Food Policy
24 Research Institution, and a group at University of
25 Wisconsin. They divided the group -- the world up into

1 three parts and they gathered subnational statistics. So
2 in the U.S. it would be county level data. And they did
3 this around the world. And they built that up to the
4 national level and reconciled it with FAO data. And so
5 this is for a period circa 2000.

6 Okay. We've adapted that to 2001, a period
7 deemed close enough to be relevant.

8 That isn't the latest GTAP database, but it's the
9 latest database for which we have all of this information
10 complete and it's published.

11 The reason we doggedly stick to that old,
12 out-of-date database is that the yield differences across
13 regions and within regions are huge. Whereas the yield
14 growth, for example, since -- from 2001 to 2007 USDA
15 average I think is around 9 percent. So we make this
16 adjustment in the 9 percent afterwards rather than risking
17 getting the difference between, you know, 50 bushels per
18 acre, 20 bushels per acre, and 200 bushels per acre wrong.
19 So that's been our choice and our judgment here, that if
20 we were to just -- if we were to -- well, those are the
21 differences that really matter for this analysis. So
22 after the fact we make an adjustment assuming yield growth
23 worldwide has been at a comparable rate.

24 CHAIRPERSON NICHOLS: Rather than changing the
25 baseline, you factor in the new data?

1 DR. HERTEL: Yeah, that's the baseline point. To
2 change the baseline, you need to project the whole world
3 economy forward.

4 That is something we could undertake given the
5 time. But the timeframe has never been appropriate for
6 that. And that's something I have lots of experience
7 doing. I wouldn't want to undertake in a hurry, because
8 garbage in, garbage out. And you can generate a lot of
9 garbage when you simulate a global model into the future.

10 So this is a cautious approach, attempted to be a
11 transparent approach, capitalizing on published data.

12 So it's hard to get data at the subnational level
13 in Africa. Brazil's better. But other parts of the
14 world, it's not trivial. We shouldn't underestimate that.
15 That's an area that could be accelerated as well.

16 BOARD MEMBER D'ADAMO: And then USDA export data.
17 Do you recall the date of the most recent data?

18 DR. HERTEL: Well, USDA export data we have
19 almost up-to-date. And in separate analysis, as I say,
20 forthcoming in the Energy Journal, we project forward
21 using our model, from 2001 to 2006, at the time we wrote
22 the paper, that was the most recent data for which these
23 data were available. And we compared model changes to
24 actual changes over the period. There was a bit of
25 validation going on.

1 But in our analysis for ARB, we're working from
2 the 2001 base and we're feeding this all in. So U.S.
3 exports are changing in the analysis -- over the course of
4 the simulation. But we're not -- you know, any time we
5 undertake such an analysis, people ask, "Well, are you
6 using my latest data on this" or "my latest data on that?"
7 If you changed the U.S. export data in this model, you've
8 got to change China's data, because someone's importing
9 it -- or Japan's data or what Brazil is exporting. So
10 it's a global system. You can't just fool with one thing.

11 But I recognize that the export response is a
12 very important one here and a very sensitive one. And I
13 think the issue -- key issue really is the sensitivity of
14 exports to price changes as opposed to the level at any
15 point in time.

16 BOARD MEMBER D'ADAMO: Thank you.

17 CHAIRPERSON NICHOLS: Thank you.

18 Mr. Fletcher, did you want to introduce the
19 next --

20 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Yes,
21 I'd just like to introduce Dr. Michael Hertel -- Michael
22 O'Hare.

23 (Laughter.)

24 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Too
25 many H's there.

1 We've been working in such close collaboration
2 that we scientists merge.

3 CHAIRPERSON NICHOLS: -- forgotten his last name.

4 STATIONARY SOURCE DIVISION CHIEF FLETCHER: But
5 Mike has been working with us very closely since the
6 inception of this project, and he has a few comments that
7 he would like to make.

8 CHAIRPERSON NICHOLS: Thank you.

9 MR. O'HARE: Oh, I guess we got that to work.

10 (Thereupon an overhead presentation was
11 Presented as follows.)

12 MR. O'HARE: So I'd like to make a few remarks on
13 I guess you could call a bigger picture look at the land
14 use change issue especially.

15 And the general burden of these remarks is to
16 regard the land use change estimates that the staff has
17 given you as being -- I don't want to use the word
18 "conservative," but I would say biofuel favorable in the
19 competition between fuels to satisfy the LCFS
20 requirements.

21 I do want to say at the beginning that it's not
22 clear what "conservative" means in this context because it
23 is a low carbon fuel standard. And if we make a mistake
24 in one direction in estimating these numbers, we'll use
25 too much of a biofuel that's actually higher carbon than

1 we thought and will therefore increase global warming.
2 And if we use numbers that are too low, then we'll use too
3 little of a biofuel that's lower carbon than we thought
4 and will therefore increase global warming.

5 So the cost to the world of being wrong in both
6 directions is fairly symmetrical. And there's no obvious
7 conservative direction as there is, for example, in life
8 and safety regulation.

9 Next slide please.

10 --o0o--

11 MR. O'HARE: I want to thank a large and growing
12 group of collaborators, including one of your
13 distinguished Board members, at this point, and also
14 remember Alex who set us out on this path a couple of
15 years ago. This has become quite a large group
16 enterprise. And I think it's good for that reason.

17 Next slide please.

18 --o0o--

19 MR. O'HARE: So let me just quickly recall the
20 history we'd been through and emphasize the policy is
21 forcing the science quite rapidly.

22 The policy intentions of California and the
23 nation and also other countries is pushing the science
24 forward probably a lot faster than it would otherwise go.
25 On the whole I think this is a good thing.

1 reasons."

2 But then you would probably want to ask
3 yourselves, "Well, until when?" And when will the time
4 ever occur when uncertainty, however measured, in these
5 economically consequential estimates is low enough? And I
6 propose that if -- my view of it is that if you didn't
7 think that time was now, then it's not clear that that
8 time would ever arrive.

9 Second, if we're going to have an LCFS, should it
10 use the best available estimates? And here I think a
11 moral principle applies, is that the practice of
12 government should be honest with citizens. This is --
13 watch the news tonight and you'll see five more reasons -
14 I don't know what they are yet, but I know they're
15 coming - why this is so important.

16 And prices and regulatory practices are in fact
17 information provided by government to citizens that affect
18 how they behave.

19 And the last question is, that coming forward
20 with the numbers in the proposal you have, should the
21 Board make it State policy that these indices will be
22 adjusted in a reasonably steady way - we don't want to
23 have new numbers every week - to reflect the accumulating
24 science? And there I'd propose that the answer also ought
25 to be yes. It's sort of a rhetorical question.

1 Next slide please.

2 --o0o--

3 MR. O'HARE: This is a quick overview of the land
4 use change process that I think is worth a review. What
5 we're talking about is taking food that would
6 other -- taking cereals that would otherwise be used for
7 food. And I emphasize that this does not apply to
8 biofuels that do not compete for land with food. This is
9 only about biofuels that are grown on land that would
10 otherwise grow food or could otherwise grow food.

11 So we're going to take the food that could be
12 grown there and we're going to use it for fuel. When we
13 do that, because food demand is fairly inelastic, four
14 responses will occur - and those are the ones in the
15 right-hand side of the slide - they will all occur, and
16 the discussion we're having about land use changes mostly
17 to do with the relative size of these four, which of them
18 occur more? And that's the great contribution of the GTAP
19 model, is to make estimates of these effects.

20 You could look at this as a picture slide of the
21 bar chart that Wes showed you a few minutes ago.

22 We're going to eat less food and less meat
23 because the only way cereals can be diverted to fuel is to
24 pay more for them. That raises prices.

25 We're going to learn how to increase yields to

1 some degree because now it's worth it to do so.

2 Land uses will change from standing timber and
3 pasture to food in the United States. And the same thing
4 will happen overseas.

5 Next slide please.

6 --o0o--

7 MR. O'HARE: What I want to emphasize in this
8 slide is a distinctive and unusual quality that the land
9 use change issue brings to the biofuel carbon estimation
10 problem.

11 The political jurisdiction in this slide, the
12 blue square with the black border, you could think of as
13 being California. And by law and practice we can control
14 pretty much what happens including the part of the state
15 that's used to grow biofuels. That's the beige square.

16 And because we can have rules about the biofuels
17 that we bring into the state to comply with the LCFS, we
18 can have a fair amount of control over the actual
19 cultivation practice.

20 But what recognizing the land use change effect
21 has done is to force our attention to things that happen
22 in many different places all at the same time far away
23 where we don't have that kind of control; that cattle
24 raising practices in Brazil have a lot to do with the land
25 use change effect of corn growing in Iowa.

1 by the use of a petroleum fuel than by the biofuel.

2 Next slide please.

3 --o0o--

4 MR. O'HARE: And the timing -- I'm sorry. Go
5 back one slide.

6 --o0o--

7 MR. O'HARE: So the time effect of this
8 discharge, because it isn't uniform, should be included.
9 And at present the staff has decided to use what we call a
10 flat allocation -- or a flat amortization of the initial
11 discharge over the production. If you recognize the time
12 effect of warming as described here and then a paper
13 available to you that the staff has, then you'd look
14 differently, and I think to the disadvantage of any given
15 biofuel, at its relative global warming effect. I think
16 that's pretty important.

17 So next slide please.

18 --o0o--

19 MR. O'HARE: Let me sum up. I argue that the ARB
20 is well positioned to implement a low carbon fuel standard
21 with the current rule. And I'd furthermore argue that
22 it's going to get even better - and that's the right way
23 to think about it - as the science progresses. And we
24 have plenty more science to do. You can keep us out of
25 trouble with this policy for many years.

1 That the LCFS, if it properly represents the best
2 science understanding of carbon discharges, is going to
3 provide the right green incentives for new technology and
4 other jurisdictions that are watching us.

5 I didn't put a bullet up, but I do want to
6 emphasize that there are -- I want to emphasize three
7 important ways in summary that the current land use change
8 estimates that the staff is proposing to use could be
9 regarded as being biofuel favoring. Which may as a policy
10 decision be what you want to do, but you should know it.

11 So the first one is the time issue that I
12 proposed.

13 The second is that for corn ethanol in particular
14 the staff is assuming that corn production will continue
15 for 30 years, and dividing that initial discharge over 30
16 years of corn's direct advantage over petroleum. I think
17 that's deeply unrealistic, that we'll be producing ethanol
18 from corn for that long, because there are too many better
19 competitors coming down the pike. I don't know which of
20 them will win, but there are much -- there are going to be
21 better ways to make ethanol and better ways to make
22 transportation fuels. So that should be 20, about.
23 There's a 50 percent change.

24 And, finally, we did some runs that CARB chose
25 not to use and -- that the staff chose not to use in their

1 estimates, in which we held food production constant. So
2 while we're not going to -- we're not going to allow the
3 biofuel production to raise food prices as much as it will
4 in the estimates we have made or to reduce food
5 consumption. And the land use change effect that we
6 observed there is about 50 percent higher than what was
7 observed in the runs and estimates that the staff has put
8 before you.

9 I think that's worth thinking about. Probably
10 not to change the numbers in your current rule-making.
11 Again, my overall advice is we should move forward and
12 pick up the science as it goes along.

13 But if you want to capture in global warming
14 carbon terms the food and nutrition effects of 15 billion
15 gallon of ethanol, then you would translate it into a 50
16 percent higher carbon discharge.

17 So those strike me as three important corrections
18 to the estimates that we've provided that the staff has
19 chosen not the use, and that you should think of as being
20 ways in which the estimates before you underestimate the
21 real carbon impact of biofuel use, especially in the
22 second case and especially in the subcase for corn.

23 Thank you for letting me present this material.
24 And I'd be happy to take some questions.

25 CHAIRPERSON NICHOLS: Thank you.

1 I'm not sure that I have any questions at this
2 point.

3 Does anybody on the Board wish to raise
4 questions?

5 Yes, you do. You didn't like the photo that he
6 used.

7 (Laughter.)

8 BOARD MEMBER SPERLING: But that's not what I was
9 going to say.

10 I think it would be useful here just to, you
11 know, hopefully bring a little more closure to this
12 discussion -- you know, partly Dr. Balmes brought up this
13 issue of uncertainty and bounding it.

14 There was this -- you know, because this land use
15 change effect really is, you know, probably the most
16 controversial part. There was this slide -- slide 37 in
17 the staff presentation essentially laid out the range of
18 estimates and where the staff has -- where the staff falls
19 in terms of its proposed value, and had the Searchinger
20 number which was over 100 grams at one end and the
21 Renewable Fuels Association at zero at the other end.

22 And I'd be interested to hear the staff, you
23 know, Mr. Fletcher or whoever else, comment on essentially
24 what Professor O'Hare was saying, that the analysis is
25 biofuel friendly, which he meant to mean that the value

1 could or might or should be higher than the number used
2 for corn ethanol.

3 So I guess the -- so it goes back to this
4 uncertainty issue. And I would note -- and when you do
5 the regulation, there's no way we can use an uncertainty
6 algorithm the way it's designed, but it can be used as
7 background for understanding.

8 So could we just get a short analysis of why the
9 Searchinger number is much higher, the Darlington RFA
10 number is much lower. And, you know, what are the big
11 factors that explain those large differences? And maybe
12 be able to comment on Professor O'Hare's assessment that
13 the number that ARB ended up with is biofuel friendly.

14 BOARD MEMBER BALMES: We must be commuting too
15 much to these meetings together, because you took those
16 words right out of my mouth.

17 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Well,
18 I'll take a crack at it and then I'll turn it over to some
19 that may be able to fill it in.

20 When we did the analysis, we looked at a number
21 of -- as we said in the slide presentation, we did do a
22 number of sensitivity runs. And when we did the first
23 series of analysis, we looked at the input parameters such
24 as the yields, the elasticities that were involved in the
25 analysis, and we had a fairly broad range of results. As

1 we came down and looked at the values that had more value,
2 then that range basically came down.

3 There are clearly a number of factors that affect
4 what your numbers are. These include, as Michael
5 mentioned, the time accounting method, which we looked at
6 a 30-year period. As Michael mentioned, that's a
7 20-year -- you could do a 20-year period, and that would
8 make that 30 go to a 45, for example.

9 We looked at also the concept of the method of
10 how you account for time. There's two or three different
11 methods that you can use. As he said, there's a flat
12 line, there's other types of time accounting methods that
13 could be used. And we evaluated those as well. And that
14 kind of affects it, although not quite as great.

15 But, again, you get -- you start running around
16 that 30 to 45 range.

17 When you look at the -- some of the other issues
18 that we looked at that can cause the numbers to go up,
19 things such as the intensification of farming, the
20 nitrogen cycle, these sorts of things, also came into
21 play.

22 One of the other critical factors that we deal
23 with is the -- basically the co-product credit we provide
24 for the corn ethanol. And there's some variability around
25 those numbers as well.

1 So the ranges that we ended up with in that
2 basically 18 to 50 range resulted from running the types
3 of different scenarios. And I might defer here to John
4 Curtis, who can provide a little bit more detail on the
5 specific elasticities and things that are involved in the
6 analysis.

7 John.

8 BOARD MEMBER SPERLING: Well, I don't really want
9 details of this. You know, I mean we're -- you know, this
10 is not the time for that. You know, I would -- with my
11 academic hat on, I'd be pleased to hear that.

12 But I mean just now just an assessment of -- you
13 know, Mr. Fletcher laid out some of the key variables --
14 but just an assessment of why the RFA number is wrong or
15 way too low, and if you agree with the assessment that in
16 the end this tends to be pro-biofuel in terms giving a
17 relatively low number. And we can get into the details in
18 the next nine months and beyond.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Let me jump
20 in here.

21 I don't really think it's pro-biofuel. I think
22 that maybe it's accommodating of the current batch of
23 biofuels.

24 When we did the assessment and we changed the
25 various numbers that are possible for land use change

1 effect and indirect land use change effect and then
2 modeled what we thought we would look like in 2000 -- can
3 we go to slide 39 -- I mean in 2020, what happened was
4 that the fuels that got low scores because they were the
5 new generation of fuels and they have low scores for
6 production and they have lower risk or zero risk for land
7 use change dominate. And really what we're talking about
8 is how do we do the transition from where we are now so
9 the current biofuels will get much cleaner and compete
10 with those truly low carbon fuels. Or the low carbon
11 fuels -- other low carbon -- new fuels come in and, under
12 the competition that we set up in the Low Carbon Fuels
13 Standard, so long as they offer economic value in terms of
14 their energy costs, they're going to prevail in the
15 marketplace, because they will be the easiest way of
16 complying with the standard.

17 So we felt that when we looked at the different
18 factors, some of which are technical and science-oriented,
19 some of which are policy calls, how many years do you
20 allow for an incremental benefit -- an annual benefit to
21 offset an initial discharge? And it was pretty
22 straightforward. We're looking forwards 2050. That's
23 about 30 years away from the 2020 goal. Plants once built
24 tend to operate for about a 30-year period. That seemed
25 to be a reasonable amount of time. We weren't convinced

1 that in -- these global warming pollutants have impacts
2 over centuries, that a few years, you know, in that time
3 period early on was going to change the overall impact of
4 global warming.

5 And we handled the range of uncertainty by
6 averaging a number of different runs together. But this
7 is no different than we do when we set a standard or we
8 say, "Well, how much toxic does it take to get to 100 in a
9 million risk?" And then we manage that risk there. We're
10 actually dealing with a range of risks, and we have to
11 shrink it for regulatory effectiveness and convenience to
12 a point number.

13 So we're doing all those same things here that we
14 did before. It's just a different area of the science.

15 And in terms of, you know, the different results,
16 you basically -- if you assume that the rest of the world
17 can grow food at rates and yields like the U.S., you don't
18 need a whole lot of land to replace the land that U.S.
19 food has come from. If you assume that the rate's going
20 to be very much lower and there's not going to be much
21 technological improvement and that the price impacts
22 aren't going to -- you know, and make farmers around the
23 world invest and come closer - not equal our productivity
24 but at least come closer - if you assume those things
25 aren't going to happen, then you get very large land use

1 impacts. And that's what we're seeing.

2 And we tried to make the inputs reasonable, as
3 reasonable as we could. And then among that, I think
4 mostly the accommodating policy comes from the decision to
5 say allow a 30-year period to make up for any initial
6 increment. And that is a policy call. And it was
7 designed -- and I think -- we think it's okay, because it
8 drives things the right direction. It drives us from
9 fuels today to better fuels in the future. And it, you
10 know, does it in a slow manner so that we don't have a big
11 problem with making the transition.

12 CHAIRPERSON NICHOLS: If I could just comment
13 here since we're referring to people whose pictures were
14 on the front of that presentation.

15 The late Dr. Alex Farrell did a briefing for me
16 shortly after I came to the Air Resources Board about this
17 rule. And I remember asking him the question, "Why don't
18 we just ban all grown fuels, let's just stop it now, and
19 insist that nothing that isn't a waste material be put
20 into the California fuel supply."

21 And his response was that from a technical
22 perspective that was probably the right thing to do; and
23 if we had the courage to do it, he would be happy to
24 support it. But that it didn't seem as though from an
25 economic perspective that was going to be a very

1 successful strategy. And I've just borne that in mind
2 throughout this whole process. And I'm sure we will
3 continue to hear more debate, not only today, but on into
4 the future about how friendly or unfriendly we are or
5 should be towards the idea that we can grow our way out of
6 our dependence on petroleum.

7 But I think that -- I think the staff's done a
8 good job of at least explaining why they've taken the path
9 that they did.

10 Yes, Dr. Balmes.

11 BOARD MEMBER BALMES: Well, I just wanted to feed
12 off that last sentence.

13 Though the original staff presentation was
14 elegant and I followed it clearly, having Mr. Scheible
15 sort of lay it all out there in very direct terms I think
16 was very helpful. That kind of information processing
17 makes our decision making easier. So I appreciate that.

18 CHAIRPERSON NICHOLS: Okay. Thank you.

19 BOARD MEMBER BERG: Madam Chair, could I just ask
20 one other --

21 CHAIRPERSON NICHOLS: Yes, please.

22 BOARD MEMBER BERG: Thank you.

23 In looking at staff's slide 26 and 27, which is
24 the ethanol land requirement, I'm not sure that I'm
25 connecting the dots as to why the indirect land use

1 wouldn't be incremental. In other words, we're already in
2 2008. Corn is dedicated to production. I don't
3 understand why the current production has an indirect land
4 use value. I do understand where by 2015 an additional 10
5 percent will be needed where that would have an indirect
6 land use. And so if you could connect those dots for me,
7 that'd be helpful.

8 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Okay. Again
9 let me provide a wider view. As investigating how it all
10 works, you have to put in perspective the world has a
11 growing population and a more affluent population and is
12 eating more. So not only in proportion to population
13 growth, but more people are eating protein from animals
14 and that takes more grain and other feeds to be put into
15 the system. So we have a constant growth and around the
16 world, and we have a choice to make in terms of what do we
17 use our food resources for.

18 And it is incremental. There's been land use
19 change from the growth in biofuel production between 19 --
20 the 1990s, when it started, and 2008. And there will be
21 more if we grow to 15 billion gallons.

22 It's also reversible, if we stop doing it or use
23 less fuel. It's not the land that's been already changed
24 from nonagricultural uses into agricultural use. That may
25 not go back. But other changes won't take place, because

1 we're -- you know, it's a constant thing. Biofuels
2 production is not the major cause of land use change
3 around the world. It's one of the causes and it
4 contributes to it.

5 And it really doesn't matter when you start using
6 it or when you stop using it. You're going to have the
7 effect or turn the effect around, either way. So that's
8 kind of the basic premise why it makes sense to go -- to
9 put the program together the way we did and why we didn't
10 want to have a situation where some -- some amount of fuel
11 was somehow grandfathered because changes in using it
12 wouldn't have an effect. We think there is an effect from
13 each time that you either increase or decrease the use of
14 the fuel in terms of the global warming consequences.

15 CHAIRPERSON NICHOLS: Any other questions at this
16 moment?

17 Yes, Dr. Telles.

18 BOARD MEMBER TELLES: You just mentioned
19 something that kind of caught my interest. And that was
20 that biofuels aren't the major cause of land use changes.
21 And what percentage of the land use changes do they really
22 represent? I know it's uncertain, but...

23 DEPUTY EXECUTIVE OFFICER SCHEIBLE: It's a small
24 percent. There's many other reasons why --
25 deforestations. And also when you look at what we

1 projected. Often in the media what you will see is a
2 blanket statement: Biofuel use in the U.S. is causing
3 tropical forests to be deforested. Well, there's only 7
4 percent of the land use change that our analysis says
5 comes from forest outside the U.S. 80 percent of the land
6 use change we think is more akin to grasslands, because
7 it's land that doesn't have trees on it and maybe uses its
8 grazing land or marginal land and comes into play.

9 So the need for timber, just poor practices in
10 many nations contributes to the bulk of deforestation.
11 And really ultimately I think we all believe that
12 hopefully we won't need to have a land use element of a
13 fuels policy because we'll have land use -- sustainability
14 land use policies in place around the world that
15 address -- regardless of the reason why the land changes,
16 we will be preventing things from happening we don't want.
17 We'll be preventing tropical forests deforestation.
18 Considering when we do land use change, when we take ag
19 land and we put urban development on it, it doesn't -- you
20 know, the effect is the same regardless of the cause: Why
21 did you lose the land resource.

22 CHAIRPERSON NICHOLS: There's been a lot of
23 comment, I'm sure - other Board members have heard it -
24 trying to get the Board to take a much more expansive view
25 of this issue. And I'm sure we'll hear more of it today

1 and there will be more discussion coming forward.

2 Did you want to follow up?

3 BOARD MEMBER TELLES: One more question.

4 On slides 25, 26, and 27, you display kind of a
5 stark gobbling up of the midwest by ethanol. In that same
6 timeframe, what's the change in yield in corn? Is that --
7 I mean if you estimated it's a static no change in yield,
8 I mean Iowa and Nebraska and all these states are going to
9 be gobbled up by corn ethanol, but --

10 CHAIRPERSON NICHOLS: It's not really a gobbling
11 up. It's like a salvation --

12 BOARD MEMBER TELLES: Well, I mean they --

13 CHAIRPERSON NICHOLS: -- if you look at it from
14 the corn grower's perspective.

15 BOARD MEMBER TELLES: Well, what I'm getting at
16 is the purple part of the square there actually increasing
17 in yield as it's decreasing in size.

18 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Yeah, it's
19 about a 10 percent increase, I believe, from 2000 to 2008
20 or 9.

21 BOARD MEMBER TELLES: So as you gobble up a
22 little bit of the midwest with corn ethanol, the rest of
23 the yield of corn is still somewhat available; it's not
24 being reduced as much as actually being displayed in these
25 diagrams?

1 DEPUTY EXECUTIVE OFFICER SCHEIBLE: No, the
2 diagram -- I think -- I hope the diagram is accurate.
3 We've taken into account both the yield increase and the
4 biofuel increase. If we had to make biofuel out of corn
5 without the yield increase, we'd be dedicating a much
6 higher percentage of the corn acreage to biofuel.

7 BOARD MEMBER TELLES: The diagram here says by
8 area, not by yield -- by surface area.

9 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Well, can
10 staff clarify that we incorporated both factors, like I
11 hope we did.

12 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Yes,
13 we did.

14 BOARD MEMBER TELLES: So is this a yield or an
15 acreage?

16 DEPUTY EXECUTIVE OFFICER SCHEIBLE: It reflects
17 both things. It reflects yield increases. And then the
18 size of the blue square is the percent of that acreage,
19 which includes the yield increase that has to be devoted
20 to the biofuel crop if we're to get to the goal of 15
21 billion gallons of corn ethanol.

22 CHAIRPERSON NICHOLS: Which is -- right.

23 All right. First of all, I want to apologize for
24 my comment earlier that I was going to limit the testimony
25 to two minutes. That was included in the written

1 comments, and it wasn't intentional. I hadn't actually
2 had a chance to think about it, to tell you the truth.

3 And I think given the importance of the issues
4 and the fact that we have a large but not extreme number
5 of people who have asked to testify, that at least in the
6 beginning we'll start off giving everybody three minutes
7 apiece to testify.

8 I would like though to let you know that we're
9 planning on taking a lunch break at one. And so if you
10 want to plan your time accordingly, that might be a
11 factor.

12 And I think we should give ourselves a brief
13 break, like five minutes -- will that do? -- a five-minute
14 break right now before we then get to the testimony.

15 Thank you.

16 (Thereupon a recess was taken.)

17 CHAIRPERSON NICHOLS: All right. Ladies and
18 gentlemen, we're ready to begin our testimony this
19 morning.

20 The first three witnesses, if you could please
21 come forward, Frank Caponi, Matt Solomon, Geoff Cooper.

22 Okay. Frank Caponi, are you here?

23 There you are. Okay.

24 This is the burden of being number one.

25 And I bet you'e not talking about ethanol either.

1 I'm just guessing.

2 Followed by Matt Solomon and Geoff Cooper.

3 MR. CAPONI: Are we on yet?

4 There we go.

5 CHAIRPERSON NICHOLS: There we go.

6 MR. CAPONI: Good morning, Madam Chair.

7 CHAIRPERSON NICHOLS: Good morning.

8 MR. CAPONI: Caught me by surprise. I think I'm
9 going to buy a lottery ticket on the way home.

10 (Laughter.)

11 MR. CAPONI: My name is Frank Caponi. I'm
12 representing the L.A. County Sanitation Districts. I'm
13 trying to talk into this mike.

14 There we go. That's a little better.

15 CHAIRPERSON NICHOLS: Good. Thank you.

16 MR. CAPONI: These stands, they don't support
17 tall people.

18 You're right, I'm not here generally to talk
19 about ethanol, but mainly to talk about waste-derived
20 fuels in transportation. And this has always been one of
21 the goals our agencies, is really to maximize our
22 renewable sources. As I catch my breath here running down
23 the isle.

24 We've been very successful in this effort. We've
25 generated over 120 megawatts of electricity from biomass

1 and biofuels. And we were the first in the world probably
2 to take landfill gas and develop a CNG with that. And we
3 also operate CNG in LNG stations.

4 We're very supportive of the states that's had to
5 incorporate biogas as a low carbon fuel standard.

6 But we have concerns that the regulation does not
7 fully support enough of the waste-derived fuel that's
8 available today and will be available in the future.

9 Some examples of this are biosolids to
10 transportation fuels, green waste to cellulosic ethanol -
11 I am going to talk about ethanol - MSW to fisher trope
12 diesel fuel. So there's a lot of possibilities out there
13 for waste-derived fuel. And these fuels typically have
14 extremely low well-to-tank carbon footprints since they're
15 mostly produced locally. And there's limited
16 transportation impacts. And since most can be produced at
17 existing facilities, there's a limited direct and indirect
18 land use impacts. So we're dealing with really an ideal
19 fuel source here.

20 Now, we've met with staff on this issue. And
21 they assure us that we'll be working on new pathways to
22 take advantage of more waste to alternative fuel options.
23 So we're very appreciate of staff for that.

24 And we really look forward to working with staff
25 on maximizing potential of waste-derived fuels. And I

1 just wanted to bring this to the attention of the Board.

2 Thank you very much.

3 CHAIRPERSON NICHOLS: Thank you very much. I
4 think you're first because you signed up first. We
5 haven't tried to sort these at all.

6 MR. CAPONI: Thank you.

7 CHAIRPERSON NICHOLS: So congratulations.

8 Matt Solomon, followed by Geoff Cooper and Cathy
9 Reheis-Boyd.

10 MR. SOLOMON: Good morning. My name's Matt
11 Solomon. I'm here today representing the Northeast States
12 for Coordinated Air Use Management, also known as NESCAUM.

13 NESCAUM is an association of state air quality
14 agencies in Connecticut, Maine, Massachusetts, New
15 Hampshire, New Jersey, New York, Rhode Island and Vermont.

16 NESCAUM strongly supports California's proposed
17 approach for a low carbon fuel standard. We believe that
18 the proposed regulation will help to achieve California's
19 greenhouse gas reduction objectives, while serving as a
20 model for other jurisdictions.

21 --o0o--

22 MR. SOLOMON: The NESCAUM states are committed to
23 aggressive action on climate change, and we recognize that
24 a low carbon fuel standard could be an important tool to
25 reduce the greenhouse gas emissions from the

1 transportation sector. In this light, the NESCAUM states
2 along with Delaware, Maryland, and Pennsylvania have been
3 evaluating the potential for a regional low carbon fuels
4 program, and we've been closely monitoring California's
5 progress.

6 We strongly support staff's recommendation to
7 include the indirect effects of land use change when
8 calculating fuel carbon intensity. Recent research has
9 shown that significant impacts -- excuse me -- significant
10 emissions might indirectly accompany the conversion of
11 land for biofuels production. The proposed regulation
12 appropriately counters this risk by accounting for these
13 indirect effects.

14 While additional research might lead to refined
15 estimates of certain life cycle impacts, the regulation as
16 proposed will immediately improve the outlook for low
17 carbon fuels in California by motivating producers of
18 current and future transportation fuels to minimize the
19 emissions associated with their products.

20 We note that the carbon intensity of gasoline and
21 diesel fuel could increase in future years as greater
22 volumes of oil sand and other nonconventional feedstocks
23 enter the market. Meanwhile efforts to commercialize
24 alternative fuels will continue to move forward with or
25 without a low carbon fuel standard.

1 The LCFS will signal to producers of the next
2 generation of fuels that life cycle carbon emissions must
3 be counted and controlled. Moreover, the regulation will
4 provide ARB with the tools to keep track of critical
5 information on life cycle emissions, while accommodating
6 future improvements in analytical methods.

7 In conclusion, NESCAUM thanks ARB and staff for
8 your hard work in developing this proposal, and we urge
9 the Board to expeditiously adopt the proposed regulation.

10 Thank you.

11 CHAIRPERSON NICHOLS: Thank you very much.

12 Kathy -- I'm sorry. Geoff Cooper, followed by
13 Cathy Reheis-Boyd and Ralph Moran.

14 I guess you can read for yourself on the chart.

15 MR. COOPER: Good morning. My name is Geoff
16 Cooper and I'm representing the Renewable Fuels
17 Association. We are the nation's largest trade group
18 representing U.S. ethanol producers.

19 First we'd like to commend the State of
20 California for its vision and leadership in developing
21 energy policies that aspire to reduce greenhouse gas
22 emissions, decrease reliance on fossil fuels, and
23 stimulate the economy.

24 However, we are greatly concerned that because
25 the regulation creates an unlevel playing field for both

1 first and second generation biofuels, these goals
2 ultimately may not be reached.

3 As noted earlier in the presentation from ARB
4 staff, we have performed our own exhaustive analysis of
5 the land use impacts of expanding corn ethanol to 15
6 billion gallons per year by 2015. Through that process, I
7 think we have, you know, learned that we are certainly not
8 convinced that expansion of ethanol production in the U.S.
9 has caused or will cause indirect land use changes. The
10 empirical data on global land use trends certainly does
11 not support the land use change theory.

12 At the same time, the world is not eating less
13 food as postulated by one of the presenters this morning.
14 Caloric intake on a per capita basis globally last year
15 was at an all time record high according to FAO.

16 Further, tremendous increases in grain output per
17 unit of land coupled with growing supplies of animal feed
18 co-products, like distillers grains, have essentially
19 eliminated the need to expand global cropland base in
20 response to increased U.S. biofuels production.

21 It is also notable that despite the predictions
22 of some supporters of the indirect land use concept,
23 exports of grains and oil seeds from the U.S. have not
24 declined appreciably and, in fact, last year we saw record
25 exports of both corn and soybeans from the United States

1 even in light of record ethanol production.

2 So in closing, we'd like to offer several
3 recommendations to the Board.

4 Number one, we'd like to recommend that the Board
5 go forward and adopt the regulation based on direct
6 greenhouse gas effects only. This is because the
7 greenhouse gas emissions that have been analyzed for all
8 fuels are on a direct basis, whereas only biofuels have
9 been subjected to the enforcement of indirect effects.

10 We further recommend that the Board direct the
11 staff to refine the modeling framework used for the
12 indirect land use change analysis and strive to reduce the
13 tremendous uncertainty of the analysis. This should
14 include much more sensitivity analysis. And as discussed
15 earlier this morning, the results should be presented in
16 confidence intervals rather than simple point estimates.
17 I know that's problematic in terms of how you assign a
18 number. But the uncertainty of these estimates, you know,
19 dictates that we look at confidence intervals.

20 Finally, we request that the Board direct the
21 staff to make an earnest attempt to uniformly evaluate all
22 fuels.

23 Thank you.

24 CHAIRPERSON NICHOLS: Thank you very much.

25 Cathy Reheis-Boyd.

1 MS. REHEIS-BOYD: Good morning, Chairwoman
2 Nichols, members of the Board. I'm Catherine Reheis-Boyd,
3 Executive Vice President of the Western States Petroleum
4 Association.

5 I think you all know we've been extremely engaged
6 in this process. We have put a lot of resources in and we
7 are invested. We've hosted several collaboratives. So
8 we're here and will continue to be.

9 But this is the most transforming fuel regulation
10 any of us has ever undertaken. It's certainly a different
11 paradigm. And we're using -- obviously looking at
12 existing fuels and existing vehicles in the past. And now
13 we're looking at fuels in vehicles that haven't even been
14 envisioned in some cases, and certainly not
15 commercialized.

16 So we are lowering the carbon intensity of the
17 entire pool of fuels. And that's a big undertaking. The
18 success of this obviously will rely on meshing all of that
19 together and making sure that the consumers can accept it.

20 We remain troubled today that we are adopting
21 this regulation with the many uncertainties that are still
22 within it, and therefore we cannot support its adoption in
23 this form, regardless of how meritorious the goals may be.

24 We do know that there are lots of carbon
25 intensity values for future fuel pathways that have not

1 yet been determined, and that's been noted in previous
2 comments. So we're unsure of the availability and cost
3 effectiveness as we go forward meeting these by 2020.

4 But we are pleased to see that there are in
5 today's resolution and 15 today comment regulation
6 language a recognition of the need to complete this by
7 year-end and bring back to the Board those additions the
8 triennial reviews for 2012 and 2015 and that those be a
9 public process and part of the regulatory program; and
10 that it also include a diverse advisory committee that can
11 help the staff and the Board kind of explore these
12 pathways as we go forward, because there will be new
13 information I'm sure we'll learn in the future.

14 And we think that will help avoid some of the
15 unintended consequences simply as well as the 2010
16 reporting year only, which is in the regulation, the
17 backloaded compliance schedule, the inclusion of the
18 enforcement protocols, and the evidence of the physical
19 pathway, which are things we do support in the regulation.

20 We're not at all convinced that the program will
21 deliver \$11 billion in savings. But it doesn't really
22 matter what we think. What matters is what the consumer
23 thinks. And as we go forward, we know one thing: They
24 will be the ultimate judge of the success of this program.
25 And we know that when they want fuel, they want it when

1 they want it and where they want it and they want it to be
2 affordable. And so if they don't have that, they're
3 usually pretty expressive about how unhappy they may be.

4 So the reviews are essential. And hope that you
5 as the Board adopt what the staff has put forward in that
6 regard.

7 Great deal more work needs to be done. It's,
8 frankly, unclear to us how we will comply with this
9 regulation given what's in it today. But we are committed
10 to continue to work with you and the staff to try to make
11 sure we can deliver a successful program that doesn't
12 impact the consumers, the State, or the economy in a
13 negative manner. What I see now, that's a pretty tall
14 order. But we'll be back.

15 CHAIRPERSON NICHOLS: Yes, you will. Thank you.

16 Ralph Moran.

17 MR. MORAN: Madam Chair, members of the Board.

18 BP shares the goal of reducing greenhouse gas
19 emissions, and we acknowledge the need to and the
20 challenge in addressing emissions from the transport
21 sector, including fuels.

22 In written comments and in conversations with
23 staff and with some of you, we have discussed our concerns
24 with the regulation as it's currently written. I won't go
25 into the details of those concerns. We'll instead refer

1 you to our most recent comment letter of April 21st,
2 except to highlight one issue. That is, the role of
3 electricity in the low carbon fuel standard.

4 We're grateful that staff has acknowledged the
5 importance of getting it right with this pathway,
6 evidenced by the related language in the resolution that
7 we saw this morning. So thank you for that. So I guess
8 I'm here to support that resolution language and to ask
9 you to go further.

10 Let me explain. In addition to being a major
11 provider of transportation fuel in the State and globally,
12 BP is increasingly a provider of low carbon power. We
13 currently have in place or underway projects in California
14 that include solar, wind, first-of-its-kind hydrogen
15 energy with carbon capture and storage, and highly
16 efficient low carbon combined heat and power.

17 Every one of these technologies significantly
18 reduces the impact of greenhouse gases versus business as
19 usual.

20 As a regulated party under the Low Carbon Fuel
21 Standard, we would like the opportunity to provide our low
22 carbon fuel power for transportation as the means of
23 generating credits within the Low Carbon Fuel Standard.

24 We're not going to be a company that sits back
25 and waits for others to develop and produce alternative

1 fuels and then purchase what may or may not come on the
2 shelf. We will be participating in the innovation and
3 development of these fuels. We are already doing this in
4 a big way for biofuels, and we'd like the opportunity to
5 do that for all fuel pathways.

6 Unfortunately, as the regulation is currently
7 written, the only entities that are able to receive Low
8 Carbon Fuel Standard credits for providing electricity are
9 the legally defined load serving entities.

10 If innovation is the goal, we don't believe it's
11 wise for the regulation to create or perpetuate a closed
12 market. We believe that the electricity pathway, like
13 every other fuel pathway, should be open to competition
14 and to the market. We believe the Low Carbon Fuel
15 Standard regulation and the State would benefit from
16 language that incentivizes and rewards at-risk capital to
17 innovate and invest in incremental low carbon power for
18 the transportation sector beyond that already required by
19 the RPS.

20 So we urge the Board to direct staff to go
21 further and to identify the barriers to opening up this
22 important pathway and to develop and implement a workplan
23 to address these barriers.

24 Thank you.

25 CHAIRPERSON NICHOLS: Thank you.

1 Greg Karras.

2 BOARD MEMBER SPERLING: Can I just ask one small
3 thing?

4 CHAIRPERSON NICHOLS: Yes.

5 BOARD MEMBER SPERLING: So what you're saying is
6 you're supportive of the resolution as it's been written,
7 you would just like to see an elaboration of that; is that
8 correct?

9 MR. MORAN: That's correct.

10 BOARD MEMBER SPERLING: Okay.

11 CHAIRPERSON NICHOLS: Okay.

12 MR. KARRAS: Thank you. Greg Karras, Communities
13 for a Better Environment.

14 In the end, ARB argues that it has to drive this
15 bus and everybody has to be on board.

16 But we're headed off a cliff and the ARB is
17 asleep at the wheel.

18 Emissions from gasoline refining are increasing
19 and could double or triple. The cause of this,
20 specifically the properties of cheaper, lower quality oil
21 that make it inherently more polluting to refine, is not
22 addressed by the proposed standard.

23 Let me give you an example. Sulfur levels in
24 crude going into refineries are thousands of times those
25 in the gasoline that you limit to control pollution, and

1 they're rising. We have submitted research -- original
2 research from California refineries showing the impacts of
3 that on increasing GHG emissions from one process.

4 South Coast Air Quality Management District has
5 asked you to look at that research of ours too.

6 Unfortunately, neither sulfur nor any of the
7 other properties of oil that make it more polluting to
8 refine is limited at the point where it goes into the
9 refinery by this proposal. That allows increasing
10 emissions from refining dirtier oil in the predominant oil
11 refining center of the American West.

12 Worse, the proposal to sell pollution allowances
13 could protect investments in the equipment for that dirty
14 oil refinery. Worse, that re-entrenchment of oil
15 infrastructure could further block noncombustion
16 alternatives, and that pollution trading could give corn
17 ethanol refiners money to invest.

18 All this would force the dirtiest of alternatives
19 to today's oil.

20 Increased emissions from dirtier oil combined
21 with the emissions per barrel of oil replaced by biofuels
22 like ethanol would foreclose would make it virtually
23 impossible to achieve the total emissions reductions
24 widely believed essential if we're going to avoid severe
25 impacts of climate change. Meanwhile, increasing toxic

1 co-pollutants from existing oil and new biofuel refineries
2 would further poison nearby low income communities of
3 color.

4 These fundamental flaws must be fixed before the
5 standard is adopted. At a minimum, take the steps set
6 forth and supported in full in our written comments.

7 Cap each refinery's oil quality where it is now.

8 Don't sell pollution credits that protect dirty
9 oil investments and violate our rights.

10 Make room for the noncombustion alternatives we
11 need.

12 This is reasonable. It's necessary. It's
13 urgent. Please do not adopt the proposal without making
14 these amendments.

15 CHAIRPERSON NICHOLS: Thank you.

16 Tom Darlington.

17 MR. DARLINGTON: Good morning.

18 Over the past year I've worked with RFA
19 considerably on the corn ethanol carbon intensity,
20 including land use. We've now only published our own
21 report on land use; we've obtained the GTAP model that's
22 been used with Purdue to estimate the land use changes.
23 And I'd like to make three points.

24 First point is that there is an error in the corn
25 ethanol value in the initial statement of reasons. Our

1 analysis base on all of CARB's assumptions is that the
2 corn ethanol land use number should be about 28 instead of
3 30. This is important because with a land use value of
4 28, it means that the carbon intensity of California RFG
5 with midwest corn ethanol is actually lower than gasoline
6 and that Californians have been enjoying greenhouse gas
7 reductions due to corn ethanol these past five years since
8 the phaseout of MTBE, and will continue to enjoy these
9 greenhouse gas reductions through time when the Low Carbon
10 Fuel Standard is implemented.

11 The second point is that this good news has
12 occurred even though CARB's analysis of land use effects
13 of corn ethanol has been somewhat slanted against this
14 feedstock. I don't say that it's been slanted
15 intentionally, but it is slanted.

16 Now, admittedly, to complete an analysis of this
17 type is quite complicated and involves an awful lot of
18 factors. In our written comments on the initial statement
19 of reasons we made a list of all the factors that were
20 either not included in the analysis or not included to the
21 extent they should be.

22 There are about ten factors that we found that
23 would either increase or decrease that land use estimate.
24 Eight of the ten factors would decrease it and two of the
25 factors might increase the land use estimate. A couple of

1 those factors were mentioned by Michael O'Hare this
2 morning.

3 We believe the analysis therefore should be more
4 balanced.

5 The third point I'd like to make is that in a
6 meeting with CARB staff last week, Professor Hertel from
7 Purdue recommended changes to two elasticities used in the
8 model that are used to estimate land use changes. He
9 talked about those this morning. It was sort of the
10 Solomon solution.

11 We did implement those changes in the GTAP model.
12 And when we change just those two elasticities, the corn
13 land use value dropped to a range of about 16 to 18 grams
14 per megajoule from 28.

15 In summary, corn ethanol has been reducing GHG
16 emissions in California for five years. And as time goes
17 on, I think it will be shown that corn ethanol has and
18 will continue to provide increased greenhouse gas emission
19 reductions in the State.

20 CHAIRPERSON NICHOLS: Okay. Thank you, Mr.
21 Darlington.

22 Just so it's clear, I have not been calling on my
23 fellow Board members to question each of these or the
24 staff to respond. I'm hoping you're taking notes. And I
25 expect we will have some time for responses to all of

1 these important inputs and criticisms, as least -- not to
2 every criticism hopefully, but to the major points that
3 are made, of which that's certainly one.

4 Okay. Thank you.

5 Paul Wuebben.

6 MR. WUEBBEN: Good morning, Madam Chair, members
7 of the Board. I'm Paul Wuebben with the South Coast Air
8 Quality Management District.

9 So I'd like to have my slides brought up.

10 Would you like me to move the microphone?

11 CHAIRPERSON NICHOLS: You're going to have to get
12 this microphone up closer to you or we will not hear you.

13 MR. WUEBBEN: Excuse me. I'll do that. Thank
14 you.

15 CHAIRPERSON NICHOLS: Sorry.

16 (Thereupon an overhead presentation was
17 Presented as follows.)

18 MR. WUEBBEN: Yes, I'm Paul Wuebben with the
19 South Coast Air District. I appreciate the opportunity
20 this morning.

21 We first want to indicate our strong support for
22 the adoption without delay, and also note that we're
23 certainly strongly endorsing the bifurcation between the
24 diesel and gasoline and also the incorporation of direct
25 and indirect land use.

1 What I did want to do -- and next slide please --

2 --o0o--

3 MR. WUEBBEN: -- is start with some specific
4 suggestions where we do think that some important
5 improvements we're strengthening could be accomplished.

6 With respect to the overlap between the Low
7 Carbon Fuel Standard and the RFS, we would suggest that
8 there be a limitation, a prorated, such that the volumes
9 of fuel under the federal standard would only represent 11
10 percent under the Low Carbon Fuel Standard. That figure
11 was reflected in the staff eyesore, for example.

12 Next slide please.

13 --o0o--

14 MR. WUEBBEN: We also believe that there's
15 several other important modifications that could be made
16 that would definitely strengthen the regulation. As was
17 noted earlier, the crude API gravity for all batches is
18 very relevant and materially affects the greenhouse gas
19 pathway. And so we would recommend that the specific
20 accounting that is done include each batches of API
21 gravity rather than just an industry average over a
22 ten-year period.

23 Second, we would strongly urge that the full
24 hydrogen pathway -- or hydrogen production be included, as
25 there's substantial merchant hydrogen that's utilized in

1 the refining of gasoline, as well as a sulfur reduction in
2 diesel fuel.

3 And, thirdly, we would urge that the RPS not be
4 double counted, that is, that we prohibit the crediting of
5 PHEV credits under the renewable portfolio standard that
6 the PUC has adopted, just to keep the carbon accounts
7 balanced and fair.

8 Next slide please.

9 --o0o--

10 MR. WUEBBEN: And, lastly, there are a number of
11 items -- and we want to reflect that the staff have made
12 some really diligent efforts throughout the process, but
13 particularly in the last change -- in the series of
14 changes, that there have been a number of workshops and
15 advisory boards. And we're very appreciative of that.

16 There's some additional items that we would urge
17 that be considered, namely, perhaps a more focused works
18 process on the indirect land use control quest in annual
19 EER updates since they drive a lot of the analysis; a
20 commitment for pathway validation and auditing, because
21 that's a crucial component here for credible accounting;
22 the monitoring of light-duty dieselization trends;
23 tracking of actual emissions in contrast to the intensity
24 per megajoule; and, finally, a rigorous multimedia
25 process. And I appreciate the reflection of that in the

1 final resolution.

2 So we stand here with a monumental regulation on
3 your doorstep and we commend the staff and the Board for
4 acting in this area.

5 CHAIRPERSON NICHOLS: Thank you.

6 The next three witnesses appear to me to sort of
7 belong together - Osofsky, Souza, and Gruen - that is, you
8 all sign on the same written comments. So if you want to
9 come up together or at least right after each other, that
10 would be great.

11 MR. OSOFSKY: Yeah, they're here now.

12 CHAIRPERSON NICHOLS: Good.

13 MR. OSOFSKY: Okay. Good morning. I'll try to
14 be brief.

15 My name is Alan Osofsky with Rogers Trucking in
16 San Leandro, California. And I'm also here representing a
17 group formed at the Port of Oakland, of a group of
18 truckers called West State Alliance, WSA. And I have
19 participated in your workshops in January.

20 I just have four points I'd like to get across to
21 you.

22 Although I said "opposed" on our card, I'm not
23 opposed to clean air. We want to do our part. We're
24 retrofitting, we're upgrading our fleet, and we're trying
25 to do everything possible.

1 But what we don't want is a return to what
2 happened in 1993 when the fuel got reformulated. The
3 State was very gracious in helping us replace our fuel
4 pumps. However, we lost man-hours, service failures to
5 our customers, and downtime of our equipment. So whatever
6 you do, bring me something that is really -- that's been
7 tested and that we can use and be comfortable with. We
8 want to do our part.

9 And if we do use this new fuel, will we be
10 protected from indemnity if we should -- or if there are
11 any problems with stormwater or Proposition 65 issues
12 arise. We'd like to know the answer to that.

13 So we ask that you do multimedia review of the
14 fuel that you choose to pass and make us feel comfortable
15 about what we're putting in our trucks.

16 We also ask you do the proper testing, and wait
17 till around December before you adopt the fuel. And if
18 you do adopt it, we would like to see some kind of a
19 periodic testing or public review of the regulation every
20 six months until 2020 to ensure that the vehicles and
21 equipment are not impacted by this change of fuel.

22 And, lastly, at the January workshop I offered
23 our fleet as a test fleet, and that offer still stands.
24 We would like to participate in this process.

25 So thank you very much.

1 CHAIRPERSON NICHOLS: Thank you.

2 MR. SOUZA: Good morning. My name is Ricky
3 Souza. I'm with Weber Distribution. We're an association
4 of IWLA.

5 Weber has 500 trailers, 200 trucks. We have a
6 newer fleet - '06, '07.

7 The fuel reformulation really makes us nervous as
8 business owners. It doesn't give us the ability to price
9 for new business because we don't know what the additive
10 is that's going into the fuel, we don't know what the end
11 product will be at the price of the pump.

12 This is also -- we have a lot of customers that
13 strictly warehousing in California with us. And we think
14 this could cause some leakage where they would seek other
15 companies and other outside carriers out of the State of
16 California where they can get lower fuel prices in Nevada
17 and Arizona.

18 We're also concerned -- we don't know what the
19 fuel will do to our equipment, to our engines. We're just
20 seeking indemnification from the fuel. We just ask for it
21 to be tested before we go forward with it.

22 Also, we want to know the recipe for the
23 reformulation. We want to know the process on where the
24 product's coming from and how it's being added. And we
25 also want to know how much it's going to be at the pump,

1 the end users. That's what we are.

2 And that's all I have. Thank you.

3 CHAIRPERSON NICHOLS: Thank you.

4 MR. GRUEN: Good morning. I've had the pleasure
5 of speaking with you in January and March in your
6 workshops. And I appreciate you giving me an opportunity
7 to discuss with you today. My name's Josh Gruen. I'm
8 representing the California Multimodal and their family of
9 companies, one of the largest intermodal drayage providers
10 in the State of California.

11 I'm also a member of a family of companies of the
12 Western States Goods Alliance, part of the Coalition of
13 Responsible Transportation for Clean Air. We're very much
14 in part and in step with making a better state, making a
15 cleaner state. I have kids. I worked in the port. We
16 all want to have a cleaner state.

17 We've contributed this year 141 new LNG tractors
18 in our fleet, 254 2009 diesel trucks. We're doing our
19 part. We're doing the right stuff. We don't want to
20 have -- be put in a situation where we're getting another
21 fuel added on top of this right now, as I heard someone
22 say, the commercial aspect of the industry. The
23 commercial aspect of the industry is that it's falling
24 apart right now from the economy in a myriad of ways.

25 There will be companies that will not be in

1 existence for sure this coming year. We don't expect --
2 myself and our company have had layoffs. We don't see it
3 turning any time soon. These additional challenges of
4 cost on things that we haven't been proven as of yet cause
5 a significant concern.

6 Identifying us of any stormwater or other
7 liabilities from our company is a significant concern.
8 Testing and given the ability to test this new fuel
9 regulation -- formulation is quite important to us to see
10 that it doesn't affect us in a negative, doesn't affect
11 our customers that have run downtime to go work with
12 somebody else.

13 We have thousands of people that we employ and
14 want to keep employed. We don't want to jeopardize any of
15 these jobs.

16 We look through just a whole bunch of stuff. I
17 mean, you know, how will these costs be distributed in
18 real cash flow terms; out-of-pocket dollars that must be
19 spent every day from the day of the program, not averaged
20 over a period of many years. And then estimate energy
21 cost savings that may or may not be realized much later.

22 Again, we'd like to see a public review process
23 every six months to 2020. Again, we'd like to see
24 these -- this fuel once we find out what the formulation
25 to test it before it's put into it.

1 And in closing, we ask that you stop and develop
2 rule-making in compliance with the Administrative
3 Procedures Act and that can be adopted by the Office of
4 Administrative Law based on completeness. Do the
5 implementation properly and protect California from going
6 down a path with clear scientific record of causing
7 desperate economic harm to every California-domiciled
8 business.

9 Thank you so much for letting me speak today.

10 CHAIRPERSON NICHOLS: Thank you.

11 Since the three of you have all sort of touched
12 on this one area, and I think it's important for consumers
13 or anyone from the general public who might have wandered
14 into listening to this proceeding, I want to try stating
15 something that I think is correct. And then if I'm wrong,
16 I hope staff will correct me.

17 But as I understand this rule, nothing in it
18 either requires or allows reformulation of gasoline that
19 is being sold. If a lower carbon method for producing,
20 let's say, ethanol as used in gasoline today comes along,
21 the ethanol that's produced from that method is still
22 going to be identical in chemical composition at the end
23 to whatever is being used today, unless they go through
24 some sort of a process to get this approved as a new
25 additive in California. In other words you cannot go

1 around, even if you're an oil company, dumping new
2 chemicals into your product without it having been
3 approved by the regulatory agency. And we're not
4 suggesting that.

5 So this is not a reformulation rule per se. And
6 in fact I don't think it really encourages reformulation
7 particularly because of the other pathways that we've
8 talked about. I mean CNG, LNG, fuel cell, electricity, et
9 cetera, et cetera, those are obviously not things that are
10 going to be blended into gasoline or diesel fuel.
11 However, if I'm wrong about that, I think we'd better
12 explain what it is that is going to happen when somebody
13 wants to change the fuel.

14 DEPUTY EXECUTIVE OFFICER SCHEIBLE: We must have
15 briefed you well, because you're correct on this.

16 (Laughter.)

17 CHAIRPERSON NICHOLS: Great. No, I just was
18 worried about this point.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Most -- I
20 mean the chemicals -- or chemicals in the ethanol has got
21 to meet ethanol specs regardless of the manner in which
22 it's produced.

23 There are two fuels that we know have promise and
24 need to go through the multimedia analysis, and we're
25 doing that now. One is biodiesel, which hasn't gone --

1 it's in use today and it's been used quite a bit, and it's
2 now -- could ramp up and become an important component in
3 the Low Carbon Fuel Standard, and we kind of hope it will.

4 And so that's going through the multimedia
5 analysis.

6 And the other one is butanol, which could serve
7 as a blending agent.

8 If someone comes up with a new thing that shows
9 promise and it looks like it might come in, it too -- and
10 it doesn't fit on the current list, it will have to go
11 through. But we don't -- we see little -- you know, it's
12 not a fuel specification. There's no multimedia analysis
13 to do on the overall program. And the components of it
14 where we get new fuels have to go through what's required
15 by State law.

16 CHAIRPERSON NICHOLS: Okay. You know, I too
17 lived through the reformulated gasoline period. And so I
18 share the concern both about multimedia and about
19 unintended consequences. So this is something we are
20 very -- going to be very alert to.

21 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Right. And
22 you were breathing cleaner air in Los Angeles because of
23 it.

24 CHAIRPERSON NICHOLS: And we are, we are.

25 (Laughter.)

1 BOARD MEMBER SPERLING: You know, perhaps a
2 little addendum to that is, you know, for biofuels that
3 are chemicals that look very much like gasoline and
4 diesel, would they have to go through any further review?
5 Because that is where much of the R&D is going now, is to
6 make those kinds of biofuels.

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: I guess it
8 all depends on how close. You know, you could bring in
9 fisher trope diesel now that's a blending component. And
10 that's just treated as diesel. So it fits under the
11 diesel spec.

12 I guess if you got too exotic, we'd say, you know
13 what, that could pose some additional problems. And you
14 just can't assume because the things that -- it's no worse
15 than the things it's replacing, it's okay.

16 CHAIRPERSON NICHOLS: Right. That's the key.

17 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Yeah, bring
18 us -- so when we see the specifics, we'll have to make our
19 call on that and then follow the law.

20 CHAIRPERSON NICHOLS: Additional comment?

21 BOARD MEMBER TELLES: Just a question to the
22 trucking people and the staff.

23 I think what they're talking about too is not
24 just reformulation but running what is available in their
25 trucks. And the trucks are changing because of our rules.

1 And one of the issues is -- I think B-20 is available now.
2 But some of the truckers have told me that B-20 doesn't
3 really run too well in the new catalytic converters and it
4 gums it up. And is that -- and some of the trucking
5 industries in the region I come from have switched back
6 from B-20 to B-5, which kind of defeats this purpose
7 because it doesn't run in the trucks that we from another
8 regulation have approved.

9 CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: There
10 are a couple things with biodiesel. Most of the trucks
11 manufactured in the past years were not approved by the
12 original truck manufacturer or engine manufacturer to run
13 on anything but very trivial amounts of biodiesel. So
14 there were some warranty issues. Some of them are
15 stepping up to B-20 now.

16 Our original retrofit verifications for our
17 in-use truck rules also did not allow B-20. The
18 manufacturer of the device said no to that. But now those
19 are all being tested and upgraded to allow B-20. But
20 B-20's pretty much the cap.

21 So if there's been problems with it, it's been
22 largely I think around, you know, the lack of good
23 specifications and things like that for the biodiesel.
24 And that's all being worked on too. So I think the
25 picture is more positive towards the future of not being

1 problems. But there were some in the past.

2 BOARD MEMBER TELLES: Well, maybe that kind of
3 says what's being -- happened. But it doesn't really
4 answer my question. And, that is, how many trucks out
5 there can burn what we're proposing that we're going to
6 have available, like B-20? And maybe the truckers when
7 they come by can help inform us on that.

8 Are they going to be able to burn it in their
9 current engines, the ones that they have just purchased to
10 run?

11 CHAIRPERSON NICHOLS: I think that gets back to
12 the issue that Cathy Reheis-Boyd raised though, Dr.
13 Telles, which is that the industry has to sell what the
14 consumers will buy. And they can't force you to use B-20
15 in your truck just because they want to sell more B-20.
16 It's not going to work that way. I mean it won't in the
17 real world, because consumers won't buy it and they don't
18 have to. So the industry will have to supply what the
19 consumers are willing to purchase.

20 CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: No, I
21 think that's exactly true. They can't put out a product
22 in their diesel pumps that half the vehicles are not
23 authorized to run on because it might void warranty or
24 because the trap they're using wasn't originally verified.
25 And so they're going to have to, you know, produce a fuel

1 that everyone can use or they're going to have a very
2 niche market for that fuel, which won't give them much
3 carbon credit.

4 CHAIRPERSON NICHOLS: Well, they'll be buying
5 credits from Southern California Edison for electric
6 chargers.

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And in the
8 beginning years since we have a very gentle ramp-in to the
9 rule, we're talking about small changes -- changes in the
10 nature of the ethanol on the gasoline side, and on the
11 diesel side very small volumes of biodiesel. And
12 hopefully they'll find some -- the customers that want
13 B-20 will get some experience with that. But the rule
14 will be averaging, if biodiesel is used, as B-1 or B-2,
15 some small amount.

16 And we know right now there are some additional
17 issues. Right now only B-5 can be really moved around and
18 stored in most underground tanks.

19 CHAIRPERSON NICHOLS: Okay. I guess we'd better
20 move on.

21 Robert Richards.

22 MR. RICHARDS: Good afternoon.

23 CHAIRPERSON NICHOLS: Afternoon?

24 It is afternoon.

25 MR. RICHARDS: Just barely.

1 I'm Robert Richards of Kern Oil Refining Company.

2 My comments today are presented from the
3 perspective of a small privately held company which has
4 made massive financial investment and commercial
5 commitment to enable it to comply with government mandates
6 to produce cleaner burning gasoline and diesel.

7 Kern oil is a small independent refiner located
8 in Bakersfield, California. Small refiners are recognized
9 by U.S. EPA, CARB, and the California Energy Commission.

10 In 1981, there were 13 small refiners in the
11 State of California supplying fuel. Today there are 2.
12 Kern is the only one of those two supplying California
13 reformulated gasoline today.

14 Small refiners are limited in their capacity. In
15 California they are landlocked without port access. And
16 we don't possess upstream oil and gas or downstream retail
17 marketing.

18 We're also not as complex or energy intensive as
19 large refiners.

20 We produce about 8/10 of a percent of the State
21 gasoline supply and about 2 percent of the diesel supply
22 in California for 2008. A small fraction of the supply,
23 but it's a major part of our business. It is our
24 business.

25 It's difficult to consider the impacts --

1 economic impacts, so we considered the supply impacts.
2 Using the lowest CI biofuel, by 2020 we would have to
3 replace 12 percent of our supply.

4 We agree with the Board that carbon intensity
5 values represent the currency upon which the LCFS is
6 based. We can demonstrate that small refiners, just
7 through small changes in the GREET model, account for 2
8 grams -- less than 2 grams less CI.

9 I'll get to our considerations.

10 We're asking the Board to consider for small
11 refineries that we reduce the carbon intensity reduction
12 goal from 10 percent to 8 percent. We would like to
13 increase the shortfall for small refiners from 10 to 20
14 percent. We'd like to have a four-year exemption for the
15 compliance schedule and also be able to generate LCFS
16 credits.

17 CHAIRPERSON NICHOLS: Thank you.

18 MR. RICHARDS: Thank you very much.

19 CHAIRPERSON NICHOLS: You do have written
20 testimony also?

21 MR. RICHARDS: I do.

22 CHAIRPERSON NICHOLS: Thank you.

23 Okay. Mr. Ruben Jauregui.

24 MR. JAUREGUI: Good afternoon. Thank you.

25 My name is Ruben Jauregui and I'm here

1 representing the Latin Business Association and the Latino
2 Institute for Corporate Inclusion.

3 Our members support the goals of AB 32, and we're
4 looking forward to exploring the opportunities that the
5 new green economy might offer to our businesses and
6 communities. But we're very concerned that in the rush to
7 get started with real regulations to reduce global
8 warming, a lot of important details are being overlooked.

9 The fuel standard you are considering today seems
10 to present several open-ended questions:

11 Will the fuels and vehicles required have been
12 invented, perfected, and tested within the timeframe
13 required?

14 Will these fuels and -- what will these fuels and
15 vehicles cost?

16 Will existing vehicles run on the new fuels
17 without damaging their engines, or will businesses and
18 families have to invest in new cars and trucks?

19 Will the new fuels really reduce greenhouse gas
20 emissions, or will they simply shift them elsewhere?

21 And will they cause increases in other emissions
22 like the ones that create smog?

23 It seems you're making a lot of assumptions that
24 are based on optimistic projections of folks who are in
25 the business of making these fuels and vehicles or would

1 like to and on a sincere desire to do something about
2 global warming.

3 But if we don't have all the answers to the
4 technical and economic projection -- questions, we can't
5 know if the money that we're spending will make a
6 difference.

7 What we do know, once the money is spent, it's
8 gone, whether it winds up helping or not. We need more
9 than high hopes and incomplete research to justify the
10 program.

11 This program, which is Low Carbon Fuel Standard,
12 needs more and deeper research. In the interests of not
13 only our economy but our environment, we need to do this
14 right. Please take the time necessary to come up with a
15 cost effective and environmentally meaningful plan.

16 Thank you.

17 CHAIRPERSON NICHOLS: Thank you.

18 Greg Luli.

19 MR. LULI: Good afternoon, Madam Chairman and
20 Board members. Thank you for giving me the opportunity to
21 speak to you today, representing the alternative biofuels
22 company. I am Greg Luli from Verenium Corporation, which
23 is commercializing lignocellulosic ethanol technology.
24 And I'm from San Diego.

25 And I wanted to say that even though my check is

1 in the opposition side of this column, that we are in
2 favor of a low carbon fuel standard. But it is the
3 indirect land use that has got us concerned. It's a
4 concern from a couple of standpoints:

5 One, from a business or economic standpoint, in
6 that it sets a precedent for the fact that it's being
7 applied only to ethanol and that right now lignocellulosic
8 ethanol, or advanced biofuels, is not well distinguished
9 in the marketplace from corn ethanol. And so there may be
10 a concern there that investors in this area -- and this is
11 a predictable area for lignocellulosic companies that are
12 now getting the funding to bring this technology to
13 commercialization and be able to produce this advanced
14 biofuel.

15 The second obviously is the scientific part of it
16 and the assumptions that go into a model. And we've all
17 talked about that. And we have some concerns about the
18 values that go into that model and the values that are
19 coming out. And with respect specifically to
20 lignocellulosic ethanol, that we know that there are some
21 errors in the assumptions of yield per acre, for example,
22 that really affect the land use as it is applied to
23 lignocellulosic ethanol.

24 And so I guess from the more of a common sense
25 standpoint, if we're saying today that this standard that

1 the indirect land use change is an important aspect of it
2 and it must be applied, then why not apply it across the
3 board to all fuels.

4 And so I guess my recommendation would be that
5 because there's so much uncertainty with that aspect of
6 this particular regulation, that you proceed with the
7 direct impacts but hold off on the indirect impacts, so
8 further studies can be done, further work can be done to
9 come up with realistic and -- well, more accurate numbers
10 that then can be applied evenly.

11 Thank you.

12 CHAIRPERSON NICHOLS: Thank you.

13 Michael Redemer.

14 I really don't need to call your names. I'm just
15 filling the time it takes for people to come up.

16 MR. REDEMER: Good morning, Chairman Nichols and
17 members of the Board. I'm Michael Redemer, President of
18 Community Fuels.

19 Community Fuels operates a 10 million gallon per
20 year biodiesel manufacturing plant at the Port of
21 Stockton, about 45 miles south of here. This plant
22 utilizes our own proprietary technology to make sure we're
23 producing the highest quality product.

24 Our plant's also scalable and can increase its
25 capacity easily as the market demands increase as well.

1 In addition to our commercial scale plant, we
2 also have active research programs looking at algae-based
3 biodiesel and advanced biodiesel process technologies. We
4 appreciate the chance to come before the Board today.

5 Community Fuels has several concerns regarding
6 the LCFS and its impact on the California biodiesel
7 industry. These concerns primarily relate to the modest
8 demand for conventional biodiesel that's forecast in the
9 proposal, the lack of credit for biodiesel that could
10 potentially displace low efficiency gasoline powered
11 vehicles, and the preliminary indirect land use impacts
12 that are indicated for vegetable oils.

13 The proposed LCFS regulation does not provide
14 adequate support for current biodiesel in the early years
15 of implementation. In fact, I think the first three years
16 were 6 million, 12 million, and 24 million gallons. Our
17 plan alone could meet the requirements up through 2012,
18 and I think the current capacity in the State could
19 probably meet the requirements through 2013.

20 These volumes are so low that the demand could be
21 satisfied by community fuels. And we put some -- forecast
22 the proposed numbers that we think are more realistic in
23 our written comments.

24 The staff report shows in Table E7 -- favors
25 advanced biofuels and shows much larger projections for

1 its growth. We think that that's fairly speculative at
2 this point. There's a lot of issues that need to be
3 overcome with the technologies. We're looking forward to
4 hoping to solve some of those problems, but we're not sure
5 we can do it in the next two to three years.

6 We believe the existing regulations should put a
7 priority on supporting the existing biodiesel industry in
8 California, and then a gradual shift from conventional to
9 advanced biodiesel can occur after these new technologies
10 emerge as viable.

11 Finally, we would like to see a credit under the
12 EER for biodiesel for the renewable fuel to displace
13 gasoline.

14 And, finally, with the indirect land use we'd
15 like to see basically those numbers fixed so that they
16 provide more certainty for vegetable-based oils. So we
17 think that's an area that needs some additional attention.

18 We'd like to thank you for the opportunity to
19 speak. And I'd also like to invite any members of the
20 Board or staff, if you'd like to tour our facility, we'd
21 be happy to host you any time.

22 Thank you very much.

23 CHAIRPERSON NICHOLS: Thank you.

24 Sofia Sarabia.

25 MS. SARABIA: Good afternoon. My name is Sofia

1 Sarabia and I am with the Center on Race, Poverty, and the
2 Environment. We submitted written comments yesterday, so
3 I'm just going to briefly highlight our main point of
4 those comments, which is that we do not believe that the
5 Board is in a position today to adopt the regulation. We
6 don't feel that the environmental and the Environmental
7 Justice analysis that were performed for this regulation
8 are adequate for CEQA and AB 32 for those requirements.

9 Briefly, the -- much of the environmental
10 analysis is deferred to project-specific review. And we
11 feel that this is really -- you're giving up an
12 opportunity to look at the statewide impact of this
13 regulation. And we think it's a requirement to look at
14 the cumulative effects of this regulation as a whole, not
15 just on the individual facilities and individual projects
16 that are going to come from this regulation.

17 And, in particular, with the Environmental
18 Justice review, we think that there is enough information
19 currently with where proposed sites might be with, you
20 know, what types of facilities might come from this
21 regulation to perform some analysis on the impacts of low
22 income and minority communities; in particular, those
23 communities that are in the Central Valley that are going
24 to receive the greatest burden of this regulation in terms
25 of the localized impacts. And there needs to be a more

1 in-depth analysis done at this stage on not just a promise
2 to have tools and to have an analysis prepared in the
3 future. That there's something that needs to be done and
4 can be done at this stage. And those types of analysis
5 need to be done before the Board can be in a position to
6 adopt this regulation.

7 And so we would ask that the Board direct staff
8 to perform this more detailed analysis on Environmental
9 Justice and on the environmental impacts in general before
10 making a decision.

11 Thank you.

12 CHAIRPERSON NICHOLS: Thank you.

13 Tom Jacob.

14 MR. JACOB: Thank you, Chair.

15 Tom Jacob with the DuPont Company. We appreciate
16 the opportunity to address you.

17 We believe biofuels is going to be central to
18 resolving our current challenges. We are deeply involved
19 in several dimensions of biofuels. Our pioneer hybrid
20 subsidiary is a leading provider of fuels for -- or seed
21 for enhanced fuel yield from corn and soy. We have a
22 joint venture with BP to deliver the next generation of
23 biofuels, bio-based butanol.

24 And we have a joint venture with Genencor to
25 deliver the next great adventure in technology, the

1 cellulosic conversion. We think that's going to be a
2 revolution on this scene.

3 And we think that the Low Carbon Fuel Standard
4 will help us deliver more rational choices going forward
5 with respect to the array of fuels that will be available.

6 We do have concerns with a number of the issues
7 relating to the pathway analyses. We've submitted these
8 in writing. They relate to the treatment of perennial
9 grasses yields, ag practices and productivity, technology
10 timelines. And we share particularly some of the concerns
11 that have been expressed regarding the incorporation at
12 this stage of indirect land use.

13 We are not challenging the legitimacy of the
14 rule. We do believe, however, that the infant nature of
15 this undertaking, particularly with respect to indirect
16 land use, argues that this exercise be kept open. We very
17 much appreciate the recommendation from staff, and hope
18 you embrace it, to direct them to continue the dialogues
19 on the pathways. We think that they must be open to
20 science as it matures as our understanding and information
21 matures.

22 In that respect, I just would like to seek a
23 clarification regarding one item in the resolution.

24 It's on page 16, the second paragraph the
25 "Resolved." It states -- this is the item that

1 specifically delegates to the Executive Director the
2 authority to amend the pathway values. Part A: To add
3 new or customized fuel pathways and carbon intensity
4 values to the carbon intensity look-up table. B: To
5 revise any existing fuel pathway or carbon intensity
6 value.

7 And then this is my question: Except values
8 based on land use or other indirect effects that are
9 specified in the carbon intensity look-up table.

10 I confess that I haven't had time to fully
11 embrace the entirety of this, and there may be connections
12 there that aren't obvious to me. But I'm curious about
13 the rationale for that exception and what it's
14 implications might be.

15 SENIOR STAFF COUNSEL JENNINGS: Yes. This is a
16 delegation to the Board -- from the Board to the Executive
17 Officer to make various changes regarding pathways. We
18 felt that the policy implications of the indirect land use
19 values were such that the Board would want to itself
20 conduct any rule makings where we were making changes to
21 the values that are already -- would be the beginning
22 values in the regulation.

23 CHAIRPERSON NICHOLS: Thank you for flagging
24 that. I think we'll want to talk about that. I can see
25 that this is going to be an issue.

1 MR. JACOB: Thank you. We believe that deserve
2 some discussion.

3 CHAIRPERSON NICHOLS: Thank you.

4 Okay. Who -- yes.

5 Sorry. Mr. Martinez.

6 MR. MARTINEZ: Good afternoon, Chair Nichols and
7 members of the Board. My name's Mark Martinez. I'm the
8 CEO of the San Joaquin County Hispanic Chamber of Commerce
9 based in Stockton, California. And I applaud you on all
10 the work that you've done on AB 32. I'm a former chair of
11 the planning commission myself. So I've got great
12 compassion for policymakers, as you have a tough job to
13 do.

14 San Joaquin County has an extremely high
15 unemployment rate. We also have a foreclosure issue as
16 well. I've spent a significant amount of time with many
17 of our businesses to evaluate cash flow, to evaluate how
18 they're doing. Lines of credit have been reduced. Access
19 to capital is very difficult right now. Many of our
20 businesses are in survival mode. It's a scary time. And
21 I don't think we're done.

22 I'd like to share with you that I think that
23 overall we don't feel that there's been enough research
24 and an independent review have been conducted as required
25 by law.

1 In particular we're worried. Many of our
2 businesses in San Joaquin County are trucking and
3 agricultural businesses. And the diesel component of this
4 rule will cause far more problems than it might solve.

5 We're also worried that we're not the only one
6 across the country who are in this -- as a matter of fact
7 that we're doing this alone. And what concerns us is that
8 we might really put ourselves at uncompetitive advantage.

9 So I want to caution you to really evaluate the
10 concerns of the economy and our small businesses.

11 Thank you very much.

12 CHAIRPERSON NICHOLS: Thank you for that.

13 Rick Hyndman.

14 MR. HYNDMAN: Thank you, Chairman Nichols. And
15 good afternoon, Chairman and Board members. I'm here
16 representing the Canadian Association of Petroleum
17 Producers.

18 And while I recognize that your big issues are
19 around biofuels, land use change, and the availability of
20 truly low carbon biofuels, because of your influence on
21 what happens in other parts of the United States and even
22 Canada, I'd like to make three points that are relevant to
23 the proposed treatment of oil sands crude in the proposal.

24 And the first of these is that LCFS is part of a
25 larger suite of policies that are designed to reduce

1 greenhouse gas emissions. The proposal of the single
2 basket for crude oil supplies that are used in California
3 focuses the LCFS policy on the choice between petroleum
4 fuels and alternatives to petroleum. And that is totally
5 appropriate.

6 There are other policies, in particular the
7 carbon pricing to be applied to industrial emissions that
8 will be directed at managing and reducing the emissions in
9 the refining and production stage. And that's the right
10 place to address those kinds of emissions.

11 Given that perspective, excluding oil sands from
12 the basket of crudes could be viewed as a way of
13 California pressuring Canada, Alberta, to do their part in
14 the international effort to reduce greenhouse gas
15 emissions. I argue that that is inappropriate and
16 unnecessary.

17 Alberta introduced carbon pricing to large
18 industries in July of 2007. It was a modest start, as are
19 all the policies in place around the world to price
20 emissions, and they're considering stepping it up. The
21 Canadian government is currently developing a policy that
22 it intends to be compatible with and comparable to the
23 carbon pricing system that it gets adopted federally in
24 this country. And so there is no need to pressure Alberta
25 or Canada to do its part. We're there.

1 So the second point I'd like to make is that --
2 to point out is that oil-sands-derived transportation
3 fuels are within the range of life cycle intensities of
4 the crudes currently in the basket and currently used in
5 California.

6 The third point is that -- just an aside on
7 that -- that there are new studies that have been
8 undertaken. And my colleagues in the Alberta government
9 may point out some of the results of these. But they're
10 reinforcing this point that the oil sands life cycle
11 intensity is comparable or at least within the range of
12 the other crudes being used here and elsewhere.

13 And the third point I want to make is that oil
14 sands, that is upgraded in Alberta, is particularly suited
15 to transportation fuels and has lower refining emissions
16 than other crudes that are used. And you need to take
17 that into account as you look at the oil sands crude if
18 you want to get the right life cycle comparison.

19 So if I can just take five seconds and recommend
20 that you recognize these three points and remove the
21 exclusion of oil sands crude from the common basket in
22 California.

23 Thank you very much.

24 CHAIRPERSON NICHOLS: All right. Thank you.

25 Just to clarify. The current plan would be to

1 have the oil sands a separate pathway or a separate type
2 of fuel, is that how that would work?

3 STATIONARY SOURCE DIVISION CHIEF FLETCHER: This
4 is Bob Fletcher.

5 The way that it works is there's a specific
6 provision in the regulation that deals with any, what we
7 call, high carbon crude oil that is not currently
8 accounting for at least 2 percent of the crude oil mix
9 within California.

10 And so we have a level above which any crude
11 has to -- that comes in and is used in California
12 refineries has to account as a deficit for that increase
13 in intensities.

14 So it doesn't just single out oil sands. It
15 would apply, for example, the Venezuelan crude that's a
16 small part, 2 percent of California's crude base today.

17 CHAIRPERSON NICHOLS: So Canada is treated as an
18 exotic fuel supply.

19 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Well,
20 it actually depends on the process. There will be a range
21 of fuels from Canada that have a range in carbon
22 intensities. And we've been working with those folks to
23 try to understand better what the different pathways are.
24 But there will clearly be crudes that will be high carbon
25 intensity crudes.

1 CHAIRPERSON NICHOLS: Okay. Thank you. I
2 understand. Bye-bye.

3 Okay. Steve Gondola.

4 MR. GONDOLA: Hi. Good afternoon. My name is
5 Steve Gondola and I'm the President and CEO of the
6 Sacramento Hispanic Chamber of Commerce. And I'm hopeful
7 that I can ask you to help me help my business community
8 to embrace the implementation of AB 32, rather than adopt
9 a sentiment of resistance toward it.

10 Our members are predominantly small
11 minority-owned businesses; and, as you can imagine, very
12 much feeling the pinch of the prolonged economic recession
13 right now; and have been doing everything to reduce costs
14 in order to weather the storm.

15 We've been supportive of the goals of AB 32 all
16 along. But we're growing increasingly concerned about the
17 costs and the methods of developing policies intended to
18 advance those goals.

19 The scoping plan adopted by the Board in December
20 requires that AB 32 policies are cost effective and
21 deliver global warming emission reductions, while taking
22 into account the impacts on small businesses and low
23 income families.

24 And the low carbon fuel standards as proposed
25 raise serious doubts about the cost effectiveness of the

1 program. We understand that the Low Carbon Fuel Standard
2 is meant to be an early action. But given the current
3 circumstances, perhaps focus can be on lower cost, simpler
4 strategies that will encourage energy efficiency and
5 conservation while not risking small businesses and jobs
6 and the economy.

7 Your leadership in the environmental protection
8 is admirable and the Sacramento Hispanic Chamber of
9 commerce is asking you to demonstrate that same leadership
10 in recognizing and acknowledging the barriers and
11 limitations inherent in the pursuit of LCFS at this
12 particular time and in this manner by working with the
13 public, Legislature and the Governor to develop more
14 realistic priorities and cost effective policies.

15 Thank you.

16 CHAIRPERSON NICHOLS: Thank you.

17 Now it's Mr. LePage.

18 MR. LePAGE: Good afternoon, bonjour. My name's
19 Mark LePage. I'm the Consul General of Canada in San
20 Francisco, Silicon Valley. So it's a been a pleasure to
21 be here with you this afternoon.

22 Canada shares the objectives of reducing
23 greenhouse gas emissions. And in fact we've committed to
24 absolute reductions in greenhouse gas emissions of 150
25 megatons by 2020. So adjusting for the smaller

1 population, it's actually very close to the AB 32 overall
2 target, surprisingly close, I think within 95 percent
3 confidence intervals.

4 Now, while we share those common goals, we're
5 concerned that the approach that is proposed in the LCFS
6 regulation may amount to discrimination against Canadian
7 crude petroleum, as was mentioned earlier, which have life
8 cycle greenhouse gas emissions comparable to and in some
9 cases lower than some of the fuels that are proposed in
10 the California baseline crude mix.

11 Now, the proposed regulation by doing so may
12 unfairly favor other crude sources that have similar GHG
13 emission profiles. So this potentially could be contrary
14 to international trade obligations of the United States
15 and could have potential negative implications for
16 California's long-term energy security.

17 It may also lead to the so-called crude shuffling
18 effect, which would result in no-net change or possibly
19 even increased GHG emissions on a global scale if we'd
20 leave California.

21 Now, based on these concerns and other
22 considerations, we would urge that the Board amend the
23 proposed LCFS regulation to assign the same carbon
24 intensity to all mainstream crude oil fuel pathways from
25 light to heavy crudes, including oil sands crude, rather

1 than only the crudes in the baseline -- the, quote,
2 baseline crudes mix.

3 Now, these crudes all have similar life cycle
4 intensities within a narrow and continuous range. And
5 most of their life cycle emissions occur at the end -- at
6 the burning phase of the cycle of the sage.

7 So, before I close I would like to assure the
8 Board that Canadians are concerned about the GHG emissions
9 in the oil sands. We're taking actions at the federal
10 level to control this -- or reduce these. And industry as
11 well has been very active. And since 1990, the average
12 barrel produced in the oil sands now requires 30
13 percent -- or produces 30 percent less GHG now than it did
14 in 1990. So it's a continuous progress cycle.

15 Thank you very much. And we look forward to
16 working again and continuously with the CARB Board.

17 Merci

18 CHAIRPERSON NICHOLS: Thank you. Merci.

19 (Laughter.)

20 BOARD MEMBER RIORDAN: Mr. Miller.

21 MR. MILLER: Thank you. Good morning -- or
22 actually good afternoon.

23 I'm Taylor Miller appearing on behalf of Sempra
24 Energy, and am pleased to express our support of the
25 proposed regulation. We previously filed written

1 comments, so I will just make a brief statement this
2 morning -- still on the morning -- this afternoon. Sorry.

3 Incidentally, the supplement that was issued
4 today does respond to some of our key comments, and
5 overall we think improves the regulations. So thank you
6 for that.

7 Sempra Energy commends the ARB and its staff for
8 the inclusive approach it's taken to reducing GHG
9 emissions from transportation fuels. Sempra Energy is
10 working to develop infrastructure in both the electric and
11 natural gas sectors in support of the LCFS program. We
12 will continue working to advance the ARB's efforts to
13 further develop and refine accurate fuel pathways in
14 support of this important effort to reduce GHG emissions
15 in the transportation sector.

16 That concludes my comments. Thank you very much
17 for the opportunity to speak.

18 BOARD MEMBER RIORDAN: Thank you, and thank you
19 for being here.

20 General Wesley Clark.

21 MR. FUGLSANG: Good afternoon. Just a slight
22 change of order. We go together as a group.

23 My name is Claus Fuglsang. I'm a Senior Director
24 in R&D representing Novozymes.

25 Novozymes is the largest -- the world's largest

1 industrial enzyme provider.

2 BOARD MEMBER RIORDAN: Thank you.

3 Yeah, speak right into that microphone.

4 MR. FUGLSANG: And we are leading in developing
5 key technology -- enzyme technology for both first
6 generation and second generation ethanol.

7 Second generation ethanol is in fact today our
8 first or largest research endeavor, mainly run out of
9 facilities here in the U.S., mainly in California at Davis
10 where we employ around 100 people in this area.

11 Novozymes very much appreciate what is intended
12 with a low carbon fuel standard. However, we have serious
13 concerns around the part relating to indirect land use.
14 We recognize the need to include indirect land use in a
15 model for carbon intensity values and acknowledge CARB on
16 its pioneering work in this area.

17 However, we think it's premature to adopt the
18 model and put it towards legislation until a broader
19 scientific consensus is reached around the model
20 especially for the indirect land use effects, which is
21 based on assumptions that can be challenged and does not
22 fully take into account dynamic effects like acreage yield
23 increases.

24 And so we instead support that establishment of a
25 panel with both academic and industrial experts to review

1 a model and prior to an implementation of a legislative
2 framework.

3 And, by the way, the European Union has postponed
4 inclusion of the renewable -- sorry -- an indirect land
5 use in to the renewable fuel standards emission.

6 We think that the LCFS in its current form
7 particularly with respect to the indirect land use
8 penalizes the first generation ethanol to an extent that
9 would jeopardize the sale upon logistics developed over
10 many years in the utilization of ethanol in the gasoline,
11 a set of which is absolutely necessary for the second
12 generation ethanol to become a sustainable reality.

13 And the key drivers for making this happen is
14 actually involved in the first generation ethanol business
15 today.

16 Second generation ethanol is around the corner,
17 which acknowledge we're ready for implementation in 2010
18 and going forward to achieve cost efficient conversion of
19 biomass to ethanol. However, we cannot afford a situation
20 where the operation was a success but the patient died in
21 the meantime.

22 Thank you.

23 BOARD MEMBER RIORDAN: Thank you very much.

24 Now, General Clark.

25 GENERAL CLARK: Well, my name's Wes Clark, and

1 I'm here as the co-chairman of a group known as Growth
2 Energy. We're a group of corn and cellulosic ethanol
3 producers and stakeholders committed to moving forward
4 from corn-based ethanol into cellulosic.

5 And this is a very important hearing today. I'm
6 very happy to be here. And I want to compliment the ARB
7 staff on the work they've done in the paper and in
8 wrestling with this model.

9 It's a very good paper, and it brings a lot of
10 good ideas forward. And we fully are in accord with the
11 desire to move toward lower carbon intensity fuels. And
12 we support the life cycle analysis approach that's been --
13 the direct life cycle costs that have been laid out in the
14 model.

15 We appreciate what Chairman Nichols gave us
16 yesterday in the letter to me where she said individual
17 ethanol producers could come in and update the life cycle
18 costs as appropriate.

19 Where we're concerned is about the indirect land
20 use. There are indirect effects from any fuel. But the
21 only indirect effects that have been looked at are the
22 indirect effects on land use from biofuel. So if we're
23 going to look at indirect effects - and I think we
24 should - you have to take a broader look at the indirect
25 effects and roll in more.

1 You also have to get the policies and the models
2 right. It's a matter of good policy formulation as well
3 as being fair to all these people who put all this time
4 and effort into advancing ethanol and getting it right.

5 What do I mean by that? Well, first of all, if
6 you look at the model itself, the model, although it makes
7 perfect logical sense and so much work is done into it -
8 and it was a brilliant presentation this morning - when
9 you actually ask yourself is this the way reality works,
10 the answer's "not quite."

11 We were putting over 100 million acres into corn
12 in this country in the 1930s. The bad carbon effects come
13 from putting nonagricultural land into agricultural
14 production. So we've been using a hundred million acres
15 for corn on and off. It goes up and down. Sometimes it's
16 80, sometimes it's 90. When we moved into corn-based
17 ethanol, we did use more corn that was going into other
18 things for ethanol. But corn productivity's gone up.
19 It's about 2 percent per year.

20 At the same time, farmers have improved their
21 cultivation methods and we're moving more into no-till
22 agriculture, which reduces some of the ancillary impacts
23 of this.

24 And, finally, then if you track through the
25 model, you would have said by the model, "Gee, you've got

1 all this extra corn being grown. It must be there
2 whacking down the rain forests in Brazil to grow soy."
3 But, In fact, rain forest deforestation in Brazil has been
4 cut in half despite the fact that ethanol production has
5 been increased by a factor of four or five. So the model
6 doesn't reflect common sense.

7 And then if you look at other indirect effects,
8 you've got to look at the indirect effects of petroleum.
9 It starts with a movie a couple of years ago. It said --
10 the title of the moving was "There will be blood." And it
11 finishes with what we're seeing today in Baghdad where 75
12 people were killed in a suicide bombing. Does that have
13 anything to do as an indirect effect of our fuel usage?
14 And the answer's of course.

15 And a University of Nebraska study just said that
16 if you look at this, you'll probably double the effects
17 for the indirect impact on air quality and greenhouse gas
18 emissions on oil that you could possibly put on any
19 biofuel.

20 So we've got to have a fair policy. Thank you
21 very much for the opportunity to be here. Please, we
22 support the life cycle analysis, just suspend the indirect
23 land use, put a 0 to 30 there, put a question mark on it.
24 Don't signal it. Let's get the science right. This is
25 too important to get wrong.

1 Thank you.

2 CHAIRPERSON NICHOLS: Thank you, General Clark.

3 Thanks for coming out.

4 Mark Stowers.

5 MR. STOWERS: Yes. My name is Mark Stowers. I'm
6 Vice President of Science and Technology of POET. We're a
7 major ethanol producer and developer of cellulosic
8 ethanol. That's my role at POET, is focused on the new
9 developments and new activities related to first and
10 second generation ethanol.

11 I'm here on behalf of Growth Energy today as we
12 look forward to agriculture and cleaner fuels derived from
13 production of renewable fuels. We do support the Low
14 Carbon Fuel Standard. But there is one problem that
15 undermines the potential success of the Low Carbon Fuel
16 Standard, and that's indirect land use.

17 The application fails to meet the standards of
18 fairness by selectively penalizing ethanol. Indirect land
19 use change is not an accepted parameter of measure for
20 life cycle greenhouse gas emissions, nor is there a
21 scientific consensus on the application of indirect land
22 use change in greenhouse emission analysis.

23 ARB has used the GTAP model, which is not a life
24 cycle analysis model.

25 We agree with a number of the points that was

1 offered by Chairman Nichols in letters to General Clark
2 and CEO Tom Buis of Growth Energy. This support is good,
3 but it falls short of what's needed and what is fair.

4 It would be premature to release any data on
5 indirect effects of any fuel until the study of all fuels
6 is complete. This would avoid sending incorrect signals
7 to the marketplace and negatively impacting the industry
8 before the science has been universally accepted.

9 This point needs to be emphasized due to reports
10 that are showing recent work around indirect effects
11 associated with foreign oil that General Clark
12 highlighted.

13 It's now time to get the Low Carbon Fuel Standard
14 right, not to development a la carte solutions that lack
15 the robustness that science-based policy requires.

16 Lastly, I'd like to challenge the assumption that
17 biofuels drive up food and feed prices as a result of --
18 and results in indirect land use change. That's a premise
19 that's in the conclusion of indirect land use change in
20 the low carbon fuel Standards. That's largely been
21 debunked by a whole host of very serious economic
22 researchers including the USDA Chief Economist, economists
23 at Texas A&M, Nebraska, and even Purdue, private studies
24 and so forth. The linkage of food versus fuel and
25 indirect land use is a false assumption.

1 What the ARB's about ready to do is vitally
2 important to Growth Energy and its members. We support
3 the low carbon fuel standards. ARB just needs to get it
4 right. The work's not done. We suggest that you adopt
5 the directive extra Low carbon fuel standards now, take
6 time to study the indirect effects, evaluate its impacts
7 across the entire energy spectrum, and apply science
8 fairly across all fuel pathways.

9 Don't rush to act. You have almost two years to
10 get it right.

11 Thank you.

12 CHAIRPERSON NICHOLS: Thank you.

13 MR. CANETE: Good afternoon, Madam Chair, Board
14 members. My name is Julian Canete representing the
15 California Hispanic Chambers of Commerce.

16 The California Hispanic Chambers of Commerce is
17 the largest regional Hispanic business organization in the
18 nation. Through our network of over 65 Hispanic chambers
19 and business associations, we represent the interests of
20 over 720,000 Hispanic business owners throughout
21 California.

22 The State Hispanic Chamber has long been
23 concerned about the cost impacts of AB 32 implementation,
24 especially on our Hispanic-owned businesses and small
25 businesses throughout California. And it is apparent

1 today that the rule you're considering validates our
2 concerns.

3 Once again, we're being told that the costs to
4 business will be minimal, if anything at all. But
5 independent research and even one of your own peer
6 reviewers have concluded that your staff report was based
7 on selective or questionable assumptions and that this
8 will indeed will be very expensive. This calls to mine
9 the economic analysis for the AB 32 scoping plan, which
10 the legislative analyst and your own panel of independent
11 reviewers also found to be seriously flawed and to have
12 great underestimated the cost.

13 Our members are among the hardest working small
14 businesses in California. And they are the ones that are
15 affected first and the hardest during hard times. And
16 hard times are definitely here.

17 Our small business members are struggling to keep
18 their doors open and to meet payroll without having to lay
19 off their workers. They are concerned about the
20 environment. But at the same time they're also concerned
21 about paying the bills, staying in business, and
22 supporting their families.

23 Your staffs, they're worried about furloughs.
24 Our members and their employees are worried about losing
25 their businesses, jobs and benefits completely. It seems

1 to me this very important, very human element has been
2 completely lost as you've rushed to adopt the rule that
3 you haven't fully evaluated. And that could impose
4 unsupportable financial burdens on hundreds of thousands
5 of small businesses and families.

6 Yes, this developed an effective low carbon fuel
7 standard. But let's also take the time to get all the
8 facts and do it right. Don't overlook the necessary
9 balance between the environment and the economy. If we
10 are going to be effective, we need to do it right. We
11 respectfully ask that you postpone taking action on this
12 item until the true costs are known, considered, and
13 undergo reasonable public scrutiny.

14 Thank you for your time.

15 CHAIRPERSON NICHOLS: Thank you.

16 I've had requests from a couple of people who
17 need to leave Sacramento before we're likely to be done
18 with our lunch break if they could testify before 1. And
19 I know this is always dangerous when you move people
20 around on the list. But I think I'm going to try to
21 accommodate them if that's not going to cause an outbreak
22 or rebellion here.

23 So -- I don't see any people yet raising
24 pitchforks -- I think maybe I will do this. So I'm going
25 to call on Eric Bowen from Tellurian.

1 Are you there?

2 Okay. We'll just call on you now then.

3 Hi.

4 MR. BOWEN: Thank you, Chairwoman Nichols. I
5 appreciate everyone's time today.

6 My name is Eric Bowen, President and CEO of
7 Tellurian Biodiesel. We are California's premier marketer
8 of biodiesel. And I am also am personally and
9 individually a member of Environmental Entrepreneurs.

10 Tellurian's focus is really on converting waste
11 products like used cooking oil into sustainable biodiesel.
12 We're partnered with fast food companies and their supply
13 chains to really scale up the waste biodiesel opportunity.

14 I'm also currently serving as the Chairman of the
15 California Biodiesel Alliance, the industry's trade
16 association here in California. We represent all of the
17 major producers in the State as well as biodiesel
18 marketers, feedstock suppliers, and technology developers.

19 The California Biodiesel Alliance has been
20 working very closely with the National Biodiesel Board,
21 the national trade association, and the too organizations
22 have been working with ARB in support of the Low Carbon
23 Fuel Standard and, in particular, on development of the
24 various pathways for waste biodiesel and soy biodiesel.

25 I'm here today to urge you to adopt the Low

1 Carbon Fuel Standard regulations without delay. The
2 California biodiesel industry is ready to provide
3 California with super ultra-low carbon diesel. Biodiesel
4 made from waste feedstocks such as used cooking oil
5 comprises the vast majority of the biodiesel produced in
6 California and can reduce life cycle emissions by up to 90
7 percent compared with ultra-low sulfur diesel.

8 I'd like to address some of the concerns that
9 some of the truckers stated earlier about concerns about
10 their vehicles and prices and let them know that biodiesel
11 has been around for a long time, over ten years in
12 California and the United States, longer than that in
13 Europe. It's been probably the most studied alternative
14 fuel, been through Tier 1 and Tier 2 EPA testing, and is
15 currently completing its California multimedia testing.

16 Equipment manufacturers who have done years and
17 years of testing, as was stated earlier, are increasing
18 their warranty levels on various percentages of biodiesel.

19 Biodiesel historically was more expensive than
20 petroleum diesel. And this is because it was made
21 primarily from soybean oil, which is a quite expensive raw
22 material. California's biodiesel derived from waste
23 cooking oil, which is also the trend nationally - about 50
24 percent of biodiesel now is made from waste - is actually
25 able to be priced at or below the price of ultra-low

1 sulfur diesel. And we're selling biodiesel today in
2 southern California for significantly less than the price
3 of ultra-low sulfur diesel. So this is not a high cost
4 solution. This is potentially a low cost solution in
5 addition to its carbon benefits.

6 California has excess capacity for production of
7 biodiesel today - over 50 million gallons, and we can
8 quickly get to 100 million gallons shortly thereafter.
9 Nationally there's even more excess capacity - over 2
10 billion gallons of installed capacity, and 4 billion
11 gallons of raw material which can produce 4 billion
12 gallons of biodiesel. Here in California alone we have
13 100 million gallons of waste material that can be derived
14 into biodiesel.

15 I appreciate you letting me jump ahead and be
16 respective of time, and just urge that it is vitally
17 important that you adopt the regulations today to provide
18 incentives and guidance to the industry so the people will
19 continue to make investments and build profitable
20 businesses.

21 Thank you.

22 CHAIRPERSON NICHOLS: Thank you.

23 And I believe you were part of this group that
24 includes Mr. Epstein and Mr. Gardenswartz?

25 MR. BOWEN: Yes.

1 CHAIRPERSON NICHOLS: Okay.

2 MR. EPSTEIN: Thank you, Chairman Nichols,
3 members of the Board. My name is Bob Epstein. We
4 submitted a letter that represents a diverse group of
5 biofuels investors and biofuels producers who strongly
6 support the adoption of the Low Carbon Fuel Standard as
7 it's being presented to you today.

8 First of all, we think the LCFS is the best way
9 to address emissions from fuels. And I will remind you
10 that in the scoping plan it's not till 2015 that you
11 consider any form of cap. So this is your strategy for
12 greenhouse gas reductions. It's one of the top six
13 measures that's identified in the scoping plan.

14 Also, I've just returned from two days in
15 Washington and I'm delighted to be back in California.
16 They are watching what's happening here, as are the
17 Europeans. This is a standard that will have worldwide
18 implications.

19 The reason why we like the way it is with the
20 indirect land use is because it provides very clear
21 direction to industry. It says that avoiding the use of
22 land is going to be rewarded. If rewards maximum
23 efficiency. It puts attention to try to avoid any future
24 conflicts with food that would come from a competition for
25 land.

1 I'm also impressed by the innovation.

2 Two things I'd like to say that address what's
3 come earlier.

4 First is, I haven't talked to any fuel producer
5 that wants to make anything except something that will run
6 in an existing vehicle. It's just too hard the make money
7 any other ways.

8 The second is some of the innovation is pretty
9 amazing. Several companies are researching making the
10 equivalent of Texas sweet crude oil. As a biofuel, you
11 drop it in the refinery, and all products come out lower
12 carbon as a result.

13 So in our letter we requested three
14 considerations to be added. I'm happy to say that my
15 understanding of the resolutions is those were included in
16 the resolutions. So we strongly urge you to support all
17 of this.

18 In terms of price. Right now, for me to find
19 affordable fuel I'm 100 percent dependent on the oil
20 industry to do that. And while some of my best friends
21 are in that industry, I would like them to have a little
22 competition. So that's the reason why I believe people
23 like Eric and the others you're going to hear from would
24 like to compete with the oil industry, they'd like to do
25 it through lower carbon, and they're going to do it

1 through lower prices.

2 Thank you very much for your time.

3 CHAIRPERSON NICHOLS: Thank you. And then the --

4 MR. GARDENSWARTZ: Madam Chairwoman, I'm not in a
5 rush. So if you want to restore order, please do.

6 CHAIRPERSON NICHOLS: All right. Thank you very
7 much.

8 Mr. Kniesche, were you also part of that group?

9 MR. KNIESCHE: Yes.

10 CHAIRPERSON NICHOLS: Okay. Then we'll get back
11 to the regular --

12 MR. KNIESCHE: Thanks for the flexibility.

13 Good afternoon. My name's Ted Kniesche. And I'm
14 Vice President of Business Development at Fulcrum
15 bioenergy. We're a renewable fuels company based in
16 Pleasanton, California.

17 We support the proposed Low Carbon Fuel Standard
18 regulation as a significant component of the State's plan
19 for reducing greenhouse gas emissions.

20 We've developed a process that converts
21 post-recycle municipal solid wastes and other waste
22 feedstocks to 100 percent cellulosic ethanol.

23 The utilization of waste streams for biofuels is
24 a low carbon fuel pathway with no land use impact and
25 should be an important part of any low carbon fuel

1 standard.

2 Later this year Fulcrum will break ground on
3 Project Sierra, which is our first commercial scale
4 facility, that will produce ten and a half million gallons
5 of cellulosic ethanol annually from waste material. The
6 project located in Storey County, Nevada, is an important
7 step forward in demonstrating the near-term viability of a
8 low carbon fuel pathway, that turns waste material into
9 ethanol.

10 Today we have already secured exclusive access to
11 enough MSW feedstock for the annual production of more
12 than 1.3 billion gallons of ethanol. In California,
13 Fulcrum currently has plans to develop several projects
14 throughout the state that will utilize post-recycled MSW
15 to produce an aggregate volume of between 100 and 200
16 million gallons per year.

17 And, moreover, across California the 18.3 million
18 tons of landfilled MSW that were identified in the UC
19 technical analysis completed for ARB could produce nearly
20 one and a half billion gallons of low carbon ethanol
21 annually, which seriously contributes to the greenhouse
22 gas reduction goals.

23 Our progress in the broader emergence of a
24 waste-to-fuels industry demonstrates a clear pathway
25 towards the development of this next generation biofuels,

1 which are scalable enough to meet California's ethanol
2 demand and sustainable enough to make serious greenhouse
3 gas reductions.

4 The proposed regulation is an important step
5 forward in creating a market for these scalable and
6 sustainable biofuels. It creates a new and important
7 paradigm for the transportation fuels industry by
8 incentivizing the use of biofuels that will contribute to
9 real greenhouse gas reductions on a complete life cycle
10 basis.

11 Given the enormous challenges of bringing these
12 fuels to market, we urge the Board to adopt the full
13 proposal without delay so, we can immediately begin
14 putting the proper investments in place to ensure that we
15 have these facilities in production as soon as possible.

16 While the proposed regulation currently does not
17 list a municipal solid waste to fuels pathway, we
18 encourage the ARB to begin working with Fulcrum and other
19 leading developers to develop such a pathway under Methods
20 2A and 2B of the regulation. It is important that ARB
21 begin working on the development of this pathway so that
22 the market will clearly recognize that biofuels from waste
23 produce -- from waste products can make a significant
24 contribution to the Low Carbon Fuel Standard.

25 Thank you again for your time. And we appreciate

1 the tremendous amount of work that's been done on this
2 regulation, and we look forward to working with ARB in
3 implementing it.

4 CHAIRPERSON NICHOLS: Thank you very much.

5 Mr. Fuentes, thank you for waiting.

6 MR. FUENTES: Thank you very much. Good
7 afternoon. Happy to address you before lunch.

8 My name is Martin Fuentes. I own an insurance
9 agency in Pico Rivera. I'm also a member of the L.A.
10 County Democratic Central Committee. And I'm active in
11 the California Latino Caucus Institute's Madrinas Padrinos
12 Mentorship Program. But more importantly, I'm here today
13 as a small business owner.

14 I've made several trips from southern California
15 to address this Board about the cost of AB 32
16 implementation and how they will affect small businesses
17 like mine. And while I appreciate the opportunity to
18 speak to you for two or three minutes at a time, I must
19 tell you that the AB 32 process has been and continues to
20 be frustrating to me.

21 As a member of the public, it would be helpful to
22 be able to see the latest information in advance of the
23 meeting at which the Board will vote. But today's report
24 wasn't available until today. That makes it hard to be
25 fully informed when speaking to you.

1 It's also hard to squeeze everything into a
2 couple minutes. But my feeling is that it's more
3 effective to share my thoughts with you directly rather
4 than have them get lost in a stack of written comments,
5 presumably vetted or summarized by a staff for you.

6 In any event I've been and remain extremely
7 troubled by the seeming insensitivity to the importance of
8 costs with respect to AB 32 programs like this one.

9 As a small business person, I've seen my customer
10 base decrease and my costs increase as a result of not
11 only the bad economy, but the State's budget deficit.

12 People who can't afford it are scaling back or
13 canceling their insurance. And those who can are being
14 careful about how much they carry. The last thing I and
15 my customers need is a program that will probably make our
16 energy costs go up and might even force people to
17 eventually buy a different kind of car sooner than
18 planned.

19 Having followed the AB 32 process for some time
20 now, I'm not convinced that your staff has completed the
21 analysis required under the State's Health and Safety Code
22 concerning costs, fuel supplies, performance, and
23 environmental impacts. Maybe you can afford to take a
24 chance on these things. But I and my customers can't.

25 If you can't tell the public what this is going

1 to cost us and can't assure us there will be a material
2 reduction in global warming for the money, I suggest you
3 hold off on your decision until you can.

4 I'd also like to know more about the potential
5 for environmental and public health problems associated
6 with fuel additives or new fuels and vehicles required
7 under this rule.

8 Thank you very much.

9 CHAIRPERSON NICHOLS: Thank you.

10 There's a certain trend to -- you know, there's a
11 whole group of folks who represent different Hispanic
12 chambers who've come to speak to us. And you've all
13 raised essentially the same issue in different ways. And
14 I appreciate that fact, because obviously there's a lot of
15 you and you're organized. I think though that, if you
16 don't mind, I'd like to have the staff kind of
17 collectively comment on the cost and the analysis that
18 they did on and why they think, you know, we're ready to
19 do this kind of at the end when we're trying to wrap up,
20 so rather than doing kind of a back and forth. But I do
21 want to say one thing, which is -- well, actually I'll say
22 two things.

23 First of all, every member of this Board to my
24 knowledge actually reads every document that is sent to
25 them. They're an incredibly conscientious bunch of people

1 and they take this very seriously.

2 The second is that although we're not allowed,
3 you know, to engage in sort of subgroupings of meetings -
4 in other words you can't violate the Brown Act by meeting
5 with a smaller group of Board members outside of the
6 public forum - a group less than a quorum is allowed to
7 meet with anybody who wants to meet with us prior to a
8 meeting and to have more direct input. And, you know, I'm
9 going to be -- when we do our ex parte comments here, I'm
10 going to be submitting a list of a dozen meetings that I
11 did with different organizations that wanted to come in
12 and express their concerns to me more directly and with
13 more time. And on every one of these rules I know there's
14 four other Board members who do that as well.

15 So while I'm sorry for the fact that you don't
16 feel like you had the opportunity leading up to this rule,
17 I do want to make sure you know that this is an
18 opportunity that's available. And I'm quite confident
19 that you would find a group of Board members, you know,
20 those who live nearest to where you're located, depending
21 on which of the groups your with, but in my case southern
22 California, you know, who would be happy to meet with you.
23 So I just wanted to make sure that you knew that.

24 MR. FUENTES: Thank you.

25 CHAIRPERSON NICHOLS: Okay. Thank you.

1 BOARD MEMBER BERG: And, Chairman Nichols, I just
2 wanted to also echo. I'm in Los Angeles -- east Los
3 Angeles, which isn't too far from you. And I do take
4 appointments regularly. And so would be happy to meet
5 with your group any time.

6 MR. FUENTES: Thank you very much.

7 CHAIRPERSON NICHOLS: Okay. We have Mr. Ordonez.

8 MR. ORDONEZ: Good afternoon. My name is Max
9 Ordonez with the California Hispanic Chambers of Commerce.
10 I've had a written speech, but I'll have to change it a
11 bit.

12 On Tuesday we had a panel of speakers discussing
13 this issue to a lot of small business folks from all over
14 the State of California. And one of the individuals there
15 owns a company and has 60 employees, and he was already
16 being -- I guess -- I'm not sure what the right word would
17 be -- but wooed by other states to go take his company
18 there. Sixty employees, blue collar workers. And after
19 this panel that we had where we were discussing this very
20 issue, I think he's going to make up his mind pretty
21 easily. So it's not really happening -- it's not helping
22 some of the businesses. And I think it's created a lot
23 of -- it will create a disadvantage. I think I disagree
24 with the report that it is not to a disadvantage for
25 businesses. It will be a disadvantage. Maybe -- I'll

1 concede maybe in the long run it may not be, but in a
2 short run it definitely will be.

3 Also, in the short run there will be required
4 costs that will come down, not only to the consumers, all
5 of us in this room, but also to the small businesses.

6 And with that being said, that's why we're of an
7 opinion that if there's any way to postpone this and
8 really look at some of these costs, and also the impact of
9 some of these alternative fuels that may not -- may
10 decrease CO2 but may actually increase other types of
11 pollutants.

12 Thank you.

13 CHAIRPERSON NICHOLS: Thank you very much.

14 That will conclude our pre-lunch lineup of
15 witnesses. We'll break for an hour and be back in this
16 room in an hour's time.

17 Thank you.

18 (Thereupon a lunch break was taken.)

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1 AFTERNOON SESSION

2 CHAIRPERSON NICHOLS: We'd like to get started
3 again please.

4 The other Board members are either in this room
5 or in the back where they have access to the sound. So we
6 can get started right away.

7 While we were at lunch the speakers list
8 multiplied dramatically. So I'm going to do two things.

9 First of all, I'm going to cut the list off now.
10 So anybody who comes in after -- who tries to sign up
11 after Robert Sawyer, the list is closed. We will be the
12 last witness.

13 The second thing I'm going to have to do is I'm
14 going to have to impose a two-minute rule instead of a
15 three-minute rule, or we will not make it through the
16 hearing. And if anybody wants to trade times or yield
17 their time to somebody else, I think that would be a good
18 idea. If you hear somebody who says what you intended to
19 say, you can just say, "I agree with that person." But I
20 cannot let this go on all night. And that's kind of where
21 we are at the moment.

22 And I appreciate the fact that more of you got
23 interested, but I wish you had signed up earlier.

24 All right. We're going to start next with
25 Matthew Hargrove.

1 And we'll set the timer for two minutes please
2 instead of three.

3 MR. HARGROVE: Madam Chair and members. Thank
4 you very much. I'll try and beat your two minutes. And
5 I'll try and set the template so a lot of people after me
6 can come up and say, "Me too."

7 CHAIRPERSON NICHOLS: Good.

8 And it's also great to see Professor Sperling. I
9 really miss all the work we got to do together at UC Davis
10 while I was there.

11 MR. HARGROVE: My name is Matthew Hargrove. I'm
12 the Vice President of Government Relations at the
13 California Business Properties Association. We represent
14 commercial, industrial, and retail real estate interests.

15 During the development of the AB 32 scoping plan
16 I was here a lot and met with many of you. And we were
17 very concerned that the economic analysis understated the
18 costs of AB 32 implementation. As you know, we're still
19 there, and we're there especially on this rule.

20 The Low Carbon Fuel Standard is the first major
21 regulation after adopting the scoping plan. And we think
22 that the evaluation process is still lacking a bit. And
23 we wish that more economic analysis can be done of this
24 rule.

25 A recent independent study showed that the LCFS

1 will result in almost \$4 billion a year in higher fuel
2 costs. And again we think that's something that's going
3 to be impactful of many of our members. We're out there
4 building and fuel cost is very important for our members
5 doing business in California.

6 The economics are clearly important, especially
7 in the context of the current recession. Recent
8 volatility in fuel prices have demonstrated how even small
9 fluctuations can impose a great hardship on businesses and
10 consumers alike.

11 From a business perspective, the higher fuel cost
12 facility associated with the LCFS will be another expense
13 piled on top of higher taxes, fees and environmental
14 regulations that have made us all increasingly
15 uncompetitive with other states and countries.

16 It's not at all certain the necessary
17 technologies and fuels that we need to implement this
18 standard have been perfected, produced, or are going to be
19 available in sufficient quantities to meet the standard.
20 Whether or not they will actually have any meaningful
21 impact on global warming is another issue.

22 These issues would best be resolved before, not
23 after, you adopt this standard.

24 And we very much appreciate you listening to us
25 today. And thank you very much for your diligent work on

1 this. I know this is tough. Thank you.

2 CHAIRPERSON NICHOLS: Thank you.

3 Amisha Patel.

4 MS. PATEL: Good afternoon, Madam Chair, members
5 of the Board. My name is Amisha Patel. I'm with the
6 California Chamber of Commerce.

7 The Cal Chamber is the State's largest business
8 advocate, representing over 16,000 businesses statewide.
9 This is small, medium, and large businesses.

10 Although the Low Carbon Fuel Standard is up for
11 adoption today, we believe in order to get this right and
12 to meet the LCFS goals, more analysis is needed. While we
13 support the diversification of our fuel technology and
14 supply and driving innovation to reach our AB 32 goals, we
15 must also be sensitive to the current state of the
16 economy.

17 California depends on a reliable and affordable
18 supply of high quality diesel fuel to build, farm, and
19 move people and goods. Our members' businesses already
20 pay the highest energy and fuel costs in the country. And
21 face increasing competition from out-of-state businesses.

22 Any shift in California's fuel supplies must be
23 carefully vetted to ensure it does not cause operation
24 problems or have supply or price impacts.

25 Specifically, we believe the following is needed

1 to better understand the proposed rule:

2 1) Determine the critically important carbon
3 intensities for biodiesel, renewable diesel, and advanced
4 renewable diesel;

5 2) Complete the legally required multimedia
6 analysis for biodiesel; and, finally

7 3) Revise the economic analysis of the supply
8 and price impacts of the diesel fuel carbon intensity
9 specification reflecting the volume of products necessary
10 for compliance.

11 Again, it is important to get this right because
12 we want to make sure that other nations and states follow
13 our lead.

14 Thank you for the chance to comment. And we look
15 forward to working with you further.

16 CHAIRPERSON NICHOLS: Thank you. Thanks for your
17 involvement.

18 Dorothy Rothrock.

19 And, by the way, if I could ask people who are on
20 this side to -- if you see your name coming up, to come up
21 to this side, we'll save time if we use both podiums.

22 MS. ROTHROCK: Thank you, Madam Chair and
23 members. My name's Dorothy Rothrock. I'm with the
24 California Manufacturers and Technology Association.

25 We're very concerned that the adoption of the

1 LCFS today is premature and could result in significant
2 fuel supply cost and quality problems that will harm
3 California's economy and jeopardize success of the
4 program.

5 We believe the LCFS has not been adequately
6 evaluated in terms of availability of low carbon fuels,
7 the impact on energy prices, and environmental impacts.
8 Those concerns have been reinforced by findings of a
9 recent review of CARB staff analysis by Sierra Research,
10 which concluded that the LCFS would increase fuel costs in
11 California by \$3.7 billion a year by 2020 and increase
12 smog-forming emissions by five tons a day.

13 Sierra characterize the staff's projections as
14 overly optimistic about the number of alternative fuel
15 vehicles that will be on the road and the cost of
16 producing and distributing biofuels such as corn ethanol.

17 To position LCFS for success and minimize the
18 cost and job losses and any unintended environmental
19 consequences, we ask that you postpone adoption of the
20 rule until we have a complete analysis.

21 We need three things -- we need at least three
22 things:

23 Complete -- the incomplete life cycle analyses,
24 notably those for biodiesel or renewable products --
25 renewable diesel products;

1 Demonstrate the availability and cost
2 effectiveness of sufficient lower carbon fuels to meet the
3 standard through 2020 using existing technologies based on
4 publicly available information; and

5 Identify the degree to which the standard will
6 require development and commercialization of materials and
7 technologies that are not yet commercially available.

8 We think we need to complete the unfinished work
9 related to diesel fuels before adopting a carbon intensity
10 standard for diesel.

11 And, finally, we also believe it's important for
12 you to provide for a review program every three years
13 through a public process that involves key stakeholders.

14 We look forward to your further analysis and
15 review to project jobs in the economy as we proceed on
16 this ambitious program.

17 Thank you.

18 CHAIRPERSON NICHOLS: Thank you.

19 MR. DURAN: Good afternoon. My name is James
20 Duran. I'm Chair of the California Hispanic Chamber of
21 Commerce Legislative Affairs Committee and also a member
22 of the Hispanic Chamber of Commerce of Silicon Valley.

23 I'm sorry Ken Yeager's not here.

24 I've been here before asking for objective and
25 realistic answers to what AB 32 global warming reduction

1 policies are going to cost. Each time I've been told the
2 real economic analysis would happen as each individual
3 rule is considered. I don't think we've actually been
4 heard, and that's why I'm here again to repeat myself. I
5 can't just say, "Me too."

6 Now you're considering the first major rule under
7 AB 32. And it looks like you're still not doing the
8 analysis necessary to truly figure out what the LCFS will
9 cost, whether the technology is or will be available, and
10 what the impacts will be on the environment and public
11 health.

12 Members of the public like me couldn't even see
13 your staff's report until today. So the process is not
14 only apparently deficient; it's also not in the least bit
15 transparent.

16 Here's what I know just from reading the papers
17 and checking what is publicly available:

18 A new study of your staff's analysis says this
19 fuel standard will cost almost 4 billion a year. It says
20 your staff's assumptions were based on theories, not real
21 data or experience. And it also says that because of the
22 plan's heavy reliance on corn ethanol, we'll also get a
23 significant increase in the emissions that cause smog.

24 Here's what else I know:

25 Unemployment in California rose to 11.2 percent

1 in March, a new record. In Silicon Valley, where I'm
2 from, it's doubled in the last year alone.

3 We're already looking at tax increases, be
4 creases in higher costs all around, but at the same time
5 we're suffering from the recession.

6 We can't afford higher fuel costs. We can't
7 afford to replace our personal and business vehicles with
8 the ones your plan is counting on to get the emissions
9 reductions, even if they do turn out to be available soon,
10 which is doubtful. And we can't afford to rush into this
11 rule without proper study. Please continue this item
12 until such time as your staff has answered the critical
13 questions about costs and other impacts.

14 Thank you.

15 MR. FROST: Madam Chair, members of the Board.
16 My name is Jerry Frost. I work at Kern Oil & Refining
17 Company down in Bakersfield.

18 I'd like to first thank staff for making
19 themselves accessible and available throughout this
20 process and listening to us.

21 In 1981, there were 12 small refineries, as
22 recognized by CARB, in the State of California. Today
23 there are only two of us left. Many of these small
24 refineries went out of business or went to making asphalt
25 rather than fuels. We did not. We committed to fuels.

1 We committed to the reformulated fuels, the ultra-low
2 sulfur diesel fuels. And now we're committed to Low
3 Carbon Standard Fuels.

4 We've been in business for 70 years and we plan
5 on being in business for another 70, at least. Or at
6 least until I retire.

7 (Laughter.)

8 MR. FROST: Small refineries are unique from the
9 large major complex refineries you find in the Bay Area
10 and down in South Coast. We're landlocked. They have
11 coastal access. We're just a white spot in the line.
12 They have upstream oil and gas production and downstream
13 marketing capabilities in retail. We do not. They have
14 large capital and accessible credit lines. We do not.

15 An example of what the majors can do is they're
16 out there buying up ethanol plants right now securing that
17 feedstock. We cannot. We're not in that position.

18 They're more complex than we are and they use
19 more energy than we do.

20 It's not a level playing field, and we will
21 continue our commitment to work with staff to help level
22 that playing field for the small business refiners.

23 Thank you.

24 CHAIRPERSON NICHOLS: Thank you.

25 MR. GARDENSWARTZ: Good afternoon. My name is

1 Will Gardenswartz and I'm in charge of marketing at
2 EdeniQ, a biotechnology company based in Visalia,
3 California.

4 We are not a biofuels producer per se but rather
5 supply both first and second generation producers with
6 technologies that help them operate more efficiently.

7 We're an interesting company because we straddle
8 or, as I like to say, bridge the space between corn and
9 cellulose. We support LCFS and the inclusion of ILUC
10 because, after a lot of healthy and sometimes heated
11 internal debate, we see them as pushing biofuels in the
12 right direction. We see them as stimulating smart,
13 efficiency-oriented technology.

14 We see the movement from food-based biofuels to
15 non-food biomass as more of a curve than a leap. EdeniQ
16 is commercializing technology that supports the migration
17 of today's multi-billion dollar corn infrastructure toward
18 more efficient and advanced production. That's a
19 direction that makes a lot of sense, not only because corn
20 is and will always be at the foundation of American
21 agriculture, but also because of the painfully tight
22 credit markets. For now and for the foreseeable future
23 it's going to be hard to muster the capital for shiny new
24 built-from-scratch cellulosic plants.

25 We know that corn can segue into cellulosic

1 because we're doing it. EdeniQ recently launched a
2 technology called Corn 3 that employs biological and
3 mechanical processes to increase the yield at today's corn
4 plants from an industry average of 2.69 un-denatured
5 gallons per bushel to 3 gallons per bushel. This means
6 that a hundred-million-gallon-per-year plant can make the
7 same amount of ethanol using 10 percent less corn. No
8 matter what your views on corn ethanol, making the same
9 amount of ethanol using 10 percent less corn is a good
10 thing. And it can mean as much as \$15 million per year to
11 the producer's bottom line, the difference between
12 bankruptcy and showing a solid profit.

13 In increasing the yield of ethanol from corn, we
14 actually begin to address some of the lower hanging
15 cellulose in the corn kernel. Indeed, a one hundred
16 million gallon per year plant employing our technology
17 could qualify four to six million gallons of its annual
18 output as cellulosic biofuel.

19 More ethanol from less corn is in line with LCFS
20 and ILUC. These regulatory incentives will help the
21 producers adopting our technology find an eager market for
22 their low carbon ethanol in California.

23 The good news is that there are a number of
24 compelling technologies being offered to first-generation
25 producers to help them gain operating efficiencies, which

1 invariably lower carbon.

2 CHAIRPERSON NICHOLS: Your time is up.

3 MR. GARDENSWARTZ: Thank you.

4 I thought, you know, since I gave my slot -- no,
5 I'm just --

6 CHAIRPERSON NICHOLS: Oh, you're such a good guy.

7 MR. GARDENSWARTZ: I had to bargain a minute
8 there.

9 CHAIRPERSON NICHOLS: Thank you.

10 MR. GARDENSWARTZ: Thank you.

11 Okay. Joe Velasco.

12 MR. VELASCO: Thank you for the opportunity to
13 appear before you. My name is Joe Velasco. I represent
14 the Brazilian Sugarcane Industry Association. So along
15 with my Canadian Friend, bonjour, since we're using our
16 own languages here today.

17 I'd like to make two brief but substantive
18 requests that were detailed in our written comments to you
19 last week.

20 We're currently, and as you'll see on the list,
21 I'm currently standing as opposed in the Low Carbon Fuel
22 Standard. And I want to make sure that I don't -- nobody
23 here probably opposes low carbon fuels, I certainly don't
24 oppose the standard broadly defined. Our issue is with
25 the underlying data and the results. And we're happy to

1 change our position later today if we can get a commitment
2 on these two requests from the ARB.

3 My first request is that the Board ensure that
4 your green analysis uses accurate data. Though under
5 current green modeling, sugarcane ethanol happens to be
6 the lowest carbon intensity liquid fuel available under
7 the look-up table right now, we believe it is actually
8 significantly lower and the corrections need to be made.
9 It should actually be something closer to less than 20
10 grams CO2 per megajoule today. Our comments point out the
11 basic errors that were made in the GREET analysis and that
12 failed to capture the process of making sugarcane ethanol
13 in Brazil.

14 Perhaps more troubling to me is that the analysis
15 ignored the improved low carbon practices ongoing in
16 Brazil today.

17 The second request I have regards everyone's
18 favorite topic here today - land use changes. And there I
19 request that analysis be done based on the comments we've
20 submitted and all the peer-reviewed data we submitted in
21 our comments that the GTAP model be rerun with accurate
22 and better data.

23 I think what you will find after that process is
24 that indirect land use changes in Brazil are much smaller
25 than estimated by CARB.

1 Again, and in order to keep on my time, I just
2 want to leave this clear as possible. Sugarcane ethanol
3 has a verifiable reduction in greenhouse gases of 90
4 percent compared to yesterday's gasoline. We know we will
5 meet the low carbon standard today as well as in 2020. We
6 just want accurate and realistic data in the models.

7 Thank you.

8 CHAIRPERSON NICHOLS: Thank you.

9 BOARD MEMBER SPERLING: On behalf of the staff
10 and the Board, I'll say we do want accurate numbers and we
11 will review it. So therefore we get your support.

12 (Laughter.)

13 CHAIRPERSON NICHOLS: We're going to move your
14 check mark to the "support" column.

15 Mr. Moyer, are you here?

16 MR. MOYER: Yes.

17 CHAIRPERSON NICHOLS: There you are. Okay.

18 MR. MOYER: Good afternoon. Craig Moyer. I'm
19 here today representing the Western Independent Refineries
20 Association.

21 The Western Independent Refineries Association is
22 a trade association representing independent refiners;
23 that is, refineries without crude oil supply or gas
24 stations.

25 There are two WIRA members here today. You've

1 heard from one of them, and we'll be hearing from another
2 one. These are noncracking refineries; that is, they're
3 simple operations. No coking, no alkylation, and no
4 cracking. And in the past fuels rules, I've been before
5 your Board pointing out that these refineries are at a
6 competitive economic disadvantage, that is, the rules cost
7 more cents per gallon for these smaller refineries than it
8 does for the large complex refiners.

9 Here, however, less complexity means lower energy
10 use per gallon. Lower energy use in the refining process
11 means a lower carbon intensity per gallon.

12 The staff proposal, however, sets one baseline
13 for everyone, even though WIRA members are probably about
14 halfway to the endpoint. And this is the one time the
15 simple refining operation can be an advantage, and we're
16 very disappointed that the proposal precludes this
17 opportunity.

18 The proposal would allow alternatives to the
19 numbers on the alternative fuel side and those can be
20 adjusted, but not the baseline for gasoline and diesel.
21 And we feel that's wrong.

22 By the way, the WIRA members being in California
23 use locally produced crude oil. So there's no transport
24 across the ocean. That's not necessary to get into that
25 issue at this point. But we'd like the opportunity to

1 come back.

2 And the most important point I want to make is
3 not only is the energy efficiency and carbon intensity
4 reduced from the small refiners, but also there are --
5 it's a double whammy because these refineries are
6 complying with the Low Carbon Fuel Standard from a common
7 baseline with credits and alternative fuels. And because
8 of logistics, scale, and access to capital, they are at a
9 disadvantage in the compliance side as well.

10 Thank you for your time.

11 CHAIRPERSON NICHOLS: Thank you.

12 MR. BURKE: Madam Chair and members of the Board.
13 My name is Jonathon Burke. I am a Vice President of
14 Corporate Development for Westport Innovations. We're a
15 Canadian company with offices and facilities here in
16 California. And we are a supplier of fuel systems and
17 engines that operate on low carbon and low emissions
18 natural gas.

19 We've been supplying natural gas engines and fuel
20 systems into California for several years now. We have
21 over 4,500 vehicles on the road using our engines
22 principally in the heavy-duty space. So buses, school
23 buses, heavy-duty transport trucks at ports and other
24 operations.

25 We are in strong support of the Low Carbon Fuel

1 Standard. And we have -- also want to thank staff and
2 commend staff for their ability to work with industry and
3 to receive our feedback. And they've addressed a number
4 of the issues we've had.

5 There is, however, one outstanding issue that
6 relates to the low carbon fuel standards, and that is the
7 energy efficiency ratio. And why this is an issue for
8 heavy-duty truckers is that they're looking at what you're
9 doing today as a market signal, and they're going to start
10 making purchase decisions based on this very important
11 market signal.

12 Heavy-duty trucks consume vast amounts of fuel as
13 compared to passenger cars. Because of that, and the EER
14 that's designated for heavy-duty natural gas vehicles of
15 .9, heavy-duty natural gas vehicles are penalized. And
16 when you're burning 20,000 gallons of fuel per year, if
17 you're not being attributed the efficiency that the
18 engines have demonstrated in CARB and EPA testing, and as
19 their certificates demonstrate, it represents a negative
20 market signal to a purchase decision that could be made by
21 someone in their efforts to achieve the low carbon fuels
22 that we're all trying to seek here.

23 So with that, I'd like to reiterate that we would
24 like to see either two EERs for heavy-duty natural gas
25 vehicles or a blended EER that accommodates both

1 spark-ignited and compression-ignition engines.

2 Thank you.

3 CHAIRPERSON NICHOLS: Thank you.

4 I am going to ask the staff to respond to that.

5 If not, we can raise it later.

6 STATIONARY SOURCE DIVISION CHIEF FLETCHER: This
7 is Bob Fletcher.

8 What they're asking for -- the energy economy
9 ratio is essentially the metric that we use for how
10 efficient the motor vehicle is in converting fuel to
11 energy. So for gasoline and diesel fuels, it's 1.0. When
12 we're talking about an energy efficiency ratio and what
13 we're looking at relative to these engines, we have had
14 discussions, and one of resolution "be it further
15 resolved" is to continue looking at it.

16 The issues that we have with the natural gas side
17 of it is the availability of data for 2010-compliant
18 diesel engines. So we are comparing, you know, one of
19 their engine types to a 2010. And what we would like to
20 do is to take a comprehensive look at all of the data to
21 come back with a revised value for EER.

22 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And I'd like
23 to add. I don't see how this affects a buyer's decision
24 to get a new vehicle. They're going to go to the dealer
25 and say, "What's my fuel economy? How many miles do I get

1 per gallon of LNG or CNG," whatever, and then put that
2 into their economic calculation.

3 What we're talking about is when someone sells
4 CNG to the vehicle as a motor vehicle fuel, what kind of
5 credit they get for greenhouse gas reductions. And that's
6 got to be a combination of a whole bunch of different
7 vehicles out there and what the fleet average is.

8 So we want to look at that. But I don't think
9 it's going to -- if it's a good deal to buy LNG and CNG
10 vehicles for the vehicle operator, then they'll see that
11 when they go to the dealer to investigate.

12 BOARD MEMBER SPERLING: But isn't the principle
13 here that we will be updating these AERs over time as --
14 if the technology changes, you know, just like we're going
15 to update other numbers -- isn't that built in to the
16 whole process here?

17 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Yes. And it
18 should be a fairly technical exercise. Because once their
19 real vehicle's on the road, it should be an easy
20 engineering calculation to make.

21 CHAIRPERSON NICHOLS: Okay thank you.

22 Todd Campbell. I just saw you there.

23 MR. CAMPBELL: Good afternoon, Madam Chair and
24 members the Board. Todd Campbell, director of public
25 policy for Clean Energy. And Clean Energy wants to

1 express strong support for the local carbon fuel standard.
2 And we also want to express strong admiration and support
3 for the staff. The staff has been incredibly helpful.
4 And has worked with us every step of the way. We're also
5 very appreciative of a number of modifications that staff
6 has put in. Actually 2 of my for 4 issues, my little
7 housekeeping issues that I actually spoke with some of you
8 about, which is the LNG opt in. And then also it's the
9 biogas modification of the definition.

10 One thing I'd like to respond is the EER is
11 incredibly important for us. And I'll tell you why. It's
12 not the issue of whether or not a dealer goes or a
13 purchaser goes to the dealer and asks what their fuel
14 economy is. It's how decision makers policy makers use
15 how that EER in determining what vehicles they fund. And
16 we've seen it already with the pathway comparison of the
17 draft pathway comparison, where staff had put in a low
18 carbon fuel diesel, that actually does not, in my view,
19 exist yet.

20 And that has been used by the Port of Long Beach
21 to marginalize the benefits of liquefied natural gas in
22 trucking. So that's the policy point that we're trying to
23 make.

24 Second, we have data that shows equal efficiency
25 for the compression ignition. And so we think that that

1 should be accounted for. And because the rule only calls
2 for one EER value, the compression-ignition engine and the
3 spark-ignited engine should be blended.

4 My final point is that I think that there's also
5 a concern about using -- or compensating for legacy fleets
6 in this issue. I think it's a really bad idea to start
7 accounting for legacy fleets when you're accounting for an
8 EER, because then you have to look at the gasoline and
9 diesel legacy fleets. And if you're not too careful
10 Canadian oil sand oil may qualify under the low carbon
11 fueled standard because of the aging diesel and gasoline
12 fleets out there.

13 So we're asking for fairness. And I really
14 appreciate -- that said, I really appreciate what staff
15 has done. I think staff has done a marvelous job and
16 we're completely supportive of this low carbon fuel
17 standard.

18 CHAIRPERSON NICHOLS: Thank you.

19 Brooke Coleman.

20 MR. COLEMAN: Madam Chair, board members, thank
21 you for the opportunity to speak today. My name is Brooke
22 Coleman. I'm the executive director of the New Fuels
23 Alliance. I want to be clear about who we represent and
24 where we're coming from on this issue.

25 We represent largely advance biofuel companies,

1 companies like Mascoma, Verenium, Cutera, companies that
2 are pushing the envelope in that space to make advanced
3 biofuels and they're relying on investments to get that
4 done.

5 This is a critical time for them and we support
6 the concept of the LCFS. We're very active supporting it
7 at the federal level early on. But at some point, we
8 derivated grossly, I would say, from the vision that
9 Governor Schwarzenegger laid out when he said we were
10 going to establish a level playing field.

11 And so with all the technical analysis, to me
12 this comes down to a very simple question. And that is,
13 do we enforce indirect effects selectively against
14 biofuels. And I want to be clear about this. We've
15 gotten to the point where we know a lot of things and we
16 all agree on a lot of things.

17 One is, is that all fuels have indirect effects.
18 So all fuels have ripple effects in the market place.

19 ARB is proposing to enforce them against biofuels
20 now while they figure them out for other fuels over time.
21 That is going to send a pulse through the marketplace that
22 is going to affect investment.

23 The published numbers that you've put out so far,
24 increased the biofuel score by percent 40 to 200 percent.
25 And I'd like you to think about that number. That applies

1 to both advanced biofuels and conventional biofuels.

2 This reduces the benefits of those fuels
3 significantly relative to other fuels that are not paying
4 for indirect effects.

5 And you have in your hands an analysis that shows
6 that 30 may not be the right number. Tom Hertel who do
7 the 30 run, said that we should perhaps set the elasticity
8 to one. We've gone ahead and done that and that number
9 shrinks down to 15. So I propose to you this, if the
10 proposal is to enforce indirect effects selectively, that
11 you do it with the most conservative number that is
12 scientifically defensible. And that right now and that
13 has been presented to you and has been presented to you in
14 technical form over the last two weeks, is 15.

15 That is a very important number for our industry,
16 because what you've done with 30 grams per megajoule is
17 you've taken conventional biofuels out of the carbon
18 equation. And that is disruptive to both conventional
19 biofuel companies, that you rely on and could rely on more
20 in California to produce your fuel, and advanced biofuel
21 companies.

22 CHAIRPERSON NICHOLS: You're really good at not
23 putting a period at the end of your sentence.

24 MR. COLEMAN: I know. I see that look. I want
25 to keep going. And it's also full in advanced biofuel

1 companies.

2 CHAIRPERSON NICHOLS: We've heard it. Thank you.

3 MR. COLEMAN: Thank you

4 CHAIRPERSON NICHOLS: Jesus Vargas.

5 Mr. Vargas.

6 Mr. Maldonado.

7 Mr. Holly from Alberta Energy.

8 MR. HOLLY: Good afternoon, Madam Chair, Board
9 Members and staff. Since 2 people are missing, I guess I
10 get to speak for 6 minutes.

11 (Laughter.)

12 CHAIRPERSON NICHOLS: Nice try.

13 (Laughter.)

14 It's like the accounting we've heard.

15 MR. HOLLY: There's a lot of discussion today
16 about pathways. And one of the things I want to talk to
17 you today about is crude pathways. And, number one,
18 understand Alberta is a global supplier of oil and gas.
19 Canada is the number one source of imported oil into the
20 United States and Canada. We produce 70 percent of the
21 oil in Canada. We supply you with 25 percent of the
22 natural gas that you consume here.

23 In the CARB report, it talks about high intensive
24 crudes. And it says oil sands is a high intensive crude.
25 We are now seeing pathway studies that we've initiated

1 with people such as Jacobs Consultancy, Fuel Pathway
2 Associates, that are indicating that carbon intensity of
3 your oil sands product is the same, if not lower, than
4 some of the crudes that you are currently consuming in
5 California.

6 That includes Mexican crude, that includes
7 Venezuelan crude and that includes your indigenous Kern
8 River crude. If you add the cogeneration component and
9 it's in the slides that I gave to you this morning, you
10 will see that even proves us even better. I also want to
11 add and point out to you, that recall that Alberta has a
12 very strong program looking at carbon capture and
13 sequestration.

14 Now, why am I talking about crudes? Well, number
15 1, we believe you've got a stretch policy. We believe you
16 cannot achieve what you want to by 2020. In your own
17 paper, you state that crude has a significant role going
18 forward. We believe it has and you can't forget about
19 that crude industry.

20 One of the things we find lacking is a discussion
21 of process improvements upstream. And that's another
22 area, although it may not be directly related to this
23 regulation, it should be something focused.

24 And I want to point out one final thing that's in
25 your report. You actually talk about the transfer of cash

1 for the petroleum industry to the alternative fuel
2 industry. But you still need to keep the oil industry
3 here for a long time. Thank you.

4 CHAIRPERSON NICHOLS: Thank you.

5 MR. LUTCH: Hello. My name is James Lutch. And
6 I appreciate the opportunity to speak before you today.

7 I'm an owner operator of Simple Fuels Biodiesel,
8 a small biodiesel producer up in northern California.
9 We're focused on production of biodiesel from local waste
10 sources of waste grease. And we export -- we support
11 accelerated implementation of the LCFS as increasing the
12 use of biodiesel has the ability to create immediate and
13 substantial reduction using currently available technology
14 on both production and consumption ends of the spectrum.

15 We support the complete lifecycle and pathways
16 analysis, so as to promote production and consumption of
17 biofuels from local sources whenever possible. While
18 California has a low potential for native oilseed crops,
19 it offers a substantial resource in the form of waste oil.
20 The local nature of this resource offers maximum carbon
21 reduction due to its inherently efficient pathways and
22 zero land-use.

23 Lifecycle analysis also will help to encourage
24 support of algae based feed stock, which we expect to
25 comprise a larger portion of the feed stock pool in the

1 coming decades. California is an ideal climate for algae
2 production as evidenced by NREL's study which was based in
3 California back in the nineties. As well as several of
4 the world's largest algae researchers are located right
5 here in California.

6 Apart from keeping California as a technological
7 leader, encouraging local production will offer
8 significant benefit to the local and State economy. All
9 fuels are not created equal. And the current technology
10 and acceptance level of biodiesel, coupled with the
11 ability for technological growth from advanced feed
12 stocks, will allow California to remain a competitive
13 innovator in the next generation of the fuel industry.

14 Thank you for your time.

15 CHAIRPERSON NICHOLS: Thank you.

16 Mr. Cortes, are you here?

17 Mr. Larson.

18 MR. LARSON: Good afternoon. Jim Larson with
19 PG&E's Clean Air Transportation Program. I'll be brief.

20 I'm here to express Pacific, Gas & Electric
21 Companies support of the low carbon fuel standard, our
22 appreciation of the staff's open and collaborative
23 process. We are committed to continuing and to engage
24 with the staff as the rule is further refined in hopes
25 that this rule can achieve and even exceed its intended

1 goals in 2020. In a way, we see this rule as a validation
2 of over 20 years of alternative fuel work that we have
3 done. The alternative fuels that we provide support and
4 aid our customers to make informed decisions as they shift
5 over to alternative fuels, are now being recognized for
6 their carbon benefits as well, as a result of this rule.

7 We commend the staff for this task and remain
8 committed to continuing to support the effort in the
9 dialogue through the remainder of the year.

10 In closing, I'd like to tip a hat to a fallen
11 colleague. Last weekend, we lost one of the industry's
12 real pioneers, Tom Alexander, for over 20 years was our
13 manager of our natural gas fuel station infrastructure.
14 Tom also supported our efforts with the natural gas
15 transit -- or natural gas school bus fleets as well. Tom
16 arguably was one of the nation's true experts in field
17 natural gas fueling infrastructure. And he will be
18 missed. But I think the legacy of the work that he's done
19 will live on for a long time and he won't be forgotten.

20 Thank you.

21 CHAIRPERSON NICHOLS: Thank you for that tribute.

22 Mr. Teall?

23 MR. TEALL: Thank you for this opportunity. It's
24 a pleasure to address the Air Resources Board. My name is
25 Russell Teall. I'm the president of Biodiesel Industries.

1 I'm the former vice chairman of the national biodiesel
2 board, and currently vice chairman of the California
3 Biodiesel Alliance.

4 I certainly endorse the earlier comments of Eric
5 Bowen, our chairman. And I would like to add to that in a
6 couple of particulars. Seven years ago, we began working
7 with the U.S. Navy on a research and development center at
8 Port Hueneme with the Naval Facilities Engineering Service
9 Center. The Navy is the largest consumer of diesel fuel
10 in the world. And as a company, we determined early on
11 that they would be a good organization to work with.

12 Over the last 7 years, we've analyzed hundreds of
13 different feed stocks from around the world. And our
14 current favorites are used cooking oil, Jatropha Curcas,
15 which is grown on wasteland and is an inedible product and
16 also algae.

17 I had the pleasure of chairing both the algae
18 world conference in Singapore recently and the Jatropha
19 Conference in Miami. And I think that these are 2 areas
20 that should be looked at more closely as part of the
21 ongoing progress of the staff work that is very
22 commendable that's been going on.

23 The analysis for algae I'm told by the scientists
24 is that the theoretical maximum is about 5 kilograms per
25 cubic meter per day. If you run the numbers, and just

1 look at the biomass byproduct that could be used for
2 animal feed, as an example, that would displace over 800
3 acres of corn and a thousand acres of soybean. And so
4 this is an area that's well worth looking into and using
5 it as a potential offset.

6 I endorse the work that you're doing and
7 recommend adoption. You have me down as neutral. It
8 should have been neutral with comment.

9 Thank you very much.

10 CHAIRPERSON NICHOLS: Thank you.

11 Tom Koehler.

12 MR. KOEHLER: Thank you. Tom Koehler. Pacific
13 Ethanol. We operate here in California. And working with
14 corn ethanol. And also have a DOE grant turning cellulose
15 products into ethanol.

16 I'll say that the way that this current proposal
17 is structured will do nothing to facilitate our transition
18 to cellulose. I have 3 brief comments.

19 One, the indirect numbers you have for corn
20 ethanol is wrong. And I think you know it's wrong.

21 Two, staff's proposal selectively is singling out
22 biofuels and not including indirect effects for all other
23 fuels. Therefore the playing field is not level. This is
24 not a true reform standard.

25 Three, you have the time to get it right. Let me

1 briefly touch on all 3 points.

2 Number 1, the indirect for corn is not right.
3 You just heard the -- when the head of GTAP said if he was
4 King Solomon he would just these numbers. That's 17 not
5 30.

6 Secondly, DG component, the distiller's grain is
7 another huge lever on this. There were no distiller grain
8 experts who peer reviewed this report. The ones that have
9 said -- and I'm just going to summarize one, because
10 there's about 12 of them on the record. "I've no interest
11 in the merits of ethanol use. What I believe is relevant
12 is the truth regarding the nutritional value of
13 distiller's grain. As the report now exists, the truth is
14 not recorded."

15 My assessment of the report is that it's almost
16 inaccurate from the beginning to the end.

17 We need to get it right. You have the time to
18 get it right. The regulation does not take effect until
19 2011, why would the Board want to put out a number you
20 know is wrong, for one. Fuel, leaving the other fuels out
21 when you know you have the time to get it right. I am
22 asking the Board to revise the resolution to take the time
23 to look at all fuels and make sure we get the indirect
24 numbers correct on all of them before 2011.

25 Thank you.

1 CHAIRPERSON NICHOLS: Thank you.

2 Jamie Knapp.

3 MS. KNAPP: Good afternoon, Madam Chair, and
4 members of the Board. I'm Jamie Knapp and I manage the
5 Coalition of Environmental Advocates who have been
6 tracking the low carbon fuel standard since Governor
7 Schwarzenegger issued his executive order back in 2007.
8 You have these groups' strong support. I'm holding in my
9 hand my hand here 5 different groups letters, all of which
10 have been submitted for the record previously I'm also
11 holding a list of several hundred supporting
12 organizations, individual scientists, businesses all of
13 whom support this regulation.

14 Now, with that support, of course, we have a few
15 concerns. And you will hear some of those concerns over
16 the course of the afternoon. You've heard them over the
17 last few months -- last few years as we have testified.

18 In addition to our support of your indirect
19 land-use approach, we believe it is based on sound
20 science. We do think some groups think it could be
21 stronger. We believe that you need to ensure a
22 significant quantity of the ultra low carbon fuels and
23 ensure that they enter the marketplace in the 2010 to 2015
24 timeframe. You need to ensure that we protect air quality
25 and public health across the State, so that we don't

1 produce fuels in neighborhoods that end up increasing
2 pollution in those neighborhoods.

3 The need for land safeguards so that the
4 regulation doesn't perversely incentivize practices that
5 damage sensitive lands and ecosystems. The need for
6 sustainability provisions to ensure that our rules don't
7 create havoc halfway around the world. You're also going
8 to hear some concerns about proposed treatment of biogas.
9 And you're going to hear a little bit about the need to
10 ensure credit transparency, as you develop the credit
11 tracking and framework for the rest of the regulation.

12 So while you have our strong support, we believe
13 the low carbon fuel standard does need strengthening to be
14 a model for other states for the nation and the world and
15 to be the ground-breaking regulation that the world has
16 come to expect from you, the preeminent air quality agency
17 in the world.

18 With that, I know it's after lunch, but I thought
19 I would offer a little afternoon snack. And that is these
20 bags of popcorn represent what we think is a better use
21 for corn and that would be food not fuel.

22 (Laughter.)

23 CHAIRPERSON NICHOLS: Thank you. You can leave
24 those with the clerk.

25 I suspect they'll find their way to us somehow.

1 Thank you.

2 MR. OLDFIELD: I picked the right person to
3 follow.

4 Good afternoon, Chairman Nichols and members of
5 the Board. My name is Justin Oldfield and I'm the
6 director of industry affairs for the California
7 Cattlemen's Association, representing all California beef
8 industry sectors from pasture to harvest.

9 First, I want to offer a different perspective on
10 a few points that have been made this morning, regarding
11 ethanol's impact on the price of livestock feed or the
12 lack thereof.

13 I'm not going to debate ethanol's impact on food
14 prices. To say increased corn ethanol production has had
15 no impact on the price of corn is simply false. Ethanol
16 production now accounts for over 25 percent of our
17 nation's corn crop and will likely continue to increase.
18 While ethanol producers argue that increased production
19 levels have no impact on the price of corn, the industry
20 argues fervently to leave federal subsidies in place.

21 Like the ethanol industry, livestock producers
22 received zero government subsidies. During last year's
23 surge in gas prices, when corn ethanol was at record
24 production, because it was more attractive to fuel
25 blenders, the price of corn rose from \$2 to \$8. To give

1 you an example, a CCA member in Imperial county lost
2 almost \$25,000 while marketing 200 steers at the time of
3 harvest. Their choices were either to reduce heard size,
4 go out of business or continue to lose money hoping that
5 losses could be offset by better days to come.

6 Corn production has increased in the U.S. along
7 with yield rates but nowhere near the amount needed to
8 offset gap in supply. Secondly, it was mentioned earlier
9 on that the use of distiller's grain by livestock
10 producers offsets the corn used in ethanol that could have
11 otherwise been fed to cattle.

12 I want to clarify this point. Corn and DDG do
13 not have a one-to-one production ratio. While livestock
14 producers can use DDG as a protein supplement, it lacks
15 the essential starts that corn provides, so livestock
16 producers still are required to feed a ration primarily of
17 flake corn, even, if DDG is readily available.

18 That being said, CCA does not oppose biofuel
19 production, but would urge future biofuel products to be
20 derived from things currently being unused, such as waste
21 rather than feed crops.

22 We do have concerns about the secondary land-use
23 portion. This use of a secondary land-use or indirect
24 land-use model is highly controversial. We have some
25 experience with ourselves. There was a report that was

1 produced basically saying that livestock production,
2 because of a secondary land use component, accounts for
3 more greenhouse gas emissions than anywhere in the world.
4 And I can tell you here in the U.S., we do not produce
5 livestock like they do in Brazil, and like they do in
6 other countries.

7 And so we certainly would urge you to take a step
8 back, look at this number, and come back with some better
9 science. So thank you very much.

10 CHAIRPERSON NICHOLS: Thank you.

11 Mr. Uihlein.

12 MR. UIHLEIN: Hi. I'm Jim Uihlein speaking on
13 behalf of Chevron.

14 Chevron supports the goal of the low carbon fuel
15 standard to reduce the carbon intensity of California's
16 transportation fuels. We recognize that this is a very
17 ambitious program. Achievement of the 2020 goal will
18 require that commercial skill implementation of fuel and
19 vehicle technologies do not currently exist. And a key
20 element of this program is the incentivization of those
21 technologies to enable the achievement of the 2020 goal.

22 The proposed -- excuse me.

23 Sorry.

24 Regular mandatory program reviews are going to
25 have a key role in this program to ensure that the pace of

1 technology introduction remains matched up with the pace
2 of implementation of the requirements.

3 Chevron is very pleased to see that the proposed
4 modifications strengthen the commitment to these reviews.
5 As part of these reviews, there should be a rigorous
6 assessment of the capabilities for reducing carbon
7 intensity over the next several-year interval of the
8 program that should be based on concrete plans and actual
9 plants and a minimum of speculation.

10 Chevron also agrees with staff's proposal to
11 include their best estimate for the effective indirect
12 land-use change in the calculation of carbon intensity
13 values for biofuels. Indirect land-use change is a real
14 significant effect. Only the magnitude of this effect is
15 uncertain.

16 Inclusion of indirect land-use change from the
17 start of the program avoids several potential negative
18 outcomes and sends the right market signal to the
19 innovators that could produce technologies that avoid this
20 effect.

21 In summary, we do support the goal of the
22 program, and we stand ready to be a constructive partner
23 in the evolution of the low carbon fuel standard through
24 time.

25 CHAIRPERSON NICHOLS: Thank you, Mr. Uihlein. We

1 appreciate that.

2 Susan Reid.

3 MS. REID: Good afternoon. My name is Susan
4 Reid. I'm senior attorney at Conservation Law Foundation,
5 which is a New England-based nonprofit environmental
6 advocacy organization. And for the record, my carbon
7 footprint for today is not as bad as it looks, because I'm
8 telecommuting during the academic year from Berkeley,
9 California.

10 (Laughter.)

11 MS. REID: But I would like to highlight the
12 importance of the Board's low carbon fuel standard work in
13 terms of the recently launched northeast and mid-Atlantic
14 states similar low carbon fuel standard initiative.

15 Following California's lead, what I'll call, the
16 northeast initiative was launched earlier this year with
17 the expectation of bringing a regional program to fruition
18 on the east coast by the end of this year. And so the
19 work of the Board is incredibly important for several
20 reasons. I'll highlight just a couple.

21 One is the precedential value. And I would like
22 to point the Board to the letter dated April 17th from the
23 Environmental Commissioners of each of the 11 states in
24 the northeast involved in this effort, highlighting the
25 important as a precedent, because we're really grateful

1 we're not going to have to reinvent the wheel and that
2 this program has largely been developed here in California
3 through thoughtful and extensive work. It also means the
4 market will be much larger, so now we're talking about
5 California, all of the northeast and shortly hopefully the
6 nation for cleaner transportation fuels.

7 And it's also very important, because it will
8 lead to or it's designed to lead to actual greenhouse gas
9 emissions reductions. And, of course, those pollutants do
10 not know State and regional boundaries.

11 There are several key design framework principles
12 that I do want to highlight that are critically important.
13 One is performance based standards that don't specifically
14 pick winners. Although, we hope that loser in terms of
15 carbon intensity will not be able to successfully compete.
16 That is based on best available science and that it takes
17 into account full lifecycle greenhouse gas emissions
18 including from direct and indirect land-use change
19 impacts. And that is again something that is highlighted
20 in the April 17th letter from the northeast environmental
21 commissioners.

22 Thank you very much for this opportunity to
23 testify today.

24 CHAIRPERSON NICHOLS: Thank you.

25 Sonia Yeh.

1 DR. YEH: Madam Chair and members of the Board,
2 my name is Sonia Yeh. I'm a Research Engineer at the
3 Institute of Transportation Studies at the University of
4 California at Davis. Over the past 2 years, I've
5 collected a team of 20 plus UC researchers studying the
6 implementation of low carbon fuel standard covering issues
7 ranging from implementation, compliance pathways and
8 costs, lifecycle analysis and sustainability.

9 I'm here as a signatory on the letter to the
10 Board signed by more than 175 scientists. The letter
11 urges the Board to account for greenhouse gas emissions
12 from indirect land-use change, as part of the lifecycle
13 emissions accounting for all fuels, including biofuels.
14 It also urges CARB to consider other major sources of
15 emissions from fuels, both direct and indirect, under the
16 proposed low carbon fuel standard.

17 The signers are independent experts in the fields
18 that directly relate to the topic, including climate
19 scientists, land use and economics. Signatories to the
20 letter include 9 members of the National Academy of
21 Sciences and 2 Nobel laureates.

22 The letter authors include Pam Matson, the Dean
23 of Earth Sciences at Stanford University; Michael Hanemann
24 a professor of agriculture in Resource Economics at the
25 University of California, Berkeley; Stewart Pimm a

1 professor of Ecology at Duke University and William
2 Schlesinger, President of the Cary Institute of Ecosystem
3 that is in Millbrook.

4 I'm going to read a few excerpts from the letter.
5 My time is running up, but I will just highlight that.
6 The work you're doing in California sets an important
7 precedent for transportation fuel policy, nationally and
8 internationally, as well as action to confront climate
9 change more broadly. We urge you to consider indirect
10 land-use change as part of the low carbon fuel regulation.

11 Thank you.

12 CHAIRPERSON NICHOLS: Thank you. And we did
13 receive copies of the ad earlier.

14 Patricia Monahan.

15 MS. MONAHAN: Good afternoon, Chairman Nichols
16 and members of the Board. My name is Patricia Monahan.
17 And I am the Director of the California Office of the
18 Union Concerned Scientists.

19 UCS strongly supports passage of the low carbon
20 fuel standard. This regulation will help move us away
21 from conventional petroleum towards cleaner more
22 sustainable fuels of the future.

23 We support the staff resolutions and regulatory
24 amendments, which would help promote ultra low carbon fuel
25 usage, sustainability and clean air. We also support the

1 recommendations that will be coming up from the American
2 Lung Association through Bonnie Holmes-Gen to strengthen
3 the air quality protections.

4 We commend staff for their hard work on this
5 ambitious and groundbreaking regulation. A lot of blood,
6 sweat and maybe even some tears went into making this
7 process. I've been wholly impressed with the caliber and
8 the dedication of the staff working on this issue. And
9 I would particularly like to congratulate them for tackling
10 the challenging task of quantifying emissions associated
11 with indirect changes in land-use.

12 The science indicates that some biofuels cause
13 deforestation and other land-use change resulting global
14 warming pollution. As a letter to CARB from over 175
15 scientists highlights, sound science dictates that we must
16 include these indirect land-use change effects for the
17 standard to be effective.

18 I would like to respond directly to Dr.
19 Sperling's question about the value that CARB has derived
20 for the emissions from conventional biofuels. UCS and
21 other researchers find that the value that CARB is
22 proposing is conservative. A proper accounting could push
23 up the value even higher.

24 As I note in our formal written testimony, there
25 are 3 reasons for this -- for why we say the value is

1 conservative, but I can't go into, because I'm running out
2 of time.

3 I think that it's important for CARB, as they
4 move forward with this regulation, to warn convention
5 biofuel producers that they should be aware that the
6 number could go higher in the regulatory review of the
7 program. Biofuel investors should put their money on
8 truly low carbon fuels of the future, like those made from
9 waste and cellulosic.

10 In conclusion, thank you to the Board for your
11 leadership on this important issue and we support -- we
12 urge you to adopt the low carbon fuel standard.

13 Thank you.

14 CHAIRPERSON NICHOLS: Thank you.

15 (Thereupon an overhead presentation was
16 Presented as follows.)

17 MR. MUI: Good afternoon members of the Board,
18 Chairwoman Mary Nichols. I'm Simon Mui, clean vehicles
19 and fuels scientist with NRDC.

20 And NRDC has been working on the LCFS for several
21 years now, since its inception. Staff was given a very
22 challenging task, particularly in addressing land-use
23 change from biofuels and developing a best estimate for
24 land-use change.

25 And all of them are standing here today after all

1 their hard work. Although, I've heard that some of them
2 are retiring, which may reflect the intensity of this
3 process.

4

5 (Laughter.)

6 MR. MUI: But I would like to turn -- to the next
7 slide.

8

--o0o--

9 MR. MUI: -- basically highlight and ask a
10 question, has ARB staff been reasonable in developing a
11 best estimate of ILUC. Have they conducted the sound
12 science necessary to take into account the best estimates,
13 peer review of models, to come up with a number, a best
14 estimate.

15 And the verdict is in. The peer-review process
16 has found, in all 4 cases, that inclusion of indirect
17 land-use change is based on sound science and it should be
18 included and not discarded because of uncertainty.

19 Next supplied, please.

20

--o0o--

21 MR. MUI: The second question I ask is, has CARB
22 addressed and incorporated many of industries' and
23 stakeholder's concerns in a fair and reasonable manner?
24 And here before you is a table that lists really the main
25 ethanol industries' concerns -- there's been 9 of them --

1 and the responses that CARB has given throughout 16
2 workshops as well as the ISOR. And I think the verdict is
3 again CARB has conducted due diligence in their process.

4 Last -- if you could forward 2 slides.

5 --o0o--

6 --o0o--

7 MR. MUI: -- I'd like to address this indirect
8 land-use change. Why land-use impacts -- indirect
9 land-use change impacts for other fuels isn't as
10 significant. Well, here you can clearly see the amount of
11 lands required for corn ethanol. And I'd like to just
12 conclude on the third slide. Here's the impact -- one
13 more please.

14 --o0o--

15 MR. MUI: Here's the impact from other fuels
16 compared to corn ethanol. And, again, I think the story
17 on indirect impacts for other fuels is that there isn't a
18 story so far. And I think the best approach is to allow
19 CARB to continue looking to see if there are significant
20 effects. But as far as our analysis has shown, we are
21 unable to find a very significant effect.

22 Thank you very much.

23 CHAIRPERSON NICHOLS: Thank you. That's a useful
24 chart.

25 MR. GARDERET: Good afternoon, Madam Chair and

1 members of the Board. My name is Remy Garderet. I
2 represent Energy Independence Now. And I'm also a member
3 of the environmental coalition from who you've been
4 hearing.

5 I wanted to highlight today one of the concerns
6 that we have. First, I want to say, of course, that we do
7 support whole-heartedly the adoption of the LCFS,
8 including the indirect land-use changes.

9 But one of our concerns is around the ultra low
10 carbon fuels, and whether the LCFS will provide a
11 sufficient incentive for the development of ultra low
12 carbon fuels, and in particular the nonliquid ones. We've
13 heard a lot about biofuels today and those can be blended
14 into our existing fuel supplies. But the hydrogen and the
15 electricity and the natural gas that we're all hoping to
16 see come on line to be able to meet our 2050 goals.

17 They need a strong incentive too. And currently,
18 the way it's structured, that incentive depends very
19 heavily on somebody willing to buy the credits that we
20 will be issuing these fuel producers.

21 So our concern is that the LCFS, the way it's
22 structured right now, does not really provide a guarantee
23 that sellers of those credits will find buyers and that
24 this will really translate into a revenue stream that they
25 can bank on.

1 We have seen with pleasure that some of that has
2 been addressed as part of the review that's projected for
3 the future, but we'd urge you to see if some of those
4 mechanisms that we propose can be incorporated within the
5 timeframe up to December 2009.

6 There's 2 other issues that relate to ultra low
7 carbon fuels. One is regulatory alignment with the
8 electricity sector regs. And I'm sure you'll be hearing
9 more about that from other members. Also, the waste
10 sector has a lot of overlapping interests here. And there
11 are many standards and codes, safety codes, fire codes,
12 certifications that impede these nonliquid fuels.
13 Everything has been set up around liquids. And so we
14 would urge you to take a look at that.

15 And also include the option of using your
16 existing authority under the clean fuels outlet to perhaps
17 force, if necessary, the initial start-up and ramp-up of
18 these fuels.

19 Thanks again for your time.

20 CHAIRPERSON NICHOLS: Thank you.

21 MS. HOLMES-GEN: Okay. Good afternoon. Madam
22 Chair and members, Bonnie Holmes-Gen. I'm Senior Policy
23 Director with the American Lung Association of California.

24 And I'd first like to underscore the American
25 Lung Association's position in strong support of the low

1 carbon fuel standard. It's a giant step forward toward
2 meeting our global warming goals in California.

3 And not just the American Lung Association, but
4 many of our colleagues in the public health community are
5 solidly behind this regulation. And you'll be hearing
6 from other speakers presenting a petition and a letter
7 from public health professionals and organizations today.

8 California simply must transform the
9 transportation sector to use ultra low carbon and
10 especially zero emission fuels and technologies.

11 Three points. Number one CARB's inclusion of
12 indirect land-use is essential to the scientific integrity
13 of the regulation.

14 Number 2, we support the former speaker's
15 comments -- the speaker before me, comments. The standard
16 should do everything possible to promote cleanest or the
17 ultra low carbon fuels like electricity, hydrogen from
18 renewables. And especially in the early years of the
19 standard, we need to get started with that.

20 And third, we strongly believe this regulation is
21 essential to the State's air quality and global warming
22 strategy. But the Board needs to remain very vigilant and
23 watching over the criteria air pollutant and toxicant
24 emission impacts, and ensure the standard does not result
25 in any hot spots of pollution.

1 But this standard will spur the development of
2 new biorefineries and local infrastructure. And these
3 refiners will be using new technologies and the emission
4 impacts are not yet fully understood. So to address these
5 issues, we support the proposed resolution and regulatory
6 language; develop a framework for evaluating these
7 impacts, air quality public health impacts, as we move
8 forward; including direction to develop guidelines for
9 local review of air quality emission impacts; direction to
10 conduct a comprehensive public health analysis of the low
11 carbon fuel standard; and direction to review and assess
12 the air quality impacts of the standard on a statewide
13 basis. And we think it would be helpful to clarify
14 further, number one, that CARB will evaluate the air
15 quality impact of each fuel pathway used to comply with
16 the LCFS, considering the air quality impacts over the
17 entire fuel cycle.

18 So looking at each fuel pathway. And number 2,
19 that CARB will work with the local air districts to
20 develop mitigation strategies that will benefit, as much
21 as possible, the local communities that are impacted by
22 facilities.

23 CHAIRPERSON NICHOLS: Thank you. We do have your
24 letter also. Thank you.

25 MR. BARRETT: Good afternoon. My name is Will

1 Barrett. I'm the air quality and global warming policy
2 coordinator for the American Lung Association.

3 I'd like to thank the Board and staff for your
4 leadership on the low carbon fuel standard and for the
5 opportunity to voice our support for the adoption of this
6 important measure today.

7 As Bonnie noted, I'm here to present a petition
8 signed by over 100 doctors, nurses, respiratory therapists
9 and other healthcare providers practicing throughout
10 California who understand that public health has suffered
11 greatly from your dependence on dirty petroleum fuels.

12 They've seen the negative effects of poor air
13 quality on their patients and are particularly concerned
14 by the effects of air quality on children, elderly, those
15 living with asthma and other respiratory illnesses and
16 other vulnerable populations in our communities.

17 By CARB's own estimates, public exposure to
18 unhealthy air contributes to nearly 10,000
19 hospitalizations for respiratory and cardio vascular
20 illnesses, 280,000 asthma attacks and other respiratory
21 symptoms, millions of lost school and work days and 19,000
22 premature deaths each year in California.

23 These healthcare providers signed onto this
24 petition, because they believe the LCFS is a vital
25 strategy to address these serious public health impacts.

1 On their behalf, I again urge you to adopt the low carbon
2 fuel standard without delay.

3 Thank you very much.

4 CHAIRPERSON NICHOLS: Thank you.

5 Shankar.

6 MR. PRASAD: Good afternoon, Madam Chair and
7 members of the Board. It's a pleasure to be here before
8 you. I'm an executive fellow at the Coalition for Clean
9 Air and we are strongly in support of this low carbon fuel
10 standard and urge you to adopt it as recommended by the
11 staff.

12 Here again, you have an opportunity to lead the
13 world in the direction and establish this credibility
14 continuing of this organization, which has been the leader
15 of the world for a long time.

16 Two comments. We know that biofuels will play a
17 significant role in order to meet the goals of this
18 standard. And this will automatically result in building
19 new facilities, which may get situated or built in cross
20 proximity. Though each of those could be meeting the
21 requirement of the permit conditions, there is a potential
22 jointly they could be creating some problems for the
23 nearby residents.

24 So in order to avoid the creation of another
25 Wilmington or some similar community, we urge the staff to

1 issue some guidance document for best practices of the
2 siting. And they kindly agreed and we thank the staff.
3 And they will be bringing that item to the Board later
4 this year or early next year.

5 This will also give an opportunity to put more
6 rigor because it comes before you into it and also the due
7 public process that is necessary

8 And another point that we want to say is that I
9 think the issues that was brought regarding the CNG, needs
10 to be considered and looked more carefully. And we
11 recommend that you direct the staff to look into this
12 issue brought forth by the Westport and Clean Energy and
13 see if there is a need for the modification that can be
14 brought before the Board when the staff comes back to you
15 in December.

16 Thank you.

17 CHAIRPERSON NICHOLS: Thank you very much.

18 DR. MEAGHER: Good afternoon. I'm Robert Meagher
19 a Sacramento pediatrician and a participant in the
20 American Lung Association's Health Network for Clean Air.

21 I'm please to present a letter from 16 state and
22 local public health organizations in support of the low
23 carbon fuel standard as a key step towards meeting the
24 State's greenhouse gas reduction goals and reducing the
25 health impacts of petroleum dependence.

1 The organization signed onto this letter, include
2 the American Lung Association, the Academy of Pediatrics,
3 the American Cancer Society, Breathe California, the
4 California Pan-Ethnic Health Network, the California
5 Nurses Association, the California Thoracic Society, the
6 Breast Cancer Fund, the Long Beach Alliance for Children
7 with Asthma, Medical Advocates for Healthy Air in Fresno,
8 Physicians for Social Responsibility, the Prevention
9 Institute, Public Health and Law Policy, the Public Health
10 Institute, the Sonoma County Asthma Coalition and the
11 Regional Asthma Management and Prevention.

12 I would like to present a short extract from our
13 letter.

14 As health and medical organizations, we are
15 alarmed by the public health crisis caused by air
16 pollution in California and consider the LCFS as an
17 important step towards improving air quality and reducing
18 serious health threats in our communities. Californians
19 are exposed to some of the nation's worst air and suffers
20 serious health impacts, including lung cancer, asthma,
21 chronic obstructive pulmonary disease, heart attacks,
22 strokes and premature death.

23 As temperatures rise from global warming,
24 California faces serious challenges to protect its air
25 quality and the health of its residents. We urge you to

1 proceed with the adoption of a strong effective LCFS
2 without delay to help California achieve its ambitious
3 greenhouse gas reduction goals while protecting public
4 health.

5 Thank you.

6 CHAIRPERSON NICHOLS: Thank you Dr. Meagher.

7 John Kabatack.

8 MR. KABATAACK: Good afternoon, Madam Chair and
9 board members. Thank you for having me today.

10 My name is John Kabatack and I'm the executive
11 director of the National Federation of Independent
12 Business California. We represent about 22,000 small and
13 independent business owners throughout California about
14 350000 nationwide.

15 When major environmental rules are initiated,
16 there's a misconception that they're aimed at big
17 business. And that's with a Capital B. There's a
18 tendency for advocates of those rules to think that
19 somehow big business can afford it. So, in essence, it
20 really doesn't cost anything.

21 The members of the NFIB know better. Our
22 members, among the millions of small businesses that
23 provide most of the jobs in California, know that when big
24 business has to make huge investments, and incur enormous
25 costs for new green policies, those costs are going to

1 find their way down to their customers, small businesses
2 like ours. And then we'll try to pass those costs along
3 to our customers, California's families.

4 But sometimes you can't pass those costs along
5 and stay competitive. This is especially true when the
6 rules only apply to California businesses, but not to
7 companies based in other states or other countries.

8 It becomes difficult, if not impossible, to
9 compete with companies that offer the same product or
10 service, but do not have to play by the same rules that we
11 have to play by in our state.

12 That's why we are so very concerned about the low
13 carbon fuel standard. Without doing the economic, the
14 environmental and the technical analyses, as required by
15 law, CARB staff is asking you to believe that the goals of
16 the LCFS can be achieved at minimal cost, and that by
17 commanding various fuel additives or new fuels to be
18 introduced, that they'll actually be available, practical
19 and affordable.

20 What's more likely, as independent evaluations
21 have concluded, is that this rule will mean billions of
22 dollars a year in higher fuel costs for small businesses
23 and consumers.

24 And it's unlikely it will materially reduce
25 global warming, since California will be the only place in

1 the country or even on the planet to pursue such an
2 aggressive program, during this time of international
3 recession and when California is experiencing an
4 unemployment rate of 11.2 percent, record unemployment
5 rate.

6 So that's why we urge you to postpone taking
7 action on this item, until the necessary analysis has been
8 fully completed. And that the rule can be fine-tuned to
9 reflect economic and technical reality.

10 Thank you very much

11 CHAIRPERSON NICHOLS: Pete Price.

12 MR. PRICE: Thank you, Madam Chair and members of
13 the Board. I'm Pete Price with the California Natural Gas
14 Vehicle Coalition, representing the natural gas vehicle
15 industry, which marries a fuel that's been determined by
16 this rule already, in several of its forms, to be LCFS
17 compliant with vehicles that are commercially available
18 today.

19 You've heard from several members of our
20 coalition already, so I will summarize. We, first of all,
21 on behalf of all of our members want to express our strong
22 support for the rule and also express our thanks to the
23 staff. They've been unfailingly available and have
24 listened to our suggestions and taken almost all of them
25 into account in this final rule.

1 Several of the changes that have actually been
2 suggested in the 15-day modifications have been mentioned
3 by others. So I'll just mention 2 that are particularly
4 important for us.

5 First of all, the recommendation or the direction
6 to finish the fuel pathway analysis for the liquefied
7 natural gas for north American sources and from biogas.
8 We very much appreciate. We're confident that when that's
9 done, LNG from north American sources, will be shown to be
10 a compliant fuel. That's why we're happy to see also that
11 the executive officer will be able to quickly incorporate
12 newly identified compliant fuels into the opt-in
13 provision.

14 The last thing I'll mention is something you've
15 heard before. Its about this EER. I'll be brief with 2
16 different engines with 2 different energy economy ratio
17 values. What we certainly don't want to see happen is for
18 an engine with superior GHG reduction capacity to be
19 under-valued. The only way to really do that is to adopt
20 2 different numbers. I understand there's a challenge
21 doing that. But at a minimum then we'd like to see a
22 blended number that takes into account both of the
23 engines. And it's ARB's own certification data that shows
24 that the compression ignition suffers no fuel penalty.
25 And we don't want to be punished because we have a 2010

1 compliant engine and others don't.

2 But with that one suggestion, once again, we
3 strongly support the rule and thank you for your work.

4 CHAIRPERSON NICHOLS: Thank you.

5 Anibal Guerrero.

6 MR. GUERRERO: Good afternoon. Buenos tardes.

7 CHAIRPERSON NICHOLS: Buenos tardes.

8 MR. GUERRERO: Anibal Guerrero with the San
9 Fernando Valley of the Mexican-American Political
10 Association.

11 At the March meeting I indicated that while we
12 worry about the environment, we also worry about economic
13 issues. AB 32 scoping plan acknowledged that higher
14 energy costs associated with carbon reductions would
15 disproportionately impact low-income communities.

16 At that time, the unemployment rate was over 10
17 and a half percent and it's now at about 11.2. That means
18 even more of us are struggling to pay rent and to feed
19 families. If the low carbon fuel standard means even a
20 small increase in gas prices, public transportation fees
21 or higher costs of food and other things that are fuel
22 dependent, it's going to hurt our communities even more.

23 Can you tell us more today than you could last
24 month about what this will cost our communities in terms
25 of annual energy bills, costs per gallon of gas, and how

1 those numbers were calculated.

2 The last time CARB adopted a new gasoline
3 formula, there were unintended, but serious water quality
4 problems from the new fuel additive MTBE. It was
5 expensive and dangerous.

6 Because of that experience, the State now
7 requires extensive environmental impact analysis before a
8 new fuel standard is proposed. It's imperative that you
9 do as much research and testing as possible before moving
10 forward with this rule to protect not only the environment
11 but public health.

12 Has staff completed and have you reviewed the
13 analysis required under the Health and Safety Code?

14 We want the low carbon fuel standard to succeed,
15 but we don't want it so badly that we're willing to accept
16 the policy that has pushed through without responsible
17 research and evaluation.

18 Por favor, take the time to do this responsibly.

19 I thank you for your time.

20 CHAIRPERSON NICHOLS: Thank you.

21 Jay McKeeman.

22 MR. McKEEMAN: Good afternoon. I'm Jay McKeeman
23 with the California Independent Oil Marketers Association.

24 We've submitted written comments, but let me just
25 summarize those very briefly.

1 There is a particular problem, from our
2 perspective, with this regulation. And we suggest that
3 the regulation not be adopted until that problem is worked
4 out.

5 Right now, the State has a problem, in that many
6 thought leaders have suggested that biodiesel is a good
7 product. However, the State Water Board will not allow
8 storage of biodiesel above 5 percent blend in underground
9 storage tanks.

10 There is a disconnect between the certification
11 of a fuel for its readiness in the stream of commerce and
12 the time that it gets introduced by a marketer or by a
13 supplier. It's a simple check list. It just requires
14 looking at several issues. Have appropriate
15 certifications been finalized with independent parties, so
16 that the underground storage tanks, the nozzles, the
17 trucks are all certified to use it?

18 Have appropriate public noticing issues been
19 resolved, such as in the Department Division of
20 Measurement Standards?

21 Are insurance companies willing to ensure the
22 liability of handling these fuels?

23 And will the fuel harm any vehicle or engine that
24 it's intended to be put into. It's a simple checklist.
25 We think that needs to be in the regulation and it needs

1 to be clearly set up, so that when a fuel is even
2 incentivized for introduction into the stream of commerce,
3 that it's set up and ready to go.

4 Thank you.

5 CHAIRPERSON NICHOLS: Thank you.

6 Dave Modisette.

7 MR. MODISETTE: Thank you, Madam Chair and
8 members of the Board. I'm Dave Modisette. I'm the
9 Executive Director of the California Electric
10 Transportation Coalition.

11 We represent the 5 largest electric utilities in
12 California on issues related to electric transportation.
13 So that's Southern California Edison, the Sacramento
14 Municipal Utility District, Pacific Gas and Electric
15 Company. The Los Angeles Department of Water and Power
16 and San Diego Gas and Electric Company.

17 We strongly support the low carbon fuel standard
18 that's before you today and we urge your adoption. I also
19 want to thank Bob Fletcher and his very capable staff for
20 bringing you this landmark regulation and for the time
21 they spent addressing our issues.

22 Electricity is a very low carbon fuel. According
23 to the staff, it reduces greenhouse gases by 64 percent,
24 in comparison to conventional fuels. And we think that
25 that number is conservative. We're willing to work with

1 the staff in the coming years to see if we can't better
2 refine that number.

3 Electricity is also significantly less expensive
4 than conventional fuels. So as a fuel provider for
5 electricity used in transportation, we're going to be
6 generating carbon reduction credits. And those credits
7 will become compliance options for petroleum fuel
8 providers and other regulated entities under the low
9 carbon fuel standard. We did ask staff for some
10 additional time to address 3 issues, which were in our
11 letter that we sent on April 14th. And staff has agreed
12 to work with us on these issues. And language to that
13 effect is included in the Board resolution.

14 So we would urge your adoption today of both the
15 board resolution and the regulatory language that's before
16 you.

17 Thank you very much.

18 CHAIRPERSON NICHOLS: Thank you.

19 Thank you.

20 Gary Schoonyan.

21 MR. SCHOONYAN: Thank you, Madam Chair. Gary
22 Schoonyan, Director of Regulatory Affairs for the Southern
23 California Edison Company.

24 Edison is very supportive of the State's efforts
25 to adopt a low carbon fuel standard, as well as a proposed

1 resolution and regulation before the Board today.

2 In providing this support, we would like to
3 commend the staff for their very good work, particularly
4 in the efforts of addressing the use of electricity as a
5 clean transportation fuel.

6 Thank you.

7 CHAIRPERSON NICHOLS: Thank you.

8 James Brady.

9 MR. VARSHNEY: Good afternoon. I'm replacing
10 James Brady.

11 I'm Sanjay Varshney, Dean for the College of
12 Business at Sac State.

13 I've taken a look at the economic analysis on
14 behalf of the California Small Business Roundtable. And I
15 had a few concerns on the economic analysis. And I want
16 to list a few which I think, if the study incorporates, is
17 going to make LCFS study really robust and good.

18 The first one. It's unclear what the outcomes
19 are likely to be if other states in the United States and
20 other countries do not -- either delay or completely
21 withdraw from the implementation of the low-emission
22 standards, similar to the LCFS, in their respective
23 jurisdictions. Staff does not account for costs or
24 disruptions to price of crops arising due to changes in
25 land-use. Although, they attempt to include the resulting

1 changes in actual emissions.

2 Staff does not consider future availability of
3 alternative fuels or any major fluctuations or disruptions
4 in the demand supply equation, leading -- and maybe the
5 resulting prices.

6 Staff assumes that there will be adequate
7 availability of vehicles utilizing alternative fuels. And
8 there will be no costs associated with technology
9 advancements needed to make the vehicles commercially
10 affordable and reasonably priced.

11 Staff also does not account for the possibility
12 that consumers will have to pay substantially higher
13 prices as they already do for those more fuel efficient
14 and advanced technology vehicles and the associated
15 economic costs and impacts.

16 It appears that the cost of production of
17 alternative fuels is artificially lowered due to the
18 associated tax incentives offered for their use.

19 And finally, staff claims that LCFS will not
20 adversely impact the competitiveness of California
21 businesses, and that LCFS will not result in any leakages
22 of business to other states. But as long as other states
23 do not implement a similar standard, California businesses
24 will automatically be rendered less competitive.

25 So those are my views.

1 Thank you.

2 CHAIRPERSON NICHOLS: Thank you. Have you
3 prepared a written analysis?

4 MR. VARSHNEY: Yes.

5 CHAIRPERSON NICHOLS: If you would submit that,
6 we would appreciate it.

7 Thank you.

8 Edwin Lombard

9 MR. LOMBARD: Thank you, Madam Chair, Committee
10 Members and staff. My name is Edwin Lombard. I'm here
11 representing the California Black Chamber of Commerce. We
12 are disappointed that, as was in the case with the
13 approval of the scoping plan last year, you are prepared
14 to adopt a rule based on incomplete economic analysis,
15 which is required by law.

16 Once again, independent researchers and reviewers
17 have concluded that your staff report is based on
18 incomplete and inadequate assumptions resulting in grossly
19 underestimated costs for this program. Once again, your
20 staff theories -- your staff theorizes that costs will be
21 minimal.

22 Last month, I attended the meeting of this board
23 and observed your adoption of the new tire inflation rule.
24 That entire rule required that vehicle maintenance shops
25 check the tire pressure of their customer's cars. And

1 even that had a price tag of \$100 million, which staff
2 acknowledged would be passed along to consumers.

3 One hundred million dollars just for checking
4 your tire pressure?

5 But the low carbon fuel standard won't cost much?

6 Something is very wrong with this picture. One
7 independent study estimated that the cost of 3.7 billion a
8 year and actually increased smog emissions is possible.
9 The Sacramento and California Black Chambers of Commerce
10 still supports the goal of AB 32, but we cannot support
11 rules like the low carbon fuel standard that is
12 insufficiently researched. It will impose higher fuel
13 costs that we can't afford and put our air quality at
14 risk.

15 We are also disappointed that you seem so willing
16 to invest billions of our dollars in programs that cannot
17 possibly slow down global warming unless the rest of the
18 world comes alongside with us.

19 Aubrey Stone will be not here. He's on the list
20 later. Mr. Stone felt so strong about this -- he is the
21 president of the Black Chamber -- that he proposed a bill,
22 SB 295, that would slow down the implementation of AB 32
23 until proper studies are done and an economic analysis was
24 done properly.

25 Thank you very much.

1 CHAIRPERSON NICHOLS: Thank you.

2 Danielle Fugere.

3 MR. FUGERE: Good afternoon. My name is Danielle
4 Fugere and I'm regional program director for Friends of
5 the Earth.

6 First I wanted to commend the CARB Board for its
7 innovative leadership on the issue of global warming, from
8 the clean cars law to AB 32 and now the low carbon fuel
9 standard. CARB has taken early and significant action.

10 And the importance of this leadership can't be
11 overemphasized. I was recently reminded of this in a
12 presentation by a representative of the City of Marin in a
13 meeting regarding how to facilitate electric drive
14 technology. And his presentation was a stark reminder of
15 how -- of the precipice of global warming on which we're
16 currently standing and how close we are to the edge of run
17 away feedback loops and of how little time we have to act.

18 I therefore offer Friends of the Earth's support
19 for the low carbon fuel standard, which will both
20 incentivize the use of low carbon fuels and disincentivize
21 the use of high carbon fuels. We also support CARB staff
22 and their commitment to measure the fuel lifecycle impact
23 of fuels, including indirect land-use.

24 Accounting for the entire range of carbon impacts
25 of fuel is a bedrock of an effective low carbon fuel

1 standard. With regard to sustainability, we appreciate
2 and support the sustainability resolution offered by staff
3 today. As CARB promotes the development of alternative
4 fuels under the low carbon fueled standards, it is
5 important to ensure that this does not result in
6 unintended negative consequences to the environment. The
7 resolution language presents a reasonable and appropriate
8 way of proceeding.

9 However, we are very concerned that CARB is
10 proposing to move forward with the low carbon fuel
11 standard and incentivize the production of biofuels with
12 no minimum land-based protections in place at all.

13 We ask the Board to adopt the federal renewable
14 fuel standard protections that were put in place by
15 Congress and signed into law by President Bush. These
16 sourcing limitations were carefully crafted by a broad
17 stakeholder group and provide minimum protections for
18 wildlife habitat, natural forests, native grasslands and
19 important public lands, while allowing biofuels production
20 to move forward.

21 And finally, I wanted to address the issue of
22 transparency on credit. It's not clear from the document
23 from this -- well, let me just say, in the last ZEV
24 review, there were -- industry took the position that
25 credits and the information on which credits were built

1 were not publicly available information. And I don't
2 think that this current regulation clarifies that that
3 information should be public.

4 And I would suggest that we --

5 CHAIRPERSON NICHOLS: We'll take a look at that
6 issue. You did comment on that also at a previous
7 session. So that's a question that we will ask.

8 MR. FUGERE: Great. Thank you.

9 CHAIRPERSON NICHOLS: Dwight Stevenson.

10 MR. STEVENSON: Hello. My name is Dwight
11 Stevenson with Tesoro.

12 First of all, thank you for reading and
13 considering our written comments, expressing our serious
14 concern, the foremost being the lack of complete economic
15 analysis and several other technical issues.

16 And we appreciate the opportunity to give some
17 comments today briefly on one of them.

18 For background, we support a full analysis of
19 cause and effect, and that includes land-use change.
20 However, another factor that was not properly and
21 completely considered is farming intensity. This is a
22 name that for what happens when farming intensity
23 increases and more food is grown on less land.

24 Dr. O'Hare and Mr. Fletcher mentioned the direct
25 effect of farming intensity that results from increased

1 ethanol demand. It seems clear that this increase in
2 farming intensity will be achieved primarily with
3 increases in water and fertilizer use.

4 And I want to point out that this intensification
5 of farming occurs on the entire world's farming system.
6 And so even a small increase in the greenhouse gas
7 intensity on the entire world' farming will be
8 significant.

9 So we offer this factor as an example of
10 important issues that have not been fully analyzed. And
11 we urge you to direct staff to complete the analysis on
12 this and other issues before moving to adopt.

13 Thank you.

14 CHAIRPERSON NICHOLS: Thank you.

15 Could whoever is next, please move forward.

16 Sven Thesen and then Will Coleman.

17 MR. THESEN: Good afternoon. My name is Sven
18 Thesen. I'm from Better Place. Our company's objective
19 is to end our oil addiction starting in the light-duty
20 transportation sector first.

21 We install and operate electric vehicle
22 infrastructure, including charge spots, battery exchange
23 stations to enable fully functional, electric vehicles
24 with unlimited range and powered by renewable energy. We
25 fully support the low carbon fuel standard and

1 congratulate CARB on their vision. CARB is not only
2 setting precedence here in California, here in the U.S.
3 but on a global scale. Good work guys. It's been a long
4 2 years.

5 We're particularly pleased with the equitable way
6 that ARB has devised to divvy up the carbon credits
7 generated from electricity as a fuel. That is, CARB does
8 or gives the credits to those entities who do the heavy
9 lifting, who solve that last 1 meter, 1 yard to get the
10 electricity out of the grid and into the vehicle.

11 New businesses are being created and those new
12 businesses are creating jobs.

13 In my case, I buy wind power. When I put that
14 wind power into my vehicle, I can get the credits, keeping
15 my vehicle travel carbon free and sustainable. My vehicle
16 blows along with the wind but at 60 miles an hour.

17 There were a number of entities competing for
18 these credits and ARB did a fair and equitable job of
19 divvying them up. Obviously, there's always arguments
20 about who gets the cake and how much.

21 If we had any squabble -- and I mean this tongue
22 in cheek, it would be to include electricity's of fuel in
23 the carbon intensity chart for electricity, when it's
24 generated from 100 percent renewables. And I mean that
25 tongue in cheek, because obviously the value would be 0.

1 CHAIRPERSON NICHOLS: Okay, but your time is up.

2 Thank you.

3 MR. THESEN: Thank you again. Good work. We
4 support the low carbon fuel standard.

5 CHAIRPERSON NICHOLS: We appreciate your support.
6 Thank you.

7 Will Coleman.

8 Randal Friedman.

9 MR. FRIEDMAN: Madam Chairman and members, Randal
10 Friedman on behalf of the U.S. Navy.

11 As an earlier speaker noted, unsolicited I might
12 add, the Navy has been an early pioneer and dedicated to
13 the advancement of using biodiesel and biofuels in
14 California. We've had a number of obstacles along the
15 way. And fortunately, we've been able to navigate those.
16 And it's very gratifying to be here before you today,
17 where you are going to recognize the critical role
18 biofuels will play in the future of California.

19 I also want to thank the staff and sort of a bit
20 of irony to -- for the exemption of us from the standards,
21 both for vehicles and equipment. The reason we asked for
22 this exemption, and I've been before you with this message
23 before, is we must have national and international
24 consistency amongst fuels and the vehicles that we use in
25 our emission.

1 Having said that, and I've been before you a
2 number of times saying that, I did want to leave with your
3 staff a message from the Chief of Naval Operation that was
4 release yesterday, that talks about some of the many
5 things we're doing to do our part in this equation.

6 So, for example, in ships, we're looking at stern
7 flaps, new hull and propeller coatings, new HVAC systems
8 all designed to significantly reduce energy. In tactical
9 vehicles, we've had a joint research program that's
10 evaluated a hundred different technology concepts,

11 including hybrid electric drives, compact mobile fuel
12 cells, composite materials and again new HVAC equipment

13 Again, these are a few of the things we're doing.
14 I just want to let you know that, yes, I'm here asking for
15 exemptions for these things, but we understand we have a
16 significant role to play and a part to do and we're busy
17 trying to do on the national and international level
18 adaptations to our equipment to meet California's needs.
19 Thank you. And I'll leave this with the staff.

20 CHAIRPERSON NICHOLS: Thank you, Mr. Friedman.

21 Peter Mieras followed by Naomi Kim.

22 MR. MIERAS: Chairman Nichols, members of the
23 Board, good afternoon. My name is Peter Mieras and I'm a
24 lawyer with Jeffer, Mangels, Butler and Marmaro LLP. And
25 recently on staff with the South Coast Air Quality

1 Management District for many years.

2 I've been following the development of the low
3 carbon fuel standard for sometime. I represent producers
4 of biofuels. I also represent Growth Energy who testified
5 earlier. I support the low carbon fuel standard and the
6 clean fuels goals it advances. But I cannot support the
7 carbon intensity penalty imposed on ethanol fuel.

8 This penalty is highly controversial and not well
9 supported from a number of perspectives, for example, good
10 science, good public policy, fair treatment, national
11 security.

12 Such a penalty rests upon a very questionable
13 theory and a very questionable immature methodology for
14 identifying and quantifying the indirect land-use effect
15 changes from the production and use of ethanol fuel. Not
16 all fuels, not all indirect effects of all fuels, but one
17 fuel, one indirect effect, one industry singled out.

18 If this fuel standard is added to, adopted with
19 this penalty included, here is what likely to happen to
20 the ethanol industry in this country.

21 First, you won't be able to compete in the
22 California market. When ethanol is on par with
23 gasoline, it virtually eliminates the competitive
24 advantage, the clean fuel advantage that ethanol has.
25 There will be a loss of thousands of jobs, existing jobs

1 and even more future jobs after that.

2 And essentially, what this will do is to impose a
3 stop work order on all future ethanol-related research and
4 development that could lead to the production of lower
5 direct intensity carbon fuels and also could lead the way
6 toward an expansion of this important advanced fuels
7 market.

8 CHAIRPERSON NICHOLS: Thank you. Your time is
9 up --

10 MR. MIERAS: Thank you

11 CHAIRPERSON NICHOLS: -- but we have heard this
12 comment also from others.

13 Naomi Kim.

14 MS. KIM: Good afternoon. My name is Naomi Kim.
15 And I serve as an assistant to the AB 32 Environmental
16 Justice Advisory Committee.

17 And I'm here to summarize the EJAC's
18 recommendations on the low carbon fuel standard that they
19 passed on April 13th, where they conclude that the
20 recommendation is that the LCFS is not ready for Board
21 adoption at this time, because the proposed regulation
22 will disproportionately impact low income communities in
23 violation of the AB 32 statute.

24 And the proposed regulation, the recommendations
25 outline at least 6 different ways that this could happen,

1 through the disproportionate siting of biorefineries in
2 traditionally overburdened communities. We also note that
3 ARB staff did not due a cumulative impacts analysis as
4 legally required. And we also note that the guidance
5 document would be merely advisory. And so it would not
6 necessarily mitigate impacts.

7 Also, the ISOR's expectation that criteria
8 pollutants will not be increased is unsupported, because
9 the EPA test program hasn't even started yet. Therefore,
10 we do not believe that staff can conclude with the
11 requisite level of certainty that there will be no
12 increases in toxic and criteria pollutants.

13 In addition, the increased food prices will have
14 a direct disproportionate impact on low-income people
15 causing hunger. And for this reason alone, the EJAC
16 recommends to exclude all biofuels -- I'll agrofuels, I'm
17 sorry, especially corn.

18 Also, the creation of hot spots is a danger,
19 considering that it is a credit trading program. And the
20 staff is proposing to allow the export of LCFS credits.

21 CHAIRPERSON NICHOLS: Thank you, Ms. Kim. Your
22 time is up but we do have the letter from the EJAC. We
23 appreciated that.

24 Larry Weitzman.

25 MR. WEITZMAN: Yes. My name is Larry Weitzman.

1 I'm a journalist and I'd like to think of myself as a
2 student of critical thinking. I've read your report,
3 staff report. And the economic analysis on the executive
4 summary page 26 says it's going to save Californians \$11
5 billion through 2020 and 3.4 billion annually after that.

6 The studies here quoted today say it's going to
7 cost Californians \$4 billion a year. But I want to quote
8 a person who's been quoted before, John Reilly of the
9 Sloan School of Management from MIT, who was asked to peer
10 review your study, who said, and I quote this, in broader
11 issues in his conclusion, "I am concerned that California
12 proposes this inefficiency approach as a model for other
13 jurisdictions and that the analysis in this report fails
14 to demonstrate the inefficient nature of this proposed
15 policy. The economic analysis was done incorrectly. It
16 does not meet technical standards of economics. The
17 baseline assumptions are mutually inconsistent. And if
18 these assumptions were executed in a proper model, it
19 would show that the LCS was unnecessary."

20 And point of fact on that, the staff says that
21 cellulosic ethanol should cost about \$2.70 per gallon
22 gasoline equivalent, when a recent study by the National
23 Renewable Energy Laboratory says that it will cost, at the
24 cheapest, \$5.14 a gallon equivalent. And I know the Board
25 thinks they're going to get a dollar and one subsidy, but

1 that subsidy doesn't live forever.

2 Finally, this Board has not modeled the benefits
3 of what this reduction in greenhouse gas is going to be.
4 But somebody has as a meteorological scientist. And the
5 benefit will be one -- from California alone one,
6 one-thousandths of a degree over a hundred years. One
7 one-thousandths of a degree. If everybody in the United
8 States did it, it would be one, one-hundredths of a
9 degree. That's immeasurable. It's ridiculous.

10 So to spend \$4 billion annually for this is
11 ridiculous. And by the way, France is changing its tune
12 on global warming as Claude Allégre will be appointed the
13 minister at the center now -- former proponent but now a
14 dissenter. You'll find that they're going to be not
15 supporting this issue.

16 CHAIRPERSON NICHOLS: Okay, Mr. Weitzman. Mr.
17 Fulks.

18 MR. FULKS: Madam Chairman and Board members. My
19 name is Tom Fulks. I'm here today representing Neste Oil.
20 Neste Oil is one of the largest users of vegetable oils in
21 the world. It's next generation renewable diesel fuel is
22 used widely throughout Europe. And Neste is very
23 interested in bringing this product to the California
24 market.

25 Since I have only 2 minutes, I'm just going to

1 get right down to it. We've been through the workshops.
2 We've been through -- we've talked to your staff
3 extensively, and we're sort of over the philosophical
4 argument discussion portion of this low carbon fuel
5 standard. So now we're sort of into the brass tacks and
6 just sort of accepting the inevitable. And so we have
7 some very specific things we'd like to talk about.

8 We have submitted these comments in writing and
9 so you've got them. But I did want to bring to your
10 attention a couple of things. We would like to see a more
11 specific compliance pathway that allows responsible
12 feedstock users to account for their existing low-carbon
13 practices. Whether it's called direct crediting or
14 mitigation allowances or whatever you want to call it,
15 this needs to be spelled out more specifically in the
16 indirect land-use language.

17 We also need to account for creative practices,
18 such as some of the things Neste does in South America by
19 replacing coca fields with palm plantations. Now, you
20 can't exactly say coca is a food. It certainly isn't
21 fiber. And so replacing some of those land uses with
22 fuels may not necessarily reduce your carbon content, but
23 it certainly doesn't have any negative consequences.

24 The draft resolution that we looked at today was
25 some of the whereases and wherefores does head in this

1 direction. And we're very grateful for your staff
2 accommodating some of the concerns of Neste Oil in this
3 regard. But we would like to see a little bit more
4 specific language.

5 Darn, I'm running out of time.

6 We need to see an annual 12-month review period,
7 periodic review, rather than 3 years. And I know I'm out
8 of time, but the 3-year period is too long for investment
9 purposes. We'd like to see a 12-month review, primarily
10 because people, like Neste, who are thinking of investing
11 can't wait 3 years for the science of indirect land-use to
12 catch up with the technology.

13 So, again, we've got them in writing. And if you
14 don't mind, take a look at those. But Neste is saying
15 okay let's just get on it.

16 Thank you.

17 CHAIRPERSON NICHOLS: Thank you.

18 You referred to the resolution. And I do want to
19 make sure that everybody has the resolution. I know it
20 was made available early this morning.

21 Are there still copies of it out there?

22 Okay, thank you.

23 MR. GRIMES: Madam Chair and Board, my name is
24 Gary Grimes. I'm to present comments on behalf of
25 Paramount Petroleum. Paramount Petroleum is a small

1 thousand times bigger. And they have much more capability
2 in terms of market power, capital equipment for investing
3 into biofuels, those economies of scale, and much better
4 logistics than we have. We're an inland refine and don't
5 have access to water-born docks like all the majors on the
6 west coast have.

7 CHAIRPERSON NICHOLS: Thanks, Mr. Grimes. I'm
8 familiar with Paramount. I'm not sure, but I suspect
9 anybody in southern California at least knows, you know,
10 where your refinery is.

11 Did you submit written comments?

12 MR. GRIMES: We did.

13 CHAIRPERSON NICHOLS: We will make sure we take a
14 look at them.

15 MR. GRIMES: Thank you.

16 CHAIRPERSON NICHOLS: Thank you. Okay.

17 Kelly McKechnie.

18 MR. McKECHNIE: Good afternoon, Chairman and
19 Board members. My name is Kelly McKechnie representing
20 Western Growers. Western Growers is an agricultural trade
21 association whose members grow, ship and pack 90 percent
22 of the fresh fruits vegetables and nuts grown in
23 California and 75 percent of the fresh fruits vegetables
24 and nuts in Arizona. Our members produce approximately
25 half of the nation's fresh produce. California already

1 has the highest price of diesel fuel in the nation.

2 And the economic impacts of this regulation in
3 front of you are nonabsorbable. Growing regulatory
4 pressure is a source of major concern for California
5 agriculture producers. California growers have been
6 saddled with regulatory fees from all departments at local
7 and State levels, putting California agriculture at a
8 disadvantage with other states and countries.

9 To give you a quick snapshot of this, in 2006,
10 Cal Poly institute for the study of specialty crops put
11 forth a study. And it was found that California citrus
12 growers bear a regulatory cost burden of \$347.12 per acre,
13 compared with a Texas citrus grower who's estimated
14 regulatory cost is \$31.71 per acre.

15 The agriculture production industry is not in the
16 position to pass along the potential higher diesel costs
17 or any other costs, for that matter, onto consumers.

18 California farmers are already suffering from the
19 cost of the cumulative regulations placed on them and a
20 downward spiral of the economy. California production
21 farmers are either leaving California to farm elsewhere or
22 are closing down their farms completely.

23 We would like to see the Board complete its work
24 on the diesel portion of the regulation before adopting
25 it, so that the performance, supply and price impacts can

1 be realistically assessed.

2 Thank you.

3 CHAIRPERSON NICHOLS: Thank you.

4 Charlie Peters.

5 MR. PETERS: Hello, Mary.

6 (Laughter.)

7 MR. PETERS: Madam Chairwoman and board. I'm
8 Charlie Peters, Clean Air Performance Professionals.

9 CHAIRPERSON NICHOLS: You need to get a little
10 closer. Sorry, you can of just have to pick it up -- or
11 is it on?

12 Oops!

13 MR. PETERS: Is that better?

14 CHAIRPERSON NICHOLS: That's much better.

15 MR. PETERS: I'm Charlie Peters, Clean Air
16 Performance Professionals. We're a coalition of
17 motorists. And we're kind of confused today, because
18 there's some things that we think might be important that
19 haven't been considered. And so maybe you can take a look
20 at them and see if they could be important. One of the
21 factors is that it's been recently reported that in
22 California, it seemingly is taking 2,000 gallons of water
23 to grow enough corn to make a gallon of ethanol. We don't
24 know if we have excessive water in California and whether
25 this should be an issue in this process or not, but I want

1 to throw that out there.

2 Another thing that we've looked at over time is
3 it appears to us as though every policy requiring corn
4 ethanol seems to increase the amount of oil we use and the
5 profit of the oil companies. It's being promoted as a
6 debate between the 2 and it seems to be a partnership from
7 our perspective.

8 That is costing the people of California
9 additional monies for food, for gasoline and we seem to be
10 using up a lot of water, whether these should be taken
11 into consideration or not, we're not sure, but we'll look
12 upon the expertise of the chair and this committee to
13 possibly look a little further before we go forward.

14 Thank you.

15 CHAIRPERSON NICHOLS: Thank you.

16 John Shears.

17 Hi.

18 MR. SHEARS: Good afternoon, Chair Nichols.

19 Oops, I accidentally turned off the mike there.

20 Good afternoon Chair Nichols and members of the
21 Board. My name is John Shears. I'm a research
22 coordinator with the Center for Energy Efficiency and
23 Renewable Technologies.

24 I had some prepared comments, which I'll quickly
25 just touch on, but then I want to respond to some of the

1 concerns of some of the other speakers.

2 CEERT strongly supports the low carbon fuel
3 standard, recognizing that climate change -- recent
4 research indicates that climate change is much worse than
5 previously projected. The impacts are much worse and NOAA
6 research indicates it's going to be irreversible. And
7 with 50 percent of the increase in global warming
8 emissions since 1990 in the U.S. Coming from
9 transportation, we need to deal with an integrated
10 strategy, which is what the ARB is implementing.

11 There have been several speakers who voiced
12 concerns over the cost exposure that they feel they might
13 be exposed to with this regulation. But what I would like
14 to remind people about is only last July we were looking
15 at nearly \$150 a barrel oil.

16 That situation has backed off because of the
17 current financial crisis. Exploration and development has
18 also drawn back and once the economy recovers, we are
19 going to see an exponential -- return to exponential
20 increases in oil prices, along with a super-spike scenario
21 overlaid on top of that. And at some point, we have to
22 move away from petroleum to other alternatives. If we
23 don't start now, when will we start?

24 So for both our battle against the emissions
25 associated with fossil fuels for transportation and to get

1 us to other alternatives that are more economically
2 sustainable, this standard is very important.

3 So thank you.

4 CHAIRPERSON NICHOLS: Thank you.

5 Kenneth Manaster.

6 MR. MANASTER: Good afternoon, Chair Nichols and
7 members of the Board. My name is Kenneth Manaster of the
8 Pillsbury Winthrop Shaw Pittman firm appearing on behalf
9 of the Western States Petroleum Association.

10 We have submitted a letter from our firm today on
11 behalf of WSPA as well. WSPA has advised the Board
12 already of its main point. CARB should finish writing the
13 LCFS before it adopting it. Certainly, common sense
14 dictates the rule should be finished before it is adopted.
15 This rule has crucial gaps in it. And it makes limited
16 sense, if any, to adopt it with those gaps. As WSPA has
17 emphatically pointed out as one example. And I quote,
18 "Without carbon intensity determinations for 5 critical
19 alternative fuels, there's no way of knowing how much of
20 them will be required."

21 WSPA has also said with respect to the diesel
22 silo, 3 fuels are supposed to provide 94 to 100 percent of
23 the diesel CI reductions, but we have no currency with
24 which to formulate our plans for the program.

25 Further more, CARB, of course, must comply with

1 the provisions of the Health and Safety Code and the
2 Administrative Procedure Act with respect to a rule-making
3 such as this. The law requires CARB to finish the rule
4 before adopting it.

5 As you know, the Administrative Procedure Act
6 defines clarity, one of the criteria for a regulation that
7 must be satisfied, so that the meaning of the regulations
8 will easily understood by those persons directly affected
9 by them. WSPA members certainly are directly affected and
10 cannot easily understand the regulations until these gaps
11 are filled.

12 In the interest of time, I'll skip explaining the
13 Health and Safety Code Provisions.

14 CHAIRPERSON NICHOLS: We have your letters, so we
15 understand --

16 MR. MANASTER: Thank you.

17 If I might say, ideally, it seems the
18 postponement would be the wisest course of action. But
19 assuming that the Board does propose -- or will adopt the
20 proposal today, we've indicated in our letter that we
21 think full 45-day notice and comment rule-making is called
22 for, including consideration of amendment or re-adoption
23 of provisions you may adopt today.

24 Thank you.

25 CHAIRPERSON NICHOLS: Thank you.

1 I think we have been at this for 2 hours.

2 We have 10 more people to hear from. My goal is
3 to be completely finished with testimony by 5 o'clock and
4 to then have discussion by the Board for as long as it
5 takes before we're ready to make a decision this evening.

6 But I think we could take a 5 minute stretch
7 break, if people are amenable to doing that. That might
8 be a good idea for all. So we'll be back in 5 minutes.

9 (Thereupon a recess was taken.)

10 CHAIRPERSON NICHOLS: All right, ladies and
11 gentlemen, let's get back to work.

12 We're going to hear next from Nick Lapis from
13 Californians Against Waste. Hi there.

14 The Board members are trickling in, but those
15 that aren't here can you hear in the back, so it's all
16 wired back there.

17 MR. LAPIS: Okay. Good afternoon, Chair Nichols
18 and board members. My name is Nick Lapis. I'm with an
19 environmental advocacy group, Californians Against Waste.
20 We're the State's leading advocacy group on recycling and
21 waste reduction issues.

22 I'm here today in strong support of this
23 rule-making. We believe that the LCFS is a huge part of
24 meeting the AB 32 goals and we're proud of the way your
25 staff has been handling it, in terms of working with

1 stakeholders and looking at the -- not only the direct
2 impacts, but also the indirect land use and the other
3 indirect impacts as well.

4 We do have a couple of concerns about the
5 treatment of waste in the LCFS. I'm going to summarize
6 them quickly. I know I only have 2 minutes. Our first
7 concern is that there has been no pathway added for
8 dedicated anaerobic digesters. We see anaerobic digesters
9 as a key for moving forward with diversion of organic
10 materials in California and moving forward.

11 We understand that the staff has limited
12 resources. But the sector is a fledgling sector,
13 especially in the waste side. And it really doesn't have
14 the resources to develop the pathway by itself. We are
15 encouraged to hear the staff say that they're interested
16 in moving along and developing this pathway for dedicated
17 digesters.

18 We would just encourage you to ask staff to
19 prioritize this and expedite the process and really move
20 this pathway to the very top of the list.

21 Secondly, we have some serious concerns about the
22 landfill gas pathway. Specifically, we're concerned that
23 the carbon intensity assigned to landfill gas does not
24 take into account any fugitive emissions from landfills.
25 Organic material and landfills decomposes anaerobically

1 and releases methane, some of which is captured, but much
2 of which is not.

3 Methane has a global warming potential, somewhere
4 between 21 and 25. So every ounce of methane that gets
5 released from a landfill has a huge, huge impact in terms
6 of pushing us closer to a tipping point for global
7 warming.

8 The amount of gas generated and captured varies
9 different -- varies greatly if -- depending on how the
10 landfill is managed and whether it's managed for gas
11 generation or for fugitive emission reduction. So we
12 would just ask you to incorporate the fugitive emissions,
13 either in the landfill gas protocol and the pathway or in
14 the future anaerobic digestion protocol in terms of an
15 avoided emission, but we look forward to working with your
16 staff on this.

17 Thank you

18 CHAIRPERSON NICHOLS: To make sure that it's
19 accounted for.

20 Thank you very much, Mr. Lapis.

21 Julio Alvarado.

22 Mr. Alvarado?

23 Tim O'Connor.

24 MR. O'CONNOR: Good afternoon, Chair Nichols
25 distinguished board members. My name is Tim O'Connor.

1 I'm an attorney with the Environmental Defense Fund here
2 in Sacramento. I'd like to speak today in strong support
3 for the California low carbon fuel standard.

4 Moving California to reduce the carbon intensity
5 of our transportation fuel mix as well as our vehicle pool
6 is a critical component towards getting our state to
7 reduce its overall emissions of greenhouse gases.

8 However, reducing our carbon footprint will
9 require Both a significant undertaking and undoubtedly
10 require both initial and sustained capital investments.
11 While achieving the 2020 goal will require some
12 expenditures, the LCFS should be seen as an investment.
13 That investment will yield returns through fuel
14 diversification, increasing resilience to fuel price
15 shocks and swings, independence from foreign fuel sources,
16 development of new businesses and general economic growth.

17 EDF, like many environmental advocates, has
18 already -- who have already spoken today, we understand
19 the concerns and the questions being offered by businesses
20 who have talked to us about their inability to understand
21 how the fuel price swings will be moderated by the LCFS or
22 who have concerns about increasing prices overall.

23 Counter to some of the claims that we've heard
24 though, we believe that the LCFS is an important hedge
25 against higher fuel prices. That is likely increases in

1 long-term crude prices coupled with even better and
2 cheaper alternative production methods will make carbon
3 fuels more affordable than gasoline.

4 One of the core benefits of the LCFS is that it's
5 a system of tradable and bankable credits to provide
6 compliance flexibility, cost containment and robust
7 incentives for early action. By creating market
8 incentives early, by back-loading the compliance
9 obligations and providing early incentives for people to
10 innovate, we should be seeing longer term smoothing of
11 cost burdens and positive pressure on innovation.

12 We support -- we've analyzed a lot of the
13 economics of the LCFS. We see it as a cost-effective
14 approach. We see that the staff has, where possible, gone
15 conservative with some of the benefits and we really
16 appreciate that and we thank the staff for all their hard
17 effort and we strongly support the low carbon fuel
18 standard.

19 CHAIRPERSON NICHOLS: Thank you Mr. O'Connor.

20 Altacir Bunde.

21 You're part of the rain forest group? Are there
22 three of you. I have 3 names.

23 THE INTERPRETER: Actually, Altacir Bunde
24 represents the Movement of popular Peasants in Brazil. So
25 he's going to speak Portuguese and I'm going to translate

1 into English for him

2 CHAIRPERSON NICHOLS: Oh, I see. Okay. Fine.
3 Thank you.

4 MR. BUNDE:(THROUGH INTERPRETER) Ethanol, as was
5 described earlier, is not clean energy. Ethanol brings
6 many negative environmental and social problems. So
7 ethanol brings burning of the land to clear and also to
8 produce the product. It brings intensive use of
9 petrochemicals. It also destroys biodiversity and it also
10 substitutes land that could otherwise be used for growing
11 food.

12 So if we consider all of this, ethanol actually
13 brings many social environmental problems to our country.
14 So the use of this sort of energy will aggravate the food
15 crisis, not only in Brazil and -- not to mention the
16 climate crisis, not only Brazil but in the entire world.

17 For this reason, we are here in support of life
18 and not in support of large corporations.

19 Thank you.

20 CHAIRPERSON NICHOLS: Thank you. Could I just
21 ask a question, please. You mentioned the name of an
22 organization. Can you just give us the organization name
23 and the location and any other information.

24 MR. BUNDE:(THROUGH INTERPRETER) He mentioned
25 that they are located in the Savanna Region in Brazil.

1 And where there is the most expansion of cane cultivation.
2 And the name of their organization is the Movement -- the
3 Popular Movement of Peasants.

4 CHAIRPERSON NICHOLS: Thank you. I had an
5 opportunity to visit Brazil this summer and meet with a
6 few organizations, so that was why I was curious.

7 Thank you.

8 Okay. Jennifer Krill from the Rainforest Action
9 Network.

10 MR. OLSON: My name is Brant Olson. Jennifer has
11 asked that I step in in her place briefly.

12 My name is Brant Olson with the Rainforest Action
13 Network.

14 And you know we've heard briefly from pretty well
15 established people in California on why the low carbon
16 fuel standard will be a hardship.

17 You know, in summary it's a big change. Change
18 is hard. Change is expensive. And we understand that.
19 But I want to thank the Air Resources Board and the staff
20 for looking past this cynical view of interests that are
21 vested in the status quo and really taking concrete steps
22 towards a view of the future that embraces sustainable
23 energy for the state in a way that I think is going to set
24 a very strong example for the rest of the nation and
25 indeed the rest of the world.

1 You know, we're really at a cross-roads with our
2 energy future. And we've got about \$200 billion in our
3 pockets collectively over the next 10 years. And the
4 cross-roads lead in a couple of different directions. You
5 know, one, is the well-worn path of business as usual.
6 And one example -- we've already heard from, you know, the
7 agrofuel side. And we had some speakers this morning at a
8 rally outside.

9 But another example I want to bring up is the tar
10 sands. The tar sands industry is pushing to dramatically
11 expand access to the United States markets over the next
12 decade with more than \$140 billion planned in U.S.
13 pipeline infrastructure over the next 20 years, including
14 Trans-Canada's Keystone Pipeline that's now under
15 construction and other proposed pipelines that would bring
16 tar sands crude directly into the State of California.

17 \$30 billion is also planned for expansion of
18 refineries, including those here in our home state -- the
19 Martinez refinery and also the Richmond refinery,
20 explicitly to take tar sands crude. Federal low carbon
21 fuel stand, along the lines of what was being considered
22 here today in California, would dramatically alter the
23 market fundamentals that make these projects happen and
24 dramatically increase the incentives for developing the
25 type of energy infrastructure that we're going to need to

1 beat the climate challenge.

2 So I want to thank again CARB and the Air
3 Resources Board for changing the market to provide real
4 incentives for a real step in the right direction and
5 encourage you to go further by imposing stiffer penalties
6 on tar sands and industrial agrofuels.

7 Thank you.

8 Is Andrea Samulon planning to speak?

9 Yes.

10 MS. SAMULON: Good afternoon. Andrea Samulon
11 from Rainforest Action Network. We endorse the principle
12 of the low carbon fuel standard. However, we believe that
13 changes to the draft language are needed to ensure that it
14 will actually mitigated climate change.

15 Specifically, the inclusion of agrofuels,
16 industrial biofuels threatens to undermine the impact of
17 the LCFS and could lead to it actually exacerbating global
18 warming. Provided that agrofuels are excluded, the LCFS
19 could substantially reduce California's carbon emissions
20 by penalizing oil companies for refining raw materials
21 that have a higher carbon footprint than that of
22 conventional oil.

23 The dirtiest of these raw materials include
24 synthetic crude oil made from sticky bitumen mined from
25 Canada's tar sands. We encourage CARB to adopt a

1 precautionary approach and to exclude agrofuels from the
2 LCFS, given current evidence of serious negative impacts
3 on forests, climate and food security.

4 All standard methodologies for calculation of
5 carbon intensity of biofuels actually presume major
6 indirect greenhouse gas savings from the use of biofuel
7 co-products. This is not full accounting of the lifecycle
8 of agrofuel production. Evidence provided by Paul
9 Crutzen, Howarth et al., Searchinger et al. among others
10 that indirect nitrous oxide emissions from agrofuels
11 linked to the use of nitrogen fertilizer or from legume
12 monocultures are far higher than suggested by IPCC
13 methodology has not been fully accessed nor has it been
14 address in any way by the IPCC.

15 This alone means that there's no scientifically
16 credible way of calculating lifecycle greenhouse gas
17 emissions from agrofuels. We know from peer-reviewed
18 studies that every industrial agrofuel feedstock is more
19 greenhouse gas emitting than petroleum.

20 When all impacts are assessed, agrofuel
21 production not only does not deliver reductions in
22 greenhouse gases, but actually increases global warming
23 emissions particularly when forests, peat lands and
24 wetlands are converted as a direct or indirect impact of
25 biofuels and they often are.

1 We can not substitute one liquid fuel petroleum
2 with another agrofuel which is just as destructive.

3 Please exclude agrofuels.

4 Thank you.

5 CHAIRPERSON NICHOLS: Thank you for your
6 testimony.

7 We have a gentlemen who drove all the way from
8 Palo Alto and missed his turn and has asked to speak. And
9 since he wants to speak against the rule, I guess we
10 should hear from him too.

11 Mr. Coleman

12 MR. COLEMAN: Thank you. And I very much
13 appreciate you allowing me to comment. I apologize for
14 being late. My name is Will Coleman. I'm a partner at
15 Morh Davidow Ventures. We are a 25 year old venture fund.
16 We have about \$2 billion under management. And we have
17 invested across the Board in advanced technologies from
18 advanced biofuels to vehicle technologies to
19 electrification of vehicle technologies.

20 And I'm one of the signers on a broader investor
21 letter that was submitted to the Board that generally
22 supports the low carbon fuel standard. We think it's an
23 important piece of legislation, but has some very deep
24 concerns about the current approach to the indirect
25 land-use change component of it.

1 Our concern is that the selective application of
2 indirect effects to just land-use change and to just
3 biofuels is something that will end up undermining the
4 value of the legislation and the regulation.

5 Our concern is that indirect effects are present
6 in all sorts of different fuels. And we need to make sure
7 that in order to apply them to one fuel, we need to apply
8 them consistently to all.

9 The other concern is that people have stated that
10 this would be good for advanced biofuels. We, as
11 investors in advanced biofuels, are actually concerned
12 about that. We don't necessarily think it would be good
13 for advanced biofuels, because it creates an undue burden
14 of proof that's placed just on biofuel companies to prove
15 how they stand in the context of other indirect effects.
16 And it's a very complicated thing for any given company to
17 try and navigate.

18 We also think it undermines investment in
19 infrastructure, which is critically important for advanced
20 biofuels to progress. The science on this is incredibly
21 complex. And having studied in the energy resources group
22 where a lot of this has been developed, you know, I can
23 appreciate how complex it is. But it's about 10 times
24 more complex than what the average hedge fund tries to
25 deal with on a daily basis. And we all know where that's

1 gotten us in the last few years.

2 So I think we need to take the time to do this
3 right and apply evenly across all fuels options before we
4 put it into the regulation.

5 CHAIRPERSON NICHOLS: Thank you. Two minutes
6 goes by really fast, but your comments were well stated.

7 Steve Shaffer.

8 MR. SHAFFER: Than you, all. A daunting task. I
9 appreciate all the hard work.

10 I've spent 35 years trying to do my part to
11 improve the environmental performance of agriculture. I
12 echo the comments of the previous speaker, so I want to
13 leave you just with a little story and hopefully I can get
14 it done.

15 There's a researcher at Colorado State
16 University, Temple Grandin, who focuses her research on
17 the humane treatment of animals and especially as they're
18 going to slaughter. It maybe ironic, but anyhow.

19 In her recent book which I was reading last
20 night, which prompted me to come and make these comments,
21 she coined a term called "abstractification". And because
22 she's autistic, she gets down to the level of the animal
23 and can perceive things that others may not. Therefore,
24 she's very successful in her research.

25 Well, I submit that this process right now is

1 "abstractifying" market-mediated effects. We need to take
2 that step back. We need to, as Temple Grandin does,
3 understand the animal. We do not yet understand the
4 animal.

5 Thank you.

6 CHAIRPERSON NICHOLS: You've been spending time
7 with A.G. Kawamura, I can tell.

8 (Laughter.)

9 CHAIRPERSON NICHOLS: That's an inside joke.

10 Mr. Hwang.

11 MR. HWANG: Good afternoon, Madam Chair, members
12 of the Board. I appreciate the opportunity to speak in
13 front of you today. I'm Roland Hwang with the Natural
14 Resources Defense Council.

15 Needless to say, we've been working on this
16 program for the last 2 years. We are strongly supportive
17 of adoption today without the delay and the indirect
18 land-use change factor.

19 I did want to speak to something which one of the
20 previous speakers just spoke about, which is that
21 apparently not all investors and biofuel producers and
22 second generation speak with one voice. I do want to
23 remind the Board that this morning there were 4 members of
24 this letter but there 16 signers, environmental
25 entrepreneurs, Bob Epstein and others, investors and

1 producers of second generation biofuels, supporting the
2 adoption of low carbon fuel standards and the indirect
3 land-use change factor because they want regulatory
4 certainty.

5 And I want to make a couple of points here why
6 it's so important to their investments and why I believe
7 that they signed this letter, which is, first of all, the
8 pace of what we need to do in order to make this program
9 successful is that in 5 year's time, there needs to be
10 about 4 to 7 cellulosic plants being built per year until
11 2020. No time for delay regulatory certainty. Absolutely
12 critical in order for us to have a chance to succeed.

13 Any delay, any delay in the indirect land-use
14 change factor sets us up for a greater probability of
15 failure to meet the 10 percent. Let's not kill our
16 chances for success before we get started.

17 Second issue I wanted to raise on this issue of
18 the review of the program, indirect land-use change in
19 particular, we have experience with the zero emission
20 vehicle program. We should learn from that experience,
21 which is too frequent of reviews will kill this program,
22 because we'll be locked in a regulatory debate.
23 Regulatory debate -- continuous regulatory debate means
24 that second-generation biofuel investments will be
25 stifled.

1 So thank you for your attention. I really
2 appreciate this opportunity in speaking in front of you.
3 Important decision, momentous decision, complex decision,
4 but very key. We have to have that regulatory certainty
5 in place, the signal -- including indirect land-use change
6 in order for us to set ourselves up for success to obtain
7 that very challenging 10 percent by 2020.

8 Thank you.

9 CHAIRPERSON NICHOLS: Thank you.

10 Chuck White

11 MR. WHITE: Thank you very much Madam Chair and
12 members of the Board. Chuck White with Waste Management.

13 Waste Management is the largest provider of
14 comprehensive solid waste recycling services in North
15 America. We are one of the first Fortune 500 companies to
16 support AB 32 and we continue to support the great work
17 you're doing in implementing that landmark piece of
18 legislation, including the low carbon fuel standard.

19 Waste Management is becoming more of a resources
20 and energy company than a waste company. We're the
21 largest processor and collector of recycled materials in
22 North America. And we generate energy from waste to power
23 over a million homes in North America today and we're
24 going to be continuing this direction. And we think the
25 low carbon standard will really help.

1 We operate about 3,000 heavy-duty trucks in
2 California about 2,400 of which are diesel, while 600 are
3 natural gas. We want to continue expanding our natural
4 gas fleet, which we think will be supported by the low
5 carbon fuel standard. And we want to transition natural
6 gas to biogas controls. We were implementing a number of
7 projects, one of which that's starting next month at our
8 Altamont landfill will produce very low carbon fuel from
9 landfill gas. We are supporting the pathways that the
10 staff has used to develop that. We're real excited about
11 other possibilities to produce fuel from waste. And we're
12 very -- we're looking forward to this low carbon fuel
13 standard to provide the incentives necessary to make this
14 a reality.

15 We're really -- I had a few comments. We're not
16 going to go into those today. Most of them have been
17 addressed or have been addressed by other commenters
18 today. The staff has been great to work with, very
19 accessible. And we really appreciate their diligence and
20 we look forward to working with them as they continue to
21 drop to develop the pathways. We wish there was more
22 pathways in front of you today related to energy from --
23 fuel from waste. But we're confident that you're heading
24 in the right direction and we look forward to continue to
25 working with you and your staff as those pathways continue

1 to be developed in the near future.

2 Thank you very much and we urge to go ahead and
3 adopt this low carbon fuel standard.

4 Thank you.

5 CHAIRPERSON NICHOLS: Thank you, sir.

6 Our final witness is Robert Sawyer, who's listed
7 university as University of California at Berkeley. But
8 he's also a distinguished former occupant of this chair.

9 DR. SAWYER: Madam Chairman and Board members.
10 I'm delighted to be here. I brought Robbie Bruner a
11 student in my freshman seminar on the politics of
12 California air pollution --

13 (Laughter.)

14 DR. SAWYER: -- to Sacramento with me today to
15 see how it all works.

16 When I first discussed the concept of a carbon
17 standard for fuels 3 years ago with your staff, they were,
18 to be generous, less than enthusiastic. They obviously
19 understood the complexities of what was being considered
20 much better than I did.

21 Thanks to the work of the environmental
22 community, to Governor Schwarzenegger's leadership in
23 issuing the Executive Order for a low carbon fuel
24 standard, the seminal work of my University of California
25 colleagues, Professor Farrell and Professor Sperling and

1 their associates, the passage of AB 32, the putting of the
2 low carbon fuel standard on the Early Action List, we are
3 where we are today. And I congratulate you all for that,
4 especially for your superb staff and what they've
5 produced.

6 You have a science based regulation, a
7 performance standard using the right gram per megajoule
8 metric -- only an engineer could love a quantity like
9 that.

10 (Laughter.)

11 DR. SAWYER: -- and flexible compliance
12 mechanisms.

13 This is one of the most important regulations to
14 be considered in the long history of environmental
15 leadership of the Air Resources Board.

16 I strongly endorse the staff proposal and
17 encourage your adoption.

18 Thank you.

19 CHAIRPERSON NICHOLS: Thank you.

20 All right. At this point, I am going to close
21 the public hearing and turn the discussion back to the
22 staff and the Board. I think we should probably start
23 with asking the staff to at least respond to some of the
24 comments that have been made. I have a list, and I
25 suspect others do too. And maybe I'll just start, because

1 I think there's sort of obvious that there's some big
2 generic kinds of questions.

3 And I think you addressed them, to some degree,
4 in the opening presentation. But having now heard a lot,
5 one thing I can certainly say is that we've had -- anybody
6 who is watching this and had not been involved before, got
7 a really good short course in why nothing has been done to
8 change the fuel supply in this country effectively for
9 many, many years, because of the dissidence and the
10 division couldn't have been more clearly illustrated.

11 But I think one whole area of critique of the way
12 that the staff has approached biofuels and the indirect
13 land-use issue is this question of whether the model is
14 right or wrong, whether the numbers were wrong, whether we
15 picked the right numbers to look at, and whether there was
16 some kind of fundamental error in the assessment of the
17 impact of corn ethanol there.

18 And I just want to kind of revisit that issue a
19 little bit and maybe different board members will have
20 different specific questions that they'd like to get at.

21 But from my perspective, I think the basic
22 question is, you know, why you chose what you chose? Why
23 that seems like the right set of numbers? What happens,
24 you know, if you cut the number in half, if you cut it in
25 quarters? Is it reasonable?

1 I mean, it sounds to me as though basically you
2 could put in any set of numbers that you want and come out
3 with a, you know, an answer if you have a predetermined
4 result that you'd like to see, ranging from a very high
5 impact to no impact. And obviously the decision has a
6 huge affect on how corn ethanol or any other fuel would
7 score as against a baseline fuel.

8 So there's -- you sort of have to ask the
9 question, how did you choose the baseline fuel in the
10 first place. And were those -- was that done right and we
11 heard from the tar sands or the oil sands people that they
12 don't think we and others that we were unfair in how we
13 defined the baseline fuel. And then we've heard that we
14 were unfair in the way that we defined the indirect land
15 uses.

16 So let's just start with, you know, the model and
17 the numbers that go into it and maybe you can comment on
18 what you've heard.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Okay. I'll
20 give it a try as I've been living this for a couple of
21 years and pushing the staff and watching them develop
22 greatly and that's been the joy of all of this.

23 We did have a predetermined number. We wanted
24 the right answer.

25 (Laughter.)

1 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And we knew
2 that we probably couldn't get that in terms of with great
3 precision. And we knew we were dealing in an area of
4 uncertainty in pushing the science limits. Now, those are
5 not things that are new to Air Resources Board or to the
6 staff here.

7 So we've done this many times. The only thing
8 that was new was it was a new area of science, a new area
9 of investigation. We looked at the tools that are
10 available. We found out that they were limited in number,
11 selected the GTAP model at Purdue, because it seemed to
12 have the capabilities to assess the major factors and it
13 was in the public domain. Therefore, when we used it, we
14 could be public about it. People could look at our
15 assumptions. If they wanted to, they could run it
16 themselves. And those are all very attractive attributes,
17 because we knew we were going to be involved in something
18 that was going to be of great concern to many people and
19 we wanted all of those things.

20 We did a very careful analysis, an open process.
21 So the first things that we did once we got the model so
22 we could get it up and running was to do sensitivity
23 analysis to learn what factors were most important. And
24 several came out, so we knew that how you handled yields
25 around the world was very important; how we input

1 co-product benefits was very important; the price
2 response, in terms of demand, was very important. And so
3 we identified in the first half of the effort the
4 things -- the assumptions that would make the model
5 provide different numbers.

6 After that, working with the experts that
7 understood which numbers were more plausible than others,
8 which effects were elasticity or other things, we ran a
9 group of analysis and tightened up from, you know, going
10 from 20 to 1000 grams per megajoule in the initial runs
11 down to a very narrow range. We knew that we didn't have
12 distinct uncertainty bounds. And so the final number is
13 really an average of those runs that all had sensible
14 inputs.

15 Then I think the policy side came in when I
16 talked a little earlier about -- or a lot earlier --

17 (Laughter.)

18 CHAIRPERSON NICHOLS: Hours ago.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: It was today,
20 wasn't it?

21 -- that how do you -- how much time do you allow
22 for the fact the model is saying there's land-use change
23 that occurs shortly after you start using the crop for the
24 biofuels. And it's going to take a long time for -- you
25 know, you get back a small benefit each year. And we

1 decided a relatively long time that would moderate the
2 response.

3 And so in the end, you know, and given we've got
4 a lot of experience here in terms of the types of
5 uncertainty that we've dealt with. And I think the
6 science is very much used in the context how we've used it
7 in this rule for a slow transition from today's fuels to
8 better fuels suffices.

9 Then into the process, we were criticized because
10 we were doing this very detailed analysis of land-use
11 change for biofuels and we weren't doing the same level
12 analysis for other things.

13 Now, we were doing that because it had been very
14 clear identified to us by experts at UC and others that
15 for biofuels it's not the emissions out of the car or the
16 biorefinery that's the most important thing, it's the
17 emissions that occur when you grow the crop or any
18 indirect effects that you have. So we searched for
19 indirect effects for the other fuels. And I can tell you
20 that we looked for them. We did land-use analysis related
21 to petroleum.

22 We looked at what happens with natural gas and if
23 we use natural gas where would it come from. At first we
24 thought it would be imported LNG and it would have a big
25 upstream energy signature. Then as we studied we've

1 learned that, you know, there are not LNG tankers coming
2 anymore, because we found more domestic supply.

3 We looked at electricity and did a good job of
4 assuring ourselves that with all the programs in place
5 that the marginal electricity is going to be natural gas
6 and renewables. And the charts that Simon showed earlier,
7 basically our same analysis, is that they're probably --
8 there's some effects there buy they're not very large and
9 they're not going to change the program or change the
10 policy.

11 And so our response now is the science is
12 adequate to construct the regulation. We're going to work
13 with U.S. EPA and work with others in this hopefully in
14 less adversarial more technical forum, because our goal is
15 not only to have numbers in a California regulation, but
16 have similar numbers in regulations that are used in the
17 rest of the U.S., in New England or in the EU, because it
18 makes little sense for us to value fuels differently for a
19 lifecycle analysis.

20 CHAIRPERSON NICHOLS: Well, just to follow-up a
21 little bit though on this indirect effects issues, because
22 you're right, it's not just indirect land use, that
23 applies more to the biofuels. It could be other kinds of
24 indirect effects that you might be looking at as well.

25 And people who value, above all, energy

1 independence or who believe that, you know, growing your
2 own is the way to get to energy independence would want us
3 to take into account, and I think they're serious about
4 this, the full range of costs associated with our current
5 dependence on petroleum, which are certainly huge. And we
6 didn't try to do that. You did not factor in all of the
7 costs associated with our current practices of importing
8 petroleum.

9 DEPUTY EXECUTIVE OFFICER SCHEIBLE: No, but the
10 numbers that we've seen would suggest that the overall
11 petroleum -- remember 75 percent of the emissions come
12 from burning the fuel in the car. So we know a lot --
13 it's harder to move the petroleum number up or down with
14 indirect effects.

15 And secondly, no matter what the petroleum number
16 is, that's the starting point. And we're going to reduce
17 that by at least 10 percent, if it were feasible, and more
18 if we can do more than that. So we've been accused that
19 some how corn ethanol was the target. Really, our target
20 is reducing reliance on high carbon fuels and petroleum is
21 the one that's going to be reduced the most.

22 In fact, under our proposal as designed, corn
23 ethanol in California we expect to grow from about 900
24 million gallons last year to almost 1.5 billion gallons by
25 2010, as the federal renewable fuels program ramps up.

1 And our program was designed to allow that.

2 Much of the corn ethanol today will have lower
3 carbon intensities than the standard. When it's used in
4 California, it will generate credit.

5 The better of the corn ethanol used today
6 generates credit all the way through 2020 and thereafter.
7 And therefore, it does play. It has to compete. And
8 there's many opportunities to improve it. So we don't see
9 what we've proposed as being anti-corn ethanol or having
10 some sort of dramatic push of the commodity out of the
11 market.

12 It signals that we need better alternatives. We
13 need better alternatives to something that's at the same
14 level of gasoline or close to gasoline. And that's the
15 only way the program is going to work in the long term.

16 And I think the uncertainty about the land-use
17 effect has been probably over-magnified greater than what
18 it needs to be with the overall program. Because again,
19 like I said this morning, by 2020 the fuels that will
20 benefit most from the low carbon fuel program are going to
21 be ones that are much below all of the fuels that we see
22 out there today, both direct effects. And if they're
23 biofuels, hopefully they will be designed in a way so they
24 either have no indirect land-use effect, they don't take
25 up crop land or they take up the type of land that doesn't

1 compete very much and have the potential for the effects.

2 CHAIRPERSON NICHOLS: I'm just going to touch, as
3 I said before, on a couple of the big issues that I know
4 other board members are going to have and want to drill
5 down on some of the specifics we get to looking at the
6 resolution.

7 But let me just now point your attention to the
8 issue of the economic analysis and the quotation from Mr.
9 Reilly and so forth about the staff's looking at that.

10 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Okay. A
11 quick recap, of our economic analysis. Again, we tried to
12 use the reasonable assumptions and projections into the
13 future, which we means we can't guarantee they're right.
14 They're projections.

15 We use the same projection of oil prices that we
16 used in the AB 32 scoping plan, which, at that time, was
17 actually the high end of the forecast. Now, it happens to
18 be a little bit below the prices that the EIA, Energy
19 Information Agency, projects. And their preliminary
20 projection they came out with early this year. And it's
21 in the middle of the range of the draft projection put out
22 by the Energy Commission. So I'm thinking that we made a
23 reasonable estimate of that. And oil prices we
24 project will go -- once the worldwide economy comes back,
25 there's no magical source of oil out there that's all of a

1 sudden going to go, we're going to see a repeat of what
2 happens last year in terms of the demand is going to
3 outstrip supply and we're going to see high prices.

4 High prices means that when you displace
5 petroleum with something else, there's a lot of savings to
6 be had there. And so if the something else doesn't cost
7 too much, you're going to, on net, save money. And that's
8 what we projected. We used projections from NREL, I
9 believe, on what the future biofuel price would be.
10 Again, we don't know that. And there's a difference.

11 But the net difference in California was that
12 there would be a savings for fuel. We may get that anyway
13 under RFS, under the federal program, but we didn't see a
14 situation where, because we switched these fuels, we would
15 have to be buying more expensive fuels.

16 The alternative analysis that's been quoted
17 several times today. It's one study that was done by
18 Sierra Research. They froze the oil price at 66
19 barrels -- \$66 dollars per barrel. They said biofuels
20 would cost quite a bit more and they said that the subsidy
21 that's provided for biofuels under RFS, which is scheduled
22 to -- it has to be renewed in, I think, 2012 if it's to
23 continue, will go away.

24 We kept that in because we thought that 2 and a
25 half decades of history, where once established, these

1 subsidies have continued would be maintained. And the
2 circumstances where it might not be maintained would be
3 one where you didn't need it anymore because the fuels are
4 self-sustaining and economically competitive.

5 So we felt that we were doing a reasonable
6 estimate that way. We did say we could be wrong. Not
7 that our assumptions weren't reasonable. And if so, we're
8 probably talking about a few cents a gallon. One thing we
9 didn't focus on -- we focused on kind of the overall costs
10 of the program and what it would look like in the years
11 when it was having a big effect. In the start, there
12 would probably a small cost, but that's less than a penny
13 a gallon just to get the small volumes of slightly better
14 fuels here and the factual that you'll loose access to
15 some of the fuels around the world.

16 There is one area where I think we didn't do a
17 proper cost analysis, which is when we stopped pending
18 money on oil, where did the money on oil go? It went out
19 of the country. It went to places that produced that oil.
20 And we're importing less foreign oil. So most of that
21 money is lost to our economy. And with biofuels or other
22 domestic fuels, a fair amount --

23 CHAIRPERSON NICHOLS: Waste-derived fuels.

24 DEPUTY EXECUTIVE OFFICER SCHEIBLE: -- a fair
25 amount of the money will be spent in the U.S. And there's

1 potential to spend a fair amount of it in California. And
2 we really didn't do the kind of analysis that
3 would -- what does that do for us or our economy? We were
4 just trying to say what was the cost of compliance. So we
5 think that we've done a solid job. We've clearly met the
6 requirements of the law and have laid out, you know, an
7 analysis. And this program is not going to be a costly
8 program. And, you know, we have a long history of where
9 there have been costs in fuels programs, we've been pretty
10 upfront in saying yes, we're going to have cleaner burning
11 gasoline that's going to cost 5 or 10 cents more a gallon,
12 but we need to do it for health reasons. We didn't find
13 those circumstances and so we told the story like we saw
14 it.

15 CHAIRPERSON NICHOLS: Okay, thank you. Are there
16 other statements that came up during the hearing that you
17 feel a special need that you want to respond to? I'll
18 give you the time to do that, if there are. If not, I'll
19 just turn to the other Board members who may have
20 questions and then we'll get to discussion.

21 DEPUTY EXECUTIVE OFFICER SCHEIBLE: I would like
22 to address some of the comments about we failed to do an
23 adequate environmental assessment.

24 CHAIRPERSON NICHOLS: Yes, thank you.

25 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Because we've

1 heard that several times.

2 CHAIRPERSON NICHOLS: About the health effects.

3 DEPUTY EXECUTIVE OFFICER SCHEIBLE: About the
4 health effects.

5 And so we did an assessment of a program where,
6 you know, we have flexibility in the program. We have
7 scenarios on how people might comply. We don't know
8 exactly how they're going to do it. So we have to create
9 what might happen. And so we did a pretty extensive job
10 of modeling the shipment of biofuels into and around the
11 State. We said there's some potential to buildup to 2
12 dozen additional facilities in the state. We modeled
13 then. We put 3 of the facilities together at the same
14 spot, which we think was unlikely. Modeled that to
15 determine is that going to create a local health risk.
16 Found out that the risk was low we've promised to do
17 guidelines to help guide the siting of the facility.

18 And we've committed to say when facilities
19 come -- are proposed, that would provide fuels to meet
20 this and they're in California, ARB is going to be much
21 more active in reviewing those, because we want to do
22 several things. One, we want to guide them to be good
23 facilities, to mitigate environmental impacts that use the
24 best controls.

25 And, second, we want to see them get built. And

1 if they're good facilities and the don't have
2 environmental impacts and they have economic values, then
3 they should be built. So we want to work with them.

4 So we think we have dealt with the issue, as well
5 as it could have been dealt with. We can't really go to a
6 community and say there's no potential at all for a
7 facility being built in your community. But the same, we
8 can't go to a community and model a facility that we don't
9 know is going to be there.

10 CHAIRPERSON NICHOLS: Okay. Ms. D'Adamo, I'll
11 start with you.

12 BOARD MEMBER D'ADAMO: Well, I do have some
13 questions. But before getting into that them, I just
14 really want to compliment staff that you've done a
15 tremendous job. And also Professor Sperling and the Chair
16 under your leadership. This is -- I think we've heard a
17 lot of testimony, in particular on the indirect land-use
18 effects. And the day seems to be focused on that perhaps
19 overly so and I just want to say that, you know, just to
20 reiterate. This is huge. A 10 percent reduction toward
21 our goal. A very cost effective regulation. Reduces our
22 carbon footprint. Leads us in the direction of even
23 cleaner fuels, consumer choice, reduction in dependence on
24 foreign oil. So this is just a big day for us. And I
25 want compliment you for that.

1 Having said that, I have been in discussion with
2 staff over the last few days, in particular on the issue
3 of indirect land-use impacts. And directing everyone to
4 page 15 of the resolution, I like the language in the
5 resolution. I just have one concern about it.

6 Looking at the third, "Be it resolved". I think
7 it's clear here that this science is in its infancy. In
8 fact, looking at some of the peer-review comments, one of
9 them says that, "ARB investigation in this area is at the
10 State-of-art, but this field is in its infancy."

11 I think that the -- I'm looking for your name,
12 I'm sorry Dr. Hartnel --

13 STATIONARY SOURCE DIVISION CHIEF FLETCHER:
14 Hertel.

15 BOARD MEMBER D'ADAMO: I'm sorry.

16 Also, in your comments, just the uncertainty of
17 where we are here. But with further refinement, those
18 uncertainties can be mitigated. And so I just think that
19 we need to get some more information on this. There have
20 been concerns raised on both sides. I don't really have
21 an opinion whether that number goes up or down. I just
22 think we need to do more investigating on it, more
23 analysis.

24 And the date in the resolution of coming back
25 2012. I think, we need to come back before the regulation

1 takes effect. So I'd feel more comfortable with an early
2 date of 2011. But other than that, I think that we're
3 ready to go and looking forward to hopefully adopting this
4 regulation.

5 I do have a couple of minor points, hopefully
6 minor points, unrelated to the land-use issues.

7 Biodiesel. I know that staff is going to be
8 coming back in the 15-day change period. Just curious if
9 you're going to be able to resolve the State Water Board
10 issue relative to the underground tanks.

11 And then also, any in-use applications of some of
12 the concerns raised about whether or not there may be
13 problems with some of the biodiesel fuels. Public
14 disclosure of credits. I feel strongly that we need
15 public disclosure. I just want to make sure we have that.

16 And then Nick Lapis in his testimony, just
17 curious about anaerobic digesters, and then the fugitive
18 emissions with landfills and whether or not those can be
19 addressed or have been addressed already?

20 CHAIRPERSON NICHOLS: Do you want to respond to
21 those.

22 Mr. Fletcher.

23 STATIONARY SOURCE DIVISION CHIEF FLETCHER: I'll
24 take a crack at them. On first, the expert workgroup does
25 come back at the end of January 1st, 2011 -- or the end of

1 2001. Did you want us to come back at the end of 2010
2 then?

3 We can do that.

4 The second issue related to the Water Board
5 issues is a broader issue associated with work that we
6 have going on with, not only the Water Board, but also
7 with researchers looking at the multi-media impacts of
8 biodiesel and renewable diesel. We also have a pretty
9 extensive test program going on for biodiesel and
10 renewable diesel to look at the air quality impacts of the
11 use of that fuel in vehicles.

12 That is testing going on and is in support of
13 specifications that we expect to come back with -- to the
14 Board at either the end of this year or the first part of
15 next year. If we find that there is specifications beyond
16 what ASTM has that are necessary to ensure that we're not
17 getting any increase in air quality impacts from that
18 fuel.

19 There is no -- the B-5 levels are pretty
20 routinely accepted. ASTM has specifications for that. I
21 think part of the issue and the lack of confidence that
22 folks have in biodiesel is, I think historically there has
23 not been those quality specifications. And some of the
24 fuel that has gotten out has caused some problems. I
25 think with the ASTM specifications that are in place now,

1 and I think they even have specifications for B-20 even,
2 that we are continuing our work on that.

3 Also, on that sort of the biodiesel renewable
4 diesel area, some of the comments that you've heard today
5 is that we shouldn't proceed with the regulation, because
6 there is no carbon intensity specified for biodiesel and
7 renewable diesel. And as part of the resolution -- well,
8 actually as part of the 15-day notice, we are proposing to
9 complete those pathways and include that as part of this
10 regulation. So that will really tie up the remaining
11 substantial quantity of fuel that is not covered.

12 On the issue associated with anaerobic digesters,
13 that is one of the sort of specialized pathways that we've
14 identified that we do not necessarily have carbon
15 intensity for a lot of those niche pathways. And one of
16 the other resolution provisions has states that the Board
17 should work with these folks to identify and prioritize
18 those pathways that are of most interest. There's a lot
19 of folks that are coming in with a lot of different types
20 of pathways right now. Some of them are more real than
21 others. And what we want to do is to come back to the
22 Board at the end of this year with a list of which once
23 that we will go ahead and work on as the Air Resources
24 Board.

25 Companies always have the options of coming to us

1 with the data needed to certify a pathway. And there's a
2 process specifically in the regulation to handle both
3 modifications to existing pathways, as well as new
4 pathways. So that one is sort of in place.

5 And the last comment you had was on public
6 disclosure of credits. One of the areas that we have to
7 clean up -- or actually just have to add to the regulation
8 is the entire credit trading program. And the issue of
9 public disclosure of the credits will be addressed as part
10 of that. And we're proposing -- that's one of the kind of
11 the 2 issues coming back to the Board at the end of the
12 year, specifically regulatory to address is the credit
13 trading program.

14 CHAIRPERSON NICHOLS: Do you feel -- and maybe I
15 should ask our lawyers this question as well, but do you
16 feel comfortable going forward with a rule that is
17 dependent on having a credit trading program without being
18 able to specify what the credit trading program is going
19 to be?

20 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Well,
21 we don't need the credit-training program until June 1st
22 2011. So if we're coming back at the end of this year --

23 CHAIRPERSON NICHOLS: Because no one can bank any
24 credits before that.

25 STATIONARY SOURCE DIVISION CHIEF Fletcher: Yeah,

1 that's right. There's no bank or anything that occurs
2 until January 1st, 2011. So we have enough time to come
3 back at the end of the year. And that means it will be
4 effective of -- likely somewhere around the middle of
5 2010, the full 6 months before. So, yes, the answer is
6 we're very confident that we can come back and that's just
7 not that critical of a part

8 On the transparency, it will be a controversial
9 issue, I'm quite certain. And we know what the Board's
10 direction is and we'll be working to structure it in
11 that -- at least, we think we know what the board's
12 direction is.

13 CHAIRPERSON NICHOLS: I think you've heard from
14 us pretty clear.

15 DEPUTY EXECUTIVE OFFICER SCHEIBLE: We were at
16 the ZEV hearing when that issues was discussed.

17 CHAIRPERSON NICHOLS: Right. Okay, Ms. Riordan.

18 BOARD MEMBER RIORDAN: Just a point of
19 clarification, because there may be others that have
20 questions and I have some questions. But I was reading
21 while the question was asked about this review and the
22 dates. And I wanted to be sure that I understand what the
23 response was. I didn't see the response from the dais
24 back to the staff.

25 And, Mr. Fletcher, just can you repeat that and

1 can I understand what --

2 STATIONARY SOURCE DIVISION CHIEF FLETCHER: My
3 understanding of Ms. D'Adamo's request was, is that we
4 accelerate the effort of the expert workgroup for looking
5 at land-use and indirect effects to come back to the Board
6 by January 1st, 2011 instead of January 1st, 2012. And
7 that is a little bit different than what we have proposed,
8 in terms of the formal review, which we will be coming
9 back at the end of 2011 and 2012.

10 CHAIRPERSON NICHOLS: And I think we're going to
11 want to have a broader review. I mean, I think there was
12 a little head nodding here. But the whole question of how
13 and when reviews are going to be done included of what is
14 going to be included, when changes can be made in the reg,
15 when changes can be made in somebody's individual
16 allocation or number assigned to them. This is going to
17 require a little more conversation, because I think many
18 of us have views about this topic, and they may not be
19 exactly the same. So I think you should note that, but
20 don't take that as a -- don't be rewriting the rule just
21 yet.

22 BOARD MEMBER RIORDAN: All right. Good. Then I
23 didn't miss that. Because that is an area that I do want
24 to discuss. But again, there may have been other people
25 in front of me before I asked my questions.

1 CHAIRPERSON NICHOLS: Well, actually I was going
2 to turn in your direction, just to be fair, because I
3 always tend to go one side all the way and then the other,
4 but this time I'm trying to be more even-handed.

5 BOARD MEMBER RIORDAN: Madam Chair, I want to say
6 certainly to the staff, it is a Herculean effort that
7 you've made and I appreciate very much the work that
8 you've done.

9 Having said that, I can't stress enough my
10 support of a continual review. Unlike one of the
11 speakers, I really appreciate review, because I think we
12 sometimes make a assumptions that certain things are going
13 to happen and they just don't happen. And I think that
14 review is very critical so that we can adjust, we can
15 refine, we can alter some of our early assumptions and
16 make it part of the real world, where the actual work is
17 being done.

18 So I'm for that review. I like the idea of
19 review. And I really can't commit to support unless we
20 have this review.

21 Now, having said that, the only thing that came
22 to my attention and I wasn't real clear on what our
23 response might be, and that was to the small refiners. I
24 didn't know whether or not there was something that they
25 brought up that we should be thinking about, or whether we

1 feel that that has been covered and that there are things
2 that, you know, would not necessarily work to disadvantage
3 them tremendously because of their size.

4 DEPUTY EXECUTIVE OFFICER SCHEIBLE: When we've
5 had fuel regulations before that have split out small
6 refiners, it has been on very defined grounds, where we
7 could say their cost of compliance, because investment is
8 much higher, their access to capital is much more
9 difficult, and the cost per ton reduced of pollution. And
10 it would put them in a severe financial disadvantage,
11 because we like the idea of a flat playing field.

12 Quite frankly, in this regulation, I can't see
13 that that occurs, because, they by blending -- I mean,
14 they're in a similar situation with large refiners, that
15 they can't go upstream and create their own fuels, but
16 there's going to be a trading market, there's going to be
17 lots of independent people creating fuels. There's
18 biodiesel out there that they can blend and get credits.
19 So they didn't make a persuasive case. Why? Because they
20 were small. They were so different.

21 One of the arguments they made is they naturally,
22 because they are simpler refiners or because of the crude
23 they use, they might, as an individual refiner, happen to
24 have a lower level. And earlier in the program, we tried
25 to decide how are we going to treat refiners and imports.

1 And we decided, for practical reasons, and to avoid
2 shuffling and other things, that it was just going to be
3 more straightforward to have singular values. Otherwise,
4 we'd have to go through each and every refiner, each and
5 every crude load that came in on the ship or got pumped
6 out of an oil field would have to be tracked and would
7 become incredibly complex.

8 And so we're not convinced that it makes sense to
9 do a refinery specific analysis for some, because we'll
10 see the winners. We won't see any of the losers coming in
11 and applying.

12 I think the is the type of thing where if they
13 want to -- you know, the program might evolve over time.
14 And we have planned in 3 year reviews. The first couple
15 of years of the program should be pretty modest for
16 everyone to meet. So it's something we can look at as
17 time goes on. But we're not willing to say from what we
18 know today, that they've made a convincing case why they
19 should be treated differently.

20 BOARD MEMBER RIORDAN: Thank you.

21 CHAIRPERSON NICHOLS: Okay. I'm going to -- all
22 right, I'll take people in the order. I was actually
23 going to just go to everybody, figuring all the Board
24 members might have comments or questions at this point.
25 So do you want to speak at this point or would you rather

1 wait.

2 BOARD MEMBER SPERLING: I'll wait.

3 CHAIRPERSON NICHOLS: You'll wait. All right.

4 You had your hand in the air.

5 BOARD MEMBER ROBERTS: Thank you, Madam

6 Chairwoman.

7 Wow, what a day.

8 Let me start. Earlier today there was a comment
9 made that models are just models. I think you may have
10 made that.

11 CHAIRPERSON NICHOLS: I did?

12 (Laughter.)

13 BOARD MEMBER ROBERTS: And it bothered me. And
14 it still bothers me, because it sort of lumps all models
15 into one category. And Some models are a lot better than
16 other models.

17 And our success ultimately depends on us having a
18 pretty good model. It doesn't mean we need a perfect
19 model. But we definitely need a good model. And we need
20 something that works. And I sense that part of this is a
21 confidence maybe that a better model is going to evolve
22 over time as we get the inputs. And I think that's the
23 need for having these periodic meetings with a little
24 greater frequency than maybe staff was thinking, to have
25 the reviews. You're kind of checking in.

1 And especially on some of these issues with
2 land-use, that I think leave a lot of questions still
3 unanswered. One of the concerns I have, I'm still not --
4 it's not clear to me. One of the last speakers who spoke
5 of indirect impacts on some of the other nonbiofuels. And
6 I wasn't quite sure what he had in mind, but we've kind of
7 dismissed that as being inconsequential. And, you know,
8 as I kind of think through it, it just seems like we did
9 that very quickly. I don't know the gentleman's name. He
10 wasn't on the list and you recognized him. And I was just
11 wondering what are examples of the things that he might
12 have had in mind that we've so quickly dismissed here as
13 not being all that critical.

14 Mr. Scheible.

15 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Actually, we
16 looked for them. I thought before it was kind of like the
17 search for the weapons of mass destruction that went along
18 a few years ago.

19 Here's an example of a scenario. We use more
20 natural gas in our vehicles in California. That's going
21 to have an impact on natural gas -- that's going to -- for
22 something to happen upstream from that.

23 And one thing was postulated well, because we
24 muse more natural gas, less natural gas is going to be
25 available for other uses, some powerplants are going to

1 use coal. That transfer will use the natural gas and it
2 will result in coal being burned. So we have to assess
3 that. Is that a plausible scenario? Is that likely to
4 happen.

5 So when we look at it, it turns out that -- our
6 assessment is that when we use more natural gas, we might
7 have a slight price impact on natural gas, but that
8 there's ample -- looks like there's ample supply, so that
9 more will be taken out of the ground, so that the
10 secondary effect didn't look to be very large.

11 The same thing happens with electricity --

12 BOARD MEMBER ROBERTS: Well, let me go back,
13 Because on that you said that we were not going -- you
14 know, it's all coming, sort of toe mess particularly. And
15 yet we know that, at least in San Diego, we're seeing a
16 major effort from Sempra who has invested a lot of money
17 now and bringing in internationally, which kind of goes --
18 flies in the face of what you were describing. So I'm
19 trying to take my own experience and --

20 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Well, there's
21 no natural gas. That facility is basically sitting there
22 now as far as we know.

23 BOARD MEMBER ROBERTS: Yeah, but it won't be for
24 long. Well, we'll see.

25 DEPUTY EXECUTIVE OFFICER SCHEIBLE: We'll see.

1 Well, we did investigate the issue and --

2 BOARD MEMBER ROBERTS: They bet a lot of money
3 that it won't be. And they're doing a lot of work to an
4 anticipate that at some point

5 BOARD MEMBER ROBERTS: Now, for -- you know, the
6 economy has slowed things down clearly.

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: But that's
8 type of thing that we would put into our analysis, where
9 does that swing supply come from, where does it come from
10 for electricity.

11 There's a whole area of economic modeling that we
12 would have to get into and we can investigate as time goes
13 on.

14 BOARD MEMBER ROBERTS: So that's again I guess
15 that's --

16 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And that's
17 part of the ongoing effort.

18 BOARD MEMBER ROBERTS: There's a point at which
19 we can start to bring factors like that in, even though
20 they're not on the table today.

21 DEPUTY EXECUTIVE OFFICER SCHEIBLE: That's
22 correct. Once, you know, the factor is identified, you
23 decide its real, you do enough analysis quantify it, and I
24 think the policy that the staff is pursuing, is once
25 quantified, we will be proposing it for all fuels, even if

1 it's a small number.

2 BOARD MEMBER ROBERTS: So we're not foreclosed on
3 that.

4 DEPUTY EXECUTIVE OFFICER SCHEIBLE: No. We think
5 that's the appropriate way to go. But what we will say is
6 that we know it had the potential and we believe it is
7 very large for some of the crop-based biofuels. And from
8 what we know today, it is not very large for the other
9 fuels. If we find out it is large or even if it's small,
10 and we can quantify it, we think the right policy is to
11 include it.

12 CHAIRPERSON NICHOLS: If I could just say a word
13 in response to that comment about the model. I don't
14 think I heard criticism of the model. I think I heard
15 criticism about the data that was going into the model and
16 whether it was up to date or correct, or whether it had
17 somehow -- if you had choices, whether we had used the,
18 you know, wrong assumptions or within a band of results
19 that we picked the right ones to use.

20 And I found that actually quite reassuring.
21 Normally, you'd hear lots of attacks on models. And, you
22 know, that they're just -- they work wrong or that they
23 come out -- they weight things incorrectly or they wrong
24 assumptions built into them. I didn't hear any of that
25 actually, which was extremely reassuring.

1 BOARD MEMBER ROBERTS: Well, maybe we're saying
2 the same thing in a different way.

3 CHAIRPERSON NICHOLS: It definitely is hungry for
4 data, though. And we do need a way to feed more accurate
5 data and get responses.

6 Yes, Dr. Balmes.

7 BOARD MEMBER BALMES: Well, just as an academic,
8 I can't help from commenting about models. But I just
9 would point out to the group and the entire room that the
10 GTAP model that Dr. Hertel presented is an extremely well
11 vetted model compared to many that are used. And, I mean,
12 as he correctly pointed out, the data -- because of that
13 vetting process and because the data have to come
14 international sources, the data are always a little bit
15 out of date. And, you know, that's a reality.

16 But I think once the data are vetted by this, you
17 know, there's a very extensive advisory board validation
18 for vetting of the data. That's a pretty good model as
19 far as models go.

20 CHAIRPERSON NICHOLS: A good model for models.

21 BOARD MEMBER ROBERTS: Could I -- I'm not down
22 yet.

23 CHAIRPERSON NICHOLS: Yes. All right, finish up.

24 BOARD MEMBER ROBERTS: And I didn't mean to get
25 everybody so defensive over that.

1 (Laughter.)

2 CHAIRPERSON NICHOLS: That's okay.

3 BOARD MEMBER ROBERTS: Quite a few years ago, we
4 had a situation where we were regulating 2-stroke engines
5 in watercraft. Some of the staff will remember it. And
6 there was not too many board members who were there then.
7 And it was interesting, because while we were going at it
8 from a clean air perspective, the real benefit was water.
9 And we couldn't regulate water, but that was an outcome.

10 And I mention it, because it seems like our
11 efforts today in going and trying to bring about air
12 quality result is really got another benefit and it's only
13 been touched on here a couple times, the whole notion of a
14 petroleum-independent economy, which is -- it's like --
15 this is like the 900-pound gorilla moving through all of
16 this. And it has been mentioned, but it hasn't -- you
17 know, there's no way -- I guess I can't say the model
18 doesn't account for it, because we'll get off into a
19 tangent again.

20 (Laughter.)

21 BOARD MEMBER BALMES: I'll be quiet.

22 BOARD MEMBER ROBERTS: But it's something that's
23 not evaluated or valued and not brought into this that to
24 me it almost overshadows so much of what we heard today.
25 And while that isn't the goal, I just have to tell you for

1 me personally, it's an awfully important --

2 CHAIRPERSON LLOYD: Value.

3 BOARD MEMBER ROBERTS: -- thing that's going to
4 result from this.

5 Having said that, probably one of the only
6 countries outside of the U.S. where we seem to maintain
7 reasonably good relationships is with Canada. And the
8 Canadians were here today. And I'm wondering how the
9 staff sees their requests and how they see that unfolding
10 with respect to the oil shale or sand or whatever it might
11 be.

12 DEPUTY EXECUTIVE OFFICER SCHEIBLE: They vastly
13 prefer oil sands.

14 BOARD MEMBER ROBERTS: Okay.

15 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Well, I think
16 it's basically a challenge. I mean, we've heard testimony
17 and gotten input how they are going to develop this
18 resource, responsibly and capture the emissions, get the
19 emissions low. And basically we've set up a program where
20 say make it as clean as the conventional basket of
21 petroleum and it comes into the program, but you have to
22 show how you do that. That's not a plan on paper to
23 investigate carbon capture and sequestration. That's a
24 plan that's demonstrated and have it working.

25 BOARD MEMBER ROBERTS: So the studies that

1 they're currently doing and that are, I guess, about to be
2 before you will be analyzed at that time and then
3 hopefully that will give you the information that they do
4 qualify as part of the, I think it was referred to,
5 California Basket.

6 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Right. And
7 we have some high-intensity crudes in California. But we
8 also have an AB 32 program where we're saying we're going
9 to cap their emissions. We're going to put controls on
10 them, make them over time buy carbon credits or reduce
11 emissions.

12 So we think that we, you know -- we have a very
13 sound basis for saying we're treating our emission
14 sources. Our refineries have to do the same thing.
15 They're going to be living under a cap when we get that
16 regulation in place.

17 CHAIRPERSON NICHOLS: Well, I just can't help but
18 observe that while it's true that Canada is our largest
19 trading partner and fortunately we haven't been at war
20 with them for many, many years, they don't hesitate to
21 charge us whatever they can get for their product either.

22 And so if you're concerned about petroleum
23 dependence, which it's just as dependent if it's come from
24 Canada as it is if it's coming from someplace farther
25 away. So I mean we are balancing a lot of different

1 factors here, I guess, in our thinking about this.

2 BOARD MEMBER ROBERTS: Well, I think it's more
3 than a cost issue though. Somehow, I feel even at the
4 same price, I'd rather get it there than have to go to
5 Venezuela or any one of a number of other places, but
6 that's just a personal feeling.

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And I think
8 the technical information shows pretty clearly that unless
9 they take extraordinary efforts to extract that very
10 carefully and minimize the carbon emissions, that it will
11 be a high-carbon source of petroleum, and we will have
12 actually more carbon in our transportation system if we
13 use that here rather than less.

14 BOARD MEMBER ROBERTS: Yeah, but the studies are
15 going to give you that information.

16 DEPUTY EXECUTIVE OFFICER SCHEIBLE: It's prove it
17 to us.

18 BOARD MEMBER ROBERTS: Okay, so that's what I was
19 concerned about.

20 Madam Chairman, first Of all I compliment the
21 staff. This is an incredibly complex issue. Probably the
22 most complex that I've seen in all the years that I've
23 been here. And I think today is probably the end of the
24 start.

25 (Laughter.)

1 BOARD MEMBER ROBERTS: It's not the end of the
2 end, and it's not even the beginning of the end. But it
3 may be the end of the start. And that would have probably
4 Winston Churchill rolling over.

5 But I think we need a start. I mean, we should
6 have been starting decades ago for other reasons. And I
7 think irrespective of what the reasons are, this is
8 incredibly important. And I think even though I may have
9 some criticisms and whether it's the model or the data or
10 whatever, it's good. It's not perfect, but it's good.
11 And good is not the enemy of the perfect.

12 So there's every reason for us to proceeding on
13 this today, inspite of the editorials I'll have to read
14 tomorrow --

15 (Laughter.)

16 BOARD MEMBER ROBERTS: -- in my own home town.
17 But I do want to thank the staff for the work that they
18 have put in. And by that extension all of the people in
19 the science community and elsewhere that have helped us
20 with this. It should have been done sooner, but that's
21 only more reason for going at it today.

22 And I than you for giving me a chance to --

23 CHAIRPERSON NICHOLS: I'll look down at the other
24 side and see if anybody wants to speak at this moment.

25 BOARD MEMBER KENNARD: I'm next.

1 CHAIRPERSON NICHOLS: Okay, you're next.

2 BOARD MEMBER KENNARD: We'll, first of all, I'd
3 to thank Dr. Sawyer, our former colleague, not only for
4 coming here today, but for planting the initial seed that
5 this was even a possibility, so thank you.

6 And also to the staff and the public who spent
7 untold hours getting to this point, which is, I think, to
8 Supervisor Roberts' point just the beginning.

9 We heard a lot about kind of the uncertainty of
10 the methodology, the uncertainty of the future. And my
11 own sense is that that's not a reason not to try to shape
12 the future, and I think this is what we're doing.

13 What gives me comfort in all of this uncertainty
14 is that this is a fluid process, that we have lots of
15 opportunities to make changes. And I would also like to
16 support Ms. D'Adamo's recommendation that we move up the
17 indirect impacts analysis, so that we have a little bit
18 more knowledge before this goes into effect.

19 I did have some specific concerns, most of which
20 Mike, I think, did address. The claim from the EJ
21 community that the cumulative impacts have not been fully
22 vetted. And I think that's probably -- there's more work
23 to be done as we go forward, because this is an
24 evolutionary process.

25 The refineries, I had some concerns about that.

1 And I'm not a hundred percent confident that there is not
2 distinction between the small refineries and the larger
3 ones. And I hope that we continue to monitor that and
4 look at that. And then finally, I was particularly
5 impressed by the magnitude of comments from the Hispanic
6 and African-American Chambers and the concern about
7 secondary and tertiary financial impacts. And I hope that
8 we continue to monitor that and remain sensitive to those
9 issues, because there's a real economic distinction
10 between small businesses and their capacity to share this
11 kind of burden.

12 And finally, just congratulations. This is
13 historic and I'm very happy to be part of it and you've --
14 you know where my vote is.

15 Thank you.

16 CHAIRPERSON NICHOLS: All right. Yes, Ms. Berg.

17 BOARD MEMBER BERG: Thank you Madam Chairman.

18 Well I, too, want to congratulate staff. I know this is
19 an amazing effort to be at this place, because I'm very
20 overwhelmed from time to time. And so I do appreciate all
21 the efforts that staff has personally given me to
22 understand this issue and to work with the stakeholders.
23 I, like my other colleagues, would just encourage -- in
24 fact, in order to go forward, would have to know, and I
25 feel like we do know, that we're ferocious learners. And

1 that we are just absolutely going after the next level of
2 science and information that is, in fact, going to make
3 that data even more relevant and give us the next knew
4 numbers.

5 I'm not totally comfortable with where the
6 numbers are on the land-use issue. Given that,
7 notwithstanding that information, I would be able to move
8 forward knowing that supporting Ms. D'Adamo's motion or
9 suggestion that we move up the review to 2010 and that
10 this working group do a lot of work between now and then,
11 because I do understand that there is not debating the
12 number. At this point, I wouldn't even know where to
13 start with that. But we do need to come back and I do
14 need to have a sense that ultimately where we end up is a
15 fair number that we feel is the way and the path to go
16 forward. So I'm in favor of moving that up.

17 I also agree that I do think we need to take a
18 look at the independent refiners. I think that there is a
19 difference between a refiner that does cracking and coke
20 processing versus a refiner that does blending. And so I
21 do hope that we will continue to get that information.
22 That doesn't need necessarily to come back at the end of
23 the 2010, but we need to get that information and learn
24 more about that process.

25 The other thing that really struck me was the

1 amount of moving parts. Like it was a surprise to me that
2 the Water Board currently did not -- we didn't have the
3 ability to store in underground tanks biofuels with
4 greater than 5 percent blends. And so we've got to keep
5 these moving parts all in front of us or we have to have
6 ways that when we discover them and people can't comply,
7 that we can respond to that. And so I also would very
8 much encourage that.

9 It's still disconcerting to me on things like the
10 economic model, when we have our U.S. Secretary of Energy
11 testify yesterday in Washington D.C. that, in his opinion,
12 a low carbon fuel standard will, in fact, increase the
13 price at the pump. So there is a diverse amount of
14 information out there. And I can see where the small
15 businesses are very, very concerned at the end of the day
16 how is this going to affect them.

17 They're trying to survive and get through this
18 current economic crisis. And they just don't want to have
19 other looming economic issues that we unintendedly might
20 be creating. And so I agree with my other colleagues that
21 that also has to stay in the forefront.

22 So I'd like to close with the fact that I am very
23 much in favor of the language that was brought into the
24 resolution to create an expert workgroup. I agree with
25 the chair that we need to be very specific as to what our

1 expectations are going to be to come back with a report.

2 I agree that we need to move that up.

3 And I would like to remind, of a conversation
4 that we had when we started the AB 32 process, and that is
5 that we knew this regulatory process would not be the same
6 as the last 40 years. We knew that it would have
7 different moving parts and different relationships with
8 stakeholders and we were going to be leaders and on the
9 cutting edge.

10 And if you're going to lead with disruptive
11 technologies in business, you have to be very careful and
12 very intuitive in order to make it to the next part of the
13 technology, so you're around, not that you're disruptive
14 and then you lose leadership because you lose your focus.

15 So, again, congratulations. I really appreciate
16 all the effort and I agree with Supervisor Roberts, I
17 think it's just the beginning.

18 BOARD MEMBER BALMES: Point of information?

19 CHAIRPERSON NICHOLS: Thank you.

20 Yes.

21 BOARD MEMBER BALMES: I don't want to get out of
22 order, but I think Ms. D'Adamo's suggestion was for the
23 year 2011.

24 CHAIRPERSON NICHOLS: January 1, 2011.

25 BOARD MEMBER BERG: And then the conversation

1 came back, even a year earlier, but we're at 2011?

2 CHAIRPERSON NICHOLS: I think we're at 2011 in
3 terms of the proposal --

4 BOARD MEMBER BERG: Okay, thank you.

5 CHAIRPERSON NICHOLS: -- that we're dealing with
6 here.

7 Okay, next in line. Supervisor Yeager.

8 BOARD MEMBER YEAGER: Yes. Thank you. I, too,
9 feel like we are making history today. And I'm very
10 honored to be apart of that.

11 It does show that this board and staff and our
12 Governor and our state are taking global warming very
13 seriously. We all know that to be able to reduce the
14 impact of our carbon footprint on this planet, we do need
15 to begin changing individual behavior and also we need to
16 have the changes in the transportation fuel industry. And
17 this is just a huge step in that direction.

18 In the past, we haven't taken into consideration
19 the full cost of carbon-intense fuels. And it really is
20 the very first time that we are going to be doing this.
21 And I think as consumers, as the public and as scientists
22 look at getting more at the overall costs of carbon
23 intense fuels, that we will see more of these type of
24 discussions and other regulations in the future.

25 But this really is the first. And we all know

1 that the other states in this nation and countries around
2 the globe are sort of looking at what we are doing. And I
3 think again we will see a lot more public input and a lot
4 more research done in this area.

5 We've had a lot of speakers. I think we had
6 about 95. And it was quite a few, and it was good to
7 listen to them all. It seems like, in some ways, we can
8 divide the speakers into 2 groups: Some who just don't
9 really believe that there should be a low carbon fuel
10 standard. And I'm not sure anything that this Board or
11 staff could say would ever really change their opinion.

12 But thankfully the majority of this speakers I
13 believe felt that we do need such a standard. And for
14 those speakers we appreciated all the comments that you
15 made. Clearly, we can do better at what we are
16 attempting. And staff, even though they spent a lot of
17 years on this already, know that it needs to be tweaked,
18 that they appreciate the input that they are receiving.
19 And I think staff really did listen.

20 We all saw it the first thing this morning, but
21 in that Attachment B, and I hope people were able to see
22 it, that there are going to be many things that are going
23 to be included in the review. And I won't list all 13 of
24 them, but they are here, but they really did, I think,
25 address many of the concerns that the speakers had.

1 Looking at -- I'll just mention five, because I think
2 they're important. Looking at advances in full fuel
3 lifecycle assessments, the availability and use of ultra
4 low carbon fuels, the LCFS program's impact on State fuel
5 supplies. Analysis of the public health impacts. And
6 identification of hurdles or barriers, such as permitting
7 issues, infrastructure, adequacy and research funds and
8 recommendations for addressing such hurdles or barriers.

9 So even though that there is, again, a lot more
10 work that needs to be done, I think that by the time we're
11 ready to go forth, all of the areas that we don't
12 understand enough about will be addressed. And that the
13 final product will be something that will be effective,
14 and that we're looking at all the things. And I also
15 agree that it is important to have the review earlier, but
16 also important, and it's been good to listen to my
17 colleagues that we're sending a very strong signal to
18 industry, that there will be a change in the marketplace.
19 That now is the time to begin investing. Now, is the time
20 to do the research. Now, is the time to sort of get on
21 board and be part of this very exciting time in our State.

22 That we're not going to go backwards. We're not
23 going to change it. This is something that you can bank
24 on. And that again, we can always tweak it, but we're
25 certainly headed in the right direction.

1 And I know that there is some concerns about some
2 of the new facilities that will be built. My hope is that
3 we can work with the local air districts throughout the
4 state on making sure that the issues that the
5 environmental justice advocates mentioned are taken into
6 consideration. We certainly know a lot of them are going
7 to be covered by CEQA. But I think it's going to be a
8 very good role for the air districts. And I think the Air
9 Board can help them trying to figure out what that overall
10 impact is and how it will affect public health in those
11 areas because I don't they wouldn't all of them in
12 particular area or not understanding the impact, because
13 certainly the idea isn't to reduce one problem area with
14 public health only to create another.

15 So, again, my congratulations to everybody that's
16 been involved in this. It's really a very exciting time.

17 CHAIRPERSON NICHOLS: Thank you very much.

18 Dr. Balmes.

19 BOARD MEMBER BALMES: Well, I'll try to be
20 uncharacteristically brief, given the time. And I sort of
21 get the vibe from the chairman that she would appreciate
22 that.

23 So, I want to compliment the staff along with my
24 colleagues. And to the point where, you know, detailed
25 suggestions that I was about to make in terms of

1 resolution showed up in the package of additional
2 changes -- and I really want to compliment the staff for
3 listening to the same stakeholders that talked to me, and
4 were responsive to their concerns.

5 Specifically with regard to public health impact
6 analysis of the LCFS at the State and local level with
7 regard to especially local impacts. I really like that
8 addition. The same with regard to air quality impacts, in
9 terms of criteria pollutants.

10 One other public health impact analysis that I
11 would like to see incorporated into our future work on
12 this would be on the pathway analysis. Because, as I
13 mentioned last month, I think that toxicities of emissions
14 from both new fuels and the production facilities has to
15 be thought about. So I would just add that.

16 But overall, I was very impressed with the
17 addition of these things.

18 With regard to pathway analysis a couple other
19 points. One is that, well, I guess it's -- as I read the
20 language on page 16, we'd be delegating authority to the
21 executive officer. And as much as I respect him, this is
22 what the pathway analysis -- as much as I respect him,
23 given the complexity, the concerns expressed by
24 stakeholders, you know, I think I'd sort of like --

25 CHAIRPERSON NICHOLS: I'm sorry go ahead.

1 BOARD MEMBER BALMES: I'd sort of like to see the
2 Board have a continued role in this. You know, I see that
3 on top of page 16 that there would be a progress report.
4 But I don't know and I don't want to overly burden the
5 staff. But I'm curious about how my other colleagues
6 would feel that we need to sort of monitor -- we, the
7 Board, need to monitor the pathway analysis.

8 CHAIRPERSON NICHOLS: The last sentence of that
9 paragraph, it talks about the executive officer says, the
10 Board directs the executive officer to notify the Board of
11 the initiation and results of any rule-makings conducted
12 pursuant to this delegation.

13 So my understanding of this was that whenever the
14 executive officer initiated a new pathway, he would notify
15 all the Board. And if a sufficient number of Board
16 members, which would be any of you, felt that you really
17 wanted to bring that back to the Board, we would ask the
18 Executive Officer to do that.

19 So I don't feel like we had to spell it out.
20 Although, I suppose it could be spelled out further. But
21 the idea here is that we could be getting huge volumes of
22 these things. And they could be really routine and
23 technical and we wouldn't want to be involved.

24 On the other hand, there could be some real
25 issues.

1 BOARD MEMBER BALMES: Is there a way to
2 periodically have the Board review these, so it didn't
3 require us to be monitoring?

4 CHAIRPERSON NICHOLS: Yes. Well, he needs to
5 give us a little list of any that he's working on. And he
6 needs, under this language, I believe, to tell us what he
7 did. So the question is, would we want to be informed
8 sort of before he made the decision on any of these
9 pathways or at some midpoint, I guess, as to how that was
10 all going. Certainly, we could do that.

11 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And these are
12 going to be rule-makings. So there's going to be

13 CHAIRPERSON NICHOLS: They actually are --

14 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Yes. After
15 listening to our legal staff, we decided that it was
16 necessary to make these rule-makings. We do have a goal
17 coming back in December with criteria. And if we are
18 really successful, we'll turn those into a certification
19 regulation.

20 But many of these are going to be engineering
21 analysis. Show us the plant. Show us the technique.
22 Give us the energy balance and we can figure it out. When
23 you get something complicated like a new indirect land-use
24 effect or for some significant crop, I think that's going
25 to have additional policy elements that the executive

1 officer will likely decide that the Board should make.

2 CHAIRPERSON NICHOLS: Well, the land-use funds
3 are exempted from this delegation anyway.

4 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Modifying
5 them. But there may be some aspects of some new biofuel
6 pathways that have a small land-use element.

7 CHAIRPERSON NICHOLS: Are you comfortable with
8 leaving it as it is at the moment with the understanding
9 that the executive officer is going to have keep us
10 thoroughly informed and we're going to get to look at the
11 criteria in December for him to do it.

12 BOARD MEMBER BALMES: Okay.

13 CHAIRPERSON NICHOLS: Is that okay?

14 BOARD MEMBER RIORDAN: Yes.

15 CHAIRPERSON NICHOLS: All right.

16 BOARD MEMBER BALMES: And then in terms of
17 fairness, we've heard a lot about fairness today from
18 testimony. But I have to say -- and again this is not my
19 area of expertise, but I'd maybe like to hear a little bit
20 more discussion from staff about this CNG, LNG
21 domestically produced, whether they need to be treated
22 equally? And the same with the combustion technologies.
23 I'm at the, what EER --

24 CHAIRPERSON NICHOLS: There's language on that in
25 the --

1 BOARD MEMBER BALMES: Yeah. And is there new
2 language?

3 CHAIRPERSON NICHOLS: On page 16, it just says we
4 direct the executive officer to specifically evaluate --
5 reevaluate the EER for heavy-duty vehicles, fueled by
6 compression and liquefied natural gas, and if appropriate
7 to update the EER as soon as practical.

8 BOARD MEMBER BALMES: Okay, yeah. So thank you.

9 So, I guess I would --

10 CHAIRPERSON NICHOLS: We anticipated this

11 BOARD MEMBER BALMES: Yes. I'm actually sort of
12 amazed.

13 (Laughter.)

14 BOARD MEMBER BALMES: There was another specific
15 thing about the siting of facilities that said, I think
16 the original language was, "if appropriate", that it would
17 be brought to the Board, a guidance document. And now it
18 doesn't say "if appropriate" anymore. It's going to be
19 brought to the Board. So you've really taken care of all
20 my concerns.

21 (Laughter.)

22 BOARD MEMBER BALMES: So I would just add my echo
23 to my colleagues who have already spoken. I think the
24 effort was described as Herculean. And I think it is.
25 And I'm especially impressed that given how big of an

1 effort it was in total, that a lot of specifics have been
2 addressed in the modified document.

3 So my thanks and pride in the staff's work.

4 CHAIRPERSON NICHOLS: Thank you. Do you want to
5 say anything at this point, Dr. Telles.

6 BOARD MEMBER TELLES: Yeah. I'm going to be a
7 little less favorable than the rest in my analysis of
8 this. And I'm going to base my view of this on the same
9 view that I spoke up when we passed AB 32, and that's
10 basically on health and also the truck rule based on
11 health.

12 Whereas, I expressed before, I think the economy
13 is extremely important, not just for economic purposes,
14 but also for health. And we're experiencing that in San
15 Joaquin valley at a degree that nobody else is in the
16 State. Fresno county has 17.9 percent unemployment.
17 Merced County 20 percent unemployment. We have cities in
18 the valley which are 42 percent unemployment.

19 As result of this, our hospitals are being filled
20 up with patients that can't pay, and it's putting a big
21 burden on our healthcare system.

22 Having said that, I think the economic analysis
23 is crucial, especially in our area where almost everything
24 that we create or grow is put on a truck and transported
25 someplace. And if the economic analysis is wrong, and the

1 fuel prices actually do increase, that the valley is going
2 to be in extremely -- not only more depressed, but also
3 worse off as far as health goes.

4 Earlier, we had a little discussion on the
5 biodiesel. And well, if it's not available, you only make
6 fuel that is available for a truck that can burn it. You
7 know, in other words, nobody is going to make it.

8 But if the fuel is not available -- or if the
9 fuel is available, but we're imposing on the company
10 that's making the fuel a restriction that they have to buy
11 credits from someplace else to make that fuel for that
12 truck that can burn it, I can't think that -- can't help
13 but think that those credits are going to somehow
14 translate into a higher fuel cost for that trucker who's
15 going to be buying that fuel.

16 I think the economics -- I really have a hard
17 time believing that this is going to be neutral for
18 California.

19 In the environmental justice part of this, also
20 when I mentioned in AB 32, I don't think we should pass
21 anything that's going to make anybody's lives worse in the
22 State of California.

23 There weren't a lot of environmental justice
24 people testifying today. But I think they're saying more
25 than just, you know, doing a site analysis of a bioplant

1 in Pasadena or wherever it might end up being. They're
2 also talking about the fact that the price of fuel and the
3 price of food may go up. And that will have an adverse
4 impact on the people in the environmental justice
5 communities who can afford it the least.

6 And no place in this document does it say what
7 we're going to do if that were to occur. And I thought
8 that that was my understanding of what we were going to do
9 with AB 32. And we're just kind of kicking this farther
10 down the road. And I don't think it should be not spelled
11 out exactly in there what's going to happen. And I think
12 your own Environmental Justice Advisory Committee made the
13 same recommendation. I think you should listen to their
14 recommendation.

15 Health impacts. Direct health impacts. The
16 criteria pollutants maybe it's not going to make any
17 difference. I tried to find out what happens with a
18 larger use of ethanol products, trying to get on some
19 websites in Brazil. And my understanding that there may
20 be a problem as far as some of the biodiesels and just
21 criteria pollutants.

22 And then there's a concern for formaldehyde and
23 acetaldehyde which were not even addressed in this
24 document at all. And to go forward and not addressing
25 something that hasn't even been looked at makes no sense

1 to me which could be a potential extreme health hazard,
2 but we don't know.

3 Everybody is talking about how that California
4 can lead the way here. I'm going to have -- if this is
5 the document to lead the way, I have some criticisms, and
6 I mentioned this to Mr. Goldstene earlier, on the document
7 itself.

8 It's very difficult to read. I've spent the last
9 30 years reading scientific documents and I find this one
10 extremely difficult to read. A lot of the graphs are
11 not -- and a lot of the tables are not explained well
12 enough to be able to read it in a fashion that you can go
13 to the initial source and really figure out what's going
14 on here. I think it's very difficult to read and I think
15 some of the people, maybe not in the peer reviewed, but
16 other scientific community felt the same thing.

17 On the modeling issue, it is a model. And maybe
18 it's the best model that's out there. Although, we
19 received a letter from 125 scientists that say it's not
20 the best model. I mean, not that it's the best model, but
21 the models are not good enough to proceed with indirect
22 land use. And I have a hard -- the indirect land use part
23 of this document, I have a hard time accepting the fact
24 that we're going to ignore the comments of 125 scientists.
25 And I actually called a couple of these guys to see why

1 they're against this.

2 And they basically said that the model is not
3 good enough, even though it's probably best out there to
4 really figure out how to do this. And that's the reason
5 why the European community is not proceeding with this.

6 So I have a lot of concerns that are not
7 addressed. And I would have a hard time voting for this.

8 CHAIRPERSON NICHOLS: Thank you.

9 Okay. I think we've heard now from everybody,
10 except from Dr. Sperling who gets the next to the last
11 word.

12 (Laughter.)

13 BOARD MEMBER SPERLING: I knew Chairman Nichols
14 you would have plenty to say.

15 (Laughter.)

16 BOARD MEMBER SPERLING: So let me just start off
17 by kind of elevating this a little bit. You know, people
18 have mentioned that this is historic. And it really is.
19 This is -- you know, I've spent decades studying
20 alternative fuels, writing books and papers and being --
21 observing the policy process. And it's been a very
22 painful history. There have been, what some of us have
23 referred to as the fuel du jour phenomenon. We've jumped
24 from one to another.

25 And what's happened is we've finally ended up, in

1 my mind, with a policy framework that is durable. It's
2 not ad hoc. It sends clear signals and really is the
3 mechanism that can be used to orchestrate this transition
4 to low-carbon nonpetroleum fuels.

5 And, you know, I signed on a couple years ago to
6 participate in this project, because I believed, at the
7 time, that this was the right way to go. And all of my --
8 the last 2 years have only confirmed that, have reinforced
9 that.

10 And just to -- you know, Bob Sawyer kind of just
11 very quickly -- it was a very nice eloquent last statement
12 that he made. But similar to what he said, just to
13 summarize the attributes of this, why this is so important
14 and why this is such good policy. This, in my mind, is an
15 example of government at its best, doing good policy,
16 that's responsible, and responsive.

17 It's science based. You know, we have that
18 scientific measure of grams of CO2 equivalent per
19 megajoule. So we have a single metric that we're using.
20 And all of the arguments here that we've been going
21 through are really the details of how to get those numbers
22 right.

23 And what reassures me is the staff has, you know,
24 I'm going to thank them even more in a second. But what
25 the staff has done is create, not only a good analysis and

1 structure, but a good process. And that's what reassured
2 me. You know when we started this process, I also had a
3 lot of misgivings. And even, you know, up until fairly
4 recently.

5 But seeing how the resolutions were put in place,
6 the review processes that are here, I think we've got
7 something that really will work. And if there's problems,
8 there's a mechanism for making adjustments along the way.

9 So it's science based. It doesn't pick winners.
10 It's performance based. It provides an incentive for
11 innovation. And there's one point I want to make on that.
12 And there was this discussion tar sands. And what the low
13 carbon fuel standard does is it provides an incentive to
14 the tar sands manufacturers/producers to be more efficient
15 on how they produce the fuel, and to find ways of reducing
16 the carbon foot print.

17 And I was talking to a senior oil executive just
18 a few days ago. And he was saying, you know, it's
19 possible to produce gasoline from tar sands with
20 smaller -- less carbon than gasoline from conventional
21 oil. It won't be easy. You're talking about
22 cogeneration. You're talking about carbon capture, about
23 reducing the amount of natural gas that's used in it. But
24 that is the point of this. This is providing an incentive
25 to improve efficiency and to reduce the carbon footprint.

1 And the tar sands can stay in the mix, but it can get
2 better. And the same thing, if companies want to invest
3 in oil shale, the same thing can happen and will happen.

4 So, you know, this -- so I've been involved with
5 the staff, I guess, more than anyone on this Board, on
6 this project. You know, Mike Scheible was involved in it
7 right from the very beginning. And the staff -- I mean,
8 everyone has said the staff -- you know, many have said
9 the staff did a good job. But it's more than doing a good
10 job. This was a tremendously challenging policy rule.

11 No one has ever done this before. You know, this
12 is not like most ARB rules where there's a cutting -- a
13 cookie-cutter template that you work with. There was no
14 template for this. And so it took a lot of creativity.
15 It took a lot of engagement with all the stakeholders.
16 And it was, you know -- and so it was Mike Scheible. It
17 was Bob Fletcher, Dean Simeroth, John Courtis, you know,
18 managing it with a large staff. And they've done a
19 fabulous job.

20 And so that's the big picture part of it. And,
21 you know, I think I'm very comfortable with this, because
22 of the -- all of the -- I have had many -- will do the ex
23 parte. And, you know, like Chairman Nichols, I've talked
24 to an awful lot of people in the last 45 days about this.
25 And I think the resolutions respond in a respectful, fair

1 way to just about all of the concerns.

2 And having said that though, there are 2 or 3
3 little things I did want to mention.

4 (Laughter.)

5 BOARD MEMBER SPERLING: Actually just 2.

6 CHAIRPERSON NICHOLS: Sharpen your pencil.

7 BOARD MEMBER SPERLING: You know, perhaps the
8 only place where I've had even just a little bit of
9 difference with the staff is on the electric vehicle part.
10 And where the staff has been working very hard to get the
11 rule exactly right about which vehicles and which electric
12 forklifts should get credit and which ones shouldn't. And
13 I differ a little bit with the staff. And I just leave
14 this because as these rules are finalized at least think
15 about it a little more.

16 And that is, the big picture is we want to
17 incentivize the use of electricity for vehicles. And if
18 we don't get it exactly right and we give a little too
19 credit somewhere, that's okay with me.

20 Because the problem is if you try to cut it up
21 too much, be too precise, you end up with a whole bunch of
22 red tape trying to, you know, partition different kinds of
23 electric forklifts, for instance, in terms of getting
24 credit. I'm not sure that's where we want to go.

25 So that's probably the only one.

1 CHAIRPERSON NICHOLS: I thought I saw some
2 language that fixed that issue.

3 BOARD MEMBER SPERLING: They made some adjustment
4 to it, but it --

5 CHAIRPERSON NICHOLS: But it wasn't enough for
6 you?

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: No. We
8 propose to make it very clear that new applications would
9 generate credits. But there's a sizable inventory out
10 there of vehicles -- or not vehicles or devices that could
11 have used diesel fuel, but now use electricity. And quite
12 frankly our analysis is if we included that, there would
13 be a lot of free credits in the early years that might
14 stimey other fuels coming in and competing, so that was
15 the problem.

16 CHAIRPERSON NICHOLS: Okay.

17 BOARD MEMBER SPERLING: I'd agree, except for the
18 use of that word stimey.

19 CHAIRPERSON NICHOLS: So is this an agree to
20 disagree issue or --

21 BOARD MEMBER SPERLING: They're going to be
22 working out the details over the next 9 months, so I
23 guess, you know, I'll respect where they end up. But my
24 feeling is if there's a place where you bend, you know,
25 you go in the direction of being a little more open in

1 terms of providing credits to stimulate the use of
2 electric propulsion. And the last thing is actually, I
3 don't know if it's substantive or not, but it's central to
4 a lot of what we've been talking about.

5 There was, in the resolution, one of the
6 resolutions has to do with giving credits to companies for
7 better farming -- better land practices. And it's not --
8 you know, this is something that's just come up in the
9 last few weeks. And so the question is, you know, with
10 the indirect land-use charge, the way the staff has put it
11 together, is that there's a single number that you add to
12 each fuel path, corn ethanol, sugar, Brazilian sugar.

13 And the question is -- you know, the issue is, do
14 you give credits for the land part of that fuel path to
15 companies that do something to improve the land practices,
16 whether it's no-till practices, or higher yields or any of
17 the kind of things that would mitigate or -- would
18 mitigate that indirect land-use charge?

19 So there's a paragraph on it here. And this is
20 the one question I have is, it's not clear to me, either
21 the thinking behind it or the actual -- how that's likely
22 to be implemented. I'll just say for my part, I would
23 support providing credits to companies that can document
24 practices, that will essentially -- I'll use the word
25 "offset". It's not in the technical sense, but that will

1 offset that land-use charge.

2 CHAIRPERSON NICHOLS: Are you referring to the
3 paragraph at the top of -- the first full paragraph on 15?

4 BOARD MEMBER SPERLING: Yes.

5 CHAIRPERSON NICHOLS: Yeah.

6 BOARD MEMBER SPERLING: And we had said early in
7 our discussions we were going to come back to this.

8 CHAIRPERSON NICHOLS: Yes, and we did.

9 DEPUTY EXECUTIVE OFFICER SCHEIBLE: I think the
10 easiest example would be someone who's going to actually
11 control their crop -- it's a biocrop. And it's not --
12 they're not using a generic crop like number 2 yellow
13 corn. So it's a fuel crop, not a food crop that's being
14 -- that has those market effects.

15 And they could demonstrate that their method of
16 growing it actually built carbon up in the soil. And
17 there should be a credit done for that. So
18 philosophically our response was, if you can prove it, and
19 it actually does that, as part of the lifecycle emissions,
20 you're taking carbon out of the air, that that's something
21 that we think ought to be credited.

22 CHAIRPERSON NICHOLS: Okay, but here's my
23 example, and this will come back maybe in the context of
24 the sustainability guidelines. Brazilian sugar cane
25 grower, who produces ethanol, hires guards to go work in

1 the Amazon to prevent illegal logging.

2 DEPUTY EXECUTIVE OFFICER SCHEIBLE: That's an
3 offset.

4 CHAIRPERSON NICHOLS: Sustainability -- it's a
5 big sustainability, plus it saves rain forests, carbon.
6 They've clearly done it. They can prove they did it.

7 DEPUTY EXECUTIVE OFFICER SCHEIBLE: Yeah, I think
8 that's one we'd have to look at and bring back. That's
9 not what we're thinking about here.

10 (Laughter.)

11 DEPUTY EXECUTIVE OFFICER SCHEIBLE: That's
12 definitely a board type of decision.

13 CHAIRPERSON NICHOLS: This is why I want to law
14 school was just to be able to come up to those kinds of
15 things

16 STATIONARY SOURCE DIVISION CHIEF FLETCHER: If I
17 could comment on that one. That's actually the second --
18 the first full resolution on page 17, where we talk about
19 we're going to come back with a workplan for
20 sustainability provisions. And then look at what we can
21 do to try to ensure that the fuels are being produced
22 sustainably. So that is part of that larger issue, I
23 think.

24 CHAIRPERSON NICHOLS: I mean, this is a big thing
25 that we're being asked to do here. And it's obviously

1 well beyond any kind of responsibility that the ARB has
2 had before. But given the size of our market for fuels,
3 our appetite for automotive fuels and what we're doing
4 with this market, it's something that behooves us to take
5 seriously.

6 BOARD MEMBER SPERLING: Yeah. So I think that we
7 want to go beyond that. I feel pretty strongly about it.
8 And I think the example that chairman Nichols gave -- you
9 know, there are, I think, a lot more examples -- you know,
10 it might be the country of Brazil could even adopt a
11 policy that will do something to restrain, you know, the
12 destruction of the rain forest. That's a big example, but
13 there can be little examples. And I think that we want to
14 keep open the opportunity for those kinds of improvement.
15 Because in the end, we want to incentivize those kinds of
16 changes and innovation and we want to do everything we
17 can, you know, and not get caught up in, you know, the
18 specifics of it.

19 But keep it open that, you know, I talked to one
20 of the oil companies and I said to them, you know, okay
21 you're in Brazil and, you know, using Brazil again as an
22 example. I said, "Are you willing to take responsibility
23 that, you know, if a particular farm adopts certain kinds
24 of practices, that you'll document it and support it and
25 be responsible for it. And they said yes. And so I think

1 that's the kind of thing -- and it's not just Brazil.
2 It's in the U.S. It's in California as well. I don't
3 know how to word it, but --

4 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Yeah,
5 I think that that objective is really more the
6 sustainability. And that's -- we know that there's going
7 to be sort of this national and international component to
8 the sustainability, because much of it may go beyond the
9 authority that we have, but to the extent that we can
10 reach agreements or that we can establish protocols for
11 agreements, like you mentioned, that are, in essence,
12 enforceable through voluntary -- you know, voluntary
13 actions that are then, in turn, enforceable, that's sort
14 of what we were thinking about the sustainability.

15 On the guidelines themselves was a little bit
16 more of parochial than what you're referring to. This was
17 things like no till practices and things that can be
18 relatively easily documented. And so this was guidance to
19 people who were coming into us that says, you know, here's
20 our carbon intensity of the pathways.

21 But in either case, we recognize it's an
22 important consideration and we'd like to try to
23 incorporate those sorts of things.

24 BOARD MEMBER SPERLING: So in just closing, I
25 have to fly out tonight and I can't help -- I'm hoping

1 we're going to be celebrating in a few minutes here. And
2 I will be testifying to Congress on the national LCFS. So
3 I'm very proud and pleased to be able to carry our message
4 forth to Washington, because in the end, as many have
5 indicated, you know, we really need, you know, the
6 national government. And hopefully others to also adopt
7 the LCFS to make it most effective. And so I want to
8 thank again the staff and it's been a wonderful
9 experience.

10 Thank you.

11 CHAIRPERSON NICHOLS: Thank you very much, Dr.
12 Sperling.

13 I can't possibly claim to be one of the fathers
14 or the mothers of the low carbon fuel standard, because it
15 was already under way, when I got here in July of 2007.
16 And I will admit, and I have said publicly, that I had a
17 lot of concerns about it. Even though it already had been
18 announced in the Executive Order, it was one of the
19 Governor's major initiatives, so I knew that it was
20 something that he was very committed to, as were many
21 other people.

22 But I spent many hours with Dan, with Alex, with
23 the staff here going through my concerns, because over my
24 years of involvement in air quality regulation, the
25 hardest things I have been involved with have been fuel

1 issues, where we tried to change the composition of the
2 fuel supply. Because it is so tied up in everybody's
3 livelihood and in the economy and in the political
4 process, there is nothing gets the attention of
5 politicians faster than a rise in the price of gasoline.
6 There is nothing that causes heads to role faster in many
7 places than concerns about the quality or the quantity of
8 the fuel supply.

9 So I've been deeply involved in asking hard
10 questions. And I was not easy to convince that this was
11 something that we could do and that actually made sense.

12 I am persuaded that the policy construct here is
13 a solid one. I think if we were doing this action today a
14 year ago in a context of an economy that people did not
15 think would crash, this would be a very different
16 discussion.

17 The tenor of the comments that we got would have
18 been very different they are today, because we could just
19 be unabashedly optimistic about the new businesses that
20 would be coming to California, about the tremendous
21 incentives that we would have here for people to bring us
22 the very best of the new fuels. And we could be
23 comfortable that we would be creating a lot of new
24 businesses and jobs here.

25 I think that we have to be a little sober about

1 that. I do. And I think that part of the monitoring that
2 I want to see done here is to make sure that we aren't
3 ahead of ourselves in our assumptions about what's going
4 to be available in the near term. Because given what's
5 actually going on right now, in the way of new businesses
6 starting up and investments being made, I don't know that
7 we'll see the kind of rapid ramp up in availability of
8 very good, advanced biofuels that we believe is what
9 should happen as a result of this rule.

10 However, I think that if we don't, and we
11 obviously hope we will. We know the economy will turn
12 around. We know the price of gasoline is going to go up.
13 It's just question of when not whether. We do have the
14 ability to stretch out deadlines or change the numbers in
15 terms of the dates, when certain things actually have to
16 occur under this rule.

17 And I think that's one of the important reasons
18 for keeping an eye on it. I am just congenitally an
19 optimist, but I do think that this is one where it
20 behooves us to be very, very careful and to be open to
21 adaptive management as new science comes along.

22 You know, that said, you can't keep changing the
23 numbers every month or even every year without running a
24 risk of unsettling things even further. So I think that
25 giving ourselves until the end of 2010 to do the kind of

1 review with the very specific elements in it that we've
2 talked about is a good way to go. And I do believe that
3 at the end of the day, we will not only be vindicated that
4 we will be a model, as was hoped from the very beginning,
5 for others that are looking to do something.

6 Because short of this kind of dramatic shift in
7 the paradigm for what kinds of fuels we're going to be
8 demanding, I don't think we will ever make any significant
9 progress whatsoever. We'll just keep increasing the
10 emissions from transportation from this part of the sector
11 at least.

12 So my view is that the Board, the staff both, but
13 particularly the staff in recent weeks and going back to
14 the surfacing of the proposal, have really listened.
15 They've made significant changes in the regulation itself.
16 It's not, you know, just talk. It's really embedded in
17 what we're going to be doing going forward.

18 But at the same time, we haven't sacrificed our
19 commitment to make sure that we are bringing, not just new
20 fuels or better fuels, but the very best fuels here to
21 California. So I'm going to be very pleased to vote for
22 this rule.

23 Before we do that however, we are required to
24 disclose our ex parte communications. And I suspect that
25 there's a lot. My question is do we have to actually read

1 them allowed or can we just enter them into the record. I
2 don't know if there's a -- I think it's just a practice
3 that we read them as opposed to --

4 CHIEF COUNSEL PETER: Actually, it is a practice
5 not a requirement. What we've done before, and I don't
6 know how many there are, is people had done one and they
7 tend to repeat. So I don't know if there's one way that
8 you can do it and people can just add new ones on.

9 CHAIRPERSON NICHOLS: Okay. Well, maybe I'll
10 just start then. I think I'm going to have more than most
11 people do.

12 Going back to March the 12th, I met with BP in
13 person. On the 18th I met with Chevron by phone. On the
14 31st I met with former Governor Davis by phone. I met
15 with Pacific Ethanol by phone. Actually, I visited the
16 Pacific Ethanol plant personally. I've met with Vinod
17 Khosla of Khosla Ventures and Bob Epstein in person. I
18 met with the U.S. Renewables Group on April 17th. Lee
19 Bailey and Tim Newell. I met with a whole coalition of
20 environmental groups that Jamie Knapp represents by phone.

21 I met with the California Biodiesel Alliance in
22 person. I met with the California Natural Gas Vehicle
23 Coalition by phone. Met with General Wesley Clark by
24 phone. Met with Californians Against Waste in person. A
25 couple of these, I think I've talked to more than once,

1 but those would be the major -- those would be the major
2 contacts. And, again, I don't think there's anything I
3 learned as a result of those meetings that wasn't repeated
4 here today.

5 But just the breadth of the interest and concern
6 was very helpful, I think, in putting this all in context.

7 BOARD MEMBER RIORDAN: Madam Chairman, on April
8 8th I met with Pacific Ethanol and that would have been
9 Bill Jones, Tom Koehler, Dr. Mark Stowers, Kristy Malm,
10 Geoff Cooper, Roger Salazar and John Dunlap.

11 On the 13th through the 20th, I had the following
12 calls:

13 One with an environmental organization, Friends
14 of the Earth, Energy Independence Now, organized by Jamie
15 Knapp. A call with Dave Smith, BP along with their
16 representative in Sacramento.

17 A call with Kathy Reheis-Boyd Western States
18 Petroleum Association. A call with Todd Campbell, Mike
19 Eaves, Clean Energy Fuels Corporation and a representative
20 from Westport. A call with Bob Epstein representing 2. A
21 Call with Dave Modisette representing California Electric
22 Transportation Coalition.

23 The conversations that I had were mirrored very
24 much in today's testimony and in the letters that we
25 received over the last 2 or 3 weeks.

1 CHAIRPERSON NICHOLS: Anything that hasn't been
2 mentioned that anybody would like to add to this, go
3 ahead.

4 Well, I mean you just go on. I mean you can just
5 say ditto if you met with the same people, I think.

6 BOARD MEMBER BALMES: Actually, they were
7 different people.

8 CHAIRPERSON NICHOLS: Okay.

9 BOARD MEMBER BALMES: On March 24th, I met with
10 Bonnie Holmes-Gen, American Lung Association, and Patty
11 Monahan, Union of Concerned Scientists.

12 On April 16th, I had a call with Growth Energy,
13 and that included Steve McNinch, Nathan Schock, Roger
14 Salazar, John Dunlap.

15 April 20th, I had a call with Todd Campbell and
16 Mike Eaves representing Clean Energy Fuels Corporation.

17 And on April 22nd Shankar Prasad, phone call,
18 representing Coalition for Clean Air.

19 BOARD MEMBER BERG: I had 9 meetings. And they
20 have all been mentioned here. And I'll give a list with
21 the dates to the reporter, but I met with the people that
22 have been discussed.

23 BOARD MEMBER ROBERTS: I don't know if you
24 mentioned, but I had a meeting on April 16th with members
25 of representatives of the Canadian Consulate, including

1 Sue Garbowitz, a Sean Barr. And the discussion was in
2 pretty much in keeping with what was the presentation they
3 made here today.

4 CHAIRPERSON NICHOLS: Thank you.

5 BOARD MEMBER BERG: Madam Chair, I do have one.
6 I did meet or had a phone call on April 22nd with Henry
7 Hogo from South Coast Air Quality Management District.

8 CHAIRPERSON NICHOLS: Great.

9 BOARD MEMBER D'ADAMO: Well, I met with a lot of
10 the same individuals. The ones that appear to be
11 different, April 13th telephone call with Cynthia Corey
12 with the California Farm Bureau. Let's see, April 17th
13 call with Todd Campbell and Mike Eaves, Clean Energy Fuels
14 Corporation. April 21st, I met with representatives from
15 the Manufacturers Council of the Central Valley. And then
16 today, brief conversations with Bob Epstein and Eric
17 Bowen.

18 And that's it.

19 BOARD MEMBER SPERLING: It's a long list also. A
20 subset of all those you've heard, plus some others I don't
21 think I heard. I had a series of Emails with Tom Koehler
22 from Pacific Ethanol. A large conference call with a
23 group headed up by Glover Park Group, Lindsay Paternak, a
24 large organization of people -- of organizations concerned
25 about the food versus fuel issue.

1 Tim Searchinger conversations. The California
2 Biomass Energy Alliance. Gregg Morris, Julee
3 Malinowski-Ball. Some contractors for Sierra Club. And I
4 think on the only other one that was -- or 2 other people,
5 Pete Price from Natural Gas Vehicle Coalition and Nick
6 Lapis who testified for Californians Against Waste plus
7 many others that were already mentioned.

8 CHAIRPERSON NICHOLS: All right. Others?

9 BOARD MEMBER YEAGER: All the ones that I met
10 with mentioned, but I'll be turning in my sheet.

11 Any others

12 BOARD MEMBER TELLES: Not many people go to the
13 San Joaquin valley.

14 (Laughter.)

15 BOARD MEMBER TELLES: I didn't meet with anybody.

16 So I had to make my own phone calls.

17 (Laughter.)

18 BOARD MEMBER TELLES: It's true.

19 So I called --

20 CHAIRPERSON NICHOLS: We could fix this.

21 (Laughter.)

22 BOARD MEMBER BALMES: I'm Going to Fresno on May
23 7th if you want to get together.

24 BOARD MEMBER TELLES: I'm a lone soul here.

25 These were unsolicited phone calls. I made them

1 myself. I called Ken Cassman of the University of
2 Nebraska who's one of the -- he's an agronomist who was --
3 I heard on Itunes U.

4 (Laughter.)

5 BOARD MEMBER TELLES: It's a very good program
6 with the Stanford Institute on Energy.

7 And then I also talked to a friend of mine who
8 I've been talking to about ethanol for the last 20 years
9 and that's Bill Jones who was a neighbor of ours.

10 CHAIRPERSON NICHOLS: All right. I think that's
11 it then.

12 BOARD MEMBER TELLES: Mary, can I --

13 CHAIRPERSON NICHOLS: Yes, please.

14 BOARD MEMBER TELLES: I know -- I just have one
15 basic question that I think maybe all of us are thinking
16 about that maybe not willing to ask. And I seem to be
17 willing to ask it.

18 If I read the politics that are happening in the
19 United States correctly, I'm a little concerned that the
20 low carbon fuel standard will pass, despite -- which I'm
21 sure we'll have excellent testimony with Professor
22 Sperling. But I'm still a little concerned if it will
23 pass, especially watching what's happening with the
24 Western Climate Initiative kind a falling apart a little
25 bit. And my basic question is what does California do,

1 what do we do as a board if there is no national low
2 carbon fuel standard and what will the impact of this be
3 economically and environmentally and health wise in this
4 State if we are the lone wolf out there for 5 or 6 years
5 before anybody tags on behind us?

6 CHAIRPERSON NICHOLS: You know, in some areas,
7 this issue -- and the technical people always talk about
8 it as leakage, you know, as sort of do you get the
9 benefit -- or do you pay the price but other people get
10 the benefit of what you've done?

11 I think that would be a bigger concern for me.
12 And I'll ask Dan to comment on this, because he's probably
13 through about it more than I have. But we have advocated
14 for other states to adopt a low carbon fuel standard
15 because we believe in it and because we do think that
16 expanding the market for the cleanest fuels brings the
17 price down for everybody. I mean that's just sort of
18 common sense.

19 And so the fact that we heard today from NESCAUM,
20 you know the northeast states group, that has also been
21 joined by Maryland and Delaware and I forget there was one
22 other state that joined with them -- Pennsylvania -- that
23 they were planning to also adopt a low carbon fuel
24 standard was very encouraging. And, clearly, I think it
25 would be generally in our interests to see this happen,

1 you know, for the county as a whole. But we are a very
2 big market in and of ourselves here in California for
3 gasoline. And we have a lot of the refining industry
4 here.

5 We certainly have the investors here and we have
6 a lot of agricultural products, as well as a lot of waste,
7 which, I mean, I persist in thinking is going to be in the
8 future -- the major, major source of lower carbon fuels is
9 going to be either municipal solid waste or waste from
10 agricultural processes, that now is just sitting around
11 and turning into methane and is creating huge problems
12 atmospherically, but which could be used as an
13 economically valuable product and would really help us
14 out.

15 So, at the levels that we're talking about here
16 and for the next decade, which is really what this rule
17 covers, I feel comfortable that this is something that we
18 could do that would actually be a net benefit for the
19 State of California.

20 But again, I made the sort of grave remarks that
21 I made earlier, because we aren't sure about that and we
22 do have to be prepared to act if we're wrong.

23 Dan, so you want to add to that?

24 BOARD MEMBER SPERLING: I guess the only thought
25 I have is that if in 10 years we, the U.S., haven't

1 decided that oil security is a serious enough problem to
2 do something about it, and that climate change isn't
3 serious enough to do anything about it, then okay, maybe
4 we can ease up on the LCFS. But it's very hard for me to
5 imagine that scenario.

6 In other words, I mean, what we're talking about
7 is reducing carbon and reducing oil use. And it seems --

8 CHAIRPERSON LLOYD: The world has to do it. It's
9 going to happen.

10 BOARD MEMBER SPERLING: It's an inevitable as
11 anything I can imagine is. And so, you know, yeah, there
12 might be a delay in Washington, but you know in Washington
13 they have done the renewable fuel standard. They have a
14 massive program for the biofuels. They have major
15 incentives for electric vehicles, you know, through the
16 new stimulus package and others. So, you know, there is a
17 national policy already to do something that's not so
18 different from what we're doing here. We're just doing it
19 in a smarter -- I would just characterize it, we're doing
20 it in a smarter better way and we're going to as partly a
21 result of that we're going to do it more efficiently and
22 we're going to bring more economic benefits to California
23 sooner

24 CHAIRPERSON NICHOLS: I think that's right.

25 All right. I detect there's a needs for

1 finishing up here.

2 BOARD MEMBER BERG: Yes. And just as s point of
3 clarification. Can we just review, the expert workgroup
4 will consist of diverse points of view and what our
5 expectation of the report that we're going to get back on
6 January 1st.

7 CHAIRPERSON NICHOLS: Yes.

8 BOARD MEMBER BERG: Because I think that would
9 calm my concerns.

10 CHAIRPERSON NICHOLS: Sure. Well, I think the
11 language in the resolution that was presented to us today
12 in terms of what's going to be in the report is a good
13 start, because it's very specific about the elements.
14 That's the one on page 16.

15 I would like to add to that, just by way of
16 clarification, I think it's the intent, but that the
17 expert workgroup would be comprised of staff from other
18 agencies of California and the federal government, as well
19 as private sector experts. And they could be from
20 universities or from nonprofit organizations or from the
21 corporate sector. But it would be diverse, in the sense
22 that it would represent all those different view points.

23 And then I believe that it probably needs to be
24 stated that they would be looking, not only at new
25 science, but also assessing how we're doing in terms of

1 new fuels actually being developed and keeping track of
2 how we're coming on that process.

3 BOARD MEMBER BERG: And I'd really like to see
4 them assess the current gap, that currently exists between
5 very competent scientists on this indirect land use, to
6 come back to us to give us maybe a better benchmarking and
7 a little more comfort.

8 CHAIRPERSON NICHOLS: I think that --

9 BOARD MEMBER SPERLING: Let me add just one
10 little thought. And that, you know, we want the right
11 number and we want it soon. You know, the science of this
12 - and I'm sure my colleagues here are going to support
13 this - this is -- we're not going to know the exact right
14 number in 1 year, in 2 years. We're going to keep getting
15 better. It's going to keep improving, but, you know, we
16 shouldn't have this expectation that presto we've done
17 this review and now, you know, we have the answer

18 BOARD MEMBER BERG: And I agree with you,
19 Professor Sperling. I'm not looking for just the right
20 number, but I am looking at -- it's 18 months down the
21 road. I would expect that this group would be able to
22 come back and it wouldn't be so polarized as it is today.

23 And the polarization does give me anxiety. And I
24 would hope that -- and maybe 18 months won't be soon
25 enough and I'll still have to deal with my own anxiety,

1 but so be it.

2 (Laughter.)

3 CHAIRPERSON NICHOLS: Well, I think by it's very
4 nature --

5 BOARD MEMBER BERG: That's my wish list.

6 CHAIRPERSON NICHOLS: -- a group is likely to be
7 able to at least put some boundaries around the areas
8 where they disagree. So I think that's a reasonable thing
9 to hope for.

10 BOARD MEMBER BALMES: Just one last point of
11 information.

12 CHAIRPERSON NICHOLS: Yes.

13 BOARD MEMBER BALMES: So we're going to have the
14 first review in --

15 CHAIRPERSON NICHOLS: Formal review.

16 BOARD MEMBER BALMES: -- in 2011?

17 CHAIRPERSON NICHOLS: Yes.

18 BOARD MEMBER BALMES: And then we're still
19 talking 3 years?

20 CHAIRPERSON NICHOLS: Every 3 years.

21 BOARD MEMBER BALMES: Yeah, I'm fine with that.
22 I didn't want it to be more frequent than that.

23 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Might
24 I get just a little clarification on that. The expert
25 workgroup is a focus workgroup specifically on land use

1 and that was the one that was coming back originally
2 January 1st, 2012.

3 CHAIRPERSON NICHOLS: Now 2011.

4 STATIONARY SOURCE DIVISION CHIEF FLETCHER: That
5 one we have moved up to January 1st, 2011. In the
6 Attachment B, we had coming back for the first formal
7 review of the entire regulation January 1st, 2012. And
8 that has a whole lot of elements associated with it and I
9 don't want to -- I want to just make sure its clear
10 that --

11 CHAIRPERSON NICHOLS: You're right, it's 2
12 different things.

13 STATIONARY SOURCE DIVISION CHIEF FLETCHER: --
14 they're 2 different things.

15 BOARD MEMBER BALMES: I'm fine with that
16 clarification.

17 CHAIRPERSON NICHOLS: All right. I think we can
18 live with that.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And also to
20 be clear, what we can promise and deliver by the 2011
21 date, January 1st, 2011, is if we have a better number
22 brining that to you and proposing it as a better number.
23 But we may be in the situation where we have a progress
24 report and we can tell you, you know, where we're at. We
25 can't guarantee that the science will move that fast and

1 the process will do it. But we will design it so that we
2 attempt to do that and try to achieve that goal of an
3 improved number or a ratification that the current number
4 was rights. That somehow --

5 CHAIRPERSON NICHOLS: But in the mean time,
6 between now and the end of this year, you're going to be
7 working on the sustainability guidelines or --

8 STATIONARY SOURCE DIVISION CHIEF FLETCHER:
9 Workplan

10 CHAIRPERSON NICHOLS: -- workplan. Okay,
11 workplan. Sorry.

12 And on getting pathways certified. So we'll have
13 lots more of them to look at and that will help with some
14 of the fairness concerns that people have, because they
15 will see that we've treated other pathways just as
16 rigorously as we did the ones that they were involved in
17 and so forth.

18 Okay.

19 DEPUTY EXECUTIVE OFFICER SCHEIBLE: And we have
20 to get. And it's going to be a large task to get the
21 regulation adopted and through the formal process. So
22 that will consume our effort in the near term.

23 STATIONARY SOURCE DIVISION CHIEF FLETCHER: And
24 just one other point of clarification. We are, as part of
25 this rule-making, directing the staff to complete several

1 major pathways. So those should be in regulation by the
2 time we meet again. But we might have additional pathways
3 that we would propose in December for approval.

4 BOARD MEMBER D'ADAMO: Madam Chair, do you want
5 to entertain a motion?

6 CHAIRPERSON NICHOLS: I would love to entertain a
7 motion. Yes, I would.

8 BOARD MEMBER D'ADAMO: Move adoption of
9 Resolution 09-31 with the change on page 15 regarding
10 indirect land use date of 2011.

11 BOARD MEMBER BALMES: Second.

12 CHAIRPERSON NICHOLS: Seconded.

13 All right. I think we can do this by a voice
14 vote. I'll ask all those who are in favor to signify by
15 saying?

16 (Ayes.)

17 CHAIRPERSON NICHOLS: Those who are opposed say
18 no?

19 (No.)

20 CHAIRPERSON NICHOLS: Okay. The motion carries
21 then with one no vote.

22 Thank you.

23 (Applause.)

24 (Thereupon the California Air Resources

25 Board meeting adjourned at 6:26 p.m.)

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CERTIFICATE OF REPORTER

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, and Registered Professional Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said meeting nor in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 1st day of May, 2009.

JAMES F. PETERS, CSR, RPR
Certified Shorthand Reporter

License No. 10063

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