HDPE AND UNSORTED PLASTIC

MARKET DEVELOPMENT STRATEGIES WORKSHOP WORKSHOP

STATE OF CALIFORNIA

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

MARKET DEVELOPMENT COMMITTEE

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BOARD ROOM

8800 CAL CENTER DRIVE

SACRAMENTO, CALIFORNIA

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THURSDAY, OCTOBER 8, 1992

9:30 A.M.

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Vicki L. Medeiros, C.S.R.
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1 A P P E A R A N C E S

2 COMMITTEE CHAIRMAN:

3 WESLEY CHESBRO
4 Board Member

5 PAUL RELIS, Committee Member
Board Member

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

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3 COMMITTEE CHAIRMAN CHESBRO: The meeting of the
4 the Integrated Waste Management Board Market Development
5 Committee will come to order.
6 This is a Committee Workshop on HDPE and Unsorted
7 Plastics Market Strategies Development and will be followed
8 by a regular meeting of the committee as well.
9 I have a few announcements to make about the
10 regular committee Agenda before we get into our Workshop.
11 First of all, for your information, Agenda Items 2, 3, 4, 7
12 and 8 have been pulled. Items 2 and 4, which are the
13 Action Plans for Mixed Paper and Compostables will be heard
14 at the November twelfth Committee Meeting along with the
15 Action Plan for Plastics.
16 Item 3, the Action Plan for Glass is tentatively
17 scheduled for the December Committee Meeting along with the
18 other four materials. The reason these items will be
19 considered at a later date is to allow staff more time to
20 complete their work on these Action Plans.
21 I would like to apologize to any of you who
22 traveled any distance because of those Agenda Items. It
23 was unavoidable, and we were not able to get the word out
24 well enough in advance.
25 If you do have specific responses that you came

1 to present, we would welcome and encourage your written
2 input. That would help us prior to the hearing of the
3 Action Plan to have those. But, of course, there will be
4 further opportunity when the Action Plans are before the
5 Committee to comment at that time.
6 Now, to the subject we're starting with. This is
7 the last of our material specific workshops. As I said, we
8 will be proceeding with Action Plans for each of those
9 materials that are under consideration at the next meetings
10 of this committee. Let me tell you how we intend to proceed
11 with this Workshop.
12 First, Ms. Jan Welch, from the Board's Market
13 Development Branch, who authored the Plastics Report, will
14 give a brief presentation on the report. After that I will
15 ask each participant to introduce themselves and present a
16 major issue or two from the point of view of the group that
17 they represent, just sort of some introductory comments, if
18 you have any.
19 Thereafter, we will go through each of the seven
20 questions which we have posed to our panelists and are
21 listed in the handout. I will be opening it up to the
22 panel members to comment on each of those questions.
23 I'm not going to call on you each individually on
24 each question. To some degree, it will be up to you to
25 signal me which of the questions you're prepared to answer

on.

Then we'll take comments from the audience directly relating to the questions. We have a procedure for audience or public participation, and that is that there is a form on the back table which we would like you to fill out if you have come prepared to speak.

If you will fill that out and hand it to Ms. Foreman, the Boards's Assistant, who is sitting at the front here, that will be helpful. On the other hand, we try not to run things too rigidly around here. If you're just dying to make a comment and you haven't filled the form out yet, we'll try to accommodate you within the time frame available.

We will be breaking for lunch from approximately noon to one o'clock p.m. If time allows prior to our breaking, I will ask each panel member to close with any additional comments they may have on the subjects that we're here to talk about today.

Just as a reminder, we are here to receive comments from experts and from the public but that no decision will be made today by the Committee. We're in the process of gathering information in this process.

I would ask the panel members and all other participants who have prepared written comments to leave them with Ms. Foreman before you leave today.

1 Let me briefly introduce our distinguished panel.
2 I want to thank all the panelists for joining us here today
3 and helping us along the way, the pathway that we are on to
4 try to come up with a strategic plan for developing markets
5 in California.
6 You have a crucial role in giving us a reality
7 check relative to the way things look from here, to our
8 staff, to the Committee. You're out there in the field
9 doing the work, and I think that's the perspective that we
10 need to help us come up with a realistic approach.
11 That being said, let me first introduce John
12 Shedd, who is the President of Talco Plastics,
13 Incorporated, representing the California Resource Recovery
14 Association's Market Development Council. Welcome.
15 Tracy Schneid, who is with the Sacramento County
16 Department of Public Works, Solid Waste Division. She's
17 also a member of CRRA, and was a last minute pitch hitter,
18 and we're very appreciative of her being able to come and
19 provide us with her knowledge.
20 Terry Bedell, Environmental Packaging Manager for
21 the Clorox Company. Welcome.
22 I believe Conway Collis has not yet arrived, but
23 we're expecting him. He's from Los Angeles and is a
24 manufacturer of plastic lumber.
25 Roger Finnell is with Prime Meridian and is a

1 Marketing Specialist providing domestic and foreign trade
2 opportunities to both buyers and sellers. It's good to
3 have you with us this morning.
4 Bruce Perlson is the Manager for Plastic
5 Environmental Affairs for Quantum Chemical Corporation, is
6 a Member of the Partnership for Plastics Progress, which
7 was formerly known as the Council for Solid Waste
8 Solutions. Although, I understand, he's not officially
9 representing them this morning.
10 We have with us Caroline Rennie, who is
11 responsible for Government Affairs at Envirothene, in
12 Chino, California. Envirothene is a manufacturer of
13 post-consumer resins.
14 We would like to welcome you all, and again thank
15 you for your willingness to come and help us with our
16 efforts here.
17 I'll now turn the microphone over to Ms. Welch
18 who will present us with the Market Status Report.
19 MS. WELCH: Because I have some slides to show, I
20 will go ahead and use the podium.
21 Again, I would like to thank the panelists for
22 making it here today. I'm certain with their background
23 and expertise we will gain a lot of valuable information
24 from today's Workshop.
25 Prior to moving on to the Workshop, I would first

1 like to take some time to cover some information on
2 plastics. To some of those here today this information may
3 seem basic, but to those unfamiliar with the plastics
4 industry, it will help to understand the complexity of it.
5 Plastics are man-made material synthesized from
6 ingredients, such as petroleum, natural gas, coal and wood.
7 Individual types of plastics or resins consist of various
8 combinations of carbon and hydrogen, oxygen, nitrogen and
9 other organic and inorganic molecules.
10 These elements form small molecular groups called
11 monomers, which are linked together through the chemical
12 process of polymerization into long chains of molecules
13 called polymers. Different types of plastic resins are
14 created during in the polymerization process by using
15 different ingredients, catalysts, additives and variations
16 in temperature, pressure and reaction time.
17 The polymerization process culminates in the
18 manufacture of plastic resins, each with a wide range of
19 strength, toughness, density, brittleness, opacity and
20 other characteristics. Resins are the raw materials used
21 by manufactures to make a variety of plastic products.
22 Plastics are made of two types, those of
23 thermosets and thermoplastics. Thermosets permanently bond
24 during the resin manufacturing process and cannot be
25 remelted and reformed.

1 Thermoplastics, on the other hand, can be
2 remelted and reformed during the manufacturing process,
3 which makes them more desireable for recycling. I would
4 also like to highlight at this time that 85 percent of all
5 plastic sales are thermoplastics.
6 Therefore, the Workshop today will be focused on
7 thermoplastics. Thermoplastics consist primarily of six
8 major resins: Polyethylene Terephthalate, more commonly
9 referred to as PET, or P.E.T.; High Density Polyethylene,
10 HDPE; Low Density and Linear Low Density Polyethylene, LDPE
11 and LLDPE; Polystyrene; Polypropylene; and Polyvinyl
12 Chloride, more commonly known as PVC.
13 There are two types of plastic waste, that of
14 industrial waste and post-consumer waste. Industrial
15 waste, often known or referred to as scrap, is waste
16 generated by resin manufacturers and processors, such as
17 floor cuttings and overruns, and is typically reused or
18 sold to reprocessors.
19 Reprocessors toss the scrap into clean flake or
20 resin pellets for use by manufacturers. The recycling of
21 industrial scrap has been around for several decades. The
22 lack of contaminant, resin consistency and relatively large
23 quantities of industrial waste generally make it
24 cost-effective to recycle.
25 Post-consumer waste originates in both

1 residential and commercial waste stream and has limited
2 markets due to contamination, quality control and resin
3 pricing. Post-consumer resins have additional processing
4 costs, such as baling, sorting, washing and grinding, which
5 control the price of post-consumer resins and typically
6 make them more expensive than recycled resins made from the
7 industrial scrap.
8 Plastics make up approximately 8 percent by
9 weight, or 20 percent by volume, of the national waste
10 stream. In California, plastics make up approximately 5.5
11 percent by weight of waste generated, of which only
12 approximately 2.7 percent is diverted.
13 During our analysis, we found that plastic
14 containers are the largest group of plastics being
15 collected because they are more readily separated with a
16 potentially higher market demand, specifically, HDPE
17 plastic bottles.
18 We also found that cities and counties are having
19 problems finding markets for unsorted plastics. Consumers
20 often return other plastic containers than those requested
21 in the collection program, while this amount might be
22 relatively small, it does cause a problem with the
23 collection programs because markets are not readily
24 available for the unsorted plastics.
25 I would now like to show you the major markets

1 for thermoplastics and how HDPE and other types of plastics
2 are distributed through these markets.
3 We first looked at the thermoplastics markets by
4 their sales and captive use. As you can see on the
5 overhead, packaging, at 32.8 percent, takes up
6 approximately a third of all of the thermoplastics sales.
7 Building construction at 13.1 percent, and
8 customer and institutional at 10.8 percent. Just to let
9 you know, building and construction includes things such as
10 pipe conduit and building materials, such as insulating,
11 siding and flooring.
12 Consumer and institutional includes disposable
13 food services, dinner and kitchenware, toys and sporting
14 goods.
15 Since packaging is the most significant, we went
16 on further to look at the sales analysis by resin type. As
17 you can see, with LDPE AND LLDPE at 38.6 percent, and HDPE
18 at 29.4 percent, they take up over a third of all of the
19 resins used in packaging sales.
20 From there, we looked at total, we broke down
21 packaging sales. Again, in this slide you will see that
22 containers and film represent 85 percent of all packaging
23 sales. Containers being at 49 percent, and film at 37
24 percent.
25 From this we decided to look at containers by

1 resin type. The chart clearly shows that HDPE, at 49
2 percent, represents the majority of all container resin
3 sales, with PET at 18 percent.
4 In our study, we found that HDPE containers are
5 the largest, single, segment of packaging, and that
6 packaging is the largest segment of all thermoplastics
7 use.
8 The obvious market for recycled HDPE would be
9 bottles and containers. However, due to industry and
10 government concerns about possible contamination of food
11 products from recycled HDPE, it's currently not used in
12 bottles and containers that hold food.
13 However, HDPE is used in other types of bottles
14 and containers, such as motor oil bottles, trash cans,
15 grocery bags and trash bags, detergent and other household
16 cleaning bottles and toys.
17 Existing recycling technologies require plastic
18 waste to be sorted by resin to make a marketable product.
19 However, there are technologies currently being used to
20 make products from commingled plastics, such as plastic
21 lumber products, which can be used in such products as
22 fence posts, marine posts, picnic tables, benches and guard
23 rail posts.
24 I have listed a number of potential markets for
25 HDPE and unsorted plastics. However, few of these markets

1 for recycled post-consumer plastics have developed on the
2 West Coast because the bulk of the U.S. plastics industry
3 is located on the East and Gulf Coasts.
4 Additionally, California's coastal location
5 provides it with readily access to export markets in the
6 Far East. In fact, between 40 and 60 percent of U.S. waste
7 exports originate from the West Coast, primarily Los
8 Angeles, and are shipped to Pacific Rim countries.
9 The Pacific Rim countries are able to use
10 inexpensive labor to hand sort plastic waste.
11 Earlier in my presentation, I touched on some of
12 the barriers affecting the markets for post-consumer.
13 Through our study we found that some of the most barriers
14 include the processing cost, that of baling and sorting and
15 washing and grinding, the fact that post-consumer resin
16 prices can exceed virgin resin prices.
17 Presently, post-consumer HDPE present prices are
18 close to or may even exceed virgin HDPE prices. The narrow
19 price differential along with quality control concerns
20 causes manufacturers to avoid purchasing post-consumer
21 resin.
22 Virgin HDPE prices are presently low due to
23 production, over capacity and the current economic slow
24 down. Quality control has been another barrier where resin
25 contamination problems cause inconsistent product quality

1 and they also increase manufacturing equipment maintenance
2 and/or down time.
3 Another barrier was equipment conversion costs.
4 Some products which use recycled resins require
5 retrofitting or replacement of the production equipment.
6 The Board currently has market development
7 programs that we have been working on and have going on,
8 those being the Market Development Zones, of which we have
9 recently designated twelve zones throughout California,
10 nine of them of which have listed plastics as their
11 targetted material.
12 The low interest loans, which are available to
13 industries which locate in the zones, the recycling
14 equipment tax credit program, of which we have received
15 fifty-six applications have been filed, five of which use
16 plastic as feedstock.
17 The Buy Recycled Program, which is where the
18 Board staff is working together with the Department of
19 General Services on California procurement of plastic
20 products, they put out a report completing a survey of
21 collecting activities on plastic products procured by local
22 government in California.
23 The California Material Exchange Catalog, more
24 commonly referred to as CALMAX, which is designed to help
25 businesses find markets for materials they have

1 traditionally discarded through a catalog of three
2 classified ads. In the current catalog for September and
3 October, it includes fifty plastics available and
4 sixty-four plastics wanted listings.
5 The minimum content rigid plastic packaging
6 containers, more commonly known as SB-235, which also
7 allowed for other options other than minimum content,
8 minimum content trash bags.
9 For these reasons brought forth in my
10 presentation at the request of concerned local governments,
11 the Market Development Committee has chosen to focus on the
12 markets for HDPE and unsorted plastics as a priority
13 material. Through this Workshop today and with the
14 expertise from the panel members, we hope to identify any
15 new barriers and come up with recommendations that together
16 state, local government and industry can work on to
17 overcome these barriers.
18 At this time, I would like to turn the workshop
19 back over to Chairman Chesbro. Thank you.
20 COMMITTEE CHAIRMAN CHESBRO: Thank you very much,
21 Ms. Welch.
22 I would like to say before we proceed further
23 that Committee Members, Board advisors, and staff,
24 including Ms. Welch, if you want to interject additional
25 questions to follow through on the line of questioning that

1 we are engaged in, please feel free to do so.

2 I'm going to be asking the questions that have

3 been given the panelists, but I think there are a lot of

4 new one's and things that -- I would like it to be a

5 free-ranging discussion. And likewise to the panelists, if

6 you would like to respond to what you hear from others.

7 The next step is to ask each of you once again

8 introduce yourself relative to the point of view that you

9 represent, and if you have any opening comments to feel

10 free to do so. I'll start with Mr. Shedd, and ask if he

11 wants to offer us any initial thoughts.

12 MR. SHEDD: I represent the CRRA, and I have a

13 background in plastics because I actually operate a

14 plastics recycling company in Los Angeles.

15 Would you like me to take the questions or more

16 introduction at this point?

17 COMMITTEE CHAIRMAN CHESBRO: I'll get to the

18 questions in a moment. I just wanted to make sure that we

19 weren't completely dictating the Agenda.

20 If there was a point of view that each of you

21 wanted to put out on the table initially, I wanted to give

22 you that opportunity. You don't have to.

23 MR. SHEDD: I'll pass for now.

24 COMMITTEE CHAIRMAN CHESBRO: Next we go to Ms.

25 Schneid.

1 MS. SCHNEID: My name is Tracy Schneid. I'm from
2 Sacramento County, Solid Waste Management Division.
3 We currently run a curbside recycling program in
4 about two-thirds of the homes in Sacramento County, and we
5 are interested in the possibility of adding new plastics
6 and also making it easier for our residents to understand
7 what plastics we do accept.
8 COMMITTEE CHAIRMAN CHESBRO: Thank you.
9 Mr. Bedell.
10 MR. BEDELL: Terry Bedell, with the Clorox
11 Company.
12 First of all, I would really like to commend the
13 Board for the quality of the report that was put together.
14 It's absolutely an excellent piece of work. It very clearly
15 spells out the complexity of the situation that we're
16 trying to manage.
17 One thing that it may not surface is what the
18 real impact on the waste stream is going to be assuming
19 that we are successful with all of this. I have a concern
20 about that because a lot of us are spending an enormous
21 amount of money and manpower in trying to help with this
22 problem, and I'm afraid that the real impact on solid waste
23 is going to be an awful lot smaller than people think that
24 it's going to be.
25 To use some of the numbers that Jan just reviewed

1 with us, nationally about 20 percent of the volume of the
2 waste stream is plastic. In California, it's actually
3 quite a bit less than that. It's about 15 percent, assuming
4 that the weight to volume conversion is about the same in
5 California as it would be nationally.
6 Total plastics, only about third of total
7 plastics is packaging. Of packaging, only about half of
8 that is rigid packaging. About half of that is food.
9 We're getting down to an extremely small part of
10 the waste stream that we're really going to be able to
11 impact.
12 Another statistic is that worth keeping in mind
13 is that in the last twenty-two years, since 1970, there are
14 two components of the waste stream that have actually
15 declined on a per capita basis. The biggest decline per
16 capita was in food waste.
17 The other category that declined was packaging
18 waste, on a weight basis. I doubt that that would hold
19 true on a volume basis. I think part of the reason for
20 both of those declines is the variety and effectiveness of
21 packaging solutions that are out there, for food products,
22 certainly, but I think for consumer products in general.
23 If we start moving in a direction that is going
24 to limit the options of packagers, how we package our
25 products, what materials are available to us and how, what

1 composition they need to be, I think that it may be moving
2 in the wrong direction from a waste management
3 perspective.
4 Having said all that, Clorox has a long, and, I
5 think, a very successful history in reducing the amount of
6 material that we use to an absolute minimum. We deal in
7 products that are very price sensitive. We cannot afford
8 to have any more packaging around our product than is
9 absolutely necessary to get the job done.
10 We also have a long and very consistent history
11 of being good corporate citizens, first and foremost in
12 California, but really across the county we have plants
13 throughout the U.S. and a number of countries throughout
14 the world.
15 We want to be part of the solution to these kinds
16 of problems. That's why I am here today. We will do
17 everything that we can that is sustainable from a technical
18 standpoint and also sustainable from an economic
19 standpoint.
20 Our first responsibility is to our customers and
21 to our stockholders. We don't think that profit is a dirty
22 word. Environmentalism is most strongly supported by
23 profitable businesses.
24 We're here hopefully help with solutions, and I'm
25 looking forward to the questions.

1 COMMITTEE CHAIRMAN CHESBRO: Thank you very much
2 for your comments. I think you raised an important point.
3 Perhaps at this point I should explain a little
4 bit how we arrived at plastics as one of the priority
5 materials, because based on the initial criteria that we
6 used it was not established as one.
7 That criteria had to do with what proportion of
8 the waste stream, potential for creating markets, relative
9 to how much market already exists. The providers of
10 collection programs stood up and came to us and said that
11 for a variety of reasons they felt it should be a
12 priority.
13 First of all, it is a growing proportion of the
14 market place, I won't necessarily say the waste stream
15 because I think that's a complicated thing, and you can't
16 generalize because it's plastics all over the map in terms
17 of types of materials. It is a growing market share in the
18 economy in terms of packaging and other products.
19 Secondly, the public clearly likes the product.
20 That is why it's a growing part of the waste stream and the
21 market share. Also, it feels very strongly that it wants to
22 recycle plastic.
23 The collectors are hearing, local governments,
24 private haulers, contractors who collect these materials
25 and independent recycling companies are saying that the

1 public is demanding the opportunity to recycle plastic.

2 As a result, those collection programs will

3 occur. In response to that, the Committee agreed to add it

4 to the list of priority materials based on somewhat of a

5 different criteria than the other priority materials which

6 were based or analyzed on.

7 I think your point is very well taken, and I just

8 wanted to add some perspective as to why we placed it where

9 it is.

10 MR. BEDELL: Understand, I'm not saying that we

11 shouldn't try to recycle plastics.

12 I just think we need to be realistic about what

13 can be done within logical constraints around that and

14 maybe start trying to manage some expectations about that.

15 COMMITTEE MEMBER RELIS: Mr. Chair, I wanted to

16 just ask Mr. Bedell if he could give us a very quick, very

17 quick summary on what Clorox has done in this area. I'm not

18 really familiar.

19 MR. BEDELL: I love the question, yes.

20 Our first priority has always been source

21 reduction. We started out when we converted Clorox from

22 glass to plastic, that was an enormous source reduction.

23 The original Clorox gallon glass bottle weighed

24 about three and a half pounds empty. When we converted to

25 plastic, the first plastic bottles weighed about 135 grams

1 or a little bit more than five ounces of plastic.

2 One of the reasons that they had to be that heavy

3 was just to get them through our glass packaging lines. We

4 immediately started taking material out of that bottle. The

5 Clorox gallon bottle today weighs about 98 grams on

6 average.

7 We have source reduced 30 percent since the early

8 60's when it was introduced. We've done the same thing with

9 our corrogated packaging. The biggest source reductions

10 we've achieved in the last two or three years have been in

11 our corrogated because of the changes in the freight

12 classification rules that are making new grades of

13 corrogated board available.

14 We're able to get the same stacking compression

15 strength out of boxes and take fiber out of it because we

16 no longer have to meet a bursting strength requirement. We

17 have to meet freight regulations.

18 The other things that we've done is to use

19 recycled materials in all of our packaging where it's

20 available and where it's cost-effective. Going back to our

21 base here, 1988, we were using about 17 percent recycled

22 material across the board in our packaging.

23 That number for 1992 is up to about 21 percent.

24 We have increased our use of recycled materials by about 25

25 percent in the last four years.

1 Most importantly for this group, we are shipping
2 gallon bleach bottles with about 20 percent recycled
3 plastic in about 10 percent of the country, not yet in
4 California. This isn't where we were able to do the
5 developmental work.
6 We are working on being able to do that in
7 California. We expect to have recycled plastic in our
8 bleach bottles within the next twelve months, at least in
9 some of them.
10 We have recycled material in our Soft Scrub and
11 our Soft Scrub with Bleach bottles, minimum 25 percent and
12 actually it's mostly 35 percent those bottles. The
13 manufacturer allows us to put a little bit more in.
14 The Formula 409 spray bottles contain 25 percent
15 recycled plastic. Those are made here in California. Our
16 Pinesol popular sizes are made from 100 percent recycled
17 PET.
18 Starting from a point of zero a year and a half
19 ago, we're now using recycled plastics, nationally, at a
20 rate of about five million pounds a year. We expect to
21 double that in the next 12 to 18 months.
22 We do want to move in the direction that I think
23 this group wants to move in. We think the most important
24 role for us to play is as a developing market for recycled
25 plastics.

1 We have quality requirements. Jan alluded to a
2 lot of the difficulties that the recycling industry has
3 had. The quality of recycled plastic is a lot better today
4 than it was a year ago, 18 months ago and so forth.
5 I'm sure Caroline Rennie will have some good
6 things to say about that.
7 This was a long answer. I apologize.
8 COMMITTEE CHAIRMAN CHESBRO: It's a good one and
9 important information. Thank you.
10 Mr. Finnell.
11 MR. FINNELL: I would like to agree with
12 Mr. Bedell. I think the report that was put out by the
13 Management Board was helpful for me in some presentations
14 that I made down in my area, Ventura.
15 I was just speaking with Chris Allan and
16 commenting that I thought to be able to see it graphically
17 and have your staff people pull out information like that
18 from many different sources, it's very helpful to put it
19 together in something that seems to be very comprehensive.
20 A lot of us do not have the time to read through
21 all the publications, and try to pull that information
22 together, but it's critical for us to determine what
23 direction we need to take and to try to ascertain really
24 what our target is going to be and focus so we don't make
25 expenditures in places that aren't worthwhile.

1 So, thank you very much.

2 COMMITTEE CHAIRMAN CHESBRO: The Board Members

3 could break their elbows trying to pat themselves on the

4 back, but I think the staff really deserves the credit for

5 the work.

6 Mr. Perlson.

7 MR. PERLSON: Thank you, Mr. Chairman.

8 Let me take the first few moments that I have

9 here to introduce Quantum Chemical to the Members of the

10 Board and the other guests up here, as well as those in the

11 audience. We're not a very well known name in California

12 nor nationally for that matter.

13 We do have a significant role in the polyethylene

14 business. The USI Division of Quantum Chemical is the

15 largest domestic manufacturer of polyethylene resins. We

16 have about 20 percent of the domestic capacity to produce

17 that material.

18 We are also involved, interestingly enough, in

19 the recovery of polyethylene. We built a plant in central

20 Ohio that started up approximately ten months ago to

21 recover polyethylene resins from both dairy containers as

22 well as household and industrial chemical containers of the

23 type that Mr. Bedell's company sells.

24 We have our foot in both buckets, if you wish,

25 and I'm here today primarily to act as a resource person,

1 perhaps to give you information on national markets, both
2 in virgin resins as well as recovered resins.
3 With that, I pass it back to you, Mr. Chairman.
4 COMMITTEE CHAIRMAN CHESBRO: Thank you very
5 much.
6 Ms. Rennie.
7 MS. RENNIE: I'm here representing Envirothene, a
8 plastics recycling firm.
9 Like quantum we take primarily post-consumer
10 plastic bottles and recycle those. When we started, we
11 thought that it was a natural market and that there would
12 be natural demand for the product that we produced.
13 We found that we were wrong and, in fact, had to
14 hustle pretty much all the markets that we could, and are
15 almost going door to door now days because we would like to
16 be doubling our capacity, and our intention is to double
17 our capacity.
18 But, in fact, creating the markets is extremely
19 time consuming. Part of the reason for this is that we are
20 competing not only with the low prices in virgin resin, but
21 we're also competing with other recyclers, other recyclers
22 being sort of an unknown.
23 It's not even that we have to compete with them
24 per se for any given market, but we have to compete with
25 the perception.

1 The rate at which plastics recycle technology has
2 improved far exceeds the perception that people have about
3 the rate at which plastics recycling is improving.
4 When I worked for Poly Source Mid Atlantic, which
5 is a plastics recycling firm in Baltimore, we were
6 producing a plastic bag out of post-consumer resin that had
7 to be about three mils thick because the dirt was so heavy
8 in it that you could feel it under your fingers.
9 Now we produce grocery sacks that are half a mil
10 thick, and where you absolutely cannot tell that there is
11 any recycled resin there at all.
12 One of the first things that Envirothene did in
13 order to ensure that it would have some markets was break
14 into markets that had not been tapped for post-consumer
15 resin. They did that by purchasing some of the down-stream
16 markets, like grocery sack and merchandise bag markets.
17 We are now starting a post-consumer plastic
18 bottle company, called the Green Bottle Company, that
19 produces bottles that are 100 percent post-consumer resin.
20 Unfortunately, we're limited in the number of
21 markets that we can purchase. The markets that we have
22 purchased consume, at best, 10 percent of the material that
23 we are producing. If we're going to increase as we would
24 like from 15 million pounds a year, which while it may not
25 be an extremely significant amount of the waste stream,

1 nevertheless, it represents a volume of bottles that could
2 fill up the Rose Bowl each year.
3 If we're going to take that and double that, that
4 is removing two Rose Bowls worth of bottles every single
5 year, we're really going to need to get the consumers
6 engaged in the process of buying recycled.
7 Thank you.
8 COMMITTEE CHAIRMAN CHESBRO: Thank you very
9 much.
10 Now we've answered all the questions.
11 Actually,, we will get into the specific
12 questions now. Let me repeat that this is a wide open
13 process here. Advisors, staff members, feel free to ask
14 questions.
15 MR. MEYERSON: May I raise one quick question?
16 COMMITTEE CHAIRMAN CHESBRO: Quickly, Bernie,
17 sure.
18 MR. MEYERSON: Is there any discussion of
19 tertiary recycling today, or are we limited to the kind of
20 recycling we're talking about?
21 COMMITTEE MEMBER RELIS: What's tertiary?
22 COMMITTEE CHAIRMAN CHESBRO: I'm not clear on the
23 term.
24 MR. PERLSON: I did have some comments that would
25 address that issue as one of the items that is on the

1 Agenda.

2 COMMITTEE CHAIRMAN CHESBRO: What I would ask you

3 to do is hold off, see to what degree we cover the areas

4 that you think need to be covered, and if there is a gap,

5 you will have the opportunity to fill it in and tell what

6 you think we ought to be doing that we're not.

7 The first question is what are the greatest

8 barriers to expanding use of recycled post-consumer HDPE by

9 existing recycled product manufacturers?

10 Who would like to begin with that one. I see

11 Caroline chomping at the bit.

12 MS. RENNIE: The consumer has almost no

13 opportunity right now to make an active choice to be buying

14 recycled.

15 We feel that it's insufficient demand which is

16 stymieing recycling to the extent that it is stymieing

17 recycling right now if people don't know.

18 If you go to the grocery store and you can't tell

19 whether a bag has recycled in it or not, you can't tell if

20 the bottle that you're choosing does or doesn't, and

21 especially if there are claims on some of these products

22 that suggest that maybe they do, but you don't know exactly

23 what those claims mean.

24 So, we would lobby pretty vigorously for accurate

25 claims and very specific claims, and even better a

1 requirement that all packaging say on it, right away, this
2 has so much post-consumer material in it, perhaps so much
3 other recycled material and so much virgin material by
4 percentages, they should add up to a hundred.
5 Provide the consumer the information so that
6 that's a legitimate part of the decision they're making.
7 COMMITTEE CHAIRMAN CHESBRO: Okay.
8 Others?
9 Yes, Mr. Shedd.
10 MR. SHEDD: I think that we need to level the
11 playing field so that the different manufacturers and the
12 different users of the product sense a need to incorporate
13 it into their products. Right now, we have a few people
14 out there, a few companies, who are stretching to use
15 recycled plastic.
16 First, before I get into that, I assume that
17 today when we use recycled that we mean post-consumer
18 recycled plastic. People toss these terms around pretty
19 loosely. I think we all need to talk from the same
20 dictionary.
21 COMMITTEE CHAIRMAN CHESBRO: I'm not sure at this
22 point we can talk about any formal Board position, but I,
23 for one, the problem definition is that we've got materials
24 that are being and will be generated by consumers that need
25 to be recycled.

1 Yes, from my standpoint we're talking about
2 post-consumer.
3 MR. SHEDD: I think that we need to make sure
4 that the people out there that are using the plastic, and
5 they are few in number, really, and there are, likewise,
6 not too many people that are buying to be buying
7 post-consumer plastic, need to have the same incentives to
8 do what they are doing.
9 The incentive does not seem to be materializing
10 from my standpoint, and I think that Envirothene would
11 second this, by natural means.
12 I think that there are some people that are using
13 it but they are complaining that it costs more money. There
14 are other people that are using it, and I'm not sure they
15 want to use it too badly, and they say that the material is
16 not of the right quality.
17 However, those people who are not using it
18 because it's not the right quality, there are other people
19 using it, and they're getting along just fine.
20 I would like to challenge the people that say
21 they're not using it because of quality. Can't challenge,
22 I have to stand up and say, yes, it does cost more in
23 certain instances.
24 If that's the reason that they're not using it,
25 then we need to level the playing field by saying everybody

1 needs to use recycled plastic.

2 As a citizen, I want to have the convenience of

3 using recycled plastic. As a citizen, I realize that in

4 order to have that convenience, even though it's only 15

5 percent of the volume of waste, if I want that convenience,

6 I'm going to have to pay something for it.

7 I think that the only way that we're going to get

8 there is by having the unsavory term of "rates and dates."

9 Rates and dates legislation.

10 I don't see it happening because there are a few

11 people that want to use it. There are a lot of words being

12 passed around but very few takers making it happen

13 themselves.

14 Plastics industry, and I'm part of the plastics

15 industry, has major producers in it. These major producers

16 want to incorporate recycled plastic.

17 They know it's good for their business. They

18 know it's the way to protect their business. They say,

19 they stand back, and it's sort of a Catch 22 situation,

20 they say but I don't have the demand for it.

21 I'll wash out the quality aspect for a minute

22 because I think that the quality aspect is not a -- it's

23 real, but it's something that is going to wash out by

24 itself.

25 The majors are coming in, and they're recycling

1 plastic. They know that plastic can be recycled. They know
2 that the quality can be cleaned up.
3 The prices are going to have to be leveled, and
4 that's only going to happen if you have mandatory
5 legislation. Then the majors will begin to incorporate
6 it.
7 If they incorporate it in their resin, then the
8 consumer is going to use it because it's there. They would
9 like to use it.
10 The Catch 22 that I'm talking about is getting
11 the major manufacturers to incorporate it in there resins,
12 and having the consumers use it.
13 It's a market situation. There is an over demand
14 today. I say legislation is the only way that it's going
15 to happen in the near term.
16 COMMITTEE CHAIRMAN CHESBRO: I'm not sure that
17 I'm clear on the type of legislation that you're talking
18 about though.
19 Are you talking about minimum content?
20 MR. SHEDD: When I say "rates and dates," I'm
21 saying minimum content, a certain percentage by a certain
22 date, like the Trash Bag law.
23 We are seeing a lot of action now that wouldn't
24 have happened if the Trash Bag law hadn't come into effect,
25 which comes in on January first.

1 COMMITTEE MEMBER RELIS: You're looking at what,
2 some sort of law that would be inclusive, like the
3 Massachusetts one that is before the voters this fall?
4 MR. SHEDD: It could be that.
5 I'm not able to say that there is a certain
6 specific law that Massachusetts has that would be the right
7 one. But I think what I know of it, that would be the right
8 kinds of a law.
9 Certainly there are laws that are in effect
10 overseas, in Germany in particular, that are driving the
11 recycling activities. There is a lot to learn by looking
12 at what other people are doing, other states, other
13 nations.
14 I don't know how to answer the question.
15 COMMITTEE MEMBER RELIS: On this point, I would
16 just like to carry one thought further with Mr. Bedell in
17 terms of the question's been raised, one or two.
18 One is the price desparity, between virgin and
19 secondary. Historically, I believe secondary has been
20 cheaper, but now we're at a point in the crossover, that's
21 one issue that is very important.
22 The other one, just in terms of a Clorox-type
23 company, a leading products company, could you tell us a
24 little more about where you see going on the post-consumer
25 part.

1 I assume a high percentage of the recycled
2 content is not post-consumer. Maybe I'm wrong.
3 MR. BEDELL: All of our -- everything that I
4 talked about in my comments is post-consumer recycled
5 material.
6 Things like regrind. We don't use any industrial
7 scrap. It would be just as hard for us to use
8 post-consumer as we have moved into using recycled
9 materials going from virgin to post-consumer.
10 Regarding Mr. Shedd's position, I respect his
11 position as a recycler, but I want to be real clear on what
12 the objective is.
13 Are we trying to overall reduce waste, or are we
14 trying create a recycling industry? Those are going to lead
15 you to potentially very different directions.
16 As I look at existing recycling businesses that
17 have been sustained for the long-term, and that's paper,
18 aluminum, glass and steel, they have all been sustained on
19 the long-term because they are cost-effective, and the
20 secondary material is cheaper to produce and generally
21 available at lower prices than the virgin material.
22 We're in a position in the early 90's, and it's
23 better in '92 than it was in '91, but we're in a position
24 right now with plastics recycling where the virgin material
25 is at a historically low commodity price.

1 Even with the price increase for high density
2 that was implemented in August, if you look back on an
3 inflation adjusted basis, virgin High Density Polyethylene
4 has never been cheaper, ever.
5 We're looking at a recycling business industry
6 that is embryonic. We've got people who are certainly
7 feeling that it's a little further along than that, but I
8 would certainly characterize it as not being any further
9 along than the terrible two's.
10 We've got a long way to go in plastics recycling
11 to make it cost-effective and deliver products to the
12 market place that more readily substitutable for virgin
13 materials.
14 I think that legislating a solution around that
15 is going to be counter-productive under virtually any
16 scenario that I can come up. That is not only an industry
17 point of view, but there is a report that was just
18 published from the Congressional Office of Technology
19 Assessment that states, almost exactly in those words,
20 don't legislate how to solve minimizing packaging in the
21 United States.
22 As manufacturers, we really need the latitude to
23 go after the best solution with the minimum number of legal
24 constraints. As waste managers, I would hope that the
25 localities would also be going after the most

1 cost-effective waste, environmentally impactful solutions
2 to the solid waste stream.
3 I'm not at all sure that recycling is that answer
4 in every case.
5 COMMITTEE MEMBER RELIS: Couldn't we also say
6 that in your observation that the virgin-secondary price is
7 at a historical low, I think you could make the same claim
8 for aluminum today under an inflation adjusted basis?
9 You may eve be able to make it on paper.
10 MR. BEDELL: It's not quite as true on paper, but
11 they are lower.
12 The advantage that they have versus plastic right
13 now is that they have mature recycling technologies and
14 industries, and those prices wax and wane along with the
15 virgin prices. It probably always will.
16 We honestly think that within two or three years
17 the price of recycled plastic is going to be more in line
18 with other kinds of recycled commodities. If we didn't
19 believe that, we wouldn't be voluntarily going ahead to add
20 cost to our packaging.
21 The result of adding any cost of packaging,
22 virtually at any level, unless you're talking about
23 strictly packaging of grocery products, those costs are
24 going to wind up having an economic impact exactly where
25 you don't want to have it.

1 If it's a highly regressive cost increase, and
2 you're going to be adding cost without adding value. On a
3 local, state regional, national or international level, I
4 think we already have enough problems trying to compete on
5 a value basis.
6 COMMITTEE CHAIRMAN CHESBRO: What about the
7 question of consumers desire?
8 From a marketing standpoint, getting back to the
9 question of -- maybe I'll ask you to answer very briefly so
10 we can get to the other panelists.
11 MR. BEDELL: One anecdote about that, we
12 advertise 20 percent recycled content that we're shipping
13 in the Midwest. We have seen zero market share increase,
14 none.
15 If Proctor Gamble was here, they could tell you
16 exactly the same thing. If Lever or Colgate were here, they
17 would tell you the same thing.
18 Consumers in this economy are not going to spend
19 the money that they say they will spend, notwithstanding
20 Mr. Shedd's comments, but people can't afford it right
21 now.
22 The economy is not in a very good place,
23 particularly in this state. Again, adding cost to the
24 system is not the right answer.
25 COMMITTEE CHAIRMAN CHESBRO: Okay. Let me call on

1 Mr. Perlson.

2 MR. PERLSON: Perhaps a few amplifying comments.

3 I think that we are trapped in a classic, it's a

4 fledgling industry, and we're trapped in a classic

5 techno-economic problem here.

6 I'll tell that from my point of view the

7 technology used to recover resins today probably won't look

8 anything like what we use five years from now or ten years

9 from now.

10 To put it in perspective in terms of how

11 fledgling this industry is, I mention that we are a

12 producer of both virgin materials and recovered materials.

13 We produce 4.2 billion pounds per year of virgin

14 materials. We have the capacity to produce 30 million

15 pounds of recovered materials, to put that in perspective.

16 The issue right at the moment is that there is a

17 cost-quality squeeze. There clearly is a well-established

18 secondary materials market, called industrial scrap. It's

19 classically positioned below virgin materials.

20 Now we have a new material called post-consumer

21 recycled resin that is somewhere in terms of quality around

22 industrial scrap quality or below. So, that should tell

23 you something about what its true intrinsic value ought to

24 be, absent any other externalities that might make the

25 material have a higher apparent value to the market

1 applies.

2 What we really need to do, again from a

3 technologist point of view, is drive down the cost of

4 recovering materials.

5 There is also another important point to be made,

6 namely, you have to establish what price or cost material

7 ought to be transferred from the public sector to the

8 private sector.

9 The public sector has classically been

10 responsible for collecting waste materials, whether they go

11 from a disposal system or to a recovery system.

12 Plastics recycling developed in a time when

13 resins were priced at an all-time high, in 1988 or

14 thereabouts. So, the expectation of the value of these

15 waste materials was very high.

16 Now, these materials, virgin materials are

17 marketed at an all-time low, historically, in constant

18 dollars.

19 So, the expectation is still there that the value

20 of these materials is high, where, in fact, they are

21 seeking their true intrinsic value at this time, which is

22 not very high.

23 I can assure, in order to produce material of

24 sufficient quality to market competitively in the market

25 place and move volume requires significant reduction in the

1 overall cost of the system, and who should bear that cost
2 is the question?
3 COMMITTEE MEMBER RELIS: You've touched on the
4 question that I'm very interested in.
5 If the cost is a barrier, and you're outlining a
6 scenario where the technological changes are very great,
7 and you have pointed to the cost of bringing the material
8 to the point where the technology can have a bearing on
9 this, what does your industry have to offer us in the way
10 of insight as to how to bring the cost down?
11 You're the technology people. You're the people
12 who are paying, who are concerned about the price
13 desparity, quality desparity.
14 I think we could benefit a great deal by what you
15 might offer us in the way of cost savings, if you see them
16 there.
17 MR. PERLSON: Obviously in the private sector
18 there are things that I could point to.
19 I'll start first with the public sector. Clearly
20 the cost of collection has to be driven downward. That's
21 generally true of any recovered material.
22 If you're going to seek your raw materials from
23 the consuming public, you must do that as efficiently as
24 possible. For example, now in many locales where recycling
25 takes place, we now drive two trucks around the street

1 rather than one. It's an increased cost that could
2 potentially be driven out of the system.
3 Clearly, the size of materials recovery
4 operations are also an important issue. There is a
5 sensitivity to the volume of material collected.
6 There is also a quality issue. Consistency in
7 the material that is recovered for recycling is important.
8 Probably at this time, probably more important than any
9 other issue.
10 There is just total inconsistency with the
11 materials that we receive at our plant. We pay in
12 accordance with that variation in quality. I can tell you
13 that the amount we pay differs by a factor of two, to
14 illustrate to you, for materials that are nominally the
15 same.
16 To put it in perspective, somebody who runs a big
17 iron plant, what kind of variation can they accept in the
18 quality of raw materials that they use to make that iron?
19 Or newsprint or any other material?
20 Now we're talking about getting materials from
21 millions of suppliers rather than just a handful of
22 suppliers. There is a tremendous variability.
23 There is a total lack of general education in
24 terms of what the expectations are of the recovery
25 industry. I don't know who's responsibility that ought to

be, whether it ought to lie with the companies like us who are in the business of recovering material or in the public sector who provide the services to collect those recyclable materials from the general public.

I don't know where that responsibility lies. It clearly needs to be communicated if we are going to do it in an effective way.

COMMITTEE CHAIRMAN CHESBRO: I would like to introduce Conway Collis, who has joined us, who is with California Recycling Company, in Los Angeles, which is a manufacturer of plastic lumber.

Welcome. Thank you for being with us. We're still on the first set of questions here, number one and subset.

I believe Mr. Finnell wanted to comment.

MR. FINNELL: Thank you very much.

I think what we've all talked about here around the table is that it has to be demand driven, whether or not we'll be able to sell resin through.

What I have found working with my firm is we have gone in and evolved from being brokers of materials into actually looking at waste stream audits and taking something from the post-consumer floor in a factory and finding an end market for it, identifying specifically what technology is available in different plants around the

1 United States, but more readily out here on the West Coast,
2 so we can take a post-consumer product and match it with
3 the right type of technology so, in fact, we end up with
4 something of quality as far as a reprocessed pellet coming
5 out at the other end and matching that up with someone who
6 is the buyer.
7 The demand that I have found is pushed a number
8 of different ways. The demand is generally motivated for
9 public relations reasons by some companies. They simply
10 don't want to recycle yet because they say it's too
11 expensive.
12 They are able to. We have produced resins that
13 they are able to use, but it just is not to their advantage
14 yet due to public relations purposes, and secondarily
15 because the virgin resin prices have been so low.
16 To put this in very specific terms, the price
17 difference may be two cents a pound, or about 10 percent.
18 They have not been motivated yet to see that the difference
19 is going to be enough for them to get involved in that
20 process.
21 Sometimes there are engineering questions where
22 the characteristics of plastics are not preferable, but
23 nevertheless, they could still blend the 10 or 20 percent
24 portion with their process, and they really wouldn't have
25 much difficulty with it.

1 I agree with Mr. Shedd in some ways. I think it
2 has to be legislated. As well as I would agree with
3 Mr. Bedell that it would be excellent if companies had the
4 social conscienceness that his company does.
5 However, my experience in the field has been if
6 it's not advantageous to buy it from a standpoint of having
7 a low price resin or there is definite public relations
8 benefit, the actual end user of the product is not
9 motivated at this point in time, and there are a lot of
10 wait-and-see companies right now.
11 These are companies we have identified that could
12 use 8 to 10 million pounds a year in reprocessed resins,
13 post-consumer material.
14 COMMITTEE CHAIRMAN CHESBRO: Okay.
15 Let me ask Mr. Collis, even though he's not
16 specifically in the HDPE business, since you have just come
17 in, do you want to make any initial comments or respond to
18 this question, or wait until we get to the mixed plastics
19 part of the Agenda?
20 MR. COLLIS: If I might make a brief comment.
21 I would like to apologize for the airlines
22 running late.
23 Let me first of all correct one point which I
24 think is critical in terms of ultimate markets for recycled
25 plastic. We are not a plastic lumber manufacturer. We

1 think that that's critically important because for
2 recycling of plastics to take place on a meaningful level,
3 I think there are two things that have to take place.
4 The first is product development. The second is
5 purchases.
6 In terms of product development, I think that
7 what is critical is that products are manufactured from
8 recycled plastic that depend for their markets not for the
9 fact that they are recycled but rather on their own
10 inherent qualities to compete in the open market against
11 other materials.
12 If they are going to depend on the fact that they
13 are recycled, the market is going to be essentially a
14 boutique market, and it's going to be very limited.
15 I think that the role that I hope that we can
16 focus on a bit today is the role of government in
17 stimulating that product development by entering into
18 direct partnerships with companies, private industry, for R
19 and D efforts.
20 There are some -- my world is recycled plastics
21 and commingled recycled plastics where, incidentally, we
22 use 50 to 60 percent of our mix is high density. In that
23 area, there are some very realistic, very obtainable, very
24 near term R and D developments that would massively
25 increase the markets that were obtainable through mixed

1 plastics.

2 That's an area that I think that it's worthwhile

3 for government to focus on, and massively, massively more

4 important than a focus on market development zones and

5 recycling zones and all of those, even tax credits, all of

6 those things are really icing on the cake, the heart of the

7 matter, but this R and D effort, direct monies going into R

8 and D, focused with companies that are working in those

9 fields could have very, very important impact.

10 Second, as they used to say about real estate,

11 that real estate was a matter of location, location,

12 location. It was three things, and that was all of them.

13 Recycling is really very similar in the sense that it's

14 three things. The three things are sales, sales, sales.

15 That is an area where government does have to

16 take the lead. Particularly in my industry, the civil

17 engineering applications for mixed plastics are critical in

18 a scenario where government does have to be out in front

19 and demonstrating to private industry the applicability and

20 the cost-effectiveness of recycled plastic products.

21 I hope during the course of the day we can focus

22 on those two areas, direct involvement of R and D, and

23 government taking the lead on purchases.

24 COMMITTEE CHAIRMAN CHESBRO: Okay.

25 MS. RENNIE: I wondered if I could address

1 quickly the notions of price value and economies of scale.
2 In terms of price, we found that even when we're
3 willing to price ourselves exactly at the price of virgin,
4 because we own some companies that use virgin materials and
5 we are well-aware of what the pricing is there, when we
6 price ourselves at or below virgin, that doesn't
7 necessarily make the difference at all.
8 Often it's not enough to convince somebody that
9 they should change suppliers, that they should change the
10 relationships, that they should go through the bother of
11 testing, that they should worry about using a material that
12 they're not as familiar with, and they're not interested.
13 There is an inherent conservatism, especially in
14 this kind of an economy, that precludes doing that.
15 But companies that are willing to do that have
16 found that, in fact, there is value. Again, I go back to
17 our grocery sack business. When we bought the two
18 companies that we do own, they were both going out of
19 business and leaving the state, and are now doing extremely
20 well.
21 Their sole point of differentiation is the fact
22 that they were running at 30 percent post-consumer material
23 and were willing to say so and stand by that with some
24 marketing assistance.
25 In fact, that has made the difference. It's

1 because they have recycled, post-consumer recycled content
2 that these programs have been able to take off.
3 Why? Because there is a story. It's a story that
4 they have been able to capitalize on in working with their
5 markets. I think Raley's Supermarkets here has done that.
6 Thriftways has done that up north.
7 That's the kind of program that using recycled
8 works in. Of course, that is sort of a boutique market, and
9 I would agree with Conway on that.
10 At the same time, one of the things that will
11 enable us in the long-term to be priced at or below virgin
12 is economies of scale. As the demand increases for
13 post-consumer material, it becomes easier for us to, in a
14 sense, get a lower margin from the infinitesimal margin
15 that some of us are realizing at present and be able to
16 sell long-term cheaper.
17 COMMITTEE CHAIRMAN CHESBRO: I'm going to call a
18 five-minute break here.
19 (Thereupon a brief recess was taken.)
20 COMMITTEE CHAIRMAN CHESBRO: Okay. We're back in
21 session.
22 The next question is really a subset of the first
23 one. To some degree we've covered it.
24 Let me put it up and see if there are any
25 additional comments on it. It relates to the barriers

1 specifically to substituting recycled post-consumer HDPE in
2 the industrial process for virgin HDPE.
3 Are there any other barriers that we have not
4 touched on that anyone would like to comment on?
5 COMMITTEE MEMBER RELIS: I would just add that I
6 think there is still the perception and it came out today,
7 and I suspect this will be the growing part of the debate
8 over plastics and other materials is the responsibility
9 question, who is responsible?
10 We have heard to some degree that there is a
11 responsibility to bring the cost down if we want to put
12 these materials more fair and square. There is a
13 responsibility implied with the public whether they are
14 buying the material now and the way that they say that they
15 wish to or not.
16 There is perception, at least, of a very strong
17 public desire to go in this direction, and whether the
18 perception and reality are one in the same, I don't know,
19 but I still think the perception is very strong and would
20 echo what Wesley said earlier.
21 When I hear things like there is a need to lower
22 cost as a barrier, et cetera, whose responsibility is
23 that?
24 We have heard that government is responsible for
25 leveling the market. Industry said, at least one

1 representative, that is not the way to go.

2 I think the responsibility question is going to

3 come more and more to the floor. I'll just make that as an

4 observation.

5 MR. BEDELL: I think that there are two parts of

6 the question there.

7 The responsibility for bringing costs more to

8 line I think is going to be a shared responsibility.

9 Industry is working very hard at many number of levels

10 improving technologies that are going to drive the actual

11 reprocessing costs down. That has been happening and will

12 continue to happen.

13 I know that in a lot of places in California work

14 is going on to try to drive collection costs down. The

15 idea it of going from curbside programs to collecting mixed

16 recyclables and taking them through MRFs.

17 I don't know if that's the best way to go. I'm

18 not in the waste management business. We have enough on our

19 plate.

20 I think that the remarks that I made earlier

21 were, let's not get so focused in on a single way of trying

22 to get this problem solved that we limit the opportunities

23 to make it cost-effective and still solve the problem.

24 Recycling is a reality. People want to do it.

25 There are a lot of reasons why it should be done. There are

1 a lot of ways that we could make it cost-effective. It
2 just isn't there right now.
3 It's kind of, we're asking a question in a fixed
4 time frame that is really going to be answered, or is in
5 the middle of a process that is very highly dynamic right
6 now. It's like trying to take a snapshot at the
7 Indianapolis 500 at lap 100 and then decide who is going to
8 win the race, how and why.
9 COMMITTEE CHAIRMAN CHESBRO: We sure hope things
10 would move that fast.
11 MR. COLLIS: But they are going in circles.
12 MR. BEDELL: It's going to appear to be
13 painstakingly slow. I submit to you that things really are
14 moving very rapidly.
15 I think some of the comments that Caroline made
16 reflect that, and other things that Bruce can say will
17 indicate that as well.
18 The other key thing that we need as a packager,
19 or user of packaging is predictable properties so that we
20 are absolutely certain that we get the package performance
21 that we need from strength, chemical resistance and
22 appearance and everything else.
23 A lot of progress is being made there.
24 Mr. Perlson can talk about some things going on with
25 Quantum, we're working with them among others, looking at

1 new kinds of High Density Polyethylenes that will allow you
2 to use recycled material and not sacrifice package
3 performance in the process.
4 There is a lot going on. Cost is part of the
5 problem, but performance is an equally big piece of this
6 puzzle.
7 COMMITTEE CHAIRMAN CHESBRO: Okay.
8 Any other comments on this before we move on?
9 The next question is very broad. What
10 alternatives exist for marketing unsorted plastics?
11 We have heard some of them mentioned. We don't
12 need to cover the same ground over and over.
13 Are there other areas that haven't been put on
14 the table?
15 MR. PERLSON: What I would like to comment and
16 address is an issue that one of the members of the audience
17 brought up earlier. I want to emphasize that what I'm
18 going to describe is a technical, is technically feasible
19 but not currently implementable.
20 There are certainly a lot of mass processing
21 techniques that one could use to recover valued materials
22 or energy from unsorted plastic materials.
23 I hesitate to use the "I" word, incineration, but
24 that is one of them. There are many others as well.
25 There are efforts in our industry, the plastics

1 industry, as well as the refining industry to consider
2 using unsorted plastics as a source of feedstock for making
3 a variety of hydrocarbons from gaseous products, to liquids
4 as well as other chemical intermediates.
5 Here the processing of materials is relatively
6 insensitive to the mix of materials that are fed to these
7 kinds of processing units. It certainly appears that they
8 are technically feasible.
9 The issue again is economic feasibility. When
10 you're competing against a relatively abundant array of
11 materials, like crude oil, natural gas, coal, et cetera,
12 it's a tough call to say that we want you to invest in
13 these kinds of processing units to make competitive
14 products that are derived from those naturally occurring
15 from raw materials.
16 It's certainly an interesting feature of plastic
17 materials, they are highly flexible. You can do a lot of
18 different chemistries with those materials that go way
19 beyond the type of recycling that Caroline and I think of.
20 They certainly exist, but they are not a market
21 reality at this time. I don't think I can tell you that
22 there will be anything beyond pilot scale demonstrations of
23 those technologies.
24 One of them is occurring as we speak in
25 Washington. The other one is occurring -- the State of

1 Washington that is. Another is occurring as we speak in
2 the State of North Dakota.
3 The results of those evaluations will be made
4 public. I want to emphasize that they are pilot scale
5 evaluations. They are not available market opportunities at
6 this time.
7 COMMITTEE CHAIRMAN CHESBRO: Okay.
8 Alternatives. I'll interpret alternatives as
9 very, very broad, and including the infrastructure question
10 of delivering the raw material to the manufacturers.
11 We touched earlier on the question of the source
12 separated versus the MRF, and the question of quality and
13 cost of collection and delivery of the material to the
14 processor.
15 Maybe I will call on Ms. Schneid to address that
16 question, and also others if they want to follow.
17 MS. SCHNEID: I guess what we're talking about is
18 actually the marketing the unsorted plastics and not
19 wanting to sort those again afterwards.
20 My understanding is that those markets are
21 limited. We have looked into the possibility of plastic
22 lumbers and things like that, and we are constantly looking
23 for new ways and new technologies.
24 I just heard another yesterday about a method of
25 improving concrete by using unsorted plastics. We're

1 looking at those at all points in time. We're not finding
2 very much. We would like to do so.
3 COMMITTEE CHAIRMAN CHESBRO: Relative to selling
4 or marketing plastics to people who make things out of
5 recycled plastics, can you compare or contrast the
6 presorting cost and the quality questions with presorting
7 of materials versus sorting at the MRF?
8 MS. SCHNEID: For the plastics, we have the bins
9 that people put their recycled plastics in. At this point
10 in time we take the No. 1's and 2's, which the PET and
11 HDPE.
12 Those are sorted at the MRF that we contract
13 with. However, when you have those plastics sorted, it's
14 usually by hand, and that does increase the cost to
15 eventually market those plastics.
16 It is much more expensive to do that way.
17 COMMITTEE CHAIRMAN CHESBRO: There are some
18 places in the state, I'm not closely familiar with them but
19 I'm told by elected officials and citizens that I interact
20 with where there is a bin where they say put the plastic in
21 it, and people basically anything from plastic bags to PET
22 to HDPE and a number of other items and put them in the bin
23 and it's collected and presumably sorted.
24 There is a sort also at a MRF, a more complex
25 sort than just the 1's and 2's. I have not had the

1 opportunity to pursue that and find out exactly how those
2 are being handled in those communities.
3 It's interesting to me that apparently they are
4 able to transfer the material to someone who is going to be
5 utilizing it. I guess one of the roles that we have in
6 local government is trying to help direct them, not tell
7 them, because that's not our role, but direct them towards
8 the most efficient and competitive ways to collect.
9 I think part of our strategy development here has
10 to be trying to figure out what is the best thing to tell
11 them about what works.
12 MS. SCHNEID: We do try to collect the plastics
13 that are most abundant and most cost-effective, and that's
14 the 1's and 2's.
15 COMMITTEE MEMBER RELIS: I know that we are
16 engaged in certain technological assessment studies here.
17 Has the industry, the plastics industry, I know this very
18 diverse group here, it's hard to say that, do you have
19 recommendations the give us that we can in turn consider
20 and share with the local governments to who we serve?
21 MR. PERLSON: In terms of what ought to be
22 collected?
23 COMMITTEE MEMBER RELIS: No.
24 Methods of collection and processing that can
25 deal with this cost question.

1 COMMITTEE CHAIRMAN CHESBRO: We have been told
2 that it needs to be efficient and cost-effective and have a
3 high quality.
4 Tell that to a local government, and they say how
5 do we do that?
6 MR. SHEDD: I have a suggestion.
7 We're intimately involved day-to-day with the
8 recycling collection program. Talco has a plant that
9 handles all types of plastic, every type of plastic expect
10 thermosetting plastics.
11 COMMITTEE CHAIRMAN CHESBRO: Is it coming in a
12 mixed condition?
13 MR. SHEDD: No, it doesn't come in mixed.
14 We have another plant that handles the foamed,
15 Polystyrene. You reach in that type of business, in the
16 foam polystyrene in particular, you're struggling for the
17 ultimate in an infrastructure in a collection process.
18 There have been all types of collection processes
19 tried in many cities around the country. You can go from a
20 blue bag system to a mixed plastics system, to a system
21 that puts it out in 6 little 18-gallon boxes at the
22 curbside, to one that puts out a 90-gallon container that
23 is fairly automated, and you say put all plastics in there,
24 to one that has or you put all compostables in one bin and
25 trash in another and plastics in another with the bottles

1 and so forth, all recyclables, and all of these have had
2 various successes.
3 The one that seems to be working the best in Los
4 Angeles, both from a cost standpoint and a purified stream
5 standpoint, seems to be two large 60-gallon or 90-gallon
6 containers put out on the curbside. One has in it all
7 trash, and the other has in it all recyclables.
8 Then the trash, they are still putting the
9 compostables. All the recyclables then go on a big belt.
10 The smaller containers where you separate at curbside the
11 bottles, glass bottles, plastic bottles, newspaper and
12 aluminum cans and so forth doesn't seem to be as successful
13 because the residents don't choose to separate it that way,
14 partly it's more difficult to pick up because you have a
15 number of bins on the truck that you have to put these
16 things into, or you have to send out separate trucks to
17 pick up each kind.
18 If the Waste Management Board made a study of
19 this, and perhaps they have, of all the various collection
20 systems, they might have an opinion as to what seems to be
21 a winner, and they might from that arrive at what the costs
22 are.
23 COMMITTEE MEMBER RELIS: You know, I think that's
24 a good point.
25 I want to put some of this back on the industry.

1 You're the experts. You do the processing and refining. We
2 could be of help in analyzing different systems, ultimately
3 you're the verdict.
4 Without your input, I don't know that a study,
5 even the studies done today, really get at the resolution
6 that we need to start getting at on this matter.
7 MS. RENNIE: It seems to me that there are two
8 key elements in economic collection.
9 One is compaction of the material to the extent
10 possible. The other one is keeping it as clean as
11 possible, as decontaminated, that is with other plastics
12 and also with other materials.
13 So that the programs that we feel are most
14 cost-effective are those where you use a bag to separate
15 out the recyclables so that they are clean within the
16 stream of mixed rubbish.
17 All of that goes into a compactor truck, which is
18 used, the compaction rate is somewhat less than it would be
19 in a regular compactor truck, but nevertheless you don't
20 have your truck coming off route, you don't have doubles
21 serving the same households several times. That can keep
22 your costs really very, very low.
23 You only need one or two people in a truck.
24 MR. PERLSON: Let me also add that the plastics
25 industry specifically has sponsored many model city

1 programs to try -- we focused on metropolitan areas, the
2 large metropolitan areas since they classically are the
3 largest generators of recyclables, to define the variety of
4 methodologies that one could use to collect materials and
5 to try to quantify the costs associated with those various
6 methodologies.
7 I would recommend that perhaps Jan or someone
8 else on the staff contact Mr. Ron Perkins, who is based in
9 Washington but spends a lot of time here on the West Coast
10 because many of the model city programs are out here, and
11 he can provide you with the information on that.
12 These have been focused not only on trying to
13 minimize the cost of collection of the plastic fraction of
14 what's collected, but also the overall mix of materials
15 that are classically targetted for materials recovery.
16 He can be reached at (202)371-5319.
17 MR. COLLIS: I think we have an interesting
18 perspective on this, because on one hand we are a customer
19 of at least two of the companies represented here.
20 On the other hand, we get the bulk of our
21 feedstock from municipal and other collection programs in
22 LA and Orange County, so that we have experience both with
23 purchasing feedstock that has come through a couple of the
24 suppliers represented here as well as getting it directly
25 from curbside collections.

1 I think there is a danger here of getting locked
2 into the Waste Management Board taking an incremental, very
3 small step by very small step approach, which is going to
4 have over time, I think, a minimal impact on the amount of
5 plastic that is really recycled as opposed to taking the
6 blinders off and taking more of a long-term view with
7 regard to what is possible.
8 Because what's happening here is that the
9 technology has changed, and is changing as we speak, much
10 faster than government is perhaps going to respond.
11 Specifically, speaking for our company, there are
12 certainly some products that we manufacture where we need
13 to rely on one of the suppliers in this room where we need
14 to get a very clean, uncontaminated, perhaps light colored
15 feedstock.
16 But for the bulk of the products that we make,
17 our technology allows us to utilize the unsorted mixed
18 plastics that's coming from curbside and other collection
19 programs, perhaps coming out of the waste stream itself.
20 They are a couple of keys to doing that. The
21 first is, again, not to sound like a broken record, not to
22 make plastic lumber because there is a very, very limited
23 market for that.
24 COMMITTEE CHAIRMAN CHESBRO: I take it I said the
25 wrong thing.

1 MR. COLLIS: That's okay.

2 Actually, I think the greatest barrier we have to
3 overcome is not in terms of taking on materials that we
4 think we're up against, which is concrete, fiberglass,
5 virgin plastic and lumber, but rather that there have been
6 some so-called plastic lumber companies out in the market
7 place that have made a product that has some applications
8 but is very limited, has great problems and all the rest.

9 We ain't them. Part of the key is developing for
10 companies like ours, and there are others even though
11 they're not in California, there are others in Austria and
12 Germany, developing the technology that allows the
13 manufacture of the high-end ultimate product.

14 Second, entering into arrangements with
15 municipalities, and I think this is critical, something we
16 push municipalities to do, whereby you really create a
17 closed loop.

18 The way you do that is, first of all
19 municipalities should collect everything. We can take,
20 with the exception of PVC, all of the plastic that's in the
21 waste stream.

22 Second, put in place economical ways of
23 processing that plastic. Specifically, what you don't want
24 to do is crush it, bale it and ship it somewhere and then
25 have it debaled. The cost of that baling and debaling is

1 virtually as much as the cost of the feedstock.

2 The way that you do it is to put the grinding and

3 cleaning equipment, if necessary, wherever the site is that

4 the transfer is going to take place, and then have it

5 shipped to the manufacturer as feedstock, not as garbage.

6 COMMITTEE MEMBER RELIS: At the MRF or whatever

7 it is?

8 MR. COLLIS: Or transfer station.

9 COMMITTEE MEMBER RELIS: Have the processing

10 equipment there and not handled again, shipped, baled and

11 then --

12 MR. COLLIS: Specifically, the way that we get

13 the bulk of our plastic is under a contract with a hauler

14 in LA and Orange County who is picking up curbside and

15 other collections.

16 We have our grinding equipment that we own at

17 their facility. When the plastic, whatever kind it is,

18 again some limitations like PVC, is coming off the conveyor

19 belts, it goes directly to our machine, it's ground on-site

20 and delivered to us on roll-offs, already ground, and we

21 can just suck it directly into our storage silos.

22 When it gets to us, it's not garbage, it's

23 feedstock. We save all of the costs of baling and debaling

24 of that plastic.

25 That's just one step or one efficiency that we

1 have been able to put in place. It's a significant one.
2 We're just one company, and that is just one
3 efficiency. When people focus on this, there are other
4 efficiencies that can be put in place.
5 The other end to close the circle, obviously
6 those municipalities that we're taking feedstock from,
7 there is a glut of feedstock on the market in terms of the
8 unsorted, need to be purchasers of the ultimate product.
9 COMMITTEE CHAIRMAN CHESBRO: Okay.
10 MS. RENNIE: We would also be in favor in
11 principle of purchasing ground material.
12 Unfortunately, High Density Polyethylene is not
13 High Density Polyethylene is not High Density Polyethylene,
14 they vary.
15 They vary depending upon whether they are
16 injection grade or blow mould grade, whether it's film
17 plastic or not. You get a lot of containers that aren't
18 High Density Polyethylene in there.
19 Depending upon the degree of contamination,
20 something that we thought we were purchasing as feedstock
21 is, in fact, garbage. We find that when we put it through
22 the whole system, washed it, cleaned it, repelletized it,
23 and run our lab tests on it, there's far too much
24 contamination in there in terms of there being wrong kinds
25 of plastic, things like that, or too much color for us to

1 sell that at an economical price.

2 That's one of the difficulties and the reason

3 that a firm like ours really keeps on purchasing bales and

4 going through the expensive process of purchasing bales and

5 then doing our own separation to quite an extent.

6 This is the only way we can guarantee quality.

7 Once you have the wrong thing going into the system it's

8 virtually impossible to pull it back out.

9 MR. COLLIS: We have had to deal with that.

10 You're right, it's a significant problem, one that we have

11 shared.

12 I don't think that it's terribly complicated to

13 address. We have spend a hell of a lot of money in

14 technology and productive capacity and all that.

15 We have a lab on-site. We test the feedstock as

16 it comes in because we have to be sure that it meets the

17 mix of resins and contamination levels, et cetera, or as we

18 inspect it, we have to route it accordingly.

19 As opposed to the kind of capital that is

20 required to put this in place, the capital to test for

21 feedstock in terms of the resins and contamination levels

22 has got to be under $10,000 or $12,000. It's a very

23 simple, low tech operation and quite precise.

24 I think you're right. That is something that can

25 be tested for, in our case, after the plastic is ground,

1 before it's pelletized or cleaned.

2 COMMITTEE MEMBER RELIS: You have two different

3 markets. You're meeting different specs.

4 MS. RENNIE: For the film market, we can tolerate

5 no contamination, period. None. That is a problem right

6 away.

7 We actually do buy flake. It is possible to do

8 that. There are markets that we trust. We test them out.

9 Among other things, the expense of the equipment

10 may not be much. You do have to have people testing the

11 material as it comes in.

12 What if you're not getting what you want? You can

13 price it down, but, again, we could be buy something and

14 then making sure from our end that the quality is fine and

15 still have it usable.

16 We can salvage loads in bales. It's hard to

17 salvage a load that is already in flake form.

18 MR. PERLSON: It really addresses the issue of

19 what's called in modern times total quality management.

20 There is a lack of discipline in the recovery of

21 materials. I think it's coming.

22 We have had some snipets and examples of the kind

23 of trust relationships that have developed between supplier

24 and buyer.

25 But to say that it's uniformly in place would be

1 a far cry from the truth.

2 COMMITTEE CHAIRMAN CHESBRO: It's a fundamental

3 transition in operation of waste management at the local

4 level and by government and by private companies, going

5 from the idea that collection and disposal, out of sight,

6 getting rid of it, and this seems obvious throughout, it's

7 been the way that we have always thought about this.

8 We are having a transition. I say we because I

9 spent seventeen years dealing with it in the city and

10 county level, transition to the fact that we're talking

11 about a resource stream being provided in the market

12 place.

13 The people who manage these wastes have to

14 completely transform the way they look at that and begin to

15 realize that how they handle it, what they do with it is

16 only very limited relationship to the rates which has been

17 the biggest concern, and price has become a factor, and

18 demand and quality are all factors.

19 It's in the process of happening, but it's a mind

20 set of going from government service, fee for service

21 program to a market place function, which local government

22 and the private waste hauling industry, in general, of

23 course, I have not in the past had the expertise or

24 orientation, but I think we will get there.

25 If you're a local government waste manager out

1 there and you're figuring out who to sell it to, and what
2 the specifications and quality are going to be needed to
3 market the materials, and you've never been in the private
4 side, private sector, it's a different ball game.
5 MS. RENNIE: What's interesting, too, is that
6 what holds true in terms of our relationship with the
7 people who supply us, holds true with the people whom we
8 supply.
9 When I was talking to Terry earlier, we were
10 talking about what kind of a price differential would there
11 need to be in order to overcome the hurdles that people
12 feel that they face when they're about to buy recycled,
13 including the factor of risk.
14 It was way more than we could do.
15 COMMITTEE CHAIRMAN CHESBRO: What was the
16 answer? Please tell us.
17 Well, I guess in summary on this question, I
18 think I'm hearing, and please correct me if I'm hearing it
19 wrong, is that the sorted use of individual components of
20 the mixed plastic stream is the preferred use to products
21 produced from mixed plastic.
22 There is really two options for the mixed
23 plastics stream. Three including the "I" word. One is to
24 manufacture products without a detailed or a complete
25 sort.

1 Then there is the question of a higher level of
2 sort to make products from a waste stream that has been
3 separated.
4 MS. RENNIE: One of the things to look at, too,
5 we tend to view recycling as an answer not solely to the
6 solid waste issue and to the extent that you start to gain
7 other factors, such as energy and the other life cycle
8 aspects, natural resource use.
9 Recycling is a part of a much larger system. In
10 looking at it has a part of a much larger system, it will
11 or will not make sense to do various things.
12 My guess is that it will make more sense to be
13 separating out certainly some of the readily separable
14 groups of plastic. Then you're left with the small
15 fractions of laminates, very difficult to recycle and
16 separate plastics, at which point some of the other, the
17 life cycle analysis will give you probably a different
18 result.
19 MR. BEDELL: It may be doing industry a little
20 bit of a disservice to finish this without talking about
21 the effort that's going on in separation technology.
22 There are pilot lines -- they're not even pilot
23 lines. There are full scale lines in place in a couple of
24 recycling operations back East that are proving the
25 technology to separate, at least bottles, by material and

1 even by color, automatically, with fairly high levels of
2 confidence.
3 These are the first commercial operations. We're
4 in the process metaphorically, I guess, of building Model T
5 Fords out there. It's going to take us a while before we
6 are able to cost-effectively take that and put it where it
7 belongs.
8 I hadn't thought very much about the possibility
9 of taking that whole technology and putting it, not at the
10 recycler, but at the MRF so that you wind up basically
11 grinding the stuff -- separating it and then grinding it at
12 what is as close to the origination point as you can get to
13 avoid some of this other inherent uneconomical steps in the
14 process right now.
15 There is a lot of work going on, and I think the
16 members of your staff are probably pretty much aware of
17 what most of the technology development looks like.
18 COMMITTEE MEMBER RELIS: I would like to
19 underscore the importance of this discussion, because we
20 have a couple of things happening.
21 We're getting nearer to the 25 percent deadline.
22 Cities and counties are making, they have got their plans
23 in, and they are preparing at various stages their capital
24 investment. It's a big capital investment.
25 The first generation of collection systems, some

1 of those have already been out five years. Equipment is
2 going to be replaced. Contracts will continue to be
3 renegotiated.
4 I think we need to start compressing the
5 turn-around time between innovation and systems that are
6 bearing out to be more cost-effective.
7 The Board can play a pivotal role in being a
8 filter or at least being a collector, provider of
9 information, but it's only as good as what we get. Somehow
10 I'm feeling that we have a need to be more energetic in the
11 translation of all this stuff that is coming out into some
12 interpreting that somehow to local government.
13 I don't know how to do it, but I think it may be
14 something that we want to discuss a lot more with staff and
15 get the input from you as to what might be the best
16 mechanism for making this integrated knowledge available.
17 MR. COLLIS: One thing I think is important from
18 the point of view of local government, and local government
19 revenues, it's a bit of the chick and the egg.
20 Local government hasn't collected the so-called
21 low end plastics because there hasn't been a market for
22 them, as well as the collection problems that the volume
23 causes.
24 But since there is now a way that is possible to
25 utilize the low end plastics, and since there is at least a

1 developing market for the products made from the unsorted,
2 low end plastics, it changes the economics for
3 municipalities pretty dramatically, in that it's now a
4 situation where if a municipality is willing to go out and
5 collect specifically the low end, unsorted plastics,
6 certainly we'll take them. We'll buy them.
7 I assume we maybe the only one's around now, but
8 there will be more. Thus, I think it's to local
9 governments benefit to look at this and say wait a second,
10 here is a way to make money off of the rest of these
11 unsorted plastics.
12 Because what's happened is their contracts with
13 the haulers have prevented them from collecting the rest of
14 the plastics because the haulers know they can't sell
15 them. The municipalities can now step in and say we want
16 these revenues, and we're going to require you to begin
17 collecting the rest of these plastics because we know there
18 is somebody out there to sell them to.
19 We do need to break through the chicken and the
20 egg problem. Once we do, it will mean more revenue for
21 local government from their collection programs.
22 MS. RENNIE: I used to work for the City of
23 Philadelphia. I was actually going to address idea of
24 taking as many plastics as you can.
25 If you're going to take the automatic sorting

1 technology that Terry was talking about, you want to
2 distribute the cost of that kind of technology over as much
3 plastic as possible. To the extent that it's effective at
4 sorting, you already have some value added.
5 If you replicate the model that's common on the
6 East Coast of public ownership of MRFs, it's privately
7 operated, and you share the profits of the sale, if, in
8 fact, you were to separate all the materials at the MRF,
9 granulate them there and able to be able to sell them, you
10 would have the highest possible value for your product, and
11 you would be providing the highest possible value to firms
12 like ours, because at that point we would be getting a
13 discrete fraction that we could try to work with.
14 COMMITTEE MEMBER RELIS: I guess the hesitation I
15 feel in response to that point is that were we to say,
16 Conway, you indicated that you can take this mixed lower
17 grade, and then if we were to add that to what is already
18 being separated, we have a broader spectrum of plastics and
19 the capital investment gets better potential return or
20 value.
21 But we have not heard anything conclusive that
22 says that that market is sufficient to justify that reach
23 at this point.
24 MS. RENNIE: I'm suggesting something a little
25 different, I think, which is to the extent possible we'll

be separating the plastics fraction coming in into High Density Polyethylene, bottle grade, PET, colored and clear, PVC and then High Density injection grade, as many sorts as you can accurately do with that kind of technology.

Then I would argue, and I don't if Conway would agree, that Conway should be the market of last resort.

MR. COLLIS: As long as the prices you charge us reflect that.

MR. SHEDD: I would like to present the scenario as I see it.

Today Conway is taking granulated plastic from the MRF. He's able to use it in his product because his product doesn't need a purified stream to the extent that other people do that are making bottles or film or whatever.

Today Envirothene is taking bottles, for the most part, that have been separated as to type. They are not taking granulated material. They are taking bottles, whole, and they are sorting them in the line, and so are we.

Tomorrow, however, we're probably going to be taking mixed bottles. The mixed bottles with the technology that is being developed that we are talking about here are going to be kicking out PET bottles here, and HDPE bottles here, and other things here.

1 Then the day after tomorrow we are going to the
2 people that are selling plastic back to the film makers and
3 the bottle makers are going to be taking granulated
4 material, like Conway is today, and we're going to have a
5 technology that allows us to separate the plastic after
6 it's been granulated.
7 I think that's where the industry is headed.
8 We're all going to be going after the same material that
9 you're getting today, Conway, in about three or four years.
10 COMMITTEE CHAIRMAN CHESBRO: Okay. Anything else
11 to add on that line of questioning?
12 MR. PERLSON: I think the time frame is just a
13 little ambitious, John.
14 MR. SHEDD: Probably, probably. That's my nature.
15 MR. COLLIS: I think that's actually a very good
16 summary statement which I concur with.
17 The only additional point that I would add, and
18 this is an amendment not a revision, to what you said, is
19 that when you're able to do that, we will purchase more
20 from you than we do today.
21 In terms of the economics of our production, it
22 still makes sense not to pay for the sorting since we do
23 not need it. Particularly because, and it's an important
24 point, there is a good deal of predictability of what is in
25 the waste stream on the average.

1 You can predict it seasonally. You can predict
2 it by communities. On the average, and this isn't for
3 every roll-off delivery that we get, but on the average,
4 over six or eight weeks, we know pretty much what we're
5 going to get unsorted.
6 That enables us to manufacture with that in
7 mind. There is a market that is there for the unsorted
8 plastic. The market that depends on not having to pay for
9 the sorting of plastic, and it's made possible by the
10 predictability of what is in the waste stream.
11 COMMITTEE CHAIRMAN CHESBRO: Okay.
12 We'll move on to the next question, shifting back
13 to HDPE.
14 What products or product groups represent the
15 greatest potential markets for recycled post-consumer HDPE
16 and why?
17 Do we have anyone who wants to take a shot at
18 that first?
19 MR. PERLSON: First of all, it's important to
20 define the quality of the materials that are recovered.
21 That determines what markets are most viable. There
22 definitely is a relationship.
23 Given the quality of the materials, and by
24 quality I mean both consistency as well as engineering
25 properties, strength and flexibility so on, cleanliness,

1 given the quality of the materials that are currently
2 recovered by the processes that Envirothene operates, and
3 we operate, probably the most sensible markets are things
4 likes corrogated pipe, thick sheet that would be used for
5 things like slick sheet or book binders or truck bedliners
6 or nursery pots, just a vast array of products.
7 COMMITTEE CHAIRMAN CHESBRO: What did you call
8 this, again?
9 MR. PERLSON: It's called sheet.
10 You exude a thick sheet of material, perhaps a
11 sixteenth or eighth of an inch thick in some cases, and in
12 some case even thicker than that, and then either by a
13 variety of processes form it into an end product shape,
14 whether that happens to be a truck bedliner.
15 Those are probably the classic examples. Resins
16 of the general types that go into bottles today are also
17 used in those same end use applications. They are close
18 enough that you can make that work.
19 I love Conway's description of the boutique
20 markets. There are some there. The question is what kind
21 of volume. If we're talking about recovering hundreds of
22 millions of pounds of these materials in this country, in
23 fact, we are already, but if we're talking about a billion
24 pounds of those materials, those boutique markets are going
25 to be saturated, and we need to look at the large volume

1 markets which will be driven primarily by the cost-value
2 equation.
3 MS. RENNIE: I would, not so much disagree, but
4 reframe it.
5 It's not just the size of the market. There's
6 also the value of the market. In some cases you can get
7 value and size at the same time, that is the highest
8 possible value added.
9 One of the things that we are able to do right
10 now is take bottle grade resin and high grade it into film
11 grade resin. If you look at the trash bag market, if you
12 look at the merchandise bag market, what is commonly know
13 as the T-shirt bag market, which is grocery sacks, with the
14 cut-out handles, those together come out to about 600
15 million pounds a year of demand.
16 I'll be happy to leave these figures with you.
17 COMMITTEE CHAIRMAN CHESBRO: Demand for those
18 products whether they're virgin --
19 MS. RENNIE: Just for High Density, the current
20 usage of High Density Polyethylene is over 600 million
21 pounds in those applications.
22 If you wanted to run at 50 percent post-consumer
23 which has been done, I think Webster Industries is actually
24 running some of their trash bags at 100 percent
25 post-consumer resin, you can see that those are markets

1 that can absorb an enormous, really a fantastic amount of
2 post-consumer resin.
3 If you can high grade things so that they can go
4 into the film industry, this is known as film as distinct
5 from sheeting, film is extra thin sheeting, you will then
6 be going to the bottle industry, which is also a fairly
7 high value industry, all things considered, of a fairly
8 high grade of plastic.
9 There the obvious market would be the household
10 chemicals market. That's 800 million pounds of plastic.
11 That would be at 100 percent.
12 We understand that one of the major consumer
13 products companies is actually looking at going to 100
14 percent at the start of the year. If other companies were
15 to replicate that, this again serves as a tremendous market
16 that draws an enormous amount of material from the waste
17 stream.
18 Beyond that, we get into things like trash carts,
19 which are 300 million pounds a year. Plastic pipe, which we
20 talked about, 380 million pounds a year.
21 There are some fantastic markets there that could
22 be absorbing well over two or three times what we're
23 currently extracting from the waste stream.
24 COMMITTEE MEMBER RELIS: I find those numbers
25 really helpful.

1 I think one of the problems in all of these
2 discussions, we have heard the relative question of, well,
3 how much would we divert in meeting our goal anyway if we
4 did this real good? On the other hand, we need to get very
5 quantitative because we're that's what we're dealing with
6 is diversion, quantification.
7 MS. RENNIE: Sure.
8 I have here something that I will leave with
9 you. These numbers are taken from "Modern Plastics" and
10 have to do with the market size for High Density
11 Polyethylene in these various applications, and it also
12 suggests what the levels of waste generated are so that you
13 can compare.
14 Then I broke it in models and said, okay, this is
15 if you were doing 100 percent, or at 30 percent, or what is
16 actually being done, which turns out to be almost trivial
17 in comparison.
18 COMMITTEE CHAIRMAN CHESBRO: Okay. Thank you.
19 Any other markets that haven't been mentioned?
20 MR. COLLIS: I guess as the spokesperson for the
21 unsorted plastic, I should throw in one thing in terms of
22 markets.
23 The reason I wanted to draw a differentiation,
24 following up on your point, between the so-called boutique
25 lines and more serious markets, if you have an industry

1 that focuses on picnic tables and park benches and those
2 kind of things, those are obviously going to be boutique
3 and very limit markets.
4 On the other hand, the technology is in place
5 that enables companies to focus on civil engineering
6 markets, industrial markets, from CalTrans as a leader in
7 focusing on sound barriers and guard rail posts and those
8 kinds of applications, shipping pallets, industrial
9 shipping pallets, docks and piers, and those kinds of
10 applications are huge industries and utilize massive
11 amounts of plastic.
12 That's the reason that it's important, not to
13 sounds like a broken record, in terms of putting the
14 resources into R and D to make sure that those markets are
15 attainable, not just for one company but on a broader
16 scale.
17 It's the reason that the economics of unsorted
18 plastic becomes important. When you're in competition with
19 wood or concrete or anything else, the amount that you're
20 paying per pound of feedstock becomes absolutely critical
21 in terms of what you're able to charge for your product and
22 how competitive you are going to be.
23 Literally, every cent begins to make a
24 difference. That's a reason that it's important that the
25 unsorted plastics are available to manufacturers and

1 ourselves.

2 COMMITTEE CHAIRMAN CHESBRO: Okay.

3 MR. SHEDD: May I ask a question?

4 The question that is asked here is what products

5 or product groups represent the greatest potential markets

6 for recycled post-consumer HDPE and why?

7 As you go down through the rest of these

8 questions, you left out one question that was originally in

9 your list of questions, and that was what products or

10 product groups presently manufactured with little or no

11 secondary markets do you think represent the greatest

12 potential for secondary material?

13 We have HDPE here. We have not talked about Low

14 Density polyethylene and Linear Low Density Polyethylene.

15 HDPE is probably an 8 billion pound market. Low

16 Density and Linear Low Density are certainly equal to

17 that.

18 I think, Quantum, would you agree?

19 MR. PERLSON: The sum of all three is probably 20

20 to 22 billion.

21 MR. SHEDD: We have not hit the other part of

22 polyethylene. We have just hit High Density Polyethylene,

23 which is for the most part the container market and the bag

24 market and some film, but there is an equal amount of

25 polyethylene out there in the form of film, for the most

1 part, that we have not touched upon, collecting.

2 In my opinion, that's the next big market that we

3 are looking at is the recycling of film itself. Is there a

4 reason for having left it out of this discussion?

5 COMMITTEE CHAIRMAN CHESBRO: I'll ask the staff

6 to respond.

7 MS. WELCH: One of the reasons is, I think I

8 tried to bring forth in my presentation is because of

9 containers, and the biggest percentage of containers is

10 produced from HDPE; therefore we focused the Workshop more

11 on HDPE.

12 That was where a lot of the local concern was and

13 the easiest to be collected from the local governments at

14 the city and county level.

15 COMMITTEE CHAIRMAN CHESBRO: It was in response,

16 as I said earlier, the folks who collect these materials

17 saying those were the one's that they were the most

18 interested in seeing us focus on.

19 The feeling that plastics taken as a whole is a

20 very complex waste stream, and that somehow or other rather

21 than trying to address the whole thing, we tried to pick

22 out the pieces that there was the greatest interest from

23 the people doing the collecting in having us do -- but

24 that's not to say that your input that we should broaden it

25 is not worthwhile.

1 We'll take it into consideration.

2 MR. SHEDD: Certainly looking at tomorrow or the

3 next day, the MRFs are collecting the containers today.

4 They are not many collecting film. Most of the film that

5 is being collected is baled and shipped overseas by the big

6 distribution depots like Target Store, or Ralph's

7 Supermarkets, or Safeway Supermarkets.

8 A tremendous amount of film is being, that's

9 post-consumer, it's been used, is being collected at those

10 places and for the most part it's shipped overseas today.

11 COMMITTEE CHAIRMAN CHESBRO: To what degree is

12 film like that going to landfill?

13 MR. SHEDD: There is a fair amount of it going to

14 landfil right now, baled and unbaled.

15 COMMITTEE CHAIRMAN CHESBRO: To go to the broader

16 rationale for priority of materials, one of the things we

17 were looking at was the question of 1995 and the year 2000,

18 and the idea that local governments are right now trying to

19 pick out certain material types that they can meet their 25

20 percent requirements for.

21 Part of what we're doing is in response to that

22 to help develop markets for the things that they are

23 determining are cost-effective for them to collect.

24 It's clear that the prioritization doesn't

25 address 50 percent but addresses a portion of the waste

1 stream itself and helps the local governments have markets
2 for the materials that they are collecting as soon as we
3 can assist.
4 That's sort of a broader context for the
5 rationale. I think exactly where you draw that line, you
6 could argue for any number of the fractions of plastics
7 stream and I think it is well-taken and we'll look at
8 that.
9 MS. RENNIE: As another note on that, even though
10 we keep breaking things out and saying each plastic is so
11 different from another plastic, in fact, in terms of the
12 markets, we're finding that we're sending, we're being able
13 to sell a good deal of our High Density Polyethylene into
14 Low Density Polyethylene.
15 Many of those markets could also be absorbing
16 materials, so that the market size is considerably larger
17 than the strict High Density Polyethylene market figures I
18 suggested imply.
19 COMMITTEE CHAIRMAN CHESBRO: Okay. I think at
20 this point I will call the lunch break and suggest that we
21 be back by 1:15 to get started again.
22 I think this has been a great discussion. I have
23 learned a tremendous amount. Each of these Workshops has
24 been real helpful to me and I think to our staff and the
25 other Board Members in our deliberations.

1 See you in a little while.

2 (Thereupon the lunch recess was taken.)

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3 COMMITTEE CHAIRMAN CHESBRO: Okay. We got through

4 number 4.

5 The fifth question, again, we've covered a lot of

6 ground on it, but I will put it out there in case there is

7 some aspect of it that we have not yet discussed.

8 What are the most detrimental problems or

9 obstacles to using recycled post-consumer HDPE and unsorted

10 plastics?

11 We have dealt with in our discussions

12 contaminants and sorting problems. Are there other things

13 that we need to touch on in that area?

14 If not, we will keep moving on. We beat that

15 into the ground already.

16 Item six is an interesting one. Are the existing

17 industry specifications for recycled post-consumer HDPE and

18 unsorted plastics adequate?

19 I think that the question of how standards do or

20 can address some of the quality problems and other problems

21 that we have been discussing this morning.

22 Who would like to start with that one?

23 MR. PERLSON: I'll take a shot at it.

24 There certainly is a now well-recognized standard

25 for post-consumer plastic materials. They are published by

1 the Institute of Scrap Recycled Industries, and are
2 generally recognized by most companies, like ours, as a
3 buying specification for materials.
4 However, they are not widely recognized by people
5 who are in the material handling industry who in turn will
6 supply a company like ours or Envirothene. So, there is
7 some disjointment at this point.
8 On the recovered resin standards, I would
9 classify that as a moving target, because buyer and seller
10 are changing so rapidly that the characteristics of the
11 materials are rapidly changing and the requirements and
12 customers are rapidly changing.
13 I don't think that we've come to a point yet of
14 maturity in the industry to really come to a unified set of
15 standards.
16 So, are they adequate?
17 No. Only because it's a moving target at this
18 point.
19 But certainly on the post-consumer materials end
20 there seems to be a fairly well-recognized and
21 well-accepted set of standards.
22 COMMITTEE CHAIRMAN CHESBRO: That raises an
23 interesting question from the standpoint of the collectors
24 of the material.
25 I don't know, Tracy, if you're prepared to

1 discuss it or not, but the question of whether and if
2 industry standards, if there is a meeting somehow of the
3 needs of the buyer with the capability of the seller to
4 meet certain standards.
5 MS. SCHNEID: Let me clarify a point that
6 Sacramento County, where we are right now. We do collect
7 recyclables and deliver them to the MRF recycling center.
8 Then that recycling center actually markets our
9 plastics. We have to market our plastics to them. We are in
10 a contract with them, and we have to give them clean
11 material.
12 We are, on occasion, told that sometimes our
13 material is not exactly clean. We do try to keep it clean.
14 COMMITTEE CHAIRMAN CHESBRO: How do you do that?
15 Do you do that by the collectors not picking
16 something up because obviously it's not clean, or do you
17 separate out the dirty stuff out at the MRF?
18 MS. SCHNEID: We do that both ways.
19 We also try to educate the community to let them
20 know what types of plastics are and are not acceptable.
21 Again, it gets very confusing for the consumer.
22 They see a number two on the bottom, and they
23 want to recycle whatever it is, even if it's a margarine
24 tub. We can't take those. We can only take the
25 narrow-necked jug containers.

1 We're trying to communicate that to them now.
2 That's very difficult.
3 COMMITTEE CHAIRMAN CHESBRO: I'm frequently
4 confused myself. Usually the first question that I get
5 asked when I go on a talk show, "Can you explain the
6 different plastics and which one's can be taken and which
7 one's can't?"
8 Are there other comments on the standards from
9 other panelists?
10 MS. RENNIE: We find that it depends entirely upon
11 our market.
12 So, we do our sorting and our processing to the
13 specification of the market that we're supplying. It's
14 sort of on a lot basis, if you will. Then the more
15 generalized lots go to more generalized markets or markets
16 that have fairly functional performance standards.
17 COMMITTEE CHAIRMAN CHESBRO: Is there additional
18 intervention at some point, not necessarily by government,
19 that would be helpful in terms of the standards?
20 MS. RENNIE: Actually, I would argue, for our
21 firm in particular, no.
22 One of the advantages that we have is that we can
23 to do that kind of sort, and we feel that we have a
24 competitive advantage in not having standards, and
25 therefore, being able to suggest that we are the only one's

1 who can supply the quality necessary.

2 COMMITTEE CHAIRMAN CHESBRO: If we're successful

3 at this business, that may be a passing demand from a

4 broader standpoint.

5 MR. FINNELL: In quite a few cases with Low

6 Density, and Linear Low Density Polyethylene film that

7 there is a term used that is called "export quality," which

8 generally means that there is so much contamination

9 involved with baled material that we can't afford literally

10 to handle it as much as needed here in the States.

11 So, it goes into the export market, simply due to

12 the low labor cost where they can take a thousand-pound

13 bale and literally go through it a piece at a time and

14 extract what is undesireable, because in many cases there

15 will be incompatible materials.

16 You wll have the catch-all term in some cases

17 that indicates that it's going to go into an export market

18 rather than being recycled here in the United States.

19 COMMITTEE MEMBER RELIS: What is the status of

20 that market now?

21 I'm not really up on export.

22 MR. FINNELL: It fluxuates a lot and depends on

23 the end market.

24 Most of the material is destined for Hong Kong,

25 China, Indonesia, Philippines, but predominantly Hong Kong

1 and China.

2 Forty-five days ago there was a large decrease in

3 the Chinese ewan, the main currency. That absolutely

4 brought the market to an absolute halt.

5 Everything stopped. It's still down considerably

6 right now as far as films. The emphasis shifts as far as

7 what is wanted in the market overseas depending upon what

8 happens with the international currencies.

9 In Taiwan, for example, the currency there has

10 increased in value, and that caused another change in the

11 market place. It changes considerably, and can change

12 literally from month to month. Recently it's been very

13 slow.

14 COMMITTEE MEMBER RELIS: Is that considered

15 growing -- is demand overall growing for that level of

16 product, or is it static?

17 MR. FINNELL: It depends on the product

18 category.

19 High Density polyethylene bottle, for example, in

20 natural and color grades, it can be an outlet for what you

21 can't place into a market here the U.S., although, now that

22 there are more plants coming on line that have the ability

23 to reprocess that, that's not necessarily an outlet.

24 When you're gathering, you can't place it in a

25 domestic market. What has happened in the past nine

1 months, the importers overseas have outbid what the
2 domestic buyers were willing to pay for the material. There
3 is always about a point or a point and a half spread.
4 What happened is that a lot of material went
5 overseas that would have otherwise stayed here and been
6 reprocessed. It just ends up being a bidding war, more or
7 less.
8 MR. SHEDD: I might say that in another part of
9 the country they do not have this problem. Back on the
10 East Coast they may.
11 But generally speaking, in other parts of the
12 country, they do not have the luxury of exporting. They
13 can buy their material, where, let's say we'll we pay ten
14 cents a pound for it, they can buy it in many cases back
15 there for two or three or four cents less.
16 If we do not pay it out here, it will go to
17 export. It's a good and bad thing.
18 If we have an oversupply, we can export it. That
19 may be good. But if we're trying to buy it competitively,
20 we'll probably have to pay more, and we'll have to sell it
21 for the same price as do the people who produce a product
22 back in the Midwest.
23 COMMITTEE CHAIRMAN CHESBRO: Okay. Any other
24 comments on standards?
25 MR. BEDELL: I have one. I think I would be very

1 much in Ms. Rennie's camp on this one, that the setting of
2 standards should be a free market activity.
3 It's another one that as the economic climate
4 changes, the standards, the way that they are set and the
5 absolute quality of materials that will become available is
6 going to wax and wane.
7 I think letting the market drive that is probably
8 the right way to go. I would not want to have everyone
9 required to buy recycled High Density Polyethylene at the
10 quality that we need for bleach.
11 We may even find that we need a different
12 standard for bleach than we do for Formula 409 just because
13 of the difference in how reactive those products are.
14 We would like to be able to optimize exactly what
15 we need and how we get it.
16 MS. RENNIE: Because there is a price
17 differential according to the amount of sorting or cleaning
18 that we have to do.
19 MR. SHEDD: I would second that also.
20 COMMITTEE MEMBER RELIS: It's unanimous.
21 COMMITTEE CHAIRMAN CHESBRO: Okay. The final set
22 of questions revolve around steps that the Board and the
23 State could be taking to improve markets.
24 So, the first one is what activities or programs
25 would be most effective for the Board to pursue to assist

1 recycled post-consumer HDPE and unsorted plastics market
2 development?
3 I've heard mention, just to review, labeling from
4 the marketing standpoint for the public, minimum recycling
5 content legislation, putting some emphasis on research and
6 technology development as suggestions that have come before
7 us so far in our discussion.
8 May I ask for other comments or suggestions about
9 what directions we might be going that could help address
10 some of problems you've brought to our attention today.
11 MS. RENNIE: I would love to see something that
12 parallels the Right to Know Network right now.
13 Where people would state how much post-consumer
14 material they were purchasing and how much virgin, so that
15 the people and the firms that are really getting out there
16 and trying to do the right thing can get recognized for
17 that, and in a sense those who aren't can be shamed into
18 it.
19 This would be then made available as the Right to
20 Know Network is now as a bulletin board so that people can
21 tap into that, journalists can tap into that, consumers can
22 tap into that and find out what it is that is actually
23 happening.
24 Right now it's very difficult. All the product
25 packaging has 800 numbers on the back. You call the 800

1 number and ask, "Are you using post-consumer recycled
2 material in this packaging?"
3 They say, "Uh-huh, yeap."
4 How can I know? I ask them, "How do you know?"
5 They answer with, "Well."
6 You don't know.
7 COMMITTEE MEMBER RELIS: Wasn't there an FTC
8 guideline on this?
9 MS. RENNIE: If you choose to market something as
10 having specific environmental attributes, many firms have
11 decided not to just so that they don't fall afoul of the
12 law. But that really doesn't help our cause.
13 COMMITTEE CHAIRMAN CHESBRO: You're talking about
14 legislative or mandatory provisions?
15 MS. RENNIE: Mandatory reporting. No
16 enforcement.
17 The information would basically be in the public
18 domain.
19 MR. BEDELL: If you want to get it on the label,
20 you have to do it on a national basis.
21 We are not going to label on a state-by-state
22 basis.
23 COMMITTEE CHAIRMAN CHESBRO: After watching the
24 RCRA discussion this year, not on this issue but on
25 questions of some national standards on things that states

1 have been doing, we have not seen much progress.

2 MR. BEDELL: I would agree. There is not much

3 progress.

4 But even in the northeast, Rhode Island and New

5 York have finally resolved their differences, and Rhode

6 Island has said even though, if your labeling in New York

7 doesn't meet the letter of the law in Rhode Island, it's

8 okay.

9 COMMITTEE CHAIRMAN CHESBRO: I'm trying to

10 remember whether it was you, it was one of the people at

11 that plastics round table that said that -- maybe it wasn't

12 you.

13 Somebody said there was a particular product that

14 if they marketed it in Massachusetts had to say in

15 recyclable on it, but if they marketed it in California

16 with that on it they would be breaking the law.

17 MR. BEDELL: To give you an example, not relating

18 to plastics, on our corrogated we use recycled material in

19 just about all the corrogated that we buy at varying levels

20 depending on what part of the country we're buying it in.

21 Clearly all corrogated is recyclable on a

22 national basis, 55 percent of it is recyclable. Three

23 years ago we wanted everyone to appreciate that, so we went

24 through all of our corrogated shipping containers and put

25 recyclable.

1 I don't even think we made a recycled claim
2 because we thought that might be too difficult to
3 substantiate. Within the last twelve months we have gone
4 through and meticulously taken recyclable off of all our
5 corrogated boxes because of the state labeling laws.
6 COMMITTEE CHAIRMAN CHESBRO: There probably would
7 be consensus that a Federal standard overcomes a lot of
8 problems compared to a lot of varying state laws.
9 The question is can you get a Federal standard?
10 MS. RENNIE: Can you create a driver?
11 In the sense if California goes one way, that
12 might create the driving impetus.
13 MR. BEDELL: I wish you were right.
14 There are at least as many states out there that
15 will not do it because California did it.
16 COMMITTEE CHAIRMAN CHESBRO: I would like to
17 think that the fact that these things were raised in the
18 RCRA debate, in part, or as a result of California and the
19 Northeastern states and others, Oregon and others taking
20 some action, but, of course, it was not enough to get any
21 kind of a national, get something in Federal legislation.
22 MS. RENNIE: Another thing that we would love to
23 see is more round tables in which you have all the elements
24 that have to be present in the recycling loop talking
25 together so that you have, for example, the retail chains

1 and the collectors and a recycler and a reprocessor and a
2 manufacturer, to cover some of the differences.
3 Also, to the extent that the solid waste problem
4 is a community problem, we should be facing it as a
5 community. The more government sits up and says, "We're
6 telling you to do this," the more manufacturers say, "The
7 hell you will. We'll try to seek exemptions."
8 All of a sudden, all the emergency in the debate
9 is bypassing the central point, which is that we are trying
10 to create effective networks to get the material out of the
11 waste stream and into production.
12 Setting up these kinds of forums where people get
13 together and try to determine what they can do, also, to
14 level the playing field.
15 If all grocery manufacturers use 10 percent
16 post-consumer content in all their bags or in all their
17 packaging that they offered, that makes a considerable
18 difference at little or no cost. If everyone were doing
19 it, it would be a non-issue in terms of one firm thinking,
20 ah-ha, we'll be losing another cent. We'll be losing this,
21 that or the other because of it, or trying to gain
22 something.
23 The people wanting to gain something could
24 continue to try and step ahead of the game.
25 MR. COLLIS: I see four major points that I think

1 need to be part of the mix.

2 They are R and D, first and foremost, which we

3 have talked about. Investment in R and D, by not only

4 private enterprise but also government, is much more

5 important long-term than minimum content legislation, than

6 procurement policies, than anything else, because it's

7 through R and D that the recycled products are going to

8 compete in the market place on their own merit not because

9 they are recycled.

10 Ultimately, we are not really going to be

11 recycling the bulk of what is produced until the ultimate

12 product is manufactured from the recycled feedstock is able

13 to compete on its own merits and compete not just because

14 there is a minimum content regulation or something like

15 that.

16 It's R and D. For R and D to be done on an

17 important scale, I think the government has to be involved

18 in partnership with private enterprise, each bearing their

19 reasonable share of that burden.

20 The reason that that partnership needs to take

21 place is that private enterprise is out on the firing line

22 and has to sell these products and knows where the markets

23 are potentially and notes how close they are to being able

24 to reach those markets.

25 The way a partnership like this should work is

1 that government ought to match what private enterprise is
2 putting up. In that way, nobody is getting a free lunch.
3 Somebody has to bet with their own money when they are
4 going to engage in a product.
5 But through the government match, it makes that R
6 and D possible on a real scale. If the Board did one thing
7 and nothing else, I believe that it should be to push in a
8 serious way for that kind of partnership.
9 In looking at it, if you look at the majors, I
10 know they have done much in the way of good works in many
11 ways, but in the area of serious R and D, what is called
12 for is not a public relations effort, not a television
13 advertising budget, it's real investment in focused and
14 targetted R and D.
15 The reality is that it's not going to be
16 something that the majors are going to be involved in with
17 regard to recycled products. It's something that has to
18 take place between growing entrepreneurial companies and
19 government. That's massively the most important area.
20 Second, obviously deals with government
21 procurement. In that area the test periods or testing
22 periods for products that are going to be purchased by
23 government have got to be shortened.
24 There are rules for some products that have to be
25 tested for 10 years before it can be utilized. The fact is

1 that many of the testing requirements have been written
2 with committees that have included established current
3 materials, whether it's the concrete industry or whoever it
4 is, so the test periods have to be scrutinized.
5 In that regard, it will save in areas where there
6 is lots of room for criticism. CalTrans, for example, has
7 been forward looking in terms of setting out testing
8 schedules and following them.
9 The testing has to be done, but it has to be done
10 in a time frame that is shortened to the maximum extent
11 possible, consistent with safety standards, regulations and
12 et cetera.
13 Third, following along the procurement is
14 obviously government procurement in these areas have to
15 take the lead and have to be out front. I think the
16 minimum content standards are less important than looking
17 at an overall agency's purchases and seeing that a portion
18 of the budget is being directed to recycled products. It's
19 obviously critical.
20 Fourth, and finally, I know that the Board has
21 targetted with regard to capital cost, assistance with
22 capital cost for processors, et cetera, and I hope that
23 manufacturers are also included in that list. I noticed in
24 the draft that they are not.
25 All of this is much more important than the zones

1 and tax credits, and I think that those things are
2 marginal. Things like R and D and procurement are the
3 heart of the issue.
4 The Board is in the position to try to make these
5 things happen, not just in theory but that they do take
6 place.
7 MS. RENNIE: I agree that the tax credits are
8 essentially gravy.
9 What we need right now if we're going to be
10 establishing the fundamentals is real funding programs. I
11 know you have heard this before, but one of the ways that
12 the funding programs work right now, if you're an upstart
13 business, you're offered a low interest loan, for which you
14 have to put up a letter of credit, for which you have to
15 have an equivalent amount of cash in the bank.
16 Which means you get to borrow from yourself at a
17 preferred rate. It's extremely difficult. It's not very
18 attractive.
19 If you have to have an amount of money equal to a
20 letter of credit because you're a start-up business, if you
21 could be helping there by taking the second position,
22 sharing some of the risk, that would enable companies like
23 ours to expand.
24 COMMITTEE CHAIRMAN CHESBRO: Are you talking
25 about financing from the Pollution Control Financing

1 Authority where the letters of credit are needed? Not our
2 loan program?
3 MS. RENNIE: No.
4 We need a letter of credit to the bank. That
5 would be tremendously useful.
6 There are states that have programs like that.
7 They are willing to take second position so that the bank
8 gets first rights in terms of if you do go under, and the
9 state gets a second.
10 COMMITTEE CHAIRMAN CHESBRO: That's a good point
11 that we have heard frequently.
12 MS. RENNIE: The other thing, and this is also on
13 the lines of government procurement, not just --
14 We don't believe that preferences work. We
15 believe that if you say we will give a price preference to
16 recycled products, you do not necessarily change purchasing
17 methods at all, but you do guarantee that you will be
18 paying a higher price for any recycled products.
19 Instead of that, we suggest that you do the
20 reverse, which is say all government procured products must
21 contain post-consumer recycled material, unless they cost
22 more than such and such, then specify how much it is that
23 you want.
24 The second step is make sure that the
25 specifications allow for recycled material. Because time

1 and again, the way that the specifications are written is
2 that either explicitly or implicitly they prohibit recycled
3 content being used. This is in terms of the types of test
4 that are used or because it says must contain virgin Low
5 Density Polyethylene.
6 COMMITTEE CHAIRMAN CHESBRO: Just by way of
7 recent history, you may know Assemblywoman Eastin had a
8 bill which was passed by both Houses of the Legislature to
9 require that on a variety of specified purchases that there
10 be a required recycled content, and it was vetoed.
11 We have to put our shoulder on that one. Cost
12 was the concern.
13 MS. RENNIE: There are waist to deal with it.
14 We have a law in the book that says five percent
15 price preference throughout the specifications in
16 California, but that hasn't done anything to affect how
17 purchasing decisions are made, nor has it resulted in a
18 five-percent price preference.
19 COMMITTEE CHAIRMAN CHESBRO: Assemblywoman
20 Eastin's bill specified that, in fact, that it could not
21 cost, I can't remember whether it was the same amount or a
22 specified percentage over, but the intention was that
23 either by structuring the purchases the right way or
24 through source reduction of consuming of products that it
25 would be a wash, and it would not require to cost more

1 money.

2 MS. RENNIE: It also enables firms like ours to

3 realize the economies of scale.

4 If you know that there is going to be a large

5 market out there, you're willing to make decisions that

6 you're not going to make if you feel you're bearing all the

7 risk.

8 COMMITTEE CHAIRMAN CHESBRO: In absence of a

9 state law mandating state purchases, it does seem -- I know

10 in the City and County of San Francisco have done something

11 very similar and gone through all the legal research of how

12 you do it within current law, and we may want to consider

13 by way of part of our technical assistance to local

14 governments to show, tell them about what San Francisco has

15 done and perhaps other governments that I don't know about.

16 MS. RENNIE: And perhaps to have sample

17 specifications that can be delivered for all the products,

18 from trash liners to park benches, to enable recycling.

19 COMMITTEE CHAIRMAN CHESBRO: It's always easier

20 to suggest things to local government if the state does it

21 first so that we're not asking them to do something that we

22 wouldn't do.

23 MS. RENNIE: It never stops the procurement

24 official from having to bear full responsibility for

25 drafting up an entirely new set.

1 MR. PERLSON: Let me add one comment to what
2 Conway had to say. I'm also, because I have technical
3 background, a big believer in research and development and
4 the power of technology in creating new markets and new
5 materials and new ways of doing things.
6 There is a model that you might consider where
7 there has been a public-private partnership, and again it
8 has occurred in the plastics industry. The State of New
9 Jersey partnered with companies that manufactured equipment
10 to process plastics and plastics resin manufacturers,
11 package users and package makers to form something that was
12 called the Center for Plastics Recycling Research, at
13 Rutgers University, which is basically an administrative
14 location.
15 Industry and government provided funds to that
16 center, and then projects were funded in the academic
17 community as their neutral third party, so that both
18 parties contributed money and could hold the investigators
19 accountable for the work. It's very important.
20 Projects were sponsored around the country. We
21 have had several Californian schools offer projects. None
22 of them were accepted during in my tenure in the
23 organization, but certainly we have other state schools
24 that have been involved. It's an excellent example.
25 One of the things that it suffered from, in my

1 view, is sufficient size to really be effective in
2 advancing technology.
3 Having said that, however, I will say that this
4 organization led to the development of the processing
5 technology that is in Envirothene's plant and in our plant,
6 very instrumental in that, exposing it widely.
7 Secondarily, we talked earlier about automatic
8 sorting technology. This academically-sponsored research
9 activity was instrumental in the semi-commercial systems
10 that Terry mentioned earlier this morning.
11 That's proof positive that at least the academic
12 community can be instigated in bringing new ideas in how to
13 solve some of the major technologic kind of problems that
14 face recycling, whether it's plastics recycling or
15 recycling of any material.
16 That's something you may want to partner with the
17 State of New Jersey together in that program rather than do
18 it independently. I don't know if that's in the realm of
19 possibility or if that's a stretch.
20 It really slacks from the necessary scale in
21 order to attack the problem in a broad way. That is
22 something you might consider.
23 MS. SCHNEID: First, I would like to say that
24 Sacramento County was recently designated as one of the
25 counties to receive a Market Development Zone. At this

1 point in time, it appears that it is going to be very
2 successful, especially in the plastics arena.
3 But as far as other programs that the Waste Board
4 could look at possibly implementing, I would like to make a
5 few comments.
6 First off, perhaps loan and grant programs for
7 capital start-up costs, or for R and D for different HDPE
8 and unsorted plastic, and using those as priority items. I
9 have seen this work in another state.
10 It did bring the entrepreneurs into the
11 equation. They started recycling plastics and various
12 plastics as well.
13 Also offer technical assistance to those
14 companies and to universities in trying to do some more
15 research. Working with the Department of Commerce and
16 these companies and new businesses as well as other state
17 departments to make it easier for those companies to do
18 business in this state.
19 Additionally, developing specifications for
20 plastics procurement which would make it much easier for
21 local governments and other businesses to purchase
22 plastics.
23 COMMITTEE CHAIRMAN CHESBRO: Okay. Great. Good
24 suggestions.
25 COMMITTEE MEMBER RELIS: I had a question on the

1 extent of research, the Rutgers program, as you said
2 produced or contributed to technological innovation which
3 is now being commercially applied.
4 What would you be looking at by way of a research
5 program? You said it needs to be bigger. We don't have a
6 clue as to what that would deal with.
7 MR. PERLSON: I can give you an idea of the
8 amount of money that has been expended.
9 The Center was established in 1985, I believe.
10 Typically, the sum of industrial contributions and matching
11 contributions from state governments, not just New Jersey,
12 other states have been involved as well, typically have
13 been in the order of $2 to $3 million a year on the average
14 from 1985 through 1991.
15 The State of New Jersey's interest is diminishing
16 at this time because of fiscal problems.
17 COMMITTEE CHAIRMAN CHESBRO: We wouldn't know
18 anything about that.
19 MR. PERLSON: Their Governor is a noted
20 highlighter on the evening news these days.
21 But I think their interest could be revitalized
22 if other states, particularly well-known states showed an
23 interest. It would be an interesting discussion.
24 COMMITTEE MEMBER RELIS: That program was $2 to
25 $3 million. You're saying it was too small.

1 What is appropriate? That is something that you
2 could get back to us on.
3 When the term research is thrown out, it's an
4 open-ended deal. How big a budget is realistic here to
5 accomplish something?
6 MR. PERLSON: I think -- of course, there is no
7 magic answer. It's not a black and white issue.
8 From my perspective having been involved in the
9 organization that I described for about four years, I think
10 that an appropriate level of funding nationally might be in
11 the order, between industry and government, would be $10 to
12 $15 million a year is the appropriate level of funding.
13 You can put hundreds of millions into this kind
14 of thing if you wanted to. What you're looking for is what
15 yield do you get per dollar spent?
16 I think the optimum level would be somewhere in
17 the order of the magnitude that I gave you.
18 COMMITTEE MEMBER RELIS: It's intriguing though
19 to think of the idea of states each ponying up if they each
20 felt that this was important rather than one state carrying
21 the burden and not doing enough research.
22 Many of the states are in the same situation
23 today.
24 MR. PERLSON: It's no different than how industry
25 approaches it. Here are thirty or forty companies who are

1 contributing to this effort, all of who have different
2 agendas, different interests, yet they are willing to
3 contribute into a pool money.
4 It shows that at least in the private sector
5 there is that willingness to do that. I would bet in the
6 public sector there would be the same willingness, given
7 the right environment.
8 MR. COLLIS: I would like to add to that.
9 I think the effort at Rutgers is a valuable one.
10 I support your suggestion.
11 In addition to, not in place of, is the focus of
12 my remarks, by way of background, the Waste Management
13 Board may recall that my company gave a presentation to the
14 Board on plastic recycling. One of our engineers who
15 helped make the presentation was the founding director and
16 long-time director of the Center at Rutgers who has worked
17 for us since we started up.
18 We're very familiar with the program at Rutgers.
19 It is quite different than what I have suggested because
20 the kind of things that are going to come out of that kind
21 of academic research entity are things that may or may not
22 be applicable in the long-term, where there is a lot of
23 lead time.
24 That is different from taking a focused look at
25 something where there might be a real product application

1 in the near-term that has a big benefit and increases
2 recycling. The only way to do that is if you know there is
3 a market application.
4 That only happens, perhaps as Tracy indicated,
5 through the loan and grant program that includes R and D,
6 but it has to be focused and targetted with the view that
7 there is a market that we want to hit.
8 That's the only way it's going to have some
9 short-term impact on recycling. I'm not that that's not
10 valuable, but it's more of a long-term thing.
11 COMMITTEE MEMBER RELIS: What I'm hearing, you
12 see, Conway, a research need that may or may not be in the
13 same place that the other people would be. It creates a
14 question of what research.
15 MR. PERLSON: You need both.
16 You need to invest for the short-term as well as
17 the long-term. That's part of an overall research and
18 development strategy, no matter what your involvement. You
19 need both.
20 MR. SHEDD: Is it possible that you are talking
21 about a market or a product technology, whereas you are
22 talking about a process technology, mainly?
23 MR. PERLSON: I'm talking about products and
24 processes, the whole gamut. Mine is not meant to be
25 exclusive.

1 MR. COLLIS: Nor mine.

2 I agree with your formulation. I think both are

3 valuable.

4 COMMITTEE CHAIRMAN CHESBRO: I'm interpreting

5 what I heard as there are smaller gaps to be filled quickly

6 and bigger gaps that might take longer.

7 MR. COLLIS: No. Not smaller and bigger. More

8 immediate and more long-term.

9 COMMITTEE CHAIRMAN CHESBRO: That's a different

10 way of saying what I meant.

11 What I meant was that smaller gap in the sense

12 that the research could be done quickly and be put on line

13 as opposed to the other things, but we need both.

14 MR. PERLSON: One of the big challenges in any R

15 and D program is when to hand off know-how.

16 The academic community is not very good at

17 commercializing anything. There are some exceptions, but

18 they're very, very rare.

19 They are good at the fundamentals and the seed of

20 an idea. Then you need to have commercial activity to

21 translate that into market reality.

22 That is why I say that both kinds of activities

23 are necessary. Conway and I are talking about the same

24 thing, but different time scales.

25 COMMITTEE CHAIRMAN CHESBRO: Well --

1 MR. BEDELL: In terms of what are the kinds of
2 things that government in general or maybe the Board
3 particularly might be doing, I guess from my perspective,
4 the climate of interaction between government and industry
5 is evolving in some very positive ways right now.
6 I think that there is much more, a greater spirit
7 of cooperation and collaboration. I would strongly
8 advocate that you encourage that.
9 Certainly the Board is an example of that. This
10 kind of a forum, I think we all learn something.
11 As it gets continued into the regulation making
12 process, there is a technical advisory board to the group
13 drafting the regulations, that dialogue is proving to be
14 very helpful for all of us.
15 I would encourage you as you look at the drafts
16 of those regulations to try to keep the spirit of them kind
17 of in the maximum flexibility as to how the goals of the
18 legislation are going to be achieved.
19 An example of that, in Oregon the law
20 specifically states that every package has to have
21 X-percent of recycled material in it. I will submit to you
22 that manufacturers like us would be far better served if we
23 could give you an average weight percent of X, that would
24 take exactly the same number of pounds of recycled
25 material, but by putting it where it's easiest for us to

1 put it or focusing it in our big volume items and so forth,
2 that kind of thing.
3 We're not trying to in any way subvert the intent
4 of the legislation, but we want some management flexibility
5 in how we achieve the end. If you could work with us in
6 that context, that would be productive all the way around.
7 I think there is a role that state governments
8 can also play in trying to influence some of the things
9 that are going on inside the belt wave on the other coast.
10 An example there, there are package disposal
11 requirements for FIFRA registered products. Every EPA
12 registered disinfectant falls under that umbrella of
13 regulations. Clorox Bleach is a registered disinfectant.
14 If our consumers are to comply with the FIFRA
15 regulations for pesticides, they have to wrap the Clorox
16 Bleach bottle -- rinse it out, and then wrap it and
17 basically send it to a hazardous waste disposal facility.
18 It is absolutely silly to do that when you've got
19 a bottle that is made out of a very high grade of High
20 Density Polyethylene and is recyclable.
21 Can we try to introduce a little bit of rational
22 thought rather than narrow-minded, this is the regulation,
23 and by God, you're going to have to live with it, that kind
24 of attitude?
25 COMMITTEE CHAIRMAN CHESBRO: Our Board has been

1 trying, gradually, as we've got so many other things going
2 on, to increase our involvement at the Federal level.
3 Certainly input from the interests represented
4 here as to points of which we can work on issues such as
5 the one you mentioned, I think we would welcome.
6 Our Legislative Affairs Committee has been
7 looking at RCRA, our legislative staff. It's a gradual
8 process. We have so much on our plate here at the state
9 level.
10 You could help us by bringing things to our
11 attention. I don't think there is any resistence at all in
12 our wanting to have a higher profile on some of those
13 issues.
14 MR. BEDELL: I sense no resistence at all either
15 to the desire to work interactively and cooperatively on
16 these things.
17 I really want to say let's keep doing this. I
18 think it really serves us all better.
19 COMMITTEE CHAIRMAN CHESBRO: Okay.
20 At this point I think what I'm going to do is
21 remind those members of the public that are here, I said
22 this at the beginning, that you're welcome to participate
23 and ask questions and make any comments.
24 I would like to open it up to see if anyone would
25 like to address the Committee today.

1 MR. HUSTON: Bill Huston, on the staff of the
2 Waste Management Board.
3 I heard Mr. Bedell on a couple of occasions talk
4 more about performance kinds of standard rather than
5 prescriptive types of standards. Our rigid plastic
6 container legislation is more of a performance opportunity,
7 I think, because there are several alternatives to meet
8 that standard.
9 There is minimum content. There is the
10 recyclability. There's the reuse, and the list goes on.
11 I wonder if that list is fairly complete from
12 your standpoint, or are there other alternatives that we
13 might want to think about?
14 MR. BEDELL: The list is really not a list for
15 us, because we have done the source reduction piece of
16 that.
17 It's literally impossible for us to make a bleach
18 bottle even 10 percent lighter than it is right now, unless
19 we want to put it in a milk crate, which we just flat -- we
20 can't afford to do that.
21 We have no control over recycling rate. We could
22 roll the dice and say maybe they will achieve the rate,
23 maybe they won't. If they achieve it, well, we'll keep
24 selling bleach. If they don't, we'll just go out of
25 business.

1 That's not an acceptable position for us to
2 take. Refill, reuse is not a realistic option for us.
3 Getting bottles back to plants located hundreds
4 and thousands of miles away from the consumer just doesn't
5 offer us a realistic opportunity at all.
6 It's great for beer and beverage and milk
7 bottles, but that's about it.
8 That leaves us recycled content. What I would
9 rather see, if you want to set a standard, I have been an
10 advocate of the Koenig Model Legislation, with a couple of
11 caveats around that, if we need to reduce packaging waste,
12 tell me how much packaging waste reduction is required, and
13 let me manage my business in how to achieve that.
14 I could have a much greater impact on your solid
15 waste stream by source reducing corrogated than I can by
16 using recycled plastic. But I have a limited number of R
17 and D dollars that I have to invest to qualify whatever new
18 package that we're going to go after.
19 I don't have unlimited packaging engineers to
20 work on recycled material and source reduction and new
21 concepts.
22 MR. HUSTON: Just to ask a follow-up question.
23 One idea that we have tossed around some here is
24 the idea of tradeable credits. You're basically given a
25 standard of how much waste to reduce.

1 I think the idea here is those firms that can do
2 it very efficiently can go well beyond the standard and
3 sell their excess to firms that can't do it quite as
4 efficiently.
5 How do you feel about that approach?
6 MR. BEDELL: I would probably never sell it. I'd
7 lease it.
8 You would have to expect that if the standard is
9 15 percent in 1996, it's going to be 30 percent in 1998,
10 and 80 percent sometime in the future. If I can achieve
11 greater than whatever the current goal happens to be, I
12 probably will keep that excess in the bank.
13 I very seriously doubt I would be interested in
14 the tradeable credit proposition.
15 COMMITTEE CHAIRMAN CHESBRO: Any other members of
16 the public want to address the Committee?
17 MR. BEST: Rick Best with Californians Against
18 Waste.
19 I was really glad to see the emphasis put on R
20 and D. I think at the Planning Committee meeting two days
21 ago, there was a lot of discussion of needing to have a lot
22 of support from the Waste Board in terms of helping local
23 governments and industry attack AB-939 and the issue of
24 markets and really trying to provide assistance.
25 I was glad when you followed-up that you gave a

1 little bit more discussion about what sort of ideas of R
2 and D. There are questions in my mind of what the state
3 can do.
4 There has been some discussion of bond financing
5 and things like that. From the research that Californians
6 against Waste has done, there is some concern about what
7 the state can actually do.
8 There needs to be more analysis as to where the
9 gaps are in terms of financing and things like that, and
10 where we need to put our emphasis.
11 One thing I wanted to ask about, is there a
12 problem -- there wasn't much discussion. It was put in the
13 Board analysis of conversion costs for converting a virgin
14 manufacturing process to a recycled.
15 Is there any discussion of what the costs are?
16 Is that a problem, in relation to -- are facilities
17 typically converted from virgin to recycle?
18 Is there a new process needed to be done to go to
19 recycle? The reason I ask that, is there incremental costs
20 that need to be funded to assist in this conversion rather
21 than the complete cost of a new facility?
22 COMMITTEE CHAIRMAN CHESBRO: Who would like to
23 tackle that one?
24 MR. PERLSON: I assume by your question that you
25 mean a plant that would produce resins, pelletized

1 materials, that would in turn go to the people that
2 fabricate packages or whatever.
3 In that case, the principal process being used in
4 this country to recover plastic materials is called a
5 mechanical process. So, no chemical changes occur in the
6 material.
7 While the process that is used to make virgin
8 materials is a chemical synthetic process. The equipment
9 that is used is totally dissimilar. So, all of these, you
10 cannot retrofit a virgin resin plant to produce recycled
11 materials, unless you were to take plastic materials and
12 decompose them into smaller molecules, which would in turn
13 go into one of those chemical synthetic processes.
14 You may have been here earlier when I alluded to
15 tertiary recycling, a process to use heat and grade these
16 materials into simple molecules, there there is some chance
17 that that kind of recovery could occur.
18 So, those materials would go into those chemical
19 plants. I also want to emphasize that at this juncture
20 there are no plans to demonstrate that.
21 It's technical feasible, but only in pilot
22 plants. There is a question mark around the economics in
23 that kind of recovery process.
24 COMMITTEE CHAIRMAN CHESBRO: Can I follow-up and
25 ask. It's true for the resin plant.

1 What about if you're the manufacturer and you're
2 buying resin? What is the difference in the manufacturers
3 process and what would need to be, changes that would need
4 to be made for using the different feedstock?
5 MR. PERLSON: Perhaps I should accede to Terry
6 since they do run some blow moulding plants.
7 At this point, it appears that we can engineer
8 our way around using recovered materials to the point where
9 existing equipment could be used, with the exception of FDA
10 cleared applications. That's still very much an open issue
11 for mechanically recovered resins.
12 Clorox is able to produce what they call a
13 monolayer bottle, which is a mixture of recovered resin and
14 virgin resin, so recycled material is, in fact, in contact
15 with the product. As I understand, the package is able to
16 perform well enough.
17 MR. BEDELL: We are still working on that.
18 MR. PERLSON: I'll back up and say that other,
19 non-bleach packaging have been able to show that.
20 I will give you a specific example, oil
21 packaging, that has been proven to do that.
22 MR. BEDELL: Some of our products, we know that's
23 okay. Formula 409 is in a homogeneously blended bottle.
24 Our initial application with bleach, we were so
25 concerned about any potential contamination coming into

1 contact with the bleach. Bleach will oxidize anything it.
2 Doesn't care whether it's a stain on your clothes or
3 contamination in plastic.
4 Rather than take a chance of winding up marketing
5 a product that has been weakened because it's been
6 partially used, we converted packaging lines, either we, or
7 in some cases our bottle suppliers, from a single layer,
8 monolayer bottle manufacturing to three-layer bottle
9 manufacturing.
10 The cost of doing that is on the order of a
11 quarter of a million to half a million dollars per line. If
12 we wound up having to do that across the board, we don't
13 think we would.
14 There are nationwide 84 blow moulding lines that
15 make bottles for us. We would be looking at a rather
16 substantial investment if we have to go that way.
17 Not to paint the picture too darkly, because of
18 improvements in recycling processes and virgin resin
19 capabilities, we are optimistic that we may be able to use
20 monolayer even for bleach. It's still in the research
21 stage.
22 We are going to be very, very cautious about
23 taking that kind of risk. I think it's remarkable that our
24 management is even willing to consider it.
25 There is no way that we're going to be able to

1 prove conclusively that that's okay. We're in the process
2 of managing the risk down to a very, very low level.
3 It's like trying to prove that something is
4 safe. You can never prove that something is absolutely 100
5 percent safe, because in fact nothing is actually 100
6 percent safe.
7 MR. COLLIS: From our point of view in terms of
8 unsorted, unwashed plastics, it's really the opposite.
9 Capability from utilizing virgin plastic
10 equipment and machinery, it would be a whole different
11 system that might be development at some point to be able
12 to use the same kind of equipment, machinery, technology,
13 et cetera.
14 But now, there is zero applicability. The reason
15 in very broad strokes, the virgin plastic or even
16 re-engineered resins used in something akin to the virgin
17 form, the feedstock is your friend working with you. In our
18 process feedstock is always something that that is the
19 problem.
20 It's the issue that you have to deal with. So,
21 it's kind of working against you, and you have to deal with
22 it.
23 COMMITTEE CHAIRMAN CHESBRO: Does that answer
24 your questions?
25 MR. BEST: Yes.

1 COMMITTEE CHAIRMAN CHESBRO: Thank you.

2 Anyone else like to address the Committee this

3 afternoon on the subject?

4 MR. COTTER: My name is Dan Cotter, Secondary

5 Resource Markets.

6 My question relates to the noncompatible plastics

7 put together in a single product. The simplist one is the

8 cap that's being put on HDPE bottles that cannot be

9 processed together.

10 Are we to see progress in that? Is there a

11 particular reason why we have not compatible caps on the

12 HDPE bottles?

13 COMMITTEE CHAIRMAN CHESBRO: It's certainly a

14 processing cost.

15 MR. COTTER: The way that it's been handled at

16 this point in time, the reason I brought it up, yesterday

17 at a recycling center the Santa Cruz, they have a huge pile

18 of bagged plastic bottles that they process when they get

19 people from the jail diversion program in there and work on

20 it few hours a week.

21 It seems like a pretty ridiculous process to get

22 recycling to happen. It's never going to happen on a large

23 scale.

24 What is the particular issue there? Can that

25 issue be resolved?

1 MR. PERLSON: I assume that you're referring to
2 the caps that are on milk bottles?
3 MR. COTTER: And others, I think, too.
4 MR. PERLSON: It's not as serious an issue for
5 others.
6 The reason that it's an issue in the case of
7 dairy packaging is that all those caps are color-coded
8 based on the milk fat content of the product that's inside,
9 from whole milk down to skim milk. It is a very effective
10 way of telling the consumer what they are buying rather
11 than reading the label.
12 COMMITTEE CHAIRMAN CHESBRO: I can't ever
13 remember which color is which.
14 MR. PERLSON: It depend on the dairy as it turns
15 out.
16 When the material is recovered and the cap is not
17 removed, it does impart pigmentation to the material. One
18 of the desireable characteristics, at least perceived in
19 the case of many people who make packaging, for example,
20 out of recovered milk bottles, is that that color is
21 undesireable.
22 It does impart a slight greenish tinge to the
23 finished product if you mix all those various colors
24 together.
25 MR. COTTER: There is also the issue of

1 noncompatible plastics, different kinds of plastics in the
2 cap and the bottle.
3 MR. PERLSON: Yes, to a degree.
4 For example, some milk jugs have a polystyrene
5 liner in them which acts as a sealing device. For example,
6 our process removes that because it has to be foam
7 polystyrene and it's easily fluidized. You just use an
8 upward flow stream of air and it comes off.
9 There are also technologies available that we
10 have evaluated to remove the caps automatically. Again,
11 there are technical fixes to the problem.
12 Right now, the issue is technology is not
13 available to the plants that are in production right now.
14 So, they are asking people to remove the caps. That will
15 disappear in my view.
16 The automatic processing and technology will
17 overcome that. It's just not implemented at this point.
18 We're in the midst of negotiating with a company
19 that's a supplier of that equipment to buy that equipment,
20 in which case we would no longer require our suppliers to
21 remove caps.
22 This is another example of the power of
23 technology that will decrease the overall cost of
24 recovering the material, and it will increase the quality
25 at the same time.

1 MR. BEDELL: I think there are a couple of
2 different answers to your question.
3 There are some things, some combinations of
4 materials that can be fixed, and there are others that
5 can't.
6 An example of one that probably can be fixed,
7 there is a manufacturer of juice products that is using a
8 PET bottle for their product, and they were using a PVC
9 liner in the cap. Those are two materials that you
10 absolutely don't want to have together.
11 They can probably find an alternate liner
12 material, and, in fact, are working on that.
13 In the case of our products, can we put a High
14 Density Polyethylene cap on our High Density Polyethylene
15 bottle? The answer is that we haven't been able to find a
16 way to do that yet.
17 In order to have the reclose security that we
18 need with our kinds of products, we need a cap with real
19 good stiffness and rigidity and doesn't cold flow, it
20 requires properties that are different from High Density
21 Polyethylene.
22 For our caps, we have to use either Polypropylene
23 or Polystyrene. Polystyrene would actually be a little bit
24 easier to separate out in the manufacturing process, but in
25 some ways Polypropylene is more desireable. It's a little

1 bit more cost-effective if you're using a lined cap.
2 There is not a good answer for you at this
3 point. It all depends. Sometimes it will be easy. In
4 other cases, it can be almost impossible.
5 MR. COTTER: Other than coming up with equipment
6 to automatically sort it, do you see any way that you're
7 heading down the road towards a fix where all manufacturers
8 can use some kind of standard, or two or three different
9 kinds of bottles with caps so that you are dealing with
10 something that is known instead of every single bottle you
11 approach.
12 What is this? What's the cap? What's the bottle?
13 No one can read those little numbers on the
14 bottle, let alone on the cap. There is no way to deal with
15 this in sorting unless it's mechanical.
16 MR. BEDELL: My answer to that is I don't see
17 homogeneity in the short-term.
18 Generally, the factors that drove the decision of
19 what kind of bottle do I need, what kind of cap do I need,
20 and liner in most cases, relate to what the product
21 requirements are.
22 How chemically aggressive is it? How much solvent
23 does it have in it? Does it need an oxygen barrier, or an
24 aroma barrier?
25 Part of the beauty of plastics is that you can

1 tailor the molecules to provide exactly the performance
2 that you need at a minimum use of materials. You're
3 constantly optimizing material versus cost.
4 You're suggesting that we want to back away from
5 that. I think the better answer is to come up with better
6 sorting technology.
7 MR. SHEDD: The other side of this, and that is
8 that recycling is relatively new industry.
9 I am an engineer. I think I know how engineers
10 think. I believe that there hasn't been a lot of design
11 for recycling in the products that are presently on the
12 market.
13 As we go longer and longer, we will find that
14 perhaps the plastic will change from a color-coded
15 Polypropylene cap to a natural High Density cap. It's
16 possible.
17 Another thing that causes a great deal of
18 contamination and problem in recycling are the labels that
19 are on the bottles. The labels are all the way from what
20 we call an inmould label, which is very, very difficult to
21 remove, to a plastic label, which maybe we don't care if we
22 remove or not.
23 If it's the right compatible plastic, it can be
24 recycled right with the bottle itself.
25 MR. BEDELL: An interesting counter-point on

1 that, to the extent that you have ink on the label, you
2 don't want the label on when you recycle.
3 You're kind of moving in two different
4 directions. It's something that we've thought about.
5 Do we want plastic labels that you can't separate
6 or paper labels that you can?
7 I think as color sorting starts to become
8 available, you're going to want to be able to separate the
9 label from the bottle.
10 MR. COTTER: My suggestion would be adding to the
11 design for recycling elements.
12 MR. BEDELL: That's a good point.
13 I do agree with one of the things at least that
14 John said. Historically, disposability of packaging has
15 not been a critical design criteria. That clearly has
16 changed with some of us more than others, and we can make
17 it better.
18 I don't want to over promise what that will
19 deliver.
20 COMMITTEE CHAIRMAN CHESBRO: I have a similar
21 question that has been running around my mind during the
22 discussion.
23 To what extent does the addition of the so-called
24 biodegradable plastics create problems for your processes,
25 and what are the prospects for finding ways to deal with

1 them if they are a problem?

2 MR. SHEDD: Depends on whether you believe in

3 biodegrabability.

4 COMMITTEE CHAIRMAN CHESBRO: That's why I said

5 "so-called."

6 I didn't raise it to address the question of

7 whether it's a good idea to make something that is

8 supposedly biodegradable products. We would probably all

9 agree to that question, but relative to just the practical

10 question of whether it makes any difference whether it's

11 biodegradable and whether it actually technically is.

12 The question I'm raising is if there is a piece

13 of plastic in the process that has been made with and

14 labeled as biodegradable because of way that the chemistry

15 of the plastic is put together, what does that do to your

16 process? Is that a problem, similar to what Dan Cotter was

17 raising as to mixtures of different types of plastics?

18 MR. SHEDD: Mr. Perlson knows more about that

19 than I would because I haven't worked with biodegradable

20 able plastics.

21 MR. PERLSON: It depends on how that particular

22 characteristic of material is achieved.

23 If the plastic material is inherently

24 biodegradable, there are many examples of commercially

25 available products, they generally are relatively easily

1 separated from the commodity materials that are used based
2 on a variety of physical properties.
3 More problematic are the starch amended
4 thermoplastics, where these materials have very similar
5 characteristics to the host material. The amendments are
6 added at very low levels. The material doesn't change a
7 whole lot in terms of how dense it is, and so on.
8 That is more problematic, and I would say that
9 that would be detrimental. For example, if milk packaging
10 were to have starch included in the package.
11 I don't think that that realistically will
12 happen. The folks who were interested in marketing those
13 kinds of materials took a run at the market and failed.
14 COMMITTEE CHAIRMAN CHESBRO: What about mixed
15 plastic stream?
16 MR. PERLSON: I would say it's less a factor in
17 mixed plastics.
18 COMMITTEE CHAIRMAN CHESBRO: What you're saying
19 is that it didn't succeed in the market enough to make a
20 difference in the waste stream?
21 MR. PERLSON: It disappeared.
22 MR. BEDELL: In some instances, for example, the
23 six-pack carrier rings for beverage packaging, those are
24 photodegradable.
25 The way that they achieve that degradability is

1 with an ultraviolet sensitive additive. You could recycle
2 that material with other High Density without any
3 problem.
4 COMMITTEE CHAIRMAN CHESBRO: Okay. Mr. Meyerson.
5 I figured that sooner or later we were going to
6 get you up here.
7 MR. MEYERSON: My name is Bernie Meyerson. I'm
8 multi material.
9 I want to pick-up on a comment that Mr. Bedell
10 made about the one of the wonderful characteristics of
11 plastics is precisely that you can engineer individual
12 polymers quite differently by putting certain additives in
13 and changing the characteristics slightly to meet very
14 specific packaging or use requirements.
15 I, for one, would not like to see a very
16 substantial value of any commodity compromised to any great
17 degree to make one particular form of recycling more
18 amenable or profitable for the people involved in it when
19 there are alternatives to pursue.
20 We have been talking about research and
21 development, and Mr. Perlson indicated that there is some
22 substantial research and development being carried on now
23 in tertiary recycling, which really doesn't require that we
24 begin to modify all those very small changes because it
25 brings material chemically back into other forms and that

1 can be put together again in much more virgin-type ways or
2 even to move into other kinds of products.
3 Even though it's not in market form now, I would
4 like to see any public effort in research and development
5 certainly not preclude working more in that form of
6 recycling, which takes full advantage of plastics as they
7 exist and yet enables us to recycle them back into a very
8 productive way.
9 My feeling is that we are not as far from
10 commercialization, even when we talk about research and
11 development in the traditional form of recycling, we're
12 talking in terms of one year, two year, three year terms,
13 and if we're talking in those terms, I think that tertiary
14 recycling is right in there. I do not want that to be
15 precluded.
16 Two very small comments that jumped a little bit
17 from what was discussed this morning. One is that there
18 seems to be in the mind set of the Board a very heavy
19 concentration on residential-based materials, which was, I
20 think, reflected in the heavy concentration on HDPE
21 containers, although there are a lot of containers produced
22 and generated industrially and commercially.
23 I think we need to make sure when we are talking
24 about recycling plastics that we include the tremendous
25 amount generated, not only in commerce and industry, but

1 agriculture, which have some special problems associated
2 with that.
3 Finally, it's been my impression that the
4 plastics industry and recycling industry has basically
5 started their mind-set on the receipt of the material at
6 their processing facility. Although, there has been some
7 lip-service into the problems of aggregation and collection
8 before it gets to them, and the cost-effectiveness of that,
9 I for one was very disturbed, and I know some of the other
10 people in the audience that deal with collection a lot were
11 disturbed, at the view that commingling everything would
12 really seem to be the way to go.
13 That would be devastating to the quality of a lot
14 of the other material that is being collected. I'm not
15 even sure that it would be good for plastics.
16 I can't imagine that glass shards would be
17 well-received in the plastics industry. You can be sure
18 that you will have them if you commingle everything that
19 way.
20 Even if you don't commingle them, collecting them
21 from small point sources, and aggregating them and whether
22 you bale them or not, getting the right weight, getting
23 enough weight to make transportation cost-effective, most
24 of the studies done have shown that these are very marginal
25 in terms of the prices that the existing recycling industry

1 is willing to pay at the door.

2 Any discussion of it in plastics recycling should

3 include that element as well.

4 COMMITTEE CHAIRMAN CHESBRO: I appreciate that

5 perspective. Thank you.

6 Anyone else?

7 Yes, Mr. Michael.

8 MR. MICHAEL: Mr. Chairman, thank you.

9 Jack Michael, representing the Los Angeles County

10 Board of Supervisors. I simply wanted to make an

11 observation. I think that this forum has been extremely

12 useful. Some of the comments made earlier that there need

13 to be more of them, I certainly would agree with.

14 One thing that I wanted to comment on is that in

15 some of this discussion there sometimes tends to be the

16 idea that there is a difference between government and the

17 private sector and others. At least from my Board's

18 perspective, our government is the people, and that to me

19 means it's the same clientele that you folks and the

20 private sector look to in terms of your economic

21 bottomline.

22 I have seen some studies. I certainly don't have

23 all of the figures. But the study that I have seen would

24 suggest, maybe contrary to popular belief, that government

25 procurement of any product represents any sort of market

1 share. I don't believe that it does, although people
2 commonly think that the government is the largest procurer
3 of everything, certainly paper and products like that.
4 The paper people have told me that all government
5 procurement of paper is something less than 6 percent of
6 the paper market. If any of you in the private sector could
7 tell me that 6 percent of the market share would sway your
8 market opinion, then maybe I would be encouraged.
9 What I'm leading up to is the discussion that
10 many have that suggest that government has to have mandates
11 upon them for certain procurement. I do believe that
12 government can play a role in setting an example and
13 providing leadership, but to mandate that government needs
14 to procure certain things to develop markets creates a bit
15 of a concern to me, because, again, our customers are your
16 customers.
17 I think it's becoming very evident that our
18 customers anyway from the government perspective do not
19 want to pay whatever somebody thinks the price should be.
20 I would suggest that maybe what we really need to be more
21 concerned about or what the economics are in what it is
22 that we're doing, and, unfortunately, minimum content to
23 some extent provides more of that equal or level playing
24 field that some want to secure, that says that if everybody
25 buys what is minimum content, then everyone is contributing

1 to the procurement of products that have recycled content.
2 I think that the end result is that we will all
3 procure those products that have recycled content when the
4 economics are such that that is the best thing for us to
5 do.
6 I'm only cautioning that at some point simply
7 mandating procurement policies on local government may not
8 achieve the end result, because economics and business
9 decisions in the government sector are important, or if
10 they are not, they should be important.
11 Thank you.
12 COMMITTEE CHAIRMAN CHESBRO: Thank you very much,
13 Jack.
14 Anyone else who would like to address the
15 Committee this afternoon?
16 Representative of our sister agency.
17 MR. POPEJOY: Good afternoon. My name is Greg
18 Popejoy. I'm with the Department of Conservation, Division
19 of Recycling, Market Development Section.
20 My question is short of an adjunct to Dan
21 Cotter's, and carries it just a little bit further. The
22 question at hand seems to be what can the Board do as far
23 as HDPE and mixed plastics go, if anything?
24 My question is what is the Board doing now or
25 anticipating doing in the future having to do with

1 restricting certain material types for packaging?

2 An example is, I know a recycler in West

3 Sacramento, Jim's Redemption Center, who prided himself on

4 taking all six or seven plastic types, trained his crew to

5 sort through this stuff, and now he's down to just PET and

6 HDPE because the markets have fallen out.

7 It cost him a lot of money to train these

8 people. It's quite a skill. He was anticipating mixed

9 plastics programs starting up, and he would be able to use

10 his skilled people to quickly pick through the stuff.

11 If they did not have the problem of the mixed

12 plastics, for instance, PVC bottles and Polypropylene

13 bottles being used for water bottles, a contaminant that

14 they have to look for, maybe it would be a little easier

15 and they'd save a little money in the sorting process, and

16 companies wouldn't have to tear apart bales looking for

17 those few little bits.

18 In other words, why are water bottles allowed to

19 come in other than PET or HDPE? Why do we allow the PVC

20 and the Polypropylene. Can we look at some kind of

21 restriction there?

22 This discussion comes up a lot as I travel around

23 and meet with different people. Why can't we do this with

24 some sort of economic incentive in place to use Polystyrene

25 rather than Polypropylene in the cap?

1 If it's a question of money, maybe there is some
2 way that that can be balanced out to entice you to use the
3 Polystyrene rather than the Polypropylene since that's the
4 big contaminant factor and also a cost factor.
5 We're trying to get the costs down for
6 collectors, maybe that's something that should be looked at
7 or maybe it's something that you are looking at. I don't
8 know.
9 I know there is interest in that. It's going to
10 come up if it hasn't already.
11 COMMITTEE CHAIRMAN CHESBRO: I think it should be
12 on the list of options that we would consider in our Action
13 Plan for plastics.
14 I would also say that, gee, if both Cal EPA and
15 DOC went to the government, we would probably have a much
16 stronger shot at getting something done.
17 MR. POPEJOY: At the staff level we work together
18 a lot.
19 If the big wigs, if you guys would just get
20 together.
21 COMMITTEE CHAIRMAN CHESBRO: I meant that as a
22 serious comment. It's appreciated and has some merit and
23 ought to be looked at jointly.
24 MR. POPEJOY: Thanks.
25 MR. PERLSON: May I make a comment about the

1 statement?

2 COMMITTEE CHAIRMAN CHESBRO: Yes.

3 MR. PERLSON: I have heard others follow the same

4 approach.

5 What you're suggesting is freezing technology.

6 You're going to say, well, you're going to package milk in

7 this paperboard, and we're going to package it in that

8 forever and ever and ever, because that makes recovery

9 easier.

10 You need to look at it holistically. You cannot

11 take recycling and say that everything that we do as a

12 society should be driven by that activity and that activity

13 alone.

14 We need to look at all other benefits and

15 negatives associated with the options that are available,

16 plus there is always new materials, new ways of doing

17 things that come to the market place. If you restrict what

18 can be used, you shut the options off. They may be far

19 more efficient and far better than what we're doing today.

20 That's my biggest fear with the kind of comments that were

21 made.

22 COMMITTEE MEMBER RELIS: I would like to offer an

23 observation on that, too.

24 The Board, as part of its long-term research, is

25 looking at many different options that have been used both

1 domestically and abroad. For instance, in the German
2 system, it will be interesting to see what happens to the
3 container stream as a result of the recyclability
4 requirement there.
5 Would there be material substitution? I don't
6 know. I think we will have a better idea of that in maybe
7 another six months to a year as their manufacturing base
8 begins to adapt to the reality of that law.
9 MR. BEDELL: Regarding the German Green Dot
10 program, I would also submit to you that the Green Dot
11 Program was the industry's response to the requirement that
12 packaging be taken back by the retailer and the
13 manufacturer. It is going to be an incredibly expensive
14 proposition.
15 The order of magnitude of the system that is put
16 together to reclaim those materials is going to cost, my
17 back of the envelope penciling says about $300 a ton to get
18 the materials back to the point where they can be recycled.
19 I seriously question that there is any material that will
20 support a fifteen cent a pound collection fee.
21 COMMITTEE CHAIRMAN CHESBRO: We can get into that
22 debate, but my own personal view is that at this point
23 that's still an abstraction. We ought to study and watch
24 and be concerned.
25 The way that I envision these Action Plans we're

1 working on now, it's the bite-sized chunks that we can take
2 out of the problem that can keep us moving towards having
3 adequate markets. That is what we ought to focus our
4 attention on. It's not at the exclusion of the big
5 economic mechanism type approaches, but I think if we look
6 at the horizon and don't keep our eyes on the path in front
7 of us we will not get much progress in the future when we
8 need it.
9 MR. FINNELL: May I comment on that?
10 I visited a number of plants. They have a common
11 problem with needing to have enough feedstock with a
12 predictable quality standard to get an end product.
13 I have spoken to the gentleman at Jim's
14 Redemption specifically and we talked about the different
15 kinds of material when he was in the early stages of
16 identifying and how he might be able to identify and
17 pulling out a variety of different items.
18 He did not have the volume to merit the storage
19 space that he would have to have, as an example, to
20 accumulate material to really make it marketable, because
21 we have to work generally in truckload quantities, which is
22 40,000 to 45,000 pounds.
23 We discussed the different types of material that
24 he had. The reason he's back to PET and HDPE is because
25 that is about the most sophisticated market that there is

1 right now, even though all of those markets are in their
2 infancy. At least there is a price that is fairly
3 predictable. Where there is a price, if you went around the
4 table here, someone would be able to come within 10 or 20
5 percent of what the prevaling market price is.
6 In a lot of cases for PVC material, it will come
7 down to a lot of the specifications of what the material
8 is, color, what form it's in and a number of other differnt
9 parameters that influence whether or not it's actually
10 marketable.
11 The biggest problem right now overall is that the
12 cost of the resins is so low in almost all catagories,
13 logistically you cannot identify a good feedstock source,
14 transport it to a plant facility that has the right
15 technology now to convert into an acceptable material that
16 will be used by Clorox, for example, and stay within the
17 numbers of where the prevaling market prices are in virgin
18 resins.
19 If you really start with the price of virgin
20 resin and work it all the way back down, I would say right
21 now there is probably a three to five cent spread before
22 it's going to be economically feasible for people to
23 actually say, I'm breaking even, or I'm making money in
24 this recycling effort, although there are a lot of people
25 wanting to do it.

1 COMMITTEE CHAIRMAN CHESBRO: And the public wants
2 it all recycled. When they buy plastic, I hear it all the
3 time, and I'm sure you all do too, including from your
4 kids.
5 Yes.
6 MR. SLOTE: Peter Slote, NorCal Waste Systems.
7 Not to beat a dead dog, well, to beat it but not
8 too hard. This question about PVC and other things, as a
9 recycler, the gentleman from the DOC was introducing an
10 idea about maybe a more administrative technique.
11 But PVC in the stream is like putting 10 percent
12 or 2 percent or 5 percent ceramic into glass. It's very
13 difficult for us to deal with.
14 I don't think that recycling of plastic is going
15 to get real far. We're a pilot program. The PPP is
16 graciously helping us evaluate some of this stuff.
17 I can tell you, the Board should think about the
18 PVC problem as a contamination not just a market problem.
19 If there is any way to assist recycling, we're a large
20 city. We have a lot of plastic. It would take us weeks
21 and weeks and weeks to get a truckload of this stuff.
22 At this point, I can tell you that recyclers
23 consider PVC a contamination.
24 MR. COLLIS: With regard to PVC, it's one resin
25 that we cannot use much of, but as it happens, we can

1 handle the amount of PVC in our mix, more than the amount
2 of PVC in the mix that is naturally occurring in the waste
3 stream.
4 We have a limitation of say 5 percent the amount
5 of PVC that we can utilize without untoward side-effects.
6 There is actually occurring about 2 percent PVC in the
7 municipal waste streams. It may be that that's less of a
8 problem than it appears, at least from our perspective.
9 COMMITTEE CHAIRMAN CHESBRO: Is it a growing
10 fraction?
11 MR. COLLIS: No.
12 MR. PERLSON: It's decreasing in use in
13 packaging, at least.
14 Again, as technology rears its head, and there
15 are machines available now that can take PET route streams
16 and pass them through a detector system and kick the PVC
17 out.
18 That would not be available on a scale system or
19 processing facility as you have, but your customers would
20 be large enough to invest in such equipment. Again,
21 technology is commercially available now to deal with that
22 issue, I assume satisfactorily. We are not in that
23 business.
24 COMMITTEE CHAIRMAN CHESBRO: From the point of
25 view of the guy who is the seller there, it doesn't make

1 any difference if the person who is buying it from him says
2 I don't want it in there or I'm not going to buy it.
3 MR. PERLSON: It's fair enough to point out that
4 some reclaimers have the equipment and some do not.
5 Presumably, those markets that are giving you
6 grief do not have the capability of removing it other than
7 by hand picking. That's why they give you grief about it,
8 and it's a legitimate concern.
9 I know, for example, Envirothene is currently
10 negotiating on a piece of equipment to do what I just
11 described to you. It is spotty. It's not a universal
12 problem, but I think it will be resolved in time.
13 It's difficult as you go through this very
14 fledgling market and things are changing so rapidly. I
15 agree that it is far from being optimized at this point,
16 but I'm certainly not going to sit here and advocate that
17 we ought to eliminate a very valuable material.
18 PVC has been with us for decades and decades, and
19 has proven over time to be a very, very valuable polymeric
20 material.
21 I am not in that business. I have no vested
22 interest, but I will tell you that to reject it out of hand
23 would be a very, very poor decision in my opinion.
24 COMMITTEE CHAIRMAN CHESBRO: Even for those
25 particulars uses?

1 MR. PERLSON: Yes.

2 MR. MARSHALL: My name is John Marshall. I'm

3 with Dow Chemical. We are also a resin supplier.

4 This has been informative and useful, and I

5 encourage more of these forums. I think one group that you

6 might try to get in is the retailers, the people who

7 actually sell this and get their input.

8 I think the biggest barrier in this whole thing,

9 and it's been said, but I want to re-emphasize it, and if I

10 were to say three things, it's price, price, price. It's a

11 question of economics.

12 I have no doubts that technology-wise this

13 problem can be solved. Things like color, odor and

14 contaminants, that can be handled.

15 The economics today, we're in a terrible market.

16 I encourage the Board to look at anything and everything

17 they can do to incentivize people to use the material,

18 whether that's tax credits, grants, loans, that has to be

19 done to maximum extend at least on the short-term here.

20 The other thing that the Board can do from an

21 education standpoint is, I recommend you concentrate on the

22 major items. That is number one and number two bottles.

23 I think we're fooling ourselves to try to tackle

24 all of this waste stream overnight. We're running before

25 we're walking, if you will.

1 If we can capture PET and HDPE, we're getting to
2 almost 50 percent of the waste stream there. On the R and
3 D issue, I think where the Board can be most helpful is on
4 the collection side.
5 To be honest with you, industry doesn't know how
6 to collect materials, at least resin producers don't know
7 how to collect materials. Product users don't know how to
8 collect it and that's where we need to help.
9 We are doing some research. We are more than
10 willing to share that data. But you analysis of what is
11 happening in the local markets here as to what different
12 communities are finding works best would be useful to share
13 with other communities.
14 Industry's biggest role, I think, is in
15 developing markets, working on quality issues, and I think
16 we can do that best.
17 Thank you.
18 COMMITTEE CHAIRMAN CHESBRO: Thank you for your
19 contribution.
20 Anyone else who would like to address the
21 Committee this afternoon?
22 If not, let me say that this has been very
23 productive. I have learned a lot. I know staff has
24 gathered a lot of information to put into their proposed
25 Action Plan that they are going to bring back to the

1 Committee for review.

2 I hope you will continue to be involved and

3 comment on what you see us producing and let us know

4 whether you think it's workable or not.

5 With that, I'll call a break and get back to the

6 Committee Meeting in ten minutes or so. Thank you.

7 (Thereupon the Workshop was adjourned

8 at 3:15 p.m.)

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1 CERTIFICATE OF SHORTHAND REPORTER

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3 I, VICKI L. MEDEIROS, a Certified Shorthand
4 Reporter of the State of California, do hereby certify:
5 That I am a disinterested person herein; that the
6 foregoing hearing was reported in shorthand by me, Vicki L.
7 Medeiros, a Certified Shorthand Reporter of the State of
8 California, and thereafter transcribed into typewriting.
9 I further certify that I am not of counsel or
10 attorney for any of the parties to said hearing nor in any
11 way interested in the outcome of said hearing.
12 IN WITNESS WHEREOF, I have hereunto set my hand
13 this nineteenth day of November, 1992.
14
15
16
17 Vicki L. Medeiros
18 VICKI L. MEDEIROS
Certified Shorthand Reporter
19 License No. 7871
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