

UNITED STATES DEPARTMENT OF ENERGY

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PUBLIC MEETING ON ENERGY CONSERVATION STANDARDS
FOR
COMMERCIAL REFRIGERATION EQUIPMENT

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TUESDAY
MAY 16, 2006

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The meeting was convened at 9:00 a.m. in room 1E-245 at US Department of Energy Headquarters, 1000 Independence Avenue, SW Washington, DC, Bryan Berringer, moderating.

PRESENT:

BRYAN BERRINGER
MIKE CHRISTOPHER
THOMAS DePRIEST
BILL GOETZLER
RONALD LEWIS
CHARLES LLENZA
CHRIS MACMINN
ARIS MARANTAN
FRANCINE PINTO
JIM RABA
MIKE RIVEST
SRIRAM SOMASUNDARUM
DAVE WINIARSKI

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MEMBERS OF PUBLIC PRESENT:

KARIM AMRANE, Air Conditioning & Refrigeration
Institute
CHRIS BALESTRINI, Food Processors Association
RICHARD BIENVENU, Ingersoll Rand/Climate Control
Technologies
DONALD BRUNDAGE, Southern Company Services
ANDREW DELASKI, Appliance Standards Awareness Project
THOMAS ECKMAN, Northwest Power and Conservation
Council
BRUCE HIERLMEIER, Zero Zone, Inc.
LARRY HOWINGTON, Hill Phoenix
MARSHALL HUNT, Pacific Gas & Electric
WILLIAM KISTNER, Carrier Corp.
SCOTT MITCHELL, Refrigeration and Thermal Test Center
STEVEN NADEL, American Council for an Energy Efficient
Economy
BILL PAYNE, Johnstone Supply
MARY SAROKA, Carrier Corp.
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P-R-O-C-E-E-D-I-N-G-S

9:06 A.M.

MODERATOR BERRINGER: Good morning and welcome. Can everybody hear me okay? Court reporter, are you picking up all right? Great.

Good morning. This is the Energy Conservation Standards for Commercial Refrigeration Equipment Workshop today. I'd just like to welcome everybody here. I will be facilitating today. My name is Bryan Berringer. And I'll ask if you sit at the table, if you have your company name, if you haven't written your name on your little sign out front, it will help the court reporter to record that.

Also, as you're speaking, we're going to do informal introductions a little bit later on, but make sure you speak into the microphone and state your name before you speak, name and company name. That will help the court reporter.

And then just this morning we're going to have -- we'll introduce Ron Lewis, the supervisor of the Regulatory Group. He's going to have some opening remarks, along with Jim Raba, the team lead for the Commercial Refrigeration.

So Ron?

MR. LEWIS: Good morning. I want to

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1 welcome you all today on behalf of the Building
2 Technologies Program. I'm very hopeful for today as
3 we share with you our approach and thoughts on
4 developing the energy efficiency standards for the
5 commercial refrigeration equipment, that it's not a
6 monologue or a one-way street, that you'll grace us
7 with your thoughts and insights so that it's a
8 productive day for all of us.

9 In addition to this individual rulemaking
10 activity, how many of you have gone to the website and
11 have seen the report to Congress that's posted on our
12 website? Could I just see a show of hands, how many
13 of you?

14 (Pause.)

15 There are many activities under way, all
16 at the same time here. Some of them underway, some of
17 them soon to be started and it would be, I'm sure,
18 interesting reading for several of you to see the
19 kinds of things that we're working on these days with
20 energy being as popular of a topic as it is these
21 days, and we all have an opportunity to do something
22 about it and play a role in it.

23 I think you'll be impressed by the breadth
24 of the activities that are underway and the aggressive
25 schedule that we've posted for the next five years.

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1 So we're hopeful that as we go through this day and
2 over the next many months to develop these standards,
3 everybody will consider the significant role that we
4 can play in helping the energy situation and helping
5 citizens of the country to save energy, and looking at
6 doing it in a logical, reasonable, and informed way.

7 So again I want to thank you on behalf of
8 the Building Technologies Program, and I'll turn it
9 back over to Bryan.

10 MODERATOR BERRINGER: Go ahead Jim, for
11 your welcoming remarks.

12 MR. RABA: Good morning and welcome to the
13 Department of Energy rulemaking on commercial
14 refrigeration equipment. Thank you, Bryan. Again, my
15 name is Jim Raba. I'm the team lead and joining me
16 today is team co-lead Charles Llenza. Also to
17 introduce to you some of the other teammates from the
18 Department of Energy: Ron Lewis, our supervisor from
19 Building Technologies. Francine Pinto, and Tom
20 DePriest will be here to join us later. Office of
21 General Counsel, Mark Friedrichs, Office of Policy
22 International, again part of the DOE staff.

23 And we're very pleased that we have such a
24 good team backing us up from both Pacific Northwest
25 National Laboratories and Navigant Consulting

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1 Incorporated, expert engineers all. I'll introduce
2 them in a moment. But indeed, thank you again so
3 much, because this rulemaking is really something
4 we're going to share together. We have to do this
5 together to make it work for the manufacturers, for
6 the efficiency interests of our country, and we look
7 forward to with you as our shall we say teammates as
8 well in that regard.

9 Today's primary presenters will be Mike
10 Christopher and Aris Marantan from Navigant Consulting
11 Incorporated, and Dave Winiarski from Pacific
12 Northwest National Laboratory. Bryan Berringer, our
13 facilitator, will kind of be our conscience and our
14 guide to make sure we're on track, on time throughout.

15 And everybody gets a chance to speak and be heard.

16 So Bryan, I'll turn it back over to you
17 for some of the housekeeping things.

18 MODERATOR BERRINGER: Okay, everybody
19 should have gotten a handout package that has the
20 agenda. It should have the website where most of the
21 information is, it has the website at the bottom of
22 your package. It should have the slide presentations
23 today. Also in that package you'll a Federal Register
24 notice from today's which will also give you
25 information on how to send comments to the Department,

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1 and we'll go over this a little bit more.

2 We also have a survey in the package. If
3 for any reason you have to leave early today, or
4 somebody comes in late, go ahead and fill that in and
5 leave it with Sheila in the back before you leave.

6 Again, what we'll do now at this time is
7 go around and we'll do some informal introductions.
8 This will not be on the record. Just as a courtesy,
9 I'll ask the people that came in, Steve, if you could
10 just put your name on, here's a marker. if you could
11 just put your names on those, I will be queuing people
12 throughout the day but it will help the court reporter
13 to record your name. Again, when you're speaking
14 please state your name and your company when making
15 remarks. I'll start with Karim, we'll go around the
16 table and then we'll go to the people in the audience.

17 (Off the record.)

18 MODERATOR BERRINGER: Okay, right now I'd
19 like to go over, everybody should have. Yes, this is
20 back on the record. Thank you. We just had
21 introductions. Again, hopefully in your package you
22 have an agenda and the presentation slides.

23 What I'd like to do is just sort of go
24 over that agenda, if there's any additions that need
25 to be put on there or if anyone has questions about

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1 the agenda, now would be the time to bring that up.

2 So, we've had our introductions. We're
3 currently going over the agenda. After this, we'll
4 have opening remarks. If nobody has requested opening
5 remarks at this time, but we will give if people want
6 to have some, we'll give a couple of minutes to give
7 opening remarks if anybody wants to have opening
8 statements, then we'll have the introduction.

9 Jim Raba will be doing the introduction
10 and analytical methodology, talking about the process
11 and what type of analysis we're going to talk about
12 today, and the rulemaking process itself.

13 Then we'll have a presentation on market
14 and technology assessment. We'll have a morning break
15 at about 10:30, followed by screening analysis and
16 engineering analysis. Then a lunch break about noon.

17 Then we'll precede with the mark-ups for equipment
18 price determination, energy and use end-load use
19 characterization, life cycle cost and payback
20 analysis. Then at about 2:15, we'll talk about
21 shipments and national impact analysis, have a break
22 about 2:45. Continue on with a brief discussion about
23 revisions to the ANOPR analysis and life-cycle cost
24 subgroup analysis, followed by manufacturing impact
25 analysis at 3:15. At 3:30 we'll have utility impact

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1 analysis, employment impacts, environmental
2 assessment, regulatory impact analysis. Then at about
3 4 o'clock, we'll have time if we have other issues, if
4 anything comes up on the parking lot, and then closing
5 remarks. And then we plan on adjourning at about
6 4:45.

7 Is there anything that anybody sees needs
8 to be added or changed on the agenda? Okay.

9 Next point on the slide is the objective
10 and expectations. Again, we're here, this is sort of
11 the kickoff for this commercial refrigeration
12 workshop. We're going to talk about the process that
13 we use in the rulemaking and talk about the analysis
14 that we use. How many people, by a show of hands, is
15 this the first time you've been in a workshop at the
16 Department of Energy of this type, talking about
17 efficiency standards? Okay. Probably about half.

18 So welcome, and if you have as we go
19 along, if you have any questions, again my role here
20 is to just be neutral, focus on the process and task
21 at hand, and ensure that everybody has a chance to
22 participate. So we don't want anybody dominating, so
23 that sort of leads us to our ground rules. I put them
24 up here too if we need to come back to them during the
25 day, but they're also in your slides.

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1 One is listen as an ally. We need to be
2 short and concise as far as our statements. Get to
3 the point, and give other people, we want people to
4 share the air time, so we want to make sure that
5 everybody has an opportunity to speak. We ask that if
6 you have sidebar conversations, you need to take them
7 to the back of the room or outside the room if need
8 be.

9 Again, we need to focus on the issues at
10 hand and not personalities. We also ask everybody, we
11 speak one at a time for the court reporter. Again,
12 state your name and your company each time you speak.

13 If you have your cell phones on, if you could put
14 those to vibrate or turn those off at this time. And
15 then again, I've added to here, I'll be queuing and
16 we'll do follow-ups. If you raise your hand, I will
17 acknowledge you and if for some reason I don't -- give
18 me a little wave there . And again, we want everybody
19 to enjoy, to have fun today. We have to have open
20 communication back and forth. That's one of the
21 things we're trying to get out of this workshop is to
22 be a little less, a little bit more informal in the
23 process.

24 Just some housekeeping issues, we're going
25 to have, as we discussed in the agenda, we're going to

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1 have a morning and afternoon break; lunch break, if we
2 seem to be ahead of time, we can readjust that
3 schedule. Again, the cafeteria for those who have not
4 been here before, basically we're on the E corridor.
5 If you go down one level, go to your left. There's a
6 snack bar. Down on your right hand side, there's also
7 some vending machines down -- again, it's down one
8 level. You can either take the elevators here, just
9 down the hall, down one floor to your left, vending
10 machines, coffee at the snack bar.

11 At lunch time, if you want to go to the
12 cafeteria, you'll do the same thing. Go down one
13 level, follow the main corridor, go to your right.
14 You'll see escalators. Go up two escalators and that
15 will be the cafeteria. There are some signs on the
16 walls for that or if not, you can follow the crowd.
17 There's usually people going there.

18 So restrooms, if you go out the door, if
19 you go left or right at the end of the hallways,
20 there's restrooms. Public phones, if you need to use
21 public phones, right where the elevator bay is, you
22 passed it when you came in. There's a lobby area,
23 there's two pay phones there. There's also a house
24 phone there if you need to talk to anybody internal.
25 Again, there's no smoking in the building and again,

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1 everything that is going on today is being recorded
2 for the transcripts. If you need to get a copy of the
3 transcripts, you can see the court reporter during the
4 breaks or at the end of the meeting if you are
5 interested in purchasing a copy of the transcripts.

6 All right, at this time, I'm going to turn
7 it back to Jim Raba to -- I'm sorry about that.

8 At this time, what I'd like to do is does
9 anybody have any opening remarks that anybody would
10 like to do at this time, about three to five minutes?

11 No. Seeing none, now I'll turn it over to
12 Jim Raba to talk about the introduction and analytical
13 methodology.

14 MR. RABA: For some, this will be
15 familiar. For others, this is an introduction to the
16 rulemaking process we go through, through all the
17 rulemaking here at the Department of Energy. So I'll
18 do an overview of that process for you so you'll be
19 familiar with a roadmap of what's to come over the
20 next three years.

21 Indeed, the letters in Item 3, ANOPR means
22 Advanced Notice of Proposed Rulemaking, and the NOPR
23 in Item 4 refers to Notice of Proposed Rulemaking.

24 Today's framework of the public meeting
25 and the framework document mark the beginning of the

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1 energy conservation standards rulemaking process in
2 the development of these efficiency standards for
3 commercial refrigeration equipment. In particular,
4 we're going to be evaluating ice cream freezers, self-
5 contained refrigeration equipment and remote-
6 condensing equipment.

7 Today's public meeting is an informal way
8 to present the assumptions, methodologies and analyses
9 that the Department intends to use throughout this
10 rulemaking. Neither the public meeting today, nor the
11 framework document that you read, are intended to be
12 definitive statements with respect to any issue that
13 is yet to be determined. So moreover, we are inviting
14 your comments, any information, data, written comment
15 and especially your participation to guide our
16 analyses.

17 In general, the Energy Policy Act of 2005,
18 EPACT 2005, directed the DOE to issue by rule no later
19 than January 1, 2009, energy conservation standards
20 for ice cream freezers, self-contained equipment and
21 remote-condensing equipment. The Department of Energy
22 is holding a separate, but parallel, rulemaking for
23 the test procedures aspect of commercial refrigeration
24 equipment.

25 Now very important, how to submit your

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1 comments. They could be today in oral statement or
2 discussion. They could be written comments for sure
3 on different methods to get them to us, please note
4 that we'd like to have the docket number or
5 identification number with each and the comment cutoff
6 period is May 30th. Congress has placed upon us a
7 very tight deadline, so we appreciate your cooperation
8 with that.

9 Now an overview of the rulemaking process.

10 There are typically five major stages in any DOE
11 standards rulemaking. Each includes a Federal
12 Register notice to place information in the public
13 view. The Department invites both oral and written
14 comments and also we may consult with stakeholders
15 individually, experts to clarify and issue or request
16 additional information on the subject. So today's
17 public meeting is that indeed. We're looking for your
18 comments to be part of the rulemaking. So we're
19 requesting from you that data information.

20 We encourage you to participate at every
21 stage of the five stages of the rulemaking process.

22 Now today, we're going to address the
23 efficiency standards development process and the
24 framework document. The next stage will be the
25 Advanced Notice of Proposed Rulemaking where the

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1 Department will present an array of the analyses and
2 again invite your comments.

3 On market and technology assessment,
4 screening analysis, engineering analysis, markups,
5 energy use and use load characterization, lifecycle
6 cost and payback analysis, shipments analysis, all
7 leading to national impact analysis.

8 Good information and hard data are hard to
9 come by. This is important.

10 The Notice of Proposed Rulemaking stage
11 will address any comments received at the ANOPR stage
12 and then refine the analysis from the ANOPR to the
13 NOPR stage, make adjustments, course corrections and
14 go from there.

15 In addition, the Notice of Proposed
16 Rulemaking, NOPR, will contain analyses for lifecycle
17 subgroups, potential impacts on manufacturers and
18 electric and gas utilities, impacts on employment, the
19 environment and any undue burden that would result
20 both in the energy conservation standards rulemaking
21 and the accumulation of other regulations
22 manufacturers may face.

23 Last, we've all worked so hard for the
24 final rule, it will surely be a happy day. However,
25 please note that the Federal Government will be closed

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1 January 1, 2009, so we're observing a federal holiday
2 that day.

3 (Laughter.)

4 So therefore, a realistic date for the
5 final rule will be sometime before December 31, 2008.

6 So it will be about three years from the final rule,
7 once it becomes a final rule by January 1st that the
8 energy conservation standards will take effect so this
9 will give manufacturers time to adjust in your
10 manufacturing practices. Also, please note that the
11 standard levels are effective for commercial
12 refrigeration equipment that is manufactured on or
13 after January 1, 2012. It will have no effect on
14 equipment manufactured before that date or distributed
15 in commerce after that date.

16 Now as we said before, the test procedures
17 for commercial refrigeration equipment are being
18 addressed in a separate rulemaking that we refer to as
19 the en masse test procedure rulemaking where
20 commercial refrigeration equipment is one of many
21 products and types of equipment that are covered under
22 EPACT 2005. We expect to see that finalized later
23 this year.

24 So here's how EPACT 2005 defines the term
25 commercial refrigerator-freezer and refrigerator-

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1 freezer which we will collectively refer to as
2 commercial refrigeration equipment. It's not a
3 consumer product. It's not designed -- it's marketed
4 exclusively for medical, scientific or research
5 purposes. Operates in chilled, frozen and combination
6 frozen-chill variable temperatures, displays or stores
7 merchandise for the collection of materials
8 horizontally or semi-vertically and vertically. Has
9 transparent or solid doors, hinged doors or a
10 combination of those doors or no doors. It's designed
11 with pull-down temperature applications and connected
12 to a self-contained condensing unit or to a remote
13 condensing unit.

14 Item 7, is one we look at more thoroughly,
15 momentarily. I'm going to hand over to Mike
16 Christopher to discuss further these definitions and
17 the market and technology assessment.

18 Mike?

19 MR. CHRISTOPHER: Thanks, Jim. Again, I'm
20 Mike Christopher. I work with Navigant Consulting.
21 And I'm going to be talking about some definitions and
22 the market and tech assessment.

23 So as Jim mentioned, can everybody hear me
24 okay?

25 MODERATOR BERRINGER: Do you want to use

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1 the cordless?

2 MR. CHRISTOPHER: Yes. Can you all hear
3 me now? Okay.

4 Jim pointed out this Item 7 right here.
5 The language says it's connected to a self-contained
6 condensing unit or remote condensing unit. And we
7 construe this language to mean that so-called
8 secondary cooling systems are not included in this
9 definition.

10 And this is also consistent with the ARI
11 standard that's under consideration, the ARI 1200,
12 which specifically excludes these systems. We have
13 Item 11 here, if anyone has comments on whether or not
14 these systems should be excluded.

15 Bryan?

16 MODERATOR BERRINGER: Yes, at this time,
17 if -- one of the things we've done in the framework,
18 if you've looked at that, we have these particular
19 comments. As we go along through the presentation,
20 there will be some other comments. We'll take time to
21 ask that question and see if anybody has the responses
22 to give for the public record and move on. And we'll
23 also give a time at the end of each presentation to
24 sort of follow up with additional questions.

25 So at this time we're just seeing whether

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1 secondary cooling applications should be covered under
2 this rulemaking. I see Andrew Delaski. Please speak
3 into the mic.

4 MR. DELASKI: Andrew Delaski, Appliance
5 Standards Awareness Project. I have two questions.
6 One of the test procedures. Is this not an
7 appropriate time for that?

8 MODERATOR BERRINGER: Yes, why don't we do
9 that. Why don't we stop right here and ask if there's
10 -- if you want to do that, we'll go on Jim's
11 presentation, if there's questions on that and then
12 we'll proceed with -- I think if you have a question
13 about the test procedure for Jim.

14 MR. DELASKI: I'm interested in what the
15 Department's plans are for process for adoption of the
16 test procedure. You mentioned it as being considered
17 in terms of the en masse test procedure proceeding.
18 What opportunities are envisioned for public comment,
19 public input to test procedure selection for this
20 rulemaking, for the commercial refrigeration product
21 rulemaking?

22 MR. RABA: Jim Raba, Department of Energy.
23 The en masse test procedure rulemaking is a
24 traditional rulemaking the Department is undertaking
25 for the many test procedures that EPACT 2005 directs

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1 us to undertake. Some are already prescribed for us
2 and so we are kind of developing along the way. In
3 any event, for the commercial refrigeration and I
4 don't remember the exact procedure, but there will be
5 ample time in the regular rulemaking process where the
6 Notice of Proposed Rulemaking will be published in
7 ample time for comments and the like.

8 So that's in parallel at this time. We're
9 really following the directives of the energy policy
10 for 2005 on that test procedure at this time. We'll
11 be soliciting comments along the way, shortly,
12 actually.

13 MR. DELASKI: So just to be clear, Andrew
14 Delaski, Appliance Standards Awareness Project. The
15 procedure is the Department will issue a proposed
16 rule, a NOPR --

17 MR. RABA: Yes.

18 MR. DELASKI: And that will be a two-step
19 public process?

20 MR. RABA: Yes, it will.

21 MR. DELASKI: And just to follow up, do
22 you have an anticipation for what sort of target you
23 have for a final rule in that proceeding?

24 MR. RABA: I understood the final rule, we
25 intend to publish that in November of this year.

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1 MR. DELASKI: Okay. And then to come back
2 to the question, I have another question on this
3 current presentation, if it's appropriate.

4 MODERATOR BERRINGER: Let me ask if your
5 question is pertaining to Jim Raba's presentation?

6 MR. DELASKI: Yes.

7 MODERATOR BERRINGER: Okay, yes.

8 MR. NADEL: I just wanted to note here --

9 MODERATOR BERRINGER: Please identify
10 yourself.

11 MR. NADEL: I'm sorry, Steve Nadel, ACEEE.

12 I understand there will be a separate test procedure
13 rulemaking, but because it will affect the analysis, I
14 wanted to point out that there's been quite a bit of
15 debate about the test temperatures to use to
16 particularly test refrigerators. The ARI test
17 procedure uses one temperature and CSA, EnergyStar,
18 CEC, everybody else uses another temperature and
19 obviously, you need to -- the test temperature will
20 affect the results and to the extent that you're doing
21 an analysis, I guess you may have to kind of make it
22 flexible so you can work with either temperature and
23 let that play out over the rest of the year. I just
24 wanted to point out that.

25 MR. RABA: Jim Raba, DOE. This is one

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1 area where we need your comments back in writing. We
2 welcome them from those gathered today. We'd like to
3 hear back from you.

4 MR. AMRANE: Karim Amrane, ARI. I guess
5 for Steve, the ARI 1200 has been modified to account
6 for that, so I think with the temperature, hopefully
7 it's resolved once and for all.

8 (Laughter.)

9 MODERATOR BERRINGER: Okay, we have a
10 comment from Chris.

11 MR. BALESTRINI: Chris Balestrini, Food
12 Products Association.

13 One of the questions that comes to mind
14 right away is an actual definition of commercial. I
15 believe what you're getting at here is point of sale
16 type of equipment, correct? Like refrigerators in
17 grocery stores, things like that. Whereas, in the
18 food industry, when you start talking refrigeration, a
19 lot of times we are seeing our freezers,
20 refrigerators, things like that in our manufacturing
21 facilities and probably you're thinking of it as an
22 industrial application. But the equipment that's
23 installed is commercially available. So there's been
24 some confusion in the food industry regarding what
25 this rulemaking session really is about.

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1 Okay, that's one of the reasons I was sent
2 here today was to ask this question for a little
3 clarity on when you talk about commercial equipment,
4 what you're really after.

5 From what I've gathered, talking to some
6 of the individuals here, I believe you're more point
7 of sale type of refrigeration type equipment and not
8 so much the industrial side in the manufacturing
9 facilities, correct?

10 MR. RABA: We'd like your comments in
11 writing on that. Jim Raba, DOE.

12 That's a good question, certainly. I
13 think a perception, at least now before this public
14 meeting today is that residential is like in your
15 home; commercial is in the supermarket, be it display
16 or storage, for example, or a food vendor of some
17 sort. So you may want to then in your written
18 comments, give us perhaps your understanding further
19 of what commercial means and give us some guidance on
20 that. We had not really approached that. The Energy
21 Policy Act itself divides up products and equipment
22 either residential or commercial/industrial, so in
23 that regard, we may want to find out more what your
24 thoughts are from your association as well.

25 Good question, thank you.

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1 MODERATOR BERRINGER: Any other comments
2 pertaining to Jim's presentation as far as the
3 process? Again, we saw about 50 percent of the people
4 have not been involved in the process. Any other
5 questions for Jim on his presentation?

6 Okay, seeing none, Andrew, I think you had
7 a question pertaining the current slide, is that
8 correct?

9 MR. DELASKI: Yes. Andrew Delaski of
10 Appliance Standards Awareness Project.

11 I'm interested in the Department's
12 rationale for excluding secondary cooling applications
13 beyond simply the test method.

14 MR. CHRISTOPHER: I don't know that I have
15 a specific answer for that. Is there an answer you
16 all have?

17 I appreciate the question, but we'll take
18 that under consideration. I don't have a specific
19 answer.

20 MR. WINIARSKI: Dave Winiarski, Pacific
21 Northwest National Lab. I believe that part of that
22 rationale is basically trying to look at the
23 definition for -- which I think talks about being
24 connected to a self-contained condensing unit or to a
25 remote condensing unit. A connection basically, so

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1 we're talking primarily a direct expansion type
2 system, a secondary coolant loop provides this
3 intermediate loop and so it wasn't clear that that fit
4 in that definition.

5 MODERATOR BERRINGER: Steve.

6 MR. NADEL: Steve Nadel, ICEEE. I guess I
7 would say if there's a heat exchanger they are
8 connected. It's not like there's no relationship
9 between the two. My tendency would be to look broader
10 and include everything. I think one of the intents of
11 this provision in EPACT was to say these should be
12 federally-regulated products and not state-regulated
13 products. And if DOE narrowly construes what's
14 federally regulated, it could create a bit of a mess.

15 The other question I have is, I'm not
16 clear to what extent supermarkets tend to use direct
17 versus secondary coolant. Is this a small niche
18 product or is it most of the class and that could very
19 much affect the energy savings and whether in a
20 practical sense it makes sense to regulate this in
21 addition to the legal sense.

22 MR. AMRANE: Karim Amrane, ARI. I think,
23 of course, if we're looking at the test procedures
24 here, the test procedures specifically exclude
25 secondary coolant so we have an issue here. I mean

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1 there's going to be an issue in response to the test
2 procedures. So I think the intent when this language
3 was drafted was to exclude secondary coolant from the
4 process.

5 MR. BRUNDAGE: Don Brundage, Southern
6 Company. I have a concern, seeing as how the ARI
7 standards which will probably be the basis for the
8 test procedures excludes secondary that to include it
9 in this rulemaking under a tight schedule will make it
10 more difficult to achieve the deadlines. It may be
11 appropriate to do a separate rulemaking or effort to
12 cover those systems, but I would not want to do
13 anything to delay or hinder this current rulemaking.

14 MR. RABA: Jim Raba, DOE. On this,
15 clearly, there's some difference here. I would invite
16 your comments both in the en masse test procedures
17 when this is addressed there and certainly in the
18 standards rulemaking today as well.

19 MODERATOR BERRINGER: Yes, Andrew.

20 MR. DELASKI: Just a follow on. Andrew
21 Delaski, Appliance Standards Awareness Project. I
22 think it's important, as we go forward with this
23 rulemaking that the existing -- we don't have an
24 existing test method at all for ice cream freezers, I
25 believe. We can't allow the test methods, existing,

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1 pre-existing ARI test methods to determine the scope
2 of the rulemaking.

3 If that's where the equipment is and the
4 equipment not covered by the ARI test method, that's
5 where the bulk of the equipment installed and sold is,
6 then in any given class, then the Department needs to
7 consider what appropriate standards are in those
8 equipment classes, with or without an existing ARI
9 test method.

10 The Department has many options to set
11 standards: existing test method, expanding that test
12 method to cover additional equipment types based on
13 Department revisions, developing a new test method,
14 but also has the option of setting prescriptive
15 standards that require Department setting prescription
16 standards in the past.

17 I think there's a general preference for
18 performance standard; we should be heading in that
19 direction, but as an initial standard for products,
20 the Department has quite often in the past has set a
21 prescriptive standard initially. So let's not the
22 ARI, the existing ARI test method in our view should
23 not determine the scope of the rulemaking.

24 MODERATOR BERRINGER: Yes, Karim.

25 MR. AMRANE: Karim Amrane, ARI. Again,

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1 the test procedures, DOE test procedures cover ice
2 cream freezers, so it's covered in the test
3 procedures.

4 Now the secondary coolant are not and for
5 the purpose of making sure that the Department of
6 Energy completes its rulemaking on time, I guess I
7 would suggest that let's focus on the bulk of the
8 equipment which is direct expansion devices and then
9 see whether the Department can -- after this
10 rulemaking is complete, the Department can go ahead
11 and look at those secondary coolant systems. But I
12 think the focus, if you want to make sure that we
13 respect the deadline of January 1, 2009, I think we
14 need to focus on what we have today and the bulk of
15 the coolant that's been impacted here which is direct
16 expansion devices.

17 MODERATOR BERRINGER: Andrew.

18 MR. DELASKI: Just a quick follow-on.
19 Andrew Delaski, Appliance Standards Awareness Project.

20 So Karim, if ARI can provide data on the
21 market share, the market is split between this
22 equipment and the rest of the market, that would be
23 really helpful in being able to determine if this is
24 an important question or not.

25 MODERATOR BERRINGER: I saw Steve Nadel,

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1 did you have a follow-up?

2 MR. NADEL: Yes, in a similar vein, I was
3 wondering if someone in the industry could comment on
4 that in supermarkets. Roughly, are we talking -- is
5 the secondary 10 percent of the market, 40 percent of
6 the market? How big is it?

7 MODERATOR BERRINGER: Yes, Larry?

8 MR. HOWINGTON: Larry Howington, Hill
9 Phoenix. Based on our experience, it would be less
10 than 5 percent from our standpoint of what we sell. I
11 think that's probably true for the market in general.

12 MODERATOR BERRINGER: Yes, Chris.

13 MR. BALESTRINI: Chris Balestrini, Food
14 Products Association.

15 One quick thing about the test methods.
16 As far as temperatures for testing and all, I
17 recommend talking to Food and Drug Administration or
18 to USDA and ask them what their guidance is for
19 refrigeration temperatures and freezing temperatures.

20 Since most of this stuff is food products and all, it
21 makes a lot of sense to go to the regulatory agencies
22 there because they can give you the science that
23 they've done and the background at certain
24 temperatures and tell you where these units should be
25 operated.

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1 MODERATOR BERRINGER: Great, thanks.
2 There's been a lot of discussion on the secondary
3 systems. Are there any other comments before we move
4 on?

5 Okay, Mike?

6 MR. CHRISTOPHER: Thanks, Bryan. Thank
7 you all for your comments. Certainly any decision
8 that will be made will be based on substantive data
9 that we get. We want to base it on the hard data.

10 So moving on, we want to talk about the
11 definition of ice cream freezer and we're mandated to
12 cover these products, but we're not given a specific
13 definition. So we propose the following, that the
14 term ice cream freezer means a commercial freezer that
15 is designed to operate at or below -5 Fahrenheit and
16 that the manufacturer designs, markets or intends for
17 the storing, displaying or dispensing of ice cream.

18 We'd like to get your feedback on this
19 definition. We want to point out that the
20 finalization of this definition will be handled in
21 that en masse test procedures rulemaking that's on-
22 going. So any comments that you submit certainly we'd
23 like to hear, but they will be forwarded on to that
24 rulemaking. I think it's still worthwhile to see what
25 comments we have on this definition.

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1 At this time we're just going to step
2 through these, we'll step through these five questions
3 one at a time, if people have responses for them. The
4 first one, 1.2, it says the Department is not aware of
5 any industry standard test method of ice cream dipping
6 cabinets and softserve ice cream extruders. The
7 Department requests information on what, if any, test
8 method exists for these type of equipment. The
9 Department seeks comment on how it should address
10 these types of equipment and rulemaking. Should
11 softserve extruders and ice cream dipping cabinets be
12 considered as ice cream freezers?

13 Any comments or responses to that?

14 Karim?

15 MR. AMRANE: Karim Amrane, ARI. I think
16 this kind of question is going to pop up along this
17 process today many times. What you're going to find
18 out with this type of equipment is that a lot of the
19 equipment today, made today is really some kind of
20 custom made. So we're going to find different ice
21 cream freezers. Minus 5 degrees is one temperature,
22 but ice cream freezers are -30 degrees as well. So I
23 guess for the Department the question is going to be
24 what should we do here? Should we cover everything?
25 Or should we cover the bulk?

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1 And I think ARI's position is that the
2 Department should look at what's available in the
3 market and then decide to focus on the majority, the
4 80 percent and forget about the 20 percent, because
5 otherwise, the Department is going to be getting into
6 things that are going to make very difficult for you
7 guys to finish the rule on time.

8 So I would suggest that this kind of issue
9 be addressed when you get market assessment and you
10 know what's going on as far as ice cream freezers and
11 focus on the majority of them which are going to be
12 mostly at -5 or zero degrees.

13 MODERATOR BERRINGER: Any response or any
14 other comments as far as Item 1.2 at this time?

15 Okay, Item 1.3, Karim sort of touched on
16 it a little bit. The Department seeks comment on the
17 definition of ice cream freezers. You can see on the
18 slide we've proposed something for ice cream freezers.

19 Do we have any comments on that at this time?

20 Andrew?

21 MR. DELASKI: Andrew Delaski, Appliance
22 Standards Awareness Project.

23 I wonder if the Department can tell us
24 where they took this definition from?

25 MR. CHRISTOPHER: I think this was a

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1 conglomerate of definitions from other rulemakings
2 from State Standards Canada. I believe that's where
3 it came from, based on -- yeah, Aris?

4 MR. MARANTAN: Aris Marantan, Navigant
5 Consulting.

6 To answer your question, it was largely
7 based on the definition provided by the Environmental
8 Protection Agency and their EnergyStar Program for
9 solid door commercial refrigerators. They have one
10 specifically for ice cream freezers.

11 MR. DELASKI: So I have one concern which
12 I'll raise and perhaps folks from the industry can
13 address it or from the Department or its consultants
14 which is is this definition comprehensive enough, that
15 is, a definition which sets an upper limit at -5
16 degrees, is there potential -- there could be some
17 risk that if one were to design and market one at -4
18 degrees that you could gain your definition and you
19 don't have a level playing field.

20 So the question I would propose back to
21 the industry and to the Department is is this a high
22 enough set point that we're not creating the potential
23 for a loophole.

24 MODERATOR BERRINGER: That was Andrew
25 Delaski.

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1 Aris?

2 MR. MARANTAN: I might be able to comment
3 on that. Just one thought, we have put a lot of
4 thinking behind the definition to address specifically
5 that point. And one thing that I would note is that
6 even without the definition of an ice cream freezer
7 specifically, any product that meets that definition
8 would automatically fall under the definition of a
9 commercial freezer. So it's partially addressed.

10 MODERATOR BERRINGER: Yes, Bruce?

11 MR. HIERLMEIER: Bruce Hierlmeier, Zero
12 Zone. Just in doing research for this it looked like
13 California's definition and Canada's definition for
14 ice cream freezer is more along the lines of a dipping
15 cabinet. They had things specifically with doors and
16 things much different than a display-type freezer or a
17 storage cabinet or perhaps a hardening cabinet, so
18 there are many different definitions just applied to
19 ice cream cases.

20 MODERATOR BERRINGER: Yes, Don?

21 MR. BRUNDAGE: Don Brundage, Southern
22 Company. I have a concern in the other direction
23 towards industrial, because having that "or" in there,
24 if it's used in storing or displaying or dispensing,
25 without some clarification, some industrial thing the

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1 size of a tractor trailer compartment would qualify.
2 So there needs to be something to define that it's at
3 retail a little better.

4 MODERATOR BERRINGER: Okay, any additional
5 comments on Item 13?

6 Steve?

7 MR. NADEL: Steve Nadel. To address Don's
8 comments perhaps a size restriction. As I recall,
9 there is some size restriction for a commercial
10 freezer in EPACT and maybe that could be used.

11 MODERATOR BERRINGER: Yes, Chris?

12 MR. BALESTRINI: Chris Balestrini, FPA.
13 Why is ice cream being singled out? I realize
14 they've done it in other agencies that they've singled
15 it out for specific reasons, but for the purpose of
16 this rule, does it necessarily have to be singled out
17 or can it be redirected in a guidance document that
18 would subsidize the actual rule?

19 Just a question. I mean --

20 MR. MARANTAN: Aris Marantan, Navigant
21 Consulting.

22 To answer the question of why we're
23 addressing ice cream freezers specifically, it was
24 required in EPACT 05. Beyond that, the Department
25 just follows the directives in EPACT 05.

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1 MODERATOR BERRINGER: Karim and then
2 Bruce.

3 MR. AMRANE: Karim Amrane, ARI. I mean
4 the main reason why ice cream freezers are listed is
5 because states started to set efficiency standards for
6 ice cream freezers so there was a need to fill up the
7 gap and have a federal standard for ice cream
8 freezers.

9 MR. BALESTRINI: Chris Balestrini again.
10 But that was -- I shouldn't say probably -- there's a
11 very good reason that that was done because ice cream
12 was put in the dairy standards and part of the PMO and
13 things like that and you know, you start getting into
14 a situation where are you going to list rulemaking for
15 every exception, you know? What I'm getting at is
16 trying to back up and broaden it a little bit to cover
17 more and then provide guidance documents for the rule
18 down the road.

19 It started happening in the food industry
20 where we started getting too specific with things and
21 we painted ourselves in the corner in some of our
22 rulemaking by not being broad enough up front to take
23 into account what some of the exceptions may be that
24 -- they may not be exceptions today, but 5 years, 10
25 years down the road, there may be new technologies and

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1 new exceptions that come into play.

2 So if you start focusing it too tightly on
3 the front side, you end up having to go through the
4 revision of the rulemaking and all that stuff down the
5 road that makes it very difficult to be nimble as new
6 technology advances. That's the only reason why I'm
7 bringing up the focus on the ice cream.

8 MODERATOR BERRINGER: Bruce was next, and
9 then Larry.

10 MR. HIERLMEIER: Bruce Hierlmeier, Zero
11 Zone. We're manufacturers of display-type equipment,
12 primarily freezers used in grocery stores for
13 displaying frozen food products, as well as ice cream
14 products which typically need a colder temperature.

15 In our industry, customers look to buy
16 equipment and they want to know how much energy to use
17 for a frozen product and they want to know how much
18 energy to use for a colder application, an ice cream
19 freezer. So in our industry, you have two ratings
20 typically.

21 In getting a little bit toward number 4,
22 our case is the same case. We sold a customer a
23 number of cases, we don't know how many they're going
24 to put ice cream in and turn the thermostat a little
25 lower and how many they're going to put frozen food in

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1 and run it a little warmer. So it's very similar in
2 the display area. The cases do basically the same
3 thing. It's just an operating temperature to preserve
4 the product so it doesn't melt on them.

5 Other ice cream cases where they're making
6 hardening cabinets and doing things like that, those
7 have very specific functions in the processing or
8 storage of ice cream compared to display. So number
9 4, we're not any different. It's the same cabinet and
10 maybe the ice cream cabinet is something that's gotten
11 out of control in its description and if we look at
12 the volume of true ice cream cabinets versus display
13 cabinets running 5 degrees colder, we'll find that
14 there aren't a lot of true ice cream cabinets out
15 there.

16 MODERATOR BERRINGER: Larry?

17 MR. HOWINGTON: Larry Howington, Hill
18 Phoenix.

19 I'm really paralleling what Bruce said.
20 We're in the same situation. In cases that we sell
21 for frozen food and we sell for ice cream actually
22 there's no distinction whatsoever in terms of the
23 product that we sell. It's just how the customer
24 actually uses it.

25 And we rate them for two loads for

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1 convenience for the customer because they're sizing
2 their compressor route based on that, based on how
3 they're going to use it.

4 The reality is we can have a single rating
5 for the cases, you know, it doesn't really matter
6 which one it is as long as there's a temperature to
7 find. And that rating would tell you how well the
8 case worked at the zero degree or the five degree
9 because it's pretty linear between the two. And
10 really there's an opportunity there to have a single
11 rating point for that kind of product, I think, as
12 opposed to two because you run two tests, but you
13 don't gain a lot of extra information from it in
14 reality.

15 MODERATOR BERRINGER: Okay, Dave.

16 MR. WINIARSKI: I was just going to --
17 this is Dave Winiarski, Pacific Northwest Laboratory.
18 I was just going to ask a clarification, maybe two
19 clarifications.

20 The first is I wasn't clear from your
21 discussion if you were talking about both remote
22 condensing-type cases and self-contained cases where
23 the compressor would be built directly into the
24 refrigeration cabinet. If those would also be
25 designed both for freezer and ice cream applications?

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1 MODERATOR BERRINGER: Yes, Larry?

2 MR. HOWINGTON: Larry Howington, Hill
3 Phoenix.

4 The bulk of what we sell is remote. We
5 occasionally self-contain for the convenience of the
6 customer. Generally, it wouldn't make really any
7 difference with the two temperatures we're talking
8 about.

9 We have other folks in the industry that
10 makes make different types of cabinets for ice cream
11 storage, and they really go into like the small shops
12 where the environmentals may not be as good and they
13 will run them colder, because they need to because of
14 those kinds of, that would be like in a small ice
15 cream shop, where you have ice cream cakes for sale.
16 That's where you may see a -15 or even a -30 on some
17 of the kind of holding cabinets. That gets into a
18 different category. But in general, for the display,
19 you wouldn't use a different one.

20 MR. WINIARSKI: Right, and someone asked
21 this because when we were first trying to look at
22 interpreting the language that's in the Energy Policy
23 Act, we were trying to understand for ourselves why
24 ice cream freezers were broken as a separate category.

25 And one part of that was that they had actually

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1 defined standards for self-contained freezers, with
2 and without doors, and it may have been that it was
3 just a decision was made that the ice cream freezer
4 category was somehow separate in terms of self-
5 contained products.

6 MODERATOR BERRINGER: That was Dave
7 Winiarski. Any follow on to those?

8 MR. CHRISTOPHER: I think the implication
9 and impact is that ice cream pertains, I think as you
10 were saying, only to the self-contained. As you'll
11 see a little further, the breakdown of the products is
12 such that our initial breakdown of products is such
13 that ice cream freezers are only on the self-contained
14 side of things.

15 MODERATOR BERRINGER: Okay, follow-ons to
16 that? I think we started to touch on Item 1.4, a
17 little bit. In what way are ice cream freezers
18 different from commercial freezers. The Department
19 requests feedback on whether they should establish
20 energy conservation for ice cream freezers that are
21 different or apart from other commercial freezers. I
22 see none.

23 I know that we kind of combined that there
24 was some discussion. And the last one, item 1.5. The
25 Department seeks comment on whether to extend energy

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1 conservation standards for self-contained commercial
2 freezers with doors and without doors to ice cream
3 freezers with doors and without doors respectively.

4 Yes, Bruce?

5 MR. HIERLMEIER: Bruce Hierlmeier, Zero
6 Zone.

7 I guess I didn't understand what that
8 meant if they're going to apply it, but provide it to
9 allow to use more energy because it's going to operate
10 at a colder temperature, so it would follow the same
11 format but say okay, but you get another kilowatt per
12 day or something because it's operating colder. What
13 was the intent of that statement?

14 MR. MARANTAN: Aris Marantan, Navigant
15 Consulting.

16 Bruce, that's exactly what we had in mind.
17 You know, the standards were prescribed in EPACT for
18 those self-contained units, and so one of the easier
19 things to do, if its possible and realistic, is to
20 extend those just as you described.

21 MODERATOR BERRINGER: Okay, any other
22 comments or questions on Item 1.5? Okay?

23 Seeing none, I'm going to turn it back to
24 Mike for his presentation.

25 MR. CHRISTOPHER: Okay, thanks Bryan. I'd

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1 like to go over the next major equipment category, and
2 that's self-contained equipment without doors. As you
3 know, EPACK covered self-contained refrigerators,
4 freezers, and refrigerator-freezers with doors and
5 left this rulemaking to cover those products without
6 doors.

7 So as we understand, this type of
8 equipment you'd probably find in convenience stores,
9 smaller grocery stores, maybe some restaurants where
10 you wouldn't expect to find a remote condensing
11 system.

12 In EPACK, we don't have a specific
13 definition for the term refrigerator-freezer. So
14 we're seeking input on using a definition here, taken
15 from CFR for a cabinet that's two or more
16 compartments, one of which is a freezer and one of
17 which is a refrigerator.

18 So we'd like to get comments. I'd like to
19 point out Item 1.6 applies to the first part of the
20 slide here, the definition for the self-contained
21 equipment without doors. And item 1.7 applies more to
22 that proposal of using the refrigerator-freezer
23 definition.

24 Bryan?

25 MODERATOR BERRINGER: So again, comments

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1 or questions about 1.6? What if any self-contained
2 commercial refrigeration equipment without doors does
3 not meet the EPACT 2005 definition?

4 That was the first part of the slide that
5 Mike just showed us.

6 (Pause.)

7 Bruce, yes.

8 MR. HIERLMEIER: That's not the definition
9 they have up there, is it?

10 MODERATOR BERRINGER: The definition is,
11 it's basically a refrigerator, a commercial
12 refrigerator-freezer or refrigerator-freezer without
13 doors that's connected to a self-contained condenser.
14 That's the definition.

15 MR. HIERLMEIER: Because in that
16 definition, we make commercial equipment, we make
17 freezers that operate above -8, but below -32. So I
18 mean that's where you have this broad range, if you
19 try to narrow it in. Somebody will probably make up a
20 piece of equipment that operates at a different
21 temperature for a unique set of circumstances. That's
22 what would be odd about the definition as shown for, I
23 guess --

24 MR. CHRISTOPHER: The second definition
25 there?

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1 MR. HIERLMEIER: Yes.

2 MR. CHRISTOPHER: Yes.

3 MR. WINIARSKI: I was going to comment.
4 That second definition, if I'm understanding the
5 comment here was for residential products.

6 MR. HIERLMEIER: Again, you wouldn't want
7 to start sucking that into the commercial area at all.

8 MR. WINIARSKI: Gotcha, okay.

9 MODERATOR BERRINGER: That was Dave
10 Winiarksi.

11 MR. AMRANE: Karim Amrane, ARI. I think
12 as Dave pointed out, this is a definition for
13 residential refrigerators and not appropriate. We
14 will get you some feedback on this.

15 MODERATOR BERRINGER: Great, any other
16 follow-on comments?

17 We'll move on to question or Item 1.7.
18 How could this definition be modified to the
19 application of self-contained commercial
20 refrigerations without doors?

21 Karim?

22 MR. AMRANE: Karim Amrane, ARI. Again, we
23 will give you some feedback on that.

24 MR. CHRISTOPHER: Okay, great, thank you.

25 Finally, we have the definition for remote

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1 condensing products. These are refrigerators,
2 freezers and refrigerator-freezers with and without
3 doors and these are the things that you find in your
4 supermarkets that have remote condensing racks. We
5 think we also, you might find them in some commercial
6 locations where you serve or store food. And again,
7 we're looking for comments here.

8 The first item we're really looking for
9 comments on whether or not it's appropriate to
10 regulate just the case here and exclude the remote
11 condensing rack from this rulemaking.

12 And the other two are the same questions
13 from the previous slide. One is, is there any
14 equipment that does not meet this definition and 1.10,
15 in that previous definition from the residential
16 electric refrigerator-freezers be adapted?

17 MODERATOR BERRINGER: Again, just to
18 reiterate on Item 1.8, the Department seeks comment on
19 regulating the energy consumption of refrigerated
20 equipment, but not the associated remote condensing
21 unit for remote condensing commercial refrigeration
22 freezers and refrigerator freezers.

23 Any comments or issues on that?

24 Karim?

25 MR. AMRANE: Karim Amrane, ARI. I guess

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1 it's the intent of EPACT. The intent of EPACT was to
2 cover just the display case, not the compressor rack,
3 so we agree with the interpretation that you have.

4 MODERATOR BERRINGER: Steve, you have some
5 follow-on?

6 MR. NADEL: Steve Nadel, ACEEE. I guess I
7 would think that it may be worth trying to cover them
8 for two reasons. One, as those of us who have been at
9 many of these workshops know a common refrain is why
10 regulate part of a system and not the whole system as
11 a major component here that wouldn't be regulated and
12 there may be some opportunities and trade offs, but
13 regulating the wider system that would take more
14 energy or allow a lower cost solution.

15 Second, there is the question about
16 federal versus state regulation. If we're only
17 regulating part of the system federally, does that
18 mean the states start looking at the other, does not
19 make sense to put this all together.

20 MODERATOR BERRINGER: Okay, thank you.
21 Any other comments?

22 Yes, Bruce?

23 MR. HIERLMEIER: Bruce Hierlmeier, Zero
24 Zone. When you start looking at racks, you open a
25 very wide opportunity of design and differences in

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1 design, compressors, condensing units, how they're
2 operated and that would be very challenging to put any
3 type of rules together in a number of years. Just as
4 you start getting different manufacturers together to
5 understand those systems and what is available, what
6 isn't available; it's technically feasible. It
7 doesn't work very well.

8 So we would recommend to not try to bring
9 those in at this point in time.

10 MODERATOR BERRINGER: Karim?

11 MR. AMRANE: Karim Amrane, ARI.

12 I would like to second what Bruce just
13 said. I think here and I'm going to speak here for
14 myself and I think we have some responsibilities with
15 respect to ARI to put in orders. We're responsible
16 for the language that went into EPACT 2005. And we
17 are responsible as well for the deadline that's in
18 EPACT 2005.

19 We're giving DOE three years to complete
20 this rulemaking. If we start including compressor
21 racks and other things, it's going to take 10 years
22 for DOE for this rule and that's not appropriate.

23 So I think the intent here was to cover
24 the disparate cases and we need to stick to what we
25 agreed to do.

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1 MODERATOR BERRINGER: Okay, thank you.
2 Any other follow-on questions, comments?

3 Okay, and Item 1.9, is similar to the
4 earlier questions. What, if any, remote condenser
5 commercial refrigeration equipment does not meet the
6 EPACT 2005 definition? Any comments on that? Okay?
7 Seeing none, Item 1.10, how can the above definition
8 for electric refrigerator-freezers be modified to be
9 equitable to remote condensing commercial
10 refrigeration, refrigerator-freezers.

11 Any comments or questions on that?

12 Yes, Larry?

13 MR. HOWINGTON: Larry Howington with Hill
14 Phoenix.

15 In general, we address two units combined
16 into one, one medium temperature and one frozen. In
17 tests, we treat them as two separate units when we do
18 the test. So we do the test as prescribed, but we
19 test the medium as one and we test the frozen as one.

20 MR. CHRISTOPHER: I have a comment. I
21 think in rulemaking we have to consider anything in a
22 case as a single product, so I don't know, I'm not
23 exactly clear on it, but it may be that you can't,
24 that may be an issue to consider. If it's in the
25 case.

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1 MR. HOWINGTON: Larry Howington with Hill
2 Phoenix.

3 It typically is a very small percentage of
4 the product that goes out. However, if you look at it
5 as one unit, and you test the two and add them
6 together, you will get the total energy for the unit.

7 So there is, you can use the same test standard and
8 determine the total energy consumption for that box,
9 if you will.

10 It's a very straightforward process to do
11 that, but it is also a very small percentage of any
12 product that you see on the market.

13 MODERATOR BERRINGER: Dave Winiarski.

14 MR. WINIARSKI: Just another, I guess, a
15 point of clarification. So you test both, you test a
16 single cabinet that has both components, a
17 refrigerator and a freezer and you operate only the
18 freezer section, only the freezer evaporator when you
19 do the test?

20 MR. HOWINGTON: If I can clarify, it's
21 done different ways. If it has an internal pressure
22 regulator, it could be operating at the frozen
23 temperature and to operate both units, in which case
24 you could test it by simply looking at it as one
25 cabinet. Or it actually could have separate lines

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1 running out.

2 In some cases, that's the way it works
3 also. So whichever way its done, you can actually use
4 the same ASRAE type test procedure, either testing as
5 if it were two and adding it or testing as if it were
6 one, depending on how its actually designed.

7 MR. WINIARSKI: So we can come up with an
8 operational energy consumption for that piece of
9 equipment per foot of display area or something like
10 that. Okay.

11 MODERATOR BERRINGER: I'm sorry. Bob?

12 MR. TANNER: Bob Tanner with Hill Phoenix.
13 I'd just like to add that that type of equipment is
14 very customized and is very low volume, and spending
15 all that time looking at test procedures for such a
16 small thing is not keeping in with what Karim has
17 mentioned and focusing on the bulk of what we have to
18 regulate here.

19 MODERATOR BERRINGER: Okay, any other
20 follow-on comments?

21 Andrew.

22 MR. DELASKI: Andrew Delaski of Appliance
23 Standards Awareness Project. A question of
24 clarification for the Department, which applies to
25 both your item, question 1.10 and back to the previous

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1 section, 1.7, which is you've asked for a more
2 clarified, a more detailed definition for commercial
3 refrigerator freezers, than is offered by the EPACT
4 language. But yet you've not asked for more specific
5 definition for refrigerators and for freezers. I'm
6 wondering why you've focused in on this particular
7 product, the refrigerator freezer product for more
8 specific definition and not the other two as well?

9 MODERATOR BERRINGER: We look to Jim or?

10 (Pause.)

11 Aris?

12 MR. MARANTAN: Aris Marantan, Navigant
13 Consulting.

14 We thought about the definition of
15 refrigerator and freezer and we saw a large variety of
16 definitions in the industry. We thought that it was a
17 little intuitive to figure out what that may be, and
18 if we need to define it, we're open to doing that.

19 MR. DELASKI: Okay, Andrew Delaski, to
20 follow up.

21 There is the definition, you do have some
22 definition, quite a detailed definition in EPACT, so
23 that gives you quite a -- more than intuition to go
24 on, I would say. You have a statute.

25 MODERATOR BERRINGER: Okay, thank you for

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1 your comments.

2 Any other additional comments on this
3 before we move on?

4 Mike?

5 MR. CHRISTOPHER: Okay, thank you. So
6 concluding that, we can move onto the ANOPR analyses,
7 the first of which is the market and technology
8 assessment. This is a very important analysis because
9 it provides some background information and foundation
10 for subsequent analyses. So the main outputs here, we
11 just got a flow chart that shows how it interrelates
12 with the preceding, sorry, the following two analyses.

13 The main outputs of the market and technology
14 assessment are product classes, baseline models, and
15 technology options, which are basically just a list of
16 any technologies that could conceivably be used to
17 approve the energy efficiency of these projects.

18 However, not all of those are going to be
19 practical. So we run a screening analysis, and the
20 ones that make it through we call design options. And
21 those feed into the engineering analysis along with
22 the product classes and the baseline models.

23 So the purpose of the market and
24 technology assessment really is to characterize the
25 market and the industry for this equipment. So as

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1 I've said before, we identify baseline models, product
2 classes, and we also identify manufacturers for this
3 industry. We estimate market shares and trends, and
4 we identify regulatory and other initiatives that may
5 have an impact on this equipment.

6 Now since this equipment has never been
7 the object of standards at the federal level, we're
8 making a general request for data for feedback for the
9 market and tech. assessment. So we're encouraging you
10 to submit any data that you have, any applicable data,
11 and we do have two specific requests here, Item 3.1
12 and 3.2. The first one, looking for information for
13 the market and tech. assessment about manufacturers,
14 what products you sell, what product class, and it's
15 very important that we know about the major
16 manufacturers as well as the smaller, the smaller
17 manufacturers.

18 And Item 3.2 is asking for input on
19 product shipments. We've had some discussion on, you
20 know, basing our analysis on these major product
21 classes, these major players, so getting shipment
22 information is going to be critical to determining
23 where the analysis goes forward.

24 So Bryan, if you'd like to address these
25 two?

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1 MODERATOR BERRINGER: Yes, at this time,
2 we'd like to seek comments on Item 3.1 which is
3 information attributed to market assessment and in
4 particular, as Mike said, if there's any major or
5 small niche manufacturers pertaining to this -- the
6 market.

7 Comments here on this?

8 Karim?

9 MR. AMRANE: Karim Amrane, ARI. As ARI,
10 we will provide you some feedback as well. We will
11 comment. We do represent the majority of the remote
12 cases of manufacturers. For the self-contained, we
13 have some, but we don't recommend the Department to
14 reach out to those -- the manufacturers that are not
15 in the room today.

16 MODERATOR BERRINGER: Any other follow-up
17 on 3.1?

18 And 3.2 is talking about -- we're seeking
19 information as far as annual product shipments from
20 1990 to 2005, both domestic and end port corresponding
21 to weighted average efficiency for these shipments.

22 Is there any -- Karim?

23 MR. AMRANE: Karim Amrane, ARI. To the
24 extent that we have the information we will provide
25 you some information. However, I precaution you, we're

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1 talking about average efficiency. The ARI standard
2 was just published this year, so it can be very
3 limited information on efficiency, but the shipments,
4 we will get you what we have, which will probably not
5 go as far as 1990. But we'll get it to you.

6 MODERATOR BERRINGER: Thank you. Any
7 additional comments on these questions?

8 All right, seeing none. Mike?

9 MR. CHRISTOPHER: Thanks, Bryan. This
10 figure is a breakdown on equipment that's being
11 covered. So under the general heading here of
12 commercial refrigeration, we've got self-contained
13 equipment that's refrigerators, freezers and
14 refrigerator freezers, with and without doors and some
15 of these obviously are already covered by EPACT.
16 Those are shaded in this gray hache. So these are
17 refrigerators with doors, non-ice cream freezers with
18 doors, and refrigerator freezers with doors.

19 So the self-contained products that we're
20 covering are refrigerators without doors, ice cream
21 freezers with and without doors, and refrigerator
22 freezers without doors. And the remote condensing
23 products are the refrigerators, the freezers and the
24 refrigerator freezers with and without doors.

25 And we've just identified kind of a

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1 numbering scheme down here that will correspond to the
2 following -- I'm sorry, the upcoming slide, just to
3 keep things clear.

4 So the first major category, ice cream
5 freezers with and without doors, we can further break
6 those down into solid doors and transparent doors and
7 ice cream freezers without doors we can break down by
8 orientation, horizontal, vertical, semi-vertical.
9 Self-contained equipment without doors --
10 refrigerators, freezers and refrigerator freezers.
11 Now we break all those down without doors as well into
12 orientation of horizontal, semi-vertical and vertical.

13 And remote condensing equipment with and
14 without doors, refrigerators, freezers and
15 refrigerator freezers were the ones with doors, again,
16 broken down, transparent and solid and the ones
17 without doors broken down by orientation.

18 So really this breakdown is our initial
19 thinking, the Department's initial thinking on how we
20 could break these products down and it's also really
21 kind of an all possibilities. We've got everything
22 broken down as far as you can go in terms of door type
23 limitation. And we understand that based on shipment
24 data or other analysis we may be able to combine or
25 eliminate some of these classes.

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1 We actually want to take this opportunity
2 to present ARI's proposed product classes as well and
3 they've taken a little bit different approach. We
4 want to contrast their approach with ours. And we've
5 prepared a back-up transparency here.

6 (Pause.)

7 It's that legible to everyone? No?

8 (Laughter.)

9 That's good? All right, I'll take you
10 through it here. So we've got these product classes
11 from ARI. They've got a draft operations manual and
12 where we break down first by condensing type, either
13 self-contained or remote, ARI is breaking down
14 initially by orientation and whether it's with or
15 without doors.

16 So they've got six million product
17 families, vertical with doors, vertical without doors,
18 semi-vertical without doors, service over-counter
19 which is not a product class that we proposed and then
20 horizontal with and without doors.

21 From there, they break it down by
22 condensing type, self-contained, or remote condensing
23 and then each of those are broken down into a
24 temperature category, medium, low, ice cream and
25 application.

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1 So that being said, we've got a request
2 for feedback and I'm going to try to bring this back
3 up.

4 (Pause.)

5 The intent here is to use this to foster a
6 discussion on these items. We want your feedback on
7 product classes. This is one of the huge problems we
8 have right now is defining these product classes.

9 MR. LEWIS: Mike, everybody has a copy of
10 the handout. It has the questions in there.

11 Why don't you project on the screen and
12 let them follow along?

13 MODERATOR BERRINGER: Are you ready to
14 discuss feedback now?

15 MR. CHRISTOPHER: Yes, let's do that. All
16 right, then we'll go ahead and go to item on your
17 slide, 28, item 3.3, the Department requests feedback
18 on the proposed classes for the commercial
19 refrigeration equipment covered under this rulemaking
20 and the criteria used for creating the classes. So
21 this is referring to classes.

22 So we have sort of two proposals on the
23 board. Any comments on the classes?

24 Larry?

25 MR. HOWINGTON: Larry Howington with Hill

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1 Phoenix. Just so that you understand kind of where we
2 came from and how we defined the classes, by looking
3 at the structure of the product version, the real
4 reason in doing that is that more closely related, we
5 felt to energy consumption by product family. The
6 structure of the case has to do with how much energy
7 consumption you're going to have and then you have
8 doors or you don't have doors, that will affect it
9 also, but really energy consumption is really kind of
10 a function of how the case is actually built and
11 that's what we use as our first breakdown.

12 And then we felt after that it was just a
13 matter of what temperature you're applying and how
14 you're operating it, self contained or remote.

15 MODERATOR BERRINGER: Any other comments?

16 I see Bruce and then Aris.

17 MR. HIERLMEIER: Bruce Hierlmeier, Zero
18 Zone. Just to reiterate what we talked about before,
19 we have the low temperature in the ice cream primarily
20 for our customers to be able to size their equipment
21 when they're running a little bit colder. That was
22 the intent here and then also so customers could
23 compare ratings amongst manufacturers so that they
24 would have some ability to determine who uses more or
25 less energy if they're going to store ice cream. So

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1 it wasn't necessarily to try and develop a different
2 product class as much as aid our customer base.

3 MODERATOR BERRINGER: Aris?

4 MR. MARANTAN: Aris Marantan, Navigant
5 Consulting. One of the things that we wanted to do in
6 our initial attempt to define product classes was to
7 put down on paper exactly what we thought was being
8 described to us in EPACT. And so we tried to include
9 every possible combination that we could envision and
10 when we did that, we saw a lot of different product
11 classes and we were really happy to see actually the
12 work that ARI has put together for the product
13 families.

14 As you'll see from the handout on slide
15 26, most of the product classes are in pretty good
16 agreement. We thought of the same things, the
17 operating temperature levels, the operating mode. One
18 of the things we didn't think about was, of course,
19 the service over-counters as Mike mentioned earlier.

20 We also in looking through the two
21 different ways of describing product classes, we also
22 noticed that there were a couple of things that we had
23 that didn't show up here. Do you remember which one
24 that was specifically?

25 MR. CHRISTOPHER: Yes, I think one of the

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1 major ones was we thought there maybe should be a
2 semi-vertical with doors.

3 MR. MARANTAN: The possibility of having a
4 semi-vertical with doors.

5 MR. CHRISTOPHER: Yes.

6 MR. MARANTAN: So as I've heard just now,
7 a lot of thought has been put into this in describing
8 the energy consumption of these things and what's a
9 large portion of the market and maybe what's not. So
10 we're happy to see this.

11 MODERATOR BERRINGER: Bob?

12 MR. TANNER: Bob Tanner with Hill Phoenix.
13 In developing this, none of our members could
14 identify anyone that manufactured that type of product
15 in semi-vertical with doors, so we just eliminated it
16 from the mix.

17 MODERATOR BERRINGER: Thank you. Any
18 other comments?

19 Yes, Scott?

20 MR. SMITH: Scott Mitchell, Southern
21 California Edison.

22 The first question I had is why the
23 refrigerators with doors and refrigerators-freezers
24 with doors are not included? Is that because they're
25 covered by another standard?

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1 MR. CHRISTOPHER: The refrigerators?

2 MR. SMITH: The ones that were graded out?

3 MR. CHRISTOPHER: Yes, sorry. I have a
4 little key up here. Those are the ones that are
5 covered by EPACT.

6 MR. SMITH: Okay, I just wanted to clarify
7 that.

8 MR. CHRISTOPHER: Those are the self-
9 contained with doors.

10 MR. SMITH: Okay. And then secondly,
11 we've done a lot of work on open display cases. I
12 worked in the Refrigeration and Thermal Test Center.
13 Many of you are probably aware of that organization.
14 We do a lot of testing on refrigeration equipment.
15 And one of the things we've learned is that about 85
16 percent of the energy consumption of open cases comes
17 from entrainment of ambient air into the cases. And I
18 know that we're looking at regulating the actual
19 equipment that's being used to make sure that it's the
20 most efficient equipment, but who is going to look at
21 whether stores choose a doored case over an open case?

22 If we can reduce the energy consumption 85
23 percent by using a different type of case, is that
24 going to be part of the standard?

25 MR. CHRISTOPHER: I mean we're mandated to

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1 regulate the products that are sold. It's not our --

2 Karim?

3 MR. AMRANE: Karim Amrane, ARI. I don't
4 think it's DOE's role to ban or to restrict products.

5 It's up to the store to decide which products makes
6 sense for the store. It's not for DOE to decide which
7 equipment should be sold, open door, closed door.

8 MR. LEWIS: Ron Lewis, DOE. The
9 empowerment and authority that we have is to regulate
10 the manufacture of products. We can't regulate the
11 application where they're used. We don't around to
12 buildings and we don't have people that go out in the
13 field and check to see what's being used. What we do
14 is make it legal to manufacture products that meet a
15 certain minimum efficiency to be manufactured and then
16 distributed, but it has nothing to do with what people
17 choose as a final product in an application.

18 So we're trying to with the statutes that
19 require us to cover certain products, eliminate the
20 least efficient products, but the choices that are
21 there, as far as products and applications that go in
22 that matrix and the complexity of all the different
23 selections would become so complex that we'd never be
24 able to enforce that.

25 MR. RIVEST: Mike Rivest, Navigant

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1 Consulting. This goes to the basic understanding of
2 what a product class is. A product class is a
3 grouping that represents a different utility to the
4 consumer. And that utility has a consequence on it,
5 energy consumption. So yes, we could save more energy
6 by banning open cases, that would reduce the utility
7 to the supermarket to sell certain products. So
8 that's why it's done that way.

9 It might consume less electricity to be
10 completely vertical as opposed to semi-vertical.

11 MODERATOR BERRINGER: Scott, did you have
12 any follow up to that?

13 MR. MITCHELL: Scott Mitchell, Southern
14 California Edison.

15 To the manufacturers, as far as open
16 freezer cases, is that a big portion of sales?

17 MR. HOWINGTON: Larry Howington, Hill
18 Phoenix. It is not a big portion of sales. If you
19 want to put it in the final, we'd be glad to quick
20 producing them.

21 (Laughter.)

22 I'm just kidding.

23 (Laughter.)

24 It's something that a few folks believe it
25 really sells certain types of products, aids them in

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1 selling product in stores. So we still provide them
2 because of that, but it is a very low percent.

3 MR. MITCHELL: Okay, thank you.

4 MODERATOR BERRINGER: Andrew, did I see
5 your hand?

6 MR. DELASKI: Andrew Delaski, Appliance
7 Standards Awareness Project. And this is for whoever
8 can answer it, but Larry, you mentioned that the semi-
9 vertical with door, if you eliminated that class from
10 the ARI product of classes, in comparison to what the
11 Department has suggested in this slide, are there any
12 other product classes or is that the only one that was
13 eliminated?

14 MR. HOWINGTON: Larry Howington. That is
15 the only one that I'm aware that was eliminated. And
16 as you can see, when you put a door on, the nature of
17 the air curtain becomes less relevant, so that's
18 really why -- we couldn't determine any one that
19 actually made a product like this.

20 MR. DELASKI: Thank you.

21 MODERATOR BERRINGER: Chris?

22 MR. BALESTRINI: Chris Balestrini, Food
23 Products Association.

24 Am I to understand that what you're doing
25 here is you're saying to the manufacturers these are

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1 what you have to manufacture your equipment to as far
2 as efficiencies and stuff like that, but then once it
3 gets into the hands of the person that buys the
4 equipment, they have no culpability to maintain the
5 efficiency of the equipment?

6 You know, it's basically all going to be
7 put on the manufacturers and there's going to be no
8 way to monitor that people are taking care of their
9 compressors properly and everything like that? You
10 know, there's a whole piece there, if you're really
11 trying to save energy, there's got to be some kind of
12 guidance or policing of it, you know, to make sure
13 that the energy efficiency is being maintained.

14 I pity the manufacturers in this situation
15 because they're the only ones that have the gun
16 pointed to their head and nobody else is culpable.
17 And it's probably not my place to defend them, but --

18 (Laughter.)

19 I can understand their frustration with
20 the way this is coming down because it's all pointed
21 at them and there's nobody else that is being held
22 culpable in this whole thing.

23 Is there any plan to try and have any kind
24 of monitoring, any part of -- like -- maybe an EPA
25 piece to it? Somebody that gets out into these

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1 grocery stores that audits them and stuff like that,
2 asking for refrigeration efficiency records be
3 maintained.

4 You know, you can take advantage of other
5 agencies that are in there inspecting grocery stores
6 and stuff like that. Then maybe there be somewhat of
7 an enforcement piece to this somehow.

8 MR. LEWIS: Ron Lewis, DOE. Chris, those
9 are all excellent comments and we appreciate that,
10 because that's what we're here for is looking for the
11 opportunities to save energy. We have certain
12 authority and we're charged by statutes to do certain
13 things and the limit of those statutes is to limit the
14 manufacture of products that are sold is not to dilute
15 or dismiss those things that you're talking about as
16 being very important.

17 There are a couple of bright spots out
18 there, hopefully, that help to influence those. One
19 is the cost of energy itself that people are more
20 motivated as energy costs go up, to look at getting
21 the max energy efficiency that they can. I guess from
22 the food products side of things, there is the point
23 of spoilage and functionality, that if things become
24 very inefficiency, that there's the point of its
25 impact on its function, its functionality of keeping

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1 things cool and safe and those types of things.

2 The other point is there are many, many
3 parts of the energy industry. There are ESCOs out
4 there. There are a lot of companies that make their
5 living by trying to help people to reduce energy.
6 There are a lot of utility companies that have
7 programs and have expertise. There are a lot of
8 universities that have extension services. There are
9 lot of people out there that can help if somebody is
10 motivated and wants to save energy, but we just are
11 not equipped or are we empowered to go out and inspect
12 and say you need to vacuum your coils, or you need to
13 tune something up. That's just not within our role
14 and responsibility here. But we do respect and
15 appreciate very much your passion for things being
16 maintained, not just being purchased that are
17 efficient.

18 Thank you for those comments.

19 MR. BALESTRINI: Can I offer one other
20 thing?

21 Chris Balestrini again. Would it be
22 within everybody's best interest to request and
23 starting with manufacturers, request some kind of
24 sticker or notification be attached to the machinery
25 that -- of a maintenance schedule for maintaining your

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1 efficiencies and some kind of recommendation about
2 this unit should be serviced every 6 to 12 months,
3 whatever, to maintain the efficiencies that -- I don't
4 know you guys necessarily have that kind of
5 information.

6 You need to do studies as you get new
7 equipment, but I mean recommending a maintenance
8 schedule may be in everybody's best interest as a
9 piece of this, you know, like should include something
10 in the rulemaking saying should include a maintenance
11 schedule for maintaining efficiencies or something
12 like -- some kind of direction that way.

13 MR. LEWIS: Again, we're limited on what
14 we're empowered to do legally and what we can direct
15 manufacturers to do. There are a lot of voluntary
16 programs that are out there. There are a lot of
17 market -- organizations like CEE -- market
18 transformation, energy efficiency advocacy groups that
19 -- a couple of them right here that have a lot of
20 guidance on their sites and have a lot of outreach.
21 There are a lot of ways to help to educate people and
22 help to make them aware of the significance of things,
23 but unfortunately DOE's empowerment and role is not
24 that.

25 FTC has labeling responsibilities for some

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1 things. We set the standards of test procedures
2 and that's really enough of a charge to us right now,
3 but again, not to dismiss or take away from the good
4 comments that you have and the desire for everybody to
5 be aware and save energy where they can.

6 MODERATOR BERRINGER: That was Ron Lewis.

7 And now we'll go to Steve Nadel.

8 MR. NADEL: Just briefly on this last
9 topic, there's also the EPA has the EnergyStar grocery
10 store program that recognizes those stores and
11 encourages them to have the best overall performance,
12 so that's one other aspect.

13 We're turning to this classification, I'm
14 kind of comparing what's on the slide to what the
15 consultants have prepared earlier. As I see it, there
16 are four differences, two of which I think we've
17 discussed already. We've already discussed the semi-
18 vertical without doors. I believe we've also
19 discussed the ice cream temperature. That's more for
20 application. That's not designed, if I understand
21 correctly, as a separate product class.

22 That leaves two other differences and I
23 was curious that ARI could correspond a little bit
24 about that, how they see them being used. One is the
25 service over-counter. I'm assuming that's for very

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1 small equipment, that would be on a counter where it's
2 a straight line, based on volume may not be
3 appropriate, if they could clarify that, that would be
4 good.

5 And I was curious what they are suggesting
6 regarding this quote application temperature. Is that
7 another just how equipment may be sold, but you will
8 always test equipment either at the medium or the low,
9 as appropriate for standard purposes and then have a
10 separate application temperature for certain sales, so
11 maybe ARI could respond.

12 MR. AMRANE: Karim Amrane, ARI. I will
13 defer your first question to the manufacturers. I
14 think they can answer that.

15 MR. HOWINGTON: I will take a crack at
16 service over-counter. This is Larry Howington, Hill
17 Phoenix.

18 The service over-counter is really the
19 cases that you see in the deli department and service
20 meat department where you have open meats and food
21 product in the cases. They're glass cases. And they
22 are probably the highest dollar value product that our
23 customer is selling. And so those cases then to be
24 very open in terms of visually which means needing a
25 lot of glass. And they're open on both -- there's

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1 glass in the front and they have glass in the back
2 too. They have doors in the back as well. Many times
3 you can open the front which means they're a little
4 different than your typical door case where you only
5 have doors on the front. So we felt that the energy
6 used and criteria might need to be a little different
7 there just because of the way those cases are used and
8 they have a very open look from a marketing
9 standpoint.

10 In a store overall, there are not a lot of
11 these cases. Only in the service area, deli service
12 area. So that's what we meant by service over. We
13 generally take -- people are taking the product out,
14 packaging it for the customer and handing it over to
15 them there. You don't serve yourself.

16 Open means seafood, those types of things.

17 Does that make sense?

18 The second question was -- what was the
19 second question?

20 MR. NADEL: About this application
21 temperature and whether that's to be used for product
22 classes or more for marketing and will it affect the
23 product classes?

24 MR. HOWINGTON: It does affect the product
25 classes somewhat. We had kind of a problem with that

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1 because customers sometimes want to use cases and I'll
2 give an example. They may have an open case that
3 they're using -- a medium or small open case where
4 they're using a medium temperature. At certain times
5 of the year they may want to run it at low
6 temperatures or they may want to run it at a frozen
7 temperature, but it's not capable of running at zero
8 degrees for product. It might only be able to run at
9 say 20 degrees.

10 And an example of what you might use would
11 be turkeys or hams or something like that around the
12 holidays. So that's an application kind of case where
13 the target temperature is 20 degrees or 10 degrees and
14 it's not capable of running at 0 degrees, although it
15 is frozen.

16 And we had that conundrum of how to
17 classify it, so we put this application -- it's
18 usually not a lot of cases, however, sometimes with
19 our product another example is ice. A customer wants
20 to run ice in a case frozen and ice doesn't need to be
21 0 degrees. So it may be running at 10 degrees. And
22 it's bags of ice. And they'll want the case to run at
23 that.

24 And if you self-contain the case, you may
25 be running it at 10 or 15 degrees, but you may not be

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1 able to run it down to 0 degrees. That's why we put
2 the category for application where it's a temperature
3 that may not be able to hit one of our mainstream
4 product temperatures, but at least you could have a
5 test temperature and you could label it as such.

6 MODERATOR BERRINGER: Mike Rivest.

7 MR. RIVEST: Mike Rivest, Navigant
8 Consulting. I guess thinking ahead a little bit in
9 terms of how we're going to structure the analysis,
10 are the products under -- which there are a series of
11 products, the 12 major product categories and then
12 they're further broken down by temperature, are those
13 physically the same, incorporating the same
14 technologies and then they are delivering different
15 services, if you will, by just a setting or are they
16 specifically built for those temperatures, but with
17 the same mechanical components?

18 The reason I'm saying that is if we were
19 to try and develop a standard, are we going to
20 essentially be doing an engineering analysis on the
21 row of 12 boxes or do we have to get into the further
22 applications and say okay, we can't just test at one
23 temperature and then have it apply, have the standard
24 be developed for one temperature and then the system
25 operated where it's needed by the customer. I'm not

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1 sure I made sense there.

2 MR. HOWINGTON: Larry Howington, Hill
3 Phoenix.

4 I'll try to answer your question. One
5 thing that we're doing is and what we agreed to do is
6 we put down all of the common applications interest
7 that we could determine within our user community and
8 we are getting sales -- shipping information on all of
9 those to provide to you so you can get an idea of how
10 -- what the volume is that we're talking about to see
11 what ones might be relevant.

12 Specifically, relative to the
13 construction, unfortunately that kind of depends.
14 Like we told you with zero and -5 or -10 on our ice
15 cream versus frozen, our product doesn't really
16 change, especially for remote cases if they're
17 identical. However, when you're doing other products
18 like I mentioned where you have a medium temp case
19 that's going to run at a lower temperature, you might
20 actually have to do things like change the fan speed,
21 fan motor speed.

22 When you go to the lower temperature, you
23 may have to lower the air flow speed. So there may be
24 specific things that you do and add to the case that
25 cause it to be constructed somewhat differently, if

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1 it's going to run at a medium and low temperature mode
2 that you wouldn't have to worry about it if you're
3 running it at maybe too low a temperature or a higher
4 medium temperature say. That may have a similar
5 construct or it may not.

6 So sometimes it is, and sometimes it
7 isn't. Unfortunately, I can't tell you, they're
8 always different or not different.

9 MR. RIVEST: Thank you.

10 MODERATOR BERRINGER: I see Steve Nadel.

11 MR. NADEL: Yes, just trying to clarify
12 this application temperature and how we apply it, what
13 it sounds to me like and tell me if this would work is
14 that if equipment can operate at one of the standard
15 temperatures, it would be rated at that temperature
16 and that would constitute the minimum standard. There
17 may be some very small number of products that is not
18 capable of operating at either 0 or 38 and that would
19 be just a very small niche category you're suggesting
20 that would somehow have some separate standard.

21 MR. HOWINGTON: Larry Howington again. I
22 think that's true, Steve, and I think by looking at
23 the shipment data, we could get an idea and maybe
24 there will need to be another category, if it's deemed
25 enough volume in that there may be a category like a

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1 wine cooler or something which really is just a medium
2 temp. case that runs at a higher temperature. If
3 enough people are producing that, it might be
4 worthwhile to have an application for that possibly.
5 I don't know.

6 MODERATOR BERRINGER: Karim.

7 MR. AMRANE: Karim Amrane, ARI. To follow
8 up on Steve's question, I think what we'll have to do
9 -- what you will have to do is look at the shipping
10 information we will be providing to the Department and
11 then see whether it's worth the time and effort to
12 regulate an application temperature with a very
13 limited amount probably being sold, so there might be
14 cases where application temperature would be relevant.

15 It might be product cases that would be irrelevant.
16 So you have to look at that.

17 MODERATOR BERRINGER: Dave Winiarksi.

18 MR. WINIARSKI: This topic about
19 essentially small volume products brings up an issue
20 that I think is somewhat unique and if Ron doesn't
21 kill me here for mentioning it, that the language that
22 was, I believe, negotiated for the Energy Policy Act,
23 basically says the Department has authority to cover
24 certain products. It then sets a deadline for the
25 Department to develop standards for products and

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1 products for which the Department does not develop
2 standards are -- it's then possible that states could
3 come along and individually set standards for it.

4 So we just want to make everyone aware
5 that when we decide that a product is a small niche
6 product and we think the Federal Government may not be
7 or in this rulemaking may not want to cover it. That
8 does open that opportunity for states to decide
9 whether they want to address it.

10 So one thing that I think I would
11 encourage is if we can think of a way to get certain
12 categories covered within the rulemaking without the
13 extensive amount of effort, that might be beneficial.

14 MR. AMRANE: Karim Amrane, ARI. I guess I
15 have a different interpretation of what EPACT says.
16 And here DOE is given the authority to do rulemaking,
17 but it might well be that when DOE is going through
18 the process, DOE might decide for certain product
19 categories or application temperatures or whatever
20 that it would be exempted. So it will be like an
21 exemption within the scope of the rulemaking. So I'm
22 not saying it that way. I'm saying it more like it's
23 a covered product for which DOE will exempt the
24 product from meeting minimum efficiency standards.

25 MODERATOR BERRINGER: Andrew.

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1 MR. DELASKI: Andrew Delaski of Appliance
2 Standards Awareness Project. I'm not sure how far you
3 want to go down this path, but there's a history of
4 the Department in the past having said set a no
5 standard standard, saying that we're determining that
6 no standard makes sense for this product, and we're
7 preempting the states. And that was overturned by the
8 Courts in the '80s. The notion of setting a no
9 standards standard is a big problem in our view.

10 If a product is not covered, then it is in
11 our view something that is not preempted in the states
12 and it's something we need to be really careful about
13 and think about as we go forward. And that said, I
14 think we want to be, but there's also the question of
15 having a level playing field for the manufacturers.
16 That we don't want to as we go forward, and I agree
17 with Karim's basic concept that we want to address
18 here opportunities for energy savings, not
19 opportunities to cover every single last little thing
20 in the marketplace. That's not the objective.

21 The objective is to save energy in a cost-
22 effective way. And whether it's the 80-20 rule or the
23 90-10 rule, the 90-10 rule there is, I agree with the
24 basic concept that's been discussed today, but we
25 should be focusing on where the opportunity is. So I

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1 think that's where we should be. And if there are
2 products that are left out that create the opportunity
3 for loopholes, that's a concern of ours, that
4 something is left out and some manufacturer sees that
5 as an opportunity to increase the market share because
6 they can then sell into this market and undersell
7 their competition, and that increases energy
8 consumption, that's a big concern of ours, too.

9 So we want to go after where the energy
10 savings is, but not create loophole, have a level
11 playing field. These are all important concepts.

12 MODERATOR BERRINGER: Steve Nadel.

13 MR. NADEL: Steve Nadel. I was just going
14 to add to that. Before we get all too bent out of
15 shape about what states might do, if it's truly a
16 niche product, a state is not going to bother. States
17 have far less resources than DOE does, so I wouldn't
18 worry too much about, you know, some small product
19 that, you know, a hundred gets sold in a year. No
20 state is going to bother.

21 MODERATOR BERRINGER: Ron?

22 MR. LEWIS: Ron Lewis, DOE. I think to
23 the point that Andrew just mentioned, our mission is
24 to save energy, to increase energy efficiency and
25 we've had a history of not getting things out very

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1 quickly. And trying to get this rulemaking done on
2 the time allotted along with a lot of other
3 rulemakings that we're being asked to do, we need to
4 get creative here in not looking under every single
5 rock and looking for every single little item that's
6 out there and trying to be exhaustive in our efforts.

7 But we want to save energy and we want to impact
8 things and we want to avoid blatant errors and
9 oversights.

10 So in looking at this, if there are
11 insights by people, for instance, when you're talking,
12 Chris, about perhaps changing fan speed or something,
13 if there is a standardized case, and I think I had
14 heard that there's a lot of customization. People for
15 different applications and different store
16 configurations and different store designs, whatever,
17 there's not a great deal of standardization out there
18 right now, so even noting that.

19 But if there are things that are primary,
20 that are the indicator of the major opportunity to
21 capture energy efficiency and energy savings, if it's
22 testing a case configuration for a certain setting,
23 and even if there's a variable such as a air flow or
24 something else that may be a nuance, an adjustment, a
25 reconfiguration. If there's a way for us to capture

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1 things without getting ridiculous in looking to
2 capture everything that's even less than a niche,
3 let's look for those opportunities. Let's look for
4 those commonalities, wherever they're possible.

5 And if anybody has insights, if there are
6 standardized sizes by application that makes sense, as
7 opposed to individual applications, if there's a sort
8 of base model that people tweak and tune to get to
9 these others, let's look at how we can categorize
10 things to make sense and get the best results without
11 getting down to such fine detail that we never get
12 this accomplished.

13 MODERATOR BERRINGER: Andrew.

14 MR. DELASKI: Andrew Delaski, of Appliance
15 Standards Awareness Project. I just want to request
16 that the Department can make a photocopy of this
17 available. That would help in preparing comments.

18 MR. LEWIS: The slide right there?

19 MR. DELASKI: Yes.

20 MODERATOR BERRINGER: We can do that. Any
21 other comments on this issue right here? I see people
22 looking at their watch. We're running behind
23 schedule, but I think this is an opportune time to
24 take a break. We'll do a 15-minute break. Be back
25 here promptly at 11:15. We'll start then and then we

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1 will finish up these questions and hopefully get back
2 on track. But thank you for all the great discussion
3 this morning.

4 (Off the Record.)

5 MODERATOR BERRINGER: Can we have
6 everybody take their seats? We'll get started up
7 again. I think almost everybody is back. If you'd
8 like to sit at the table and join us.

9 Let's go ahead and see if we can get back
10 on schedule here and get through some of these
11 questions. We're at Slide 28. We're on 3.4 now. It
12 says can the terms horizontal, semi-vertical and
13 vertical be used to describe equipment orientation?
14 If so, how should these be defined based on the angle
15 of the air-curtain, the load-line with the vertical,
16 with the 0 to 30 degree being the vertical; 30 to 60
17 being the semi-vertical and 60 to 90 percent being the
18 horizontal?

19 So this again is talking about classes.
20 Any comments on the classes?

21 Larry?

22 MR. HOWINGTON: Larry Howington, Hill
23 Phoenix. We have a definition to put forward to ARI,
24 based upon kind of a composite of all the members.

25 MODERATOR BERRINGER: Okay.

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1 MR. HOWINGTON: And basically the 0 to 10
2 is horizontal; 10 to 80 is the semi-vertical; and the
3 80 to 90 would be vertical. And that seemed to
4 represent fairly well the kind of classes that are
5 around here.

6 MODERATOR BERRINGER: Okay, great. Thank
7 you.

8 MR. HOWINGTON: So we'll put it forward in
9 writing.

10 MODERATOR BERRINGER: Great, thanks.

11 Mike?

12 MR. RIVEST: Mike Rivest. Larry, it seems
13 like 10 to 80 degrees is very broad. If one were to
14 set a standard based on one of those angles, say
15 halfway, would it be reasonable for the other products
16 to meet that same energy efficiency minimum
17 requirement?

18 MR. HOWINGTON: Again, this is Larry
19 Howington. I can show you product that we make that I
20 think that you would say is clearly semi-vertical,
21 that fall into that fairly narrow category.

22 If you look at the obvious construction of
23 it, it's designed so the shelves start very short at
24 the top and get broader as they go down and if you
25 look at it, you'll see that it obviously is a semi-

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1 vertical.

2 When you start defining -- if something
3 doesn't convey the visual aspect until you see on very
4 tall ones, they actually can get out pretty far and
5 still have a fairly shallow angle from vertical.

6 It would be a cascade-type case as opposed
7 to a vertical air-curtain case.

8 MR. RIVEST: But what I was saying is is
9 it possible that there might be some products which
10 have say an 80 degree or a 79 degree and would have to
11 meet the same standard as an 11 degree, and would that
12 be acceptable?

13 MR. HOWINGTON: Yes, it should be.

14 MR. RIVEST: Okay.

15 MR. HOWINGTON: Yes. It should be
16 acceptable. I wouldn't think anyone would complain
17 from having to meet the standard. In general, the
18 further you go off the vertical or the horizontal, you
19 start getting into the less efficiency area as you
20 start rolling air across shelves.

21 MR. RIVEST: Okay, thanks.

22 MODERATOR BERRINGER: Okay, any others?
23 So thank you, Larry. You're going to give us some
24 comment on it. Any other input on this 3.4?

25 Okay, 3.5. What product class, if any,

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1 can be combined with the standard setting purposes
2 because of their similarities? Can we combine any
3 classes in any areas?

4 Seeing no comments, we'll move on.
5 Hopefully, you will see something you can give us,
6 Larry, in your written comments will be great.

7 3.6. Can analysis for any one of these
8 product classes be applied or extrapolated to another
9 product class?

10 Sounds like a similar type of question.

11 Okay, seeing none. 3.7. Should all these
12 product classes be considered, e.g., do any of these
13 product classes have few or no shipments?

14 Larry?

15 MR. HOWINGTON: ARI will be forwarding
16 composite shipment to you and I think that should help
17 clarify for you rather than us speculate. We will try
18 to provide you the composite shipment data that's
19 available for all of the suppliers to the members.

20 MODERATOR BERRINGER: Great. All right,
21 then we'll move on to 3.8. Would it be appropriate to
22 extend the standards proscribed for self-contained
23 commercial refrigeration equipment with doors that
24 meet 2005 to similar remote condensing equipment with
25 doors and ice cream freezers with doors covered in

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1 this rulemaking? If so, what methodology would be
2 appropriate?

3 Karim?

4 MR. AMRANE: Karim Amrane, ARI. I will
5 defer a little bit to the manufacturers, but I don't
6 think it would be appropriate to extend. I mean
7 remote cases are, I guess, actually in self-contained
8 cases are correlated with respect to volume. The
9 remote cases industry is using total display area or
10 something else. It looks like it's going to be
11 difficult to extend the same methodology that was
12 developed in 17 to the remote cases. But together, I
13 would like to have the industry give us additional
14 comments on that.

15 MODERATOR BERRINGER: Yes, Bruce.

16 MR. HIERLMEIER: Bruce Hierlmeier, Zero
17 Zone. One other item in the self-contained cases the
18 internal volume they use was a gross internal volume
19 which in our study in looking at it as an industry,
20 for remote cases, we're looking at more of a net or
21 usable volume so you don't get to take advantage of
22 some of the distance between shelves and doors and
23 that type of thing. So that wouldn't work well to
24 just assume all those numbers would start working and
25 applicable to our equipment.

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1 MR. WINIARSKI: Dave Winiarksi for Pacific
2 Northwest Laboratory. Part of the reason this
3 question came up in perusing some of the
4 manufacturers' literature, we saw products that were
5 essentially looked like the same product, but
6 available in both the self-contained and a remote
7 configuration and we were not -- we didn't know
8 whether that was a common approach within the industry
9 or sort of that one manufacturer's products.

10 MODERATOR BERRINGER: Yes, Bruce.

11 MR. HIERLMEIER: Bruce Hierlmeier, Zero
12 Zone. I guess I can't speak for a number of
13 manufacturers, but I will. A number of our
14 manufacturers will make those perhaps as niche
15 products, so if a customer says I want to have this
16 nice, big piece of remote equipment, but can you
17 provide a condenser unit to go along with it, they
18 will apply that unit for that, but it's not a high
19 volume sale. If they're doing self-contains, they're
20 really in that marketplace, much like people that make
21 a lot of self-contains, if the customer wants to have
22 it remote, they'll make that a remote for them, but
23 again, it's probably not the rule. It's an abnormal
24 product form.

25 MODERATOR BERRINGER: Okay, any other

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1 follow-on comments. Any other manufacturers? Larry?

2 MR. HOWINGTON: Larry Howington, Hill
3 Phoenix.

4 As you have the opportunity to start
5 looking at energy data, I think that you'll probably
6 be happy to see that on the remote cases, in general,
7 that energy consumption will be lower in the self-
8 contained cases. Some of the issue has been trying to
9 make the direct comparison. I don't know how you make
10 the jump exactly or if there would be a good way to do
11 it. But in general, I think that we'll find the
12 remote cases will be more energy efficient.

13 MODERATOR BERRINGER: Yes, Chris?

14 MR. BALESTRINI: Chris Balestrini, FPA.
15 I'm just wondering if the classes and everything like
16 that that you're talking about, I'm wondering if there
17 isn't a volumetric effect that as you get bigger, the
18 behavior of the machinery will change as your volume
19 increases in your units and you may end up running
20 into like size constraints that you have to specify
21 within certain classes to be able to generate the
22 efficiencies and the rating and things like that that
23 you want to try and control here.

24 I don't know if any of the guys doing the
25 studies are breaking it down into volumetric

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1 comparisons as well as the efficiency comparisons.

2 MR. CHRISTOPHER: I think we are going to
3 get into that a little bit in the next slide.

4 MODERATOR BERRINGER: Well, why don't we
5 go ahead, if there's no other comments, we'll go ahead
6 and move on to the next slide.

7 MR. CHRISTOPHER: Yes, Karim touched on
8 this too, the idea of a normalizing factor or a
9 normalizing metric. And the ones that we're looking
10 at, of course, are volume which is historically have
11 been with the closed cases, the self-contained; total
12 display area which defined in the ASRAE 72 and the ARI
13 1200 and length. And our initial thinking really is
14 that length isn't going to be adequate to capture all
15 the effects and what we're proposing is to use this
16 total display area for the open cases and volume for
17 the closed cases. And we've done some looking into
18 this for manufactured data and the next slide actually
19 -- maybe we can come back to this item.

20 We looked at the -- this is just a sample
21 of some of the background research we've been doing to
22 compare energy consumption to total display area. So
23 this is for the remote condensing, basically a multi-
24 deck meat or dairy case and this is a survey of
25 publicly available manufacturer literature.

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1 And so really what we're looking at is for
2 medium temp, the variation in energy consumption with
3 TDA and we're starting to explore what these ranges
4 are, what some of the upper and lower limits are on
5 these.

6 Does that begin to address the question
7 that you have?

8 MR. BALESTRINI: Yes.

9 MR. CHRISTOPHER: Okay.

10 MR. BALESTRINI: Yes, that's what I was
11 wondering about is is your air getting bigger as your
12 volume gets bigger?

13 MR. CHRISTOPHER: Yes.

14 MR. BALESTRINI: Basically, you're
15 demonstrating that right there.

16 MR. CHRISTOPHER: We've got the same kind
17 of approach for length and volume as well. And we've
18 got backup slides if you want to take those out and
19 have a look. That's something --

20 MODERATOR BERRINGER: Yes, Karim?

21 MR. AMRANE: Karim Amrane, ARI. Just a
22 quick question. It says here that the energy
23 consumption is based on ARI 1200 2006?

24 MR. CHRISTOPHER: Yes.

25 MR. AMRANE: All the data you have here is

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1 based on the ARI 1200 2006?

2 MR. CHRISTOPHER: We took manufacturers'
3 specifications and calculated CDEC through the ARI
4 1200 calculation method. So that being said, maybe we
5 can come back to this and address this, if there are
6 any specific comments.

7 MODERATOR BERRINGER: Steve, did you have
8 a question or comment?

9 MR. NADEL: Steve Nadel, ACEEE. And this
10 will pick on some of the things that Scott Mitchell
11 was saying before. I think for the open cases which
12 metric you use could very much affect whether this
13 equipment increases the marketshare, decreases, how
14 much of it is sold.

15 If you do total display area, that will
16 penalize equipment that is deeper, that has more
17 storage area because there is heat loss associated
18 with that, so you may get more volume and it makes it
19 easier to sell the equipment, just based on display
20 area.

21 Likewise, if you do display area, it
22 encourages higher heights as opposed to trying to
23 narrow the height compared to say the length.

24 So our preference is, if possible, to do
25 something more toward refrigerated volume and in order

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1 to really try to keep this as efficient as possible.
2 The one compromise I can think of is you may have to
3 go to a multi -- some type of progression equation
4 that would have both volume and either length or
5 display area, but to just do display area, I think
6 would needlessly increase energy use.

7 MR. CHRISTOPHER: Is a multi-metric like
8 that problematic since you might be counting, say if
9 you do volume and display area, are you counting
10 certain dimensions twice?

11 MR. NADEL: I was thinking it would be a
12 regression equation though, the current standard for
13 say self-contained refrigerator was based on a
14 regression equation based on volume, so you just have
15 two variables. One is volume. One might be display
16 area. Just a slightly more complicated equation, but
17 based on actual data for the base cases and so on.

18 MODERATOR BERRINGER: Karim, do you have a
19 follow-on?

20 MR. AMRANE: Karim Amrane, ARI. Again,
21 going back to the question of whether to use total
22 display or volume, again, I will defer to the
23 manufacturers, but it seems to me that in the remote
24 cases, the trend has been to use total display area,
25 not only in the U.S., but as well in Europe. So I

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1 think we are trying here to align ourselves with out
2 standards like the ISO standard that uses total
3 display area.

4 So we want to be consistent. Our
5 certification program will be based on total display
6 area, so that's how the data is going to be listed in
7 our directory.

8 MODERATOR BERRINGER: Yes, Don?

9 MR. BRUNDAGE: Don Brundage, Southern
10 Company. From a practical point of view, I don't know
11 that you're going to get people building cases that
12 are taller because then consumers will not be able to
13 reach them. I think there's some normal, common sense
14 limits to these things.

15 MODERATOR BERRINGER: Thank you. We may -
16 - we have some questions from the audience. Please
17 come to the mic and identify yourself.

18 MR. MACMINN: I'm Chris MacMinn from
19 Navigant Consulting and I just actually had a quick
20 question for Karim and I think maybe Larry. I think I
21 heard you guys mention that you use total display area
22 for all remote cases? We had actually be thinking
23 that total display area was relevant to cases without
24 doors as opposed to maybe volume for cases with doors.
25 But you're saying that you think that total display

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1 area is relevant to remote cases whether or not they
2 have doors?

3 MR. HOWINGTON: This is Larry Howington
4 with Hill Phoenix. Truthfully, we're collecting the
5 data to look at it both ways to see which we get a
6 more reasonable fit because -- and I think what you
7 said may be right. For door cases and we want to -- a
8 lot of regulation has been put out on door cases
9 already. We didn't want to be looking like we were
10 terribly inconsistent with that. So we felt like we
11 might kind of leave that alone and then looking at the
12 open cases, because the ISO standard went with total
13 display area, we wanted to look at the data that we
14 generate and graph it and kind of see, look at it both
15 ways and see what made sense. If the fit seemed to be
16 better one way or the other relative to representing
17 energy per what the customer was buying.

18 In an open case, the customer is buying
19 display area. How well they display the product. As
20 we close the case up, as far as they're concerned, it
21 has less value to them. So that's kind of, I think
22 what drove ISO and sort of was in our mind and we're
23 in the process of pulling all that data together which
24 we'll share so that maybe we can look at it and see
25 what makes the most sense.

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1 MODERATOR BERRINGER: Okay, so I think we
2 pretty much touched on the question of Item 3.9 then
3 as far as feedback on it, the test metric.

4 Are there any other comments on that item?

5 MR. CHRISTOPHER: Well, then the last
6 issue here in the market and technology assessment is
7 baseline units. So once these classes have been
8 established, whatever they may be, we just select the
9 baseline in each class.

10 And so this is the starting point for
11 these standards, so we measured standards against the
12 baseline. And typically, previous standards are used
13 as to set the minimum baseline, but we don't have
14 standards in this case to go by. So we're looking to
15 do background information to get this data. Take a
16 look how to establish these baseline models and we'd
17 like to get manufacturers' data to supplement that
18 and your ideas about how to select these baseline
19 models.

20 So in fostering some discussion about this
21 issue, I want to hold off on the questions for a
22 second and go to this next slide here which -- so the
23 gray data points here are that previous graph that we
24 showed. CDED daily energy consumption versus TDA for
25 a standard level of lighting which we've defined as a

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1 single row of lights in an open display case.

2 The other data set here, the black points,
3 represents the same set of cases, but this time the
4 CDEC was calculated with a maximum level of lighting
5 which we've defined as one can't be row, one sill row
6 and one row of lighting per shelf. And really what we
7 want to get at here is that we need to be careful
8 about what assumptions we make in defining a baseline
9 model and we want to get your input on things like
10 lighting, for example, is a big one, that have an
11 impact on the utility of the case and a great impact
12 on the energy efficiency of the case.

13 So that being said I want to go back to
14 these two items and see what comments, questions we
15 have about how to select baseline models.

16 MODERATOR BERRINGER: Okay, so at this
17 point we'll look at item 3.11. It says the
18 Department's feedback on how to select baseline models
19 for each product class.

20 Comments on that? This is a very
21 important issue as far as where you start looking at
22 your analysis, especially your engineering analysis.

23 Karim?

24 MR. AMRANE: Karim Amrane, ARI. You will
25 get feedback from us on what the baseline is. We are

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1 putting together a document that will define it,
2 hopefully, at least from our point of view and you
3 will get probably a baseline as far as on consumption
4 too.

5 MODERATOR BERRINGER: Great, thank you.
6 And then it says moving on to item 3.12, the
7 Department seeks information on what particular
8 components and features characterize the baseline
9 models for each product class. There's a number of
10 examples there.

11 All right. Baseline information that you
12 submit to us will -- that will help us out. Thank
13 you.

14 MR. CHRISTOPHER: Thanks, Bryan. That
15 does it for the market and tech. Now we're going to
16 hand it off to Aris Marantan, who is going to discuss
17 the analysis and the engineering analysis.

18 MR. MARANTAN: Okay, thank you Mike. Can
19 everybody hear me okay? The next analysis performed
20 as part of the ANOPR is the screening analysis which
21 I'll describe here. Okay, the purpose of the
22 screening analysis is to screen out technology options
23 that will not be considered any further in the
24 analyses. The Department applies four screening
25 criteria which are listed here. Two of the list of

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1 technology options determine what the applicable
2 design options shall be for use in the remaining
3 analyses.

4 These four criteria were developed as part
5 of the process rule by the Department of Energy, and
6 they include first of all the technological
7 feasibility, which is any technologies that are not
8 incorporated in commercial products currently or any
9 working prototypes will not be considered any further.

10 So it has to be demonstrated for us to be examining
11 that technology.

12 The second one is practicability to
13 manufacture, install, and service. If mass production
14 of a technology and reliable installation and
15 servicing of any technology cannot be achieved by the
16 time the standard comes into effect on a scale
17 necessary to serve the market, then it will not be
18 considered any further as well.

19 The third one is adverse impacts on
20 utility or availability to customers. So for this
21 criteria, if a technology is determined to have
22 significant adverse impact on utility or utility of
23 the product to significant subgroups of consumers, or
24 results in unavailability of product types with
25 performance characteristics, features, sizes,

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1 capacities, that sort of thing, the volumes that are
2 substantially the same as products that are generally
3 available in the U.S., then they will not be
4 considered any further.

5 And the last one is adverse impacts on
6 health or safety. That's pretty self-explanatory. So
7 what I want to emphasize here is that we'll be looking
8 for comments on which technology options the
9 Department should screen out in order to have a
10 remaining set of limited design options which will be
11 considered further in the analyses, particularly the
12 engineering part of it.

13 Okay, what you see here is an initial list
14 of technology choices. This one happens to be
15 applicable to all equipment types that we're examining
16 here in this rulemaking. The technology choices are
17 typically developed using past technology options that
18 have been used or prototype designs, as I've
19 mentioned. And initially, this list of technology
20 choices includes technologies that are technologically
21 feasible from our understanding of the industry
22 currently.

23 However, in consultation with stakeholders
24 and using this screening criteria that I've just
25 described, we will filter this list down to a usable

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1 set of design options. The list continues on the next
2 slide, for equipment without doors only and also for
3 self-contained equipment. And then at this point
4 before I turn it over to Bryan to lead the discussion
5 on each of these, I want to make clear that the
6 Department is interested in specific information using
7 the screening criteria to screen out these technology
8 options. We want to make sure that any comments we
9 receive are explicit and relate to the full-screening
10 criteria if possible.

11 MODERATOR BERRINGER: Okay, yet again
12 3.10, it says what technologies or designs if any
13 should be added or removed from this list above. So
14 I'm not going to go to each technology. I don't think
15 you guys can see that, if you think something is here
16 or we've missed something that needs to be added, a
17 technology that you think should be on here, we need
18 to add it the list if, as Aris said, that if the four
19 criteria would apply to something that is on the list,
20 and you feel it should be screened out because of
21 safety issues or other issues, then please let us
22 know.

23 Let me start with, does anybody feel that
24 there's something that's missing from this list that
25 needs to be added on technology? Seeing none,

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1 anything that needs to be removed from this list that
2 does meet the four criteria for screening out? The
3 purpose of screening out is that we don't spend a lot
4 of time and effort on analyses, engineering analyses,
5 so we don't, something that's a viable technology.

6 Bruce.

7 MR. HIERLMEIER: Bruce Hierlmeier, Zero
8 Zone. I guess I'd be cautious on the demand defrost.
9 hat was popular in the trade journals and topics a
10 few years ago. I think it didn't work all that well
11 if you have one failure in a case, you could lose a
12 thousand dollars worth of product. It doesn't pay for
13 the savings you have. There may be very little
14 interest in that. People are interested in doing it,
15 but no viable technology to make it happen right now.

16 MODERATOR BERRINGER: Thank you. Any
17 other comments from any of the other manufactures?
18 Okay, seeing none.

19 MR. MARANTAN: Okay, after conducting the
20 screening analysis, the Department performs an
21 engineering analysis based on the remaining design
22 options. So the engineering analysis consists of
23 estimating the cost of equipment at various levels of
24 reduced energy consumption. Okay, the purpose of
25 engineering analysis is to characterize the

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1 relationship between manufacturer costs and energy
2 efficiency, or in this case energy consumption.

3 In general, as energy consumption
4 decreases, manufacturing costs increases, and that's
5 represented here in the graph. In determining the
6 relationship, the Department will estimate the
7 increase in manufacturer costs associated with
8 technological changes that decrease energy
9 consumption. So as you can see, the output of the
10 beginning analysis is a curve, which you see here.
11 And that is used further downstream in the analysis,
12 in the life-cycle cost and payback period, the
13 manufacturer impact and the employment impact
14 analysis.

15 Okay, this next graph shows a little bit
16 more on the method that we envision for the
17 engineering. This is broken down into several
18 discrete steps. The first step in the process is
19 defining a baseline, which was covered in the previous
20 section. So here baseline units for each product
21 class are defined, and data is gathered for baseline
22 performance. And then we also include mark-up
23 assumptions, which convert manufacturer production
24 costs to manufacturer selling prices.

25 The next step is the development of the

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1 cost versus energy consumption curve. Here the
2 Department will obtain cost estimates for engineering
3 analysis from detailed incremental cost data, which is
4 desegregated into the cost of material, labor, and
5 overhead. And then an industry-wide analysis is
6 created based primarily on manufacturer's supplied
7 data.

8 The next step is pretty important as well.

9 We don't just rely on the cost energy consumption
10 curve. We have to also do qualification. So in this
11 step, the Department plans to qualify the aggregated
12 cost versus energy consumption data received from
13 stakeholders. By identifying applicable design
14 options and using the test procedure to determine
15 performance improvements, and you saw a little bit of
16 that in the previous section.

17 Now we also do, we also collect
18 manufacturer selling price data as well in order to
19 create these qualification points. In addition, the
20 Department plans to consult with outside technical
21 experts as needed. And then finally, the Department
22 will finalize the analyses based on stakeholder
23 feedback received during the comment period.

24 So the next few slides describe a little
25 more about each of these steps. Okay, here is the

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1 cost versus energy consumption curve development. The
2 first part of that development is for each product
3 class, the Department will select the baseline as a
4 reference point, against which it can measure changes
5 resulting from energy standards.

6 Typically the baseline model is a model
7 that just meets current energy efficiency standards.
8 However, in this case we don't have that luxury. So
9 the Department proposes to use information provided
10 by stakeholders in addition to information that we
11 will collect from publicly available data in selecting
12 the appropriate.

13 The next step, the Department collects
14 incremental cost data which is intended to represent
15 the average incremental production cost to improve
16 that baseline model to a specific energy consumption
17 level. So this describes really an energy -- an
18 efficiency level approach for the engineering because
19 the Department will examine aggregated incremental
20 increases in manufactured selling price at reduced
21 energy consumption levels. This approach allows
22 representation of the entire range of efficiency
23 levels.

24 And then the last step which I mentioned
25 earlier is qualification. Here, the Department

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1 intends to qualify the cost versus energy consumption
2 relationship supplied by stakeholders through
3 engineering expertise in consultation with
4 stakeholders.

5 Specifically, the Department will
6 supplement the aggregated data with information
7 collected through a follow-up interview process.

8 These interviews are confidential and provides a
9 deeper understanding of the various combinations of
10 technologies used to reduce energy consumption.

11 Okay, so here we have two questions
12 related to the approach. I'll return it back to
13 Bryan.

14 MODERATOR BERRINGER: Then on to Item 5.1.

15 For each product class, the Department seeks
16 information on incremental manufacturing cost of
17 components. It says see Items 3.12. For energy
18 consumption levels above the baseline. Then e.g.,
19 daily energy consumption, what components are
20 different from the baseline, material cost, labor
21 cost, overhead costs, excluding depreciation, building
22 conversion, capital expenditures, tooling, equipment,
23 conversion of capital expenditures, R&D expenses,
24 marketing expenses, etcetera. So again, we're looking
25 at incremental manufacturing costs of components, in

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1 components.

2 Any comments on that?

3 Karim?

4 MR. AMRANE: Karim Amrane, ARI. ARI will
5 be providing those cost efficiency curves to DOE, as
6 an aggregate curve. It will be presented to the
7 industry, not individual manufacturers.

8 MODERATOR BERRINGER: Okay, thank you.
9 Yes, is it Marshall?

10 MR. HUNT: Yes, Marshall, PG&E. I think
11 we need to remember that these are mature market or at
12 production level cost because you might think of
13 widget A, put it in 5 percent of your existing product
14 and it will be a niche very specialized, very
15 expensive item, whereas if it was required by the
16 standards, all of your product had that widget A, then
17 the cost would be much, much different. In past
18 proceedings, that's been a big issue.

19 MODERATOR BERRINGER: Okay, any other
20 comments?

21 Okay, we'll move on to Item 5.2. The
22 Department is also interested in any equipment test
23 data that stakeholders could provide, e.g., test
24 procedures used, rating conditions, refrigerated
25 volumes, display, total display areas, case length,

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1 voltage, integrated average product temperature, daily
2 energy consumption, etcetera. Test data for the
3 baseline model in each product class is particularly
4 important. Again, we were trying to get a baseline
5 from which we're establishing standards. So it's very
6 important, the baseline. Any comments or -- does
7 anybody know any other data sources out there to sort
8 of obtain this information?

9 MR. AMRANE: Karim Amrane, ARI. Again, as
10 ARI, we will provide you the curves, the individual
11 test reports that you're asking, I guess, you can
12 request them from the manufacturers directly. As ARI,
13 will provide you just aggregate numbers.

14 MODERATOR BERRINGER: Okay, great. Thank
15 you. Any other comments? All right, thank you.

16 Aris?

17 MR. AMRANE: Karim Amrane again. I'd like
18 to make a general comment here. I guess it's
19 important that all stakeholders on the table agree on
20 the process that DOE intends to follow here. It's
21 going to be very difficult for DOE to change course
22 along the way because of the time frame we're talking
23 about. So I guess our position to what DOE is trying
24 to do I think we need to hear it today because it's
25 going to be too late six months from now.

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1 MODERATOR BERRINGER: Thank you.

2 MR. MARANTAN: Okay, this next slide shows
3 cost efficient -- cost energy consumption curve as an
4 example for a specific product. What you see here is
5 energy consumption, also the manufacturing costs. The
6 baseline is right there in the middle. It's the
7 baseline efficiency level that will be determined.
8 The cost versus energy consumption curve . This one
9 here is on here as well and the last items are the
10 qualification points. These are -- this is an example
11 of the kind of output that we will expect from the
12 engineering analysis and so a little bit on the
13 qualification.

14 What we intend to do is derive the
15 qualification points from various sources. One of
16 them, first of all, is publicly available information
17 that you might see form the manufacturer websites and
18 specification sheets. Also, the design options that
19 were not screened out in the previous analysis. We'll
20 be using those along with the test procedure. In this
21 case, it's ARI 1200 which we've done some work with
22 already. And also interaction with stakeholders and
23 other technical experts. So that's really what we're
24 getting at here when we say we're putting together
25 qualification points to check the cost efficiency

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1 curve.

2 With that, I'll turn it over to Bryan for
3 feedback.

4 MODERATOR BERRINGER: Yes. Item 5.3.
5 Does the Department request feedback on the use of
6 efficiency level approach for determining the
7 relationship between manufacturer's selling price and
8 energy consumption for commercial refrigeration
9 equipment, supported as needed by the design option
10 approach. So we are talking about the approach we're
11 using here. We're going to use an efficiency level
12 approach which is aggregated information from ARI
13 versus a design option approach.

14 So any comments on this approach?

15 Steve Nadel?

16 MR. NADEL: Steve Nadel, ACEEE. It will
17 probably be no surprise because we've made this
18 comment in a variety of other rulemakings. We are
19 somewhat troubled by the design option, I'm sorry, the
20 efficiency level approach because it effectively
21 creates a black box. You have a baseline equipment
22 that manufacturers provide data on how much more it
23 costs. There's no way for anybody to do some
24 independent analysis on that. We prefer the design
25 options approach because it shows how much will be

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1 saved, how much will it cost and things can be
2 independently verified.

3 One approach the Department has often done
4 in recent rulemakings is do both. So the Department
5 seems to like the efficiency level approach. We
6 prefer the design options. By doing them both you can
7 calibrate one against another, have data that is
8 publicly available so all parties can comment and not
9 have a black box.

10 So as Karim said, yes, it's going to be
11 critical to get this right up front which is why we're
12 bringing this up now.

13 MODERATOR BERRINGER: Mike Rivest.

14 MR. RIVEST: The subtle difference, I
15 think, between what you are asking for, Steve, versus
16 what we're proposing to do is you seem to envision two
17 complete and separate analyses and we envision an
18 analysis, a primary analysis and a quote secondary and
19 more limited analysis. And we believe, particularly
20 for this product, that the test procedure gives us a
21 wonderful construct to look at the energy savings
22 potential of discrete design options because that's
23 how really the test procedures have been set up. And
24 we can get costs on those design features
25 independently.

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1 So without -- when you saw earlier, there
2 are probably over 30 product classes. They would be a
3 tremendous amount of work to do design option approach
4 on 30 product classes. But we certainly can do a
5 product approach, the design option approach on those
6 product classes that have the greatest energy
7 consumption. And we've already started doing that.
8 You saw earlier the graphic of the product offerings
9 in the market today and that's the type of analysis we
10 can provide for those product classes that have the
11 greatest amount of energy savings.

12 So that's what we're proposing to do.
13 We're confidence that the limited design option
14 approach curves that we'll develop will be consistent
15 with the industry data. We're going to make sure of
16 that through our interview process, so there's no
17 misunderstanding. Because design option approach is
18 not a miracle. It's not the miracle solution either
19 because it assumes a lot, particularly in other
20 products, but I think if we have an understanding of
21 what's truly being done, we'll be able to reconcile
22 our validation with the curves that are being
23 supplied. If not, we'll know very early on through
24 our limited sample.

25 So anyway, I just wanted to qualify that

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1 and maybe get further reaction from what I just said.

2 MODERATOR BERRINGER: I see a follow-on
3 comment.

4 Chris.

5 MR. BALESTRINI: Chris Balestrini, FPA. I
6 have a question about the curve that you have up on
7 the screen. When you say incremental manufacturing
8 costs, at what point in the manufacturing system are
9 you considering the costs? Is it at the time the unit
10 is completed being built? Because like say, for
11 instance, you have a piece of machinery that you do
12 some options on and you change the weight of it, well,
13 to ship that you're going to incur an upcharge on the
14 transportation side, so you really need to identify
15 exactly where you're looking for the cost, if you
16 already haven't and I don't know if you've already
17 defined that stuff.

18 And the other question I had was the
19 energy consumption, is that like kilowatt hours per
20 cubic foot of volume inside the unit or you know,
21 what's the units that you're using for the energy
22 consumption?

23 MR. MARANTAN: I will answer your second
24 one first. What we've been using in our analysis up
25 until now is kilowatt hours per day per some

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1 normalizing factor which has yet to be determined and
2 you know, in a lot of cases we've been using total
3 display area, as you saw in the previous section. So
4 does that answer your question? Kilowatt hours per
5 day per a normalizing factor.

6 MR. BALESTRINI: For an open unit. Now
7 what about the closed one? So that's like per square
8 foot of the display area, correct?

9 MR. MARANTAN: Yes. For the closed ones,
10 we haven't determined that either, but we have similar
11 choices. It can be kilowatt hours per day per cubic
12 feet of volume or some other metric which hasn't been
13 determined yet.

14 MR. BALESTRINI: Does it make sense though
15 to go with one unit so you can compare apples with
16 apples that if a person that wants to buy a unit can
17 compare costs on a relative basis, you know, stick
18 with one unit between both closed and open?

19 MR. MARANTAN: I'd like to have as little
20 difference as possible. It makes sense to do it that
21 way.

22 To answer your first question you actually
23 read our mind. We're going to get to that in the next
24 slide.

25 MR. BALESTRINI: Okay. I'm not reading

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1 ahead.

2 (Laughter.)

3 MODERATOR BERRINGER: Andrew.

4 MR. DELASKI: Andrew Delaski of Appliance
5 Standards Awareness Project.

6 Can the Department take a moment just to
7 describe a bit more how you anticipate collecting the
8 manufacturer data? Is this data going to be collected
9 by ARI, handed over to you in one piece? How are you
10 going to weight manufacturers' data? How is that --
11 or is it going to be collected by your consultants?
12 What's the process envisioned?

13 MR. RIVEST: That hasn't all been worked
14 out. Mike Rivest. Really that hasn't all been worked
15 out yet. I envision that ARI in their comments would
16 address how they propose to display that data to DOE
17 in the past. What we're looking for not just a curve,
18 but a curve supplemented with detailed breakdowns of
19 cost, of variable cost and tooling and investment
20 numbers that we can then use in manufacturing impact
21 analysis. I know that's more of a burden, but it also
22 helps us both in the validation and then in the
23 manufacturing impact analysis further on down.

24 In terms of the aggregation, I can only
25 speak to what's been done in the past. I don't know

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1 what ARI envisions, but typically the data comes in
2 from individual manufacturers and their costs are
3 aggregated based on shipment weighting of their
4 responses.

5 MR. AMRANE: Karim Amrane, ARI. And we
6 intend to follow the same process, so that's going to
7 be done the way it's been done in the past.

8 MR. RIVEST: Right, and what's a little
9 bit different and what's been done in the past is that
10 we would follow up with those manufacturers to ask
11 questions that would help us understand how that, why
12 the curve looks the way it does. And to first of all,
13 make sure that they feel that that curve is also
14 representative of their costs and give us an
15 understanding as we move down the curve of what design
16 options have been implemented. And that gives us
17 information we can then compare with our database of
18 design options and design option costs, so we can see
19 if the efficiency improvement that we believe are
20 going on are in line and also the costs that we have
21 so we'll have costs for fan motors, for example, going
22 to an ECM technology and we can compare that with what
23 they're implementing.

24 Here we have the benefit of a test
25 procedure that already allows us to calculate and to

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1 agree on what the energy savings of a certain design
2 implementation is. It is built with that flexibility,
3 which is wonderful. So I don't expect big
4 disagreements about what the efficiency improvement of
5 an upgraded motor would be here.

6 We might defer about the cost of that
7 motor. We have to understand where those cost
8 estimates come from and why they might be or not be
9 different.

10 MR. DELASKI: So a couple of follow-up
11 comments. Andrew Delaski of Appliance Standards
12 Awareness Project.

13 I'm glad to hear that Karim, ARI envisions
14 providing for detailed data to the Department that
15 they've provided in the past. However, back on
16 Steve's earlier point about the need for design
17 options to work for -- by providing that detailed data
18 to the Department it perhaps is a black box to the
19 Department and to its consultants, but to non-
20 manufacturer stakeholders, the data remains very
21 difficult to understand the components of it.
22 Therefore, the design option were done to validate
23 that data and show the benefits of different technical
24 options. It remains very important.

25 So -- and a second comment. In other

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1 rulemakings, other proceedings, the Department has
2 typically, my understanding, typically taken
3 manufacturer cost data and developed a market weighted
4 average to determine the cost to reach particular
5 efficiency levels, in essence, giving more weight to
6 the costs of a big manufacturer than say to the cost
7 of a small manufacturer, to come up with an average
8 figure. It's been a troubling approach to me to use
9 this sort of market weighted average cost numbers. It
10 may be that the manufacturers in this rulemaking that
11 are affected, come forward to you with a set of costs
12 that are very similar. However, in past rulemakings,
13 the costs, I believe, had been quite a distribution.

14 The distribution of costs in an energy
15 efficiency level are very important to understand what
16 the ultimate costs will be. I'll give an example of
17 why this is so important. It's getting to be summer
18 barbecue system. I'm going to put a new deck on the
19 back of my house. Okay? So to get this work done,
20 I'm a good consumer. I'm going to go out and I'm
21 going to get three bids. Maybe I'll get five bids to
22 get this work done if I'm really diligent.

23 I've lived in my house for 10 years. I've
24 had a lot of work done. I've done the kitchen, I did
25 the bathroom. I've done the attic, and I've always

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1 gotten lots of bids. And these bids come in all over
2 the map. The difference between my low bid and high
3 bid has been as much as 2.5 to 3 times for the same
4 job, where we really specifically spec out the job at
5 one time.

6 We're a cost careful family, so we're
7 focused on low cost. We often take the low bid and
8 that affects the second lowest bid. But I'm not
9 picking the guys 2.5, 3 times the highest cost because
10 that guy doesn't want the job, really. But if I pay
11 three times as much as the low cost, he'll gladly do
12 it for the higher price.

13 What the Department does in its
14 methodology, it goes out and it gets five bids and it
15 takes the average of those five bids based upon a
16 market weighted average. But when I do my job in my
17 backyard, I'm not going to pay the guy that gets the
18 job the market weighted average. I'm going to pay him
19 what he bid.

20 To bring this home to this situation, I
21 think what the Department should be looking at is not
22 the market weighted average, but rather what are the
23 costs coming in at the low end of the estimates.
24 Because those low ends tell you where the market is
25 going to go. The manufacturer who can make it at the

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1 lower end of that range is the manufacturer who is
2 going to define where the prices are going to happen
3 in that marketplace.

4 Because the other manufacturers will
5 quickly adjust and find ways to sharpen their pencils
6 to meet those costs. If they don't, then their market
7 shares will erode and market shares are the name of
8 the game in most market places. So they're going to
9 find ways to meet those lower costs.

10 The Department doesn't recognize that
11 market share can shift and that the market adjusts to
12 those adjustments, to those cost pressures. So I
13 think this weighted average taking of manufacturer
14 costs, if we re-examined, we looked at how we can take
15 into account how the manufacturer must compete in a
16 marketplace to look at the lower end of those
17 manufacturer ranges. So you need those distributions.

18 The distributions need to be there. But where are
19 the costs coming from for different manufacturers?

20 MR. RIVEST: That's not incompatible --

21 (Laughter.)

22 Somehow I thought he was talking about me.
23 Mike Rivest, Navigant Consulting. That's not
24 incompatible with what we've proposed to do, which is
25 to have a range around that central tendency. It

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1 think we'll have to work with ARI to see exactly what
2 that might mean in this case. If it's, I mean, they
3 could supply an entire distribution. That would be
4 complex. It could be more something like high, low,
5 and medium or at least straight average versus
6 weighted average, something that would give a little
7 more understanding publicly to the underlying data.

8 MR. AMRANE: Karim Amrane, ARI. And yes,
9 we've done it in the past and we could do that high,
10 low, and medium, for example. But I'm a little bit
11 concerned with the comments that Andrew made because
12 basically you're trying to get the small manufacturers
13 out of business by proposing what you're trying to
14 propose here. Small manufacturers are going to have a
15 higher cost than larger manufacturers, and those need
16 to be taken into account in the analysis. Otherwise,
17 you'll be skewing the data by just considering the
18 larger manufacturers in the analysis, and that's not
19 how ARI provided data. I'm telling you right now.

20 MR. DELASKI: Andrew Delaski of Appliance
21 Standards Awareness Project. I'm not at all
22 suggesting that the manufacturer impact analysis
23 should be put aside and certainly impacts on small
24 manufacturers should be addressed through the
25 manufacturing impact analysis. And I also, I don't

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1 know who is going to have the high cost, who is going
2 to have the low cost. You know, you hypothesized that
3 the small manufacturers will have the higher cost. I
4 don't know that a priori, that that's going to be the
5 case.

6 In fact, I'm concerned that the
7 Department's historical approach by using a market
8 weighted average of cost, it does in fact, what the
9 Department will do in this case or has in the past,
10 correct me if I'm wrong, that that actually
11 disadvantages small manufacturers because their costs
12 are given less weight. So this is not about size of
13 manufacturer, it's about what the market can support
14 in terms of cost.

15 MODERATOR BERRINGER: Mike Rivest.

16 MR. RIVEST: To the extent, I can say for
17 a fact that there's a very strong correlation between
18 the size and the costs and its inverse, and it's
19 mostly because of fixed costs and R&D investments and
20 things like that. So market weighing tends to bring
21 down the cost compared to the straight average, but
22 you know, if ARI would provide both, we would get some
23 insight into that. If they were to provide a high and
24 low with an average, or maybe something short of the
25 lowest, but percentile, like a 25th percent. When you

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1 get low, then you're identifying someone's absolute
2 data submission which is problematic. So I mean, I
3 think we can work on giving a range of data without
4 divulging anyone's particular data point.

5 MR. DELASKI: Thank you.

6 MODERATOR BERRINGER: Any other follow on
7 comments?

8 Steve Nadel.

9 MR. NADEL: Okay, excuse me. Steve Nadel.
10 Mike Rivest made some comments and asked for further
11 feedback. I guess my initial reactions is that could
12 work provided that the data is provided in the TSD so
13 people can look at it. It's not just DOE reassures
14 itself that data is published to show what the
15 assumptions were and how this correlates.

16 You probably need to do it for the most
17 common classes but also for classes that are
18 technologically very different from the most common
19 classes, because it's hard to generalize. And that
20 based on the costs that come in, probably in the
21 ANOPR, there needs to be some provision that if some
22 costs look way out of line, that you may do additional
23 design option analysis between the ANOPR and the NOPR
24 to help address those issues. So I'm just trying to
25 explore ways to reassure us, and not have a black box,

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1 but I understand your desire to simplify the analysis
2 and not try to be working two streams for all 30
3 product classes.

4 MR. RIVEST: Mike Rivest, Navigant
5 Consulting. The process you described, that's exactly
6 what we envision which would be to have very publicly
7 available results of our validation, comparison of
8 our assumptions about cost efficiency versus the
9 submitted data. So it wouldn't be just a matter of
10 putting the dots on that graph, but in fact saying
11 what the generalities are and what are costs, assumed
12 costs were.

13 MODERATOR BERRINGER: Okay, Aris.

14 MR. MARANTAN: Okay, this next slide
15 really talks about the assumptions and the analysis
16 that we're going to put together for the markups. But
17 it sort of gets back to the question that Chris asked
18 earlier about the costs.

19 As you can see here, the costs that we're
20 talking about, or the price actually, is the
21 manufacturer's selling price. That's what we're going
22 to be including the output of the engineering
23 analysis.

24 That's derived from two things: full
25 production cost as well as the markups. The full

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1 production costs includes direct material, direct
2 labor, factory overhead, and depreciation. The
3 markups include sales and marketing, research and
4 development, interest and profit.

5 Since we don't have that kind of
6 information readily available, we have to use publicly
7 available information, and that's a matter of
8 collecting that information from sources such as the
9 SEC, from 10K reports, company annual reports, Dunne
10 and Bradstreet reports, Value Line, Standard and
11 Poors, and Ibbotson Associates. So that's the kind of
12 price that we're trying to establish here. Does that
13 answer a question?

14 MR. RIVEST: Mike Rivest, Navigant
15 Consulting. To answer your question specifically,
16 which was transportation costs, those are factored
17 into the lifecycle cost analysis, which you know, what
18 we're deriving here is just manufacturing price, FOB.

19 What does FOB stand for? Freight on Board.

20 Which means that loading dock of the
21 manufacturer. So the life cycle cost analysis, which
22 includes the installation, any changes in installation
23 costs or maintenance costs for example, are rolled up
24 into the next analysis we'll describe this afternoon
25 which is the consumer life cycle cost analysis.

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1 MR. BALESTRINI: Chris Balestrini, FPA. I
2 realize then that you're going to have a situation
3 where your numbers, as far as costs, are going to be
4 extremely variable depending on region of
5 manufacturer, you know, what prevailing wage rates are
6 in certain parts of the country and stuff like that.

7 And are you going to back it down to try
8 to assign a cost per certain size to try to even it
9 out? You know, say manufacturer A provides a
10 refrigeration unit that's 100 square feet display
11 area, and B does one that's 75 square feet. Are you
12 going to try and break it back to a comparative
13 measure so that you can talk about the cost on a per
14 unit basis?

15 MR. RIVEST: Mike Rivest, Navigant
16 Consulting. What we do is in establishing the
17 baseline for the data gathering, we are declaring in
18 advance that the case we're looking at will be this
19 many total displayed area inches.

20 MR. MARANTAN: So you do define it.

21 MR. RIVEST: So we define that going in.

22 MR. MARANTAN: Okay.

23 MR. RIVEST: Then the problem becomes when
24 we set the standard, we have to set the standard for a
25 broader range of a total display area. So as we saw

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1 earlier, if there is a need to adjust the standard to
2 account for the total display area, we do that in a
3 second step, which might be a regression analysis, for
4 example.

5 MODERATOR BERRINGER: At this time, let's
6 look at Item 5.4, the Department seeks comment on the
7 market approach proposed developing estimates for
8 manufacturer's selling price, as Aris mentioned, the
9 different sources that we're looking at, if there's
10 any additional sources that you think would be used or
11 any additional information, now would be the time to
12 let us know.

13 Marshall?

14 MR. HUNT: Marshall Hunt, PG&E. I just am
15 concerned that is it always true that its manufacturer
16 direct sales or is there one or two or even three-step
17 to market process? Is that allowed for in the
18 analysis? It would be nice if it was so simple that
19 the manufacturers always sold directly, but I doubt
20 that's not really the case.

21 MR. MARANTAN: Yes. To answer that,
22 that's actually covered in an LCC analysis which we'll
23 hear about after lunch. It is accounted for, not just
24 direct sales.

25 MR. HUNT: Thank you.

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1 MODERATOR BERRINGER: Any other comments
2 on markup? Okay, we'll continue with the next slide.

3 MR. MARANTAN: This slide is the last one
4 for engineering. We have two topics here. The first
5 one is proprietary designs. Here, the Department will
6 consider in its engineering analysis all of the design
7 options that haven't been screened out previously in
8 the screening analysis, including proprietary designs.
9 So the Department will consider these designs in
10 subsequent analyses only if it's not a unique path to
11 a given efficiency level.

12 If the proprietary design is the only
13 approach available to achieve a given efficiency level
14 than the Department will reject that efficiency level.

15 So there's an item here for that
16 particular topic. I'll just go on to the next one and
17 cover both at the same time.

18 The second one is outside regulatory
19 changes. Here, the Department must also consider the
20 effects of other regulatory changes that can impact
21 manufacturers of these equipment. For example, in the
22 refrigeration industry, due to the phaseout of CFCs
23 and HCFCs, the industry must convert over to HFC-based
24 refrigerants. So that's one of those outside
25 regulatory things that the Department must consider.

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1 So the item we request feedback on if
2 there are any other outside regulatory changes. So
3 with that, Bryan?

4 MODERATOR BERRINGER: So we are looking at
5 Item 5.5, are there proprietary designs that the
6 Department should consider for any of the products
7 under consideration by this rulemaking? If so, how
8 should the Department acquire cost data necessary for
9 evaluating these designs?

10 So again, are there any designs -- we know
11 they're proprietary that would be at issue for -- that
12 other manufacturers could not produce these, a similar
13 unit or technology.

14 Not seeing any. Item 5.6. Are there
15 additional outside issues that the Department should
16 consider in its analysis for commercial refrigeration
17 as Aris talked about there, might be other regulatory
18 areas or other issues that we need to consider that we
19 are not.

20 I see Dave Winiarski.

21 MR. WINIARSKI: I just wanted to make a
22 comment here related to remote equipment and the issue
23 that struck me when we were talking about this was
24 that in the use of the ARI 1200 test procedure, the
25 COP of the remote condensing system is described in

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1 the test procedure and specified. And I guess one of
2 the things that if we decide to go the route of using
3 that test procedure is that's listed COP as a function
4 of suction temperature going to be consistent with the
5 use of newer refrigerants.

6 MODERATOR BERRINGER: Yes?

7 MR. TANNER: Bob Tanner, Hill Phoenix.
8 That chart that's in ARI 1200, we just picked a
9 standard compressor that's offered. I can't remember
10 the exact model, but it was one that was frequently
11 used in parallel rack systems as a normalizing which
12 is picked as a standard compressor to -- once again,
13 the standard was developed to compare data not
14 necessary to give specific -- it's very close. It's a
15 pretty off-the-shelf technology compressor, but you're
16 right, it would not take into account any more
17 efficient options that have come down that road.

18 MODERATOR BERRINGER: Larry?

19 MR. HOWINGTON: This is Larry Howington,
20 Hill Phoenix.

21 However, from the standpoint of rating and
22 getting a comparison I don't think there will be
23 inverse relationships by not using all the
24 refrigerants and so on. So that table can certainly
25 be revised if it were needed to if some refrigerant

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1 were to come out later, but for relative comparison,
2 it should serve very well, actually, as you go
3 forward.

4 Certainly, you'd be welcome to analyze
5 other refrigerants and see how much difference it
6 would make, but relatively speaking, I think it would
7 make very little difference.

8 MODERATOR BERRINGER: Any other comments?

9 All right, we're at that point as far as
10 lunch here. If we can have everybody back here at
11 1:30. We're about a half hour behind schedule and if
12 you need directions, actually to the cafeteria, Brenda
13 has some maps.

14 MR. NADEL: Would you want to consider a
15 45-minute lunch break? No.

16 MODERATOR BERRINGER: General Counsel says
17 no.

18 (Laughter.)

19 It's very difficult to get lunch and get
20 back here in 45 minutes. We'll probably start at
21 1:30. Thank you.

22 (Whereupon, at 12:28 p.m., the meeting was
23 recessed, to reconvene at 1:30 p.m.)

24 MODERATOR BERRINGER: Without further ado,
25 I'm going to give it to David Winiarski, who is going

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1 to discuss the last couple of sections on markup,
2 energy use and end use load characteristics, life
3 cycle cost, and payback analysis.

4 MR. WINIARSKI: Again, my name is David
5 Winiarski. I'm a Research Engineer with Pacific
6 Northwest Laboratory, and I'll be presenting for the
7 Department.

8 A number of the analysis steps here for
9 the remainder of the afternoon, starting with the
10 markups for equipment price determination, energy use
11 and energy use load characterization, life cycle cost,
12 and payback period analyses, shipments analysis, and
13 national impact analysis. And that will lead us all
14 the way through to the ANOPR phase of the rulemaking.

15 So to start off with, we'll talk a little
16 bit about markups here. The purpose of the markup
17 analysis is to, one, develop overall price markups for
18 the distribution change from the manufacturer price to
19 the consumer end user. And then, once we've developed
20 those markups, we try to use them to establish
21 consumer prices for both baseline equipment and for
22 equipment at various higher standard levels that are
23 going to be considered.

24 The starting of that process is really to
25 try to identify the distribution channels for the

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1 equipment and all the categories of equipment that
2 were going to be covered under this rulemaking. The
3 Department has essentially identified three sort of
4 prototypical distribution channels for the equipment.

5 Distribution channel 1, shown off to the
6 left, is basically going from a manufacturer who sells
7 the product to a distributor or a wholesaler. The
8 distributor or wholesaler then resells the product to
9 a mechanical contractor. The mechanical contractor
10 would then resell the product and the product's
11 installation to a consumer. For instance, in this
12 case a good example might be an independent or a small
13 grocery store.

14 Distribution channel 2 is a slight
15 variation on that, and in this case the manufacturer
16 sells to a distributor, but the distributor then sells
17 directly to the end consumer of the product. It
18 doesn't go through a mechanical contractor firm.

19 The Department envisions this to be
20 characteristic of perhaps self-contained equipment,
21 where a mechanical contractor may not actually be
22 necessary to install the equipment and put it in
23 service. Okay? But there certainly may be other
24 categories of equipment for which this distribution
25 channel might be appropriate.

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1 Distribution channel 3 is what's commonly
2 referred to as national accounts. In this
3 distribution channel, basically the manufacturer sells
4 directly to the end user or consumer. Distribution
5 channel 3 may be very important for this rulemaking,
6 dependent on sort of the volume of product that's
7 basically purchased into large national supermarket
8 chains, who may be making that purchase directly from
9 the manufacturer. And as some of us talked during the
10 break, specifying exactly what they want from the
11 manufacturer when they purchase that equipment.

12 Once the Department has identified
13 distribution channels, it's going to go through the
14 process of trying to identify markups for product as
15 basically going from a manufacturer price for the
16 product to a price essentially paid by the end user.
17 Markups relate the consumer's price to the cost of
18 goods sold. That will include the -- if we're looking
19 at the entire distribution chain, that's basically
20 going from, again, the manufacturer's selling price
21 for the product to its eventual shipment to the -- and
22 placement on site.

23 The markups -- the two types of markups
24 that we're going to talk about here -- and the
25 Department has used in previous rulemakings -- we

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1 describe here as sort of baseline markups as well as
2 incremental markups. Baseline markups are used to
3 describe basically what's the current markup in the
4 case of a fixed sort of a baseline standard until it
5 gets installed in the field.

6 Baseline markups provide a consumer price
7 that basically represents all of the costs in the
8 distribution chain, plus any additional profit that's
9 made by the members of the distribution chain. The
10 Department recognizes that when the product is -- or
11 when the product manufacturer price may increase, for
12 example in the case of standards due to a change in
13 efficiency, that some of those costs in the
14 distribution chain will increase perhaps
15 proportionately.

16 However, other costs in the distribution
17 chain, in a relatively competitive market, are
18 expected to remain fixed. So what we refer to as
19 incremental markups are markups that are used to
20 assess an incremental change in the manufacturer's
21 price and a corresponding incremental change in the
22 consumer's price for the product.

23 Incremental markups cover only those
24 expenses that vary with the costs of goods sold. In
25 this case, again, expenses that increase due directly

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1 to an increase in efficiency. For example, insurance
2 on product shipments might be an example of something
3 that would be fairly proportional to an increase in
4 the original cost for the product.

5 However, other costs, in particular things
6 like direct labor costs, salaries, payroll, and
7 occupancy expenses, may not increase. And those would
8 be held fixed in the calculation of incremental
9 markups.

10 With that little introduction, I'd like to
11 point out that we have four requests for feedback from
12 the stakeholders here regarding the development of
13 markups. In the first case, two of those questions
14 basically make reference to a very recent standard and
15 recent technical support materials that were developed
16 for commercial unitary air conditioners. That's the
17 CUAC you see up there.

18 And one of the things that we're
19 interested in is looking at what similarities
20 stakeholders expect to see between the distribution
21 chains and the relative markups on each point in that
22 distribution chain in refrigeration equipment as
23 compared to the similar -- the markups that were
24 developed for the commercial unitary air equipment.

25 So, Bryan?

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1 MODERATOR BERRINGER: So Item 7.1, as Dave
2 mentioned, if you go back a couple slides, you'll see
3 the distribution change is the question here. The
4 Department requests information from stakeholders on
5 whether the distribution pass of the commercial
6 refrigeration equipment covered under this rulemaking
7 would be similar to those, to the commercial unitary
8 AC, and, if not, how the two might differ.

9 The Department also requests information
10 on the relative fraction of shipments expected for
11 each path in the appropriate distribution chain for
12 the commercial refrigeration equipment covered under
13 this rule. So it's -- is there any unique situations
14 as far as distribution change, as far as this type of
15 equipment? Or are there -- in this case, are their
16 national accounts is one of the third bars, as you now
17 have the slide up on there.

18 No comments? Are people just sort of
19 absorbing that?

20 (Laughter.)

21 Thumbs up? Thumbs down? Halfway?

22 MR. WINIARSKI: I guess I would ask if
23 that's -- if it's -- if there's information that could
24 be used, or if there's data sources that could be used
25 to characterize relative shipments here.

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1 MR. AMRANE: Karim Amrane, ARI. I think
2 that we need to go back -- we need to go back and
3 assess. You're asking for what's the percentage
4 eventually, what kind of distribution will be used,
5 the percentage of those being shown to channel 1 and
6 channel 2. And we don't have the information right
7 now, but we can certainly go back and ask for that.

8 MR. WINIARSKI: Right. And, certainly,
9 the corollary to that is: are these the correct
10 distribution chains, or is there something we're
11 missing?

12 MODERATOR BERRINGER: Right. Okay. We'll
13 go on to Item 7.2. "The Department requests feedback
14 on, at the overall markups for the commercial
15 refrigeration equipment covered under this rulemaking
16 for each path in the distribution chain are likely to
17 be similar to those developed under commercial unitary
18 AC for the same distribution facts."

19 So we're certainly doing a similar
20 analysis. Some people -- most people probably weren't
21 involved in that rulemaking there in this room, other
22 than ARI. So, you know, I would -- yes, Bruce.

23 MR. HIERLMEIER: Bruce Hierlmeier, Zero
24 Zone. I mean, are you going to tell us what that is?
25 You're asking us to compare -- are similar to

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1 something? I don't know what it is.

2 MODERATOR BERRINGER: Well, I think what's
3 in the slide is the distribution chain, is what we did
4 in the commercial AC. It's a similar process. So I
5 don't know if you have to go back to that rulemaking,
6 but does that look right, or, again, are there any
7 unique situations?

8 I see Bob, and I'll come back to Bruce.

9 MR. TANNER: Bob Tanner, Hill Phoenix.
10 Just like what Bruce said, we have no idea what the
11 markup is for that market. We can't even compare it.

12 MODERATOR BERRINGER: Can you go back to
13 the slide?

14 MR. AMRANE: I thinking not about the
15 market itself, but I'm thinking about the distribution
16 channels. Is it okay? Is it right? Or --

17 MR. TANNER: That's not what the second
18 question said. The second question said, "Are the
19 markups the same?" and we have no idea.

20 MR. WINIARSKI: Let me first talk, because
21 I'm not sure who -- I know some of the companies are
22 organizations who were actually involved in that
23 rulemaking. Basically, in terms of the structure of
24 the distribution channels -- and I'll see if I can get
25 this right. One of the key differences is in those --

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1 in that rulemaking there was a national accounts
2 channel, which is very similar to this one.

3 There was also a -- for the other
4 distribution channels, there was a general contractor
5 involved. And some markups as the -- basically, the
6 general contractor oversaw and added additional
7 markups to the mechanical contractor. In addition,
8 there were few -- there were essentially no
9 distribution channels where you went directly from a
10 distributor to a consumer. A contractor was always
11 involved in the installation.

12 MODERATOR BERRINGER: Okay. If I may get
13 Bob's question, he's asking for the comparison on this
14 question, do you know -- do you recall what the
15 percentages were for the commercial AC, what the
16 markups were for those particular distribution
17 channels? I think that's the -- that's sort of what I
18 think Bob was asking.

19 MR. AMRANE: We have the information.

20 MODERATOR BERRINGER: Okay. Karim says he
21 does have information.

22 MR. AMRANE: Yes. We have the
23 information, and we can share it with you guys.

24 MODERATOR BERRINGER: Okay. I have -- let
25 me go to Jim Raba and then --

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1 MR. RABA: Jim Raba, DOE. On the front
2 page of your handout for the slides and throughout,
3 there is a website here for the Department, which
4 points you to the compliance standards page. And on
5 that page of our website are many rulemakings, both
6 residential and commercial.

7 This rulemaking for commercial
8 refrigeration appears. But also, the commercial
9 unitary air conditioning rulemaking is there also.
10 The technical support document, TSD -- if you're
11 curious it's a good question. You know, I was
12 thinking, "Gee, are they going to ask that question?"

13 It's true. If you want more information as to what
14 these are all about, how we arrived at them, and the
15 other markups data, the technical support document,
16 it's really available to the public under the
17 commercial unitary air conditioning title or subtitle
18 on that same website.

19 So that may be something to look at
20 afterwards offline. You can come back with comments
21 later, or at least understanding later on, too.

22 Does that help? Of course it does.

23 MR. WINIARSKI: I think it does. The
24 other thing, although I don't have the markups for
25 each channel here -- we didn't present that in there

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1 -- the overall markups that were calculated, when you
2 considered all channels and the relative fraction of
3 shipments that went to each channel, was I think on
4 the baseline product about 2.3, 2.31.

5 So that's basically a multiplication
6 factor you would add to the -- or not add to, you
7 would basically multiply the manufacturer's price by
8 that to get the end cost as it's brought into the
9 building where it's going to be used.

10 An incremental price, which held certain
11 of the costs constant, was approximately I think 1.56.

12 So that's the order of the markups.

13 MODERATOR BERRINGER: All right. Are
14 there any other comments? We could definitely get the
15 information to you as far as what those actually were
16 for the commercial unitary AC, and Karim says he also
17 has that information.

18 MR. AMRANE: Karim Amrane, ARI. I recall,
19 Dave, also the markups were a function of the
20 equipment, site of the equipment. Was it --

21 MR. WINIARSKI: The markups weren't. The
22 installation costs were.

23 MR. AMRANE: Oh, they were.

24 MR. WINIARSKI: Right. The markups
25 weren't. However, one thing that's broached in the

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1 rulemaking is in that particular rulemaking markups
2 were calculated differentially for products going into
3 new construction versus products going as
4 replacements. And the reason for that is, again,
5 because the general contractor was expected not to be
6 involved in typically a retrofit situation and marking
7 it up.

8 In this case, again, it's not clear. We
9 don't have a general contractor shown in our
10 distribution channel, so that didn't appear to be an
11 issue. But we certainly welcome any comments you have
12 on that.

13 MODERATOR BERRINGER: Okay. Any further
14 comments on 7.2? Okay. Why don't we move on to 7.3?

15 "The Department requests feedback on its proposal to
16 use incremental distribution chain markups for the LCC
17 analysis." Any comments on that? Marshall?

18 MR. HUNT: Yes. Marshall Hunt, PG&E. As
19 I remember it, those markups could be pretty
20 substantial. And if we by weighted average could
21 figure out the different stream, I'd want to at least
22 consider that. In other words, I would hate to box us
23 in to the highest markup.

24 So do you remember -- you got up to 2.31,
25 right? And if we find out this kind of product has a

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1 more market -- more of a market process that's
2 cheaper, we should look at that.

3 MR. WINIARSKI: You're speaking in terms
4 of -- typically, what was done in that rulemaking and
5 what we expect to do here would be develop sort of
6 weighted average markups --

7 MR. HUNT: That's fine.

8 MR. WINIARSKI: -- for each distribution
9 channel, you know, for all of the distribution
10 channels put together.

11 MR. HUNT: Yes. Rather than take exactly
12 one.

13 MR. WINIARSKI: Yes, exactly. We
14 typically wouldn't take one and not necessarily the
15 highest every day.

16 MODERATOR BERRINGER: Any other feedback
17 or comments on 7.3, then? Okay.

18 Item 7.4, "The Department seeks comment on
19 the sources of relevant data that could be used to
20 characterize markups for commercial refrigeration
21 industry." Okay. Seeing -- Karim?

22 MR. AMRANE: Karim Amrane, ARI. I guess a
23 question to you would be: are you reaching out to the
24 distributors? Are you reaching out to the
25 technicians, to contractors, to find out what the

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1 market pays in that particular industry?

2 MR. WINIARSKI: That's the plan, and how
3 much will depend, again, on -- how much we reach out
4 depends on sort of the amount of product that goes
5 through each channel, obviously. We want to
6 concentrate our efforts.

7 I think one of the -- famous man,
8 Einstein, said, you know, we want things to be as
9 simple as possible, but no simpler. And I think
10 that's basically the process by which we're going, so
11 we're looking to get information, but we don't want to
12 go down blind alleys if we can.

13 One -- I was going to comment, Karim,
14 because you mentioned that -- that one source of
15 information is the HARDI, Heating/Air conditioning
16 Refrigeration Distributors International. That will
17 give us some good information on the wholesale market
18 price.

19 MODERATOR BERRINGER: Okay. Any other
20 follow-up on 7.4, then? All right. So now we'll go
21 to the next slide.

22 MR. WINIARSKI: Okay. Once we move from
23 the markets here, in order to characterize the life-
24 cycle cost of the different standard levels, we need
25 to have some assessment of the energy impact of moving

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1 between standard levels. That's done in this bullet
2 here, or chevron here, the energy use and end use load
3 characterization analysis.

4 The Department is going to propose
5 something here. We want to get a lot of feedback on
6 whether this is the right direction to go.

7 The purpose of the analysis is eventually
8 to come up with the energy savings to go from higher
9 standard levels. And to do that, we have to define a
10 process. The process that was proposed here is to
11 develop energy use and peak electricity demand
12 characteristics for buildings that use commercial
13 refrigeration equipment, and then use the energy use
14 figures from the buildings to sort of characterize the
15 unit energy consumption for different standard levels.

16 The question jumps to mind, why -- why are
17 we interested in looking at building-level analysis?
18 The concern here was that for most of the types of
19 buildings into which these products go the energy use
20 from the commercial refrigeration equipment has both a
21 direct electrical consumption associated with it and
22 its subsequent compressor, but it also has a
23 significant impact on the HVAC use in the building,
24 heating and ventilating in the building, air
25 conditioning in the building.

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1 So the idea was to use the building-level
2 analysis to try to assess the net energy impact of the
3 change in standards. The graphic shown here basically
4 describes one particular concern. A large fraction of
5 these products are remote display products. The
6 compressor -- or the condenser system is basically
7 outside the building. The evaporators are inside the
8 building. And essentially what's happening is you are
9 refrigerating that building when you remove heat from
10 it.

11 Now, what that does is, basically, if you
12 didn't do that, you'd be air conditioning the building
13 likely. So there is a net differential because the
14 efficiencies between the air conditioner and the
15 refrigeration equipment aren't quite the same. There
16 is a net differential in the impact on the actual
17 energy costs or energy consumption of the building.

18 In order to go down this path, the
19 Department proposed to use some whole building
20 simulation tools. These tools -- there are certain
21 tools that basically have been designed and
22 incorporate commercial refrigeration equipment models
23 within the overall building simulation tool. And we
24 could use those to assess this net energy impact.

25 In order to do that, we need to actually

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1 construct buildings. And so the Department's proposal
2 here was to basically build up prototypical buildings
3 -- in this case, a supermarket and a smaller building,
4 for instance a grocery or convenience store, and then
5 basically try to assess the impacts of changes in the
6 energy utilization of the commercial refrigeration
7 equipment on the actual energy use of the building.

8 We would do this by doing these
9 simulations across the country, in different regions,
10 and then use appropriate weights based on things like
11 building construction levels to assess or to weight
12 the impact across these different regions of the
13 country.

14 Now, that is not necessarily as simple as
15 it could be done, but it's trying to assess or address
16 a particular issue that we know is out there. So one
17 of the questions is whether that's an appropriate
18 methodology, or do we do something similar or
19 something simpler. For instance, just using the
20 results directly from the test procedure would be an
21 example of a simpler approach.

22 So, Bryan?

23 MODERATOR BERRINGER: Okay. So that leads
24 us to Item 6.1. "The Department seeks stakeholder
25 input on whether the impact of higher efficiency

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1 refrigeration equipment on the building space
2 conditioning loads is significant enough to warrant
3 taking them into account in the energy analysis. And,
4 if so, what methods could be used to estimate the net
5 energy consumption and the load impacts of higher
6 efficiency commercial refrigeration equipment in
7 buildings using this equipment?"

8 I see Don Brundage.

9 MR. BRUNDAGE: Don Brundage, Southern
10 Company. Really, the only way you can do it is on a
11 whole building basis, because there's so many
12 interactions between the refrigeration equipment and
13 the HVAC in the building. I would agree that the
14 whole building approach is the correct one.

15 MODERATOR BERRINGER: Okay. Karim.

16 MR. AMRANE: Karim Amrane, ARI. I would
17 agree as well. I think this is the right way to go.
18 But I would like to get more input from David on what
19 kind of models are we going to use to simulate the
20 buildings, and whether those simulation tools are
21 appropriate in simulating commercial refrigeration
22 products.

23 MR. WINIARSKI: At this point, we have not
24 selected the tool necessarily to use. There are three
25 tools that I know that are out there and readily

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1 available. Probably the furthest along in terms of
2 how well it can simulate buildings is the DOE 2.2 tool
3 that has been developed by J.J. Hairsch and has
4 largely been -- the development of this refrigeration
5 model has been funded through the State of California
6 and a number of its exercises. So that was a likely
7 choice.

8 Another possible option is the
9 Department's Energy Plus tool, but that has probably
10 gotten much less review.

11 MODERATOR BERRINGER: Tom Eckman?

12 MR. ECKMAN: Tom Eckman, Northwest Power
13 and Conservation Council. The issue of significance
14 raises the question of whether or not how significant
15 it is would actually turn the standard levels to be
16 different by climate zone, and whether the Department
17 is prepared to deal with that by setting different
18 standards for different parts of the country based on
19 climate. If it's indeed significant, it might turn
20 the analysis.

21 MR. WINIARSKI: If I could speak to that,
22 there's a couple ways in which it may be significant,
23 and one of them is actually the variability across the
24 continent. Another area it may be significant is this
25 area of sort of tradeoffs between whether you're

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1 cooling the building with the commercial AC equipment
2 or the refrigeration equipment.

3 MR. ECKMAN: I'm not arguing whether it is
4 or isn't. I'm saying that if it's so significant that
5 it makes the economics change across the country, are
6 you prepared to promulgate standards that are climate-
7 specific?

8 MR. LEWIS: Ron Lewis, DOE. We can't do
9 that. We can't promulgate separate standards for
10 different parts of the country.

11 MR. ECKMAN: Is there a legal prohibition
12 against it?

13 MR. LEWIS: Yes.

14 MODERATOR BERRINGER: I see Karim has a
15 follow-up.

16 MR. DePRIEST: Tom DePriest, General
17 Counsel. Congress directed us to establish national
18 standards.

19 MODERATOR BERRINGER: Karim, did you have
20 a follow-up?

21 MR. AMRANE: Just to -- I mean, that's a
22 federal standard. It's one standard for the entire
23 country, and that's true for other parts as well.

24 MR. LEWIS: Right. Ron Lewis again. The
25 significance you're talking about where the

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1 differential -- there may be ways we can consider it
2 or review it. We just can't have different outcomes
3 for different places. So inputs as far as elements
4 and things that we need to take note of will be
5 appreciated, but the actual outcomes we can't do. We
6 can do sensitivity analysis. We can do various
7 different things.

8 But we set a national standard, and
9 especially as we're regulating the manufacture of
10 products that may be distributed anywhere and a
11 national chain may buy equipment that they further
12 distribute to construction sites, it would be very,
13 very tough to monitor and enforce as well. So the
14 statutes require us to have a single statute or a
15 single regulation.

16 MR. ECKMAN: Tom Eckman again.
17 Acknowledging that or accepting that as it is, then it
18 seems to me as we collect the sales weighted
19 information about where these go we need to associate
20 those with the climate effects, so that we have the
21 data that certain refrigeration systems are sold in
22 certain climates.

23 And, you know, to the extent that there's
24 an economic impact associated with that, the weighting
25 needs to be representative, weighted by the climate

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1 effects that actually are where the products are sold.

2 So the -- you know, if indeed this is significant, I
3 don't -- I'm not convinced yet that it is, but it
4 might be enough. And if it is, because there are
5 places where there are no cooling loads, or very
6 little, and so this doesn't turn out to be much. And
7 there are places where there are large cooling loads
8 and you've got to make it up.

9 So I think it complicates the analysis,
10 but I think it's the right way to do it. I just think
11 it complicates the analysis.

12 MODERATOR BERRINGER: I see Andrew, and
13 then I see Chris, and then I see Marshall.

14 MR. DELASKI: Andrew Delaski, Appliance
15 Standards Awareness Project. Two comments. One, to
16 follow up on Tom's, there's been a lot of discussion
17 about the departments that can do a schedule on this
18 on its rulemaking. And I think you put it well when
19 you said let's keep the analysis as simple as possible
20 without becoming -- but still accurate.

21 And that's what we're after here --
22 something that accurately represents what's happening,
23 but yet doesn't add a level of complexity that bogs
24 down the -- bogs down your work. So we want to
25 represent what's happening, but let's not -- let's

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1 not lose the forest -- lose the trees from the forest.

2 In response to this question of: can the
3 Department set two standards? Clearly, you've come to
4 a conclusion as to what you can do, and that has
5 happened in the course of another proceeding.
6 Attorneys that we've consulted with have a different
7 conclusion as to what your authority is, and I don't
8 want to -- we don't need to debate this right here.
9 But just for the record that we don't agree with your
10 conclusion that you can't set two standards.

11 MODERATOR BERRINGER: Okay. I saw Chris
12 and then Marshall.

13 MR. BALESTRINI: Chris Balestrini, FPA.
14 There is other things that can come into this
15 variation, too, though. You know, climatology is part
16 of it, but the other thing is consumer traffic, you
17 know, things like that.

18 There are so many things that go into it
19 that I think for the purpose of rulemaking you should
20 probably not even consider some of this stuff for the
21 simple fact that providing the information on how your
22 equipment works to the consumer, which is the grocery
23 stores or whatever, let them judge for themselves how
24 and where they want to -- they want to use the
25 equipment that you've made.

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1 I mean, and if you really want to get into
2 the nuts and bolts of it, call for feedback from those
3 people, because they have engineers on their staffs.
4 They're calculating energy usage. You know, I can't
5 expect them -- I -- if I'm sitting where the
6 Department of Energy is, I can't expect a manufacturer
7 to be able to know the energy consumption of a
8 Wal-Mart store around the corner, you know.

9 And you've got a good partnership here
10 between -- you know, between the Department of Energy
11 and the manufacturers. But to close the loop you
12 really need to get involvement from the end user as
13 well. And that's the one piece I see that's glaringly
14 missing here today is any kind of input, especially
15 when it comes to the life-cycle costs. They're the
16 ones that are going to give you the best information,
17 I would believe, you know.

18 And maybe one of the things coming out of
19 this meeting is to have some kind of game plan to get
20 some involvement from those folks, too.

21 MODERATOR BERRINGER: Okay. Thank you.

22 Marshall?

23 MR. HUNT: Marshall Hunt, PG&E. Just as a
24 devil's advocate, if we really cannot have climate-
25 adjusted standards, then why go through this exercise?

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1 Let's just get the most efficient equipment we can
2 and go from there, because like you said, Chris, the
3 mechanical engineer, which I am one, would -- is
4 looking at a project. If you have certain kinds of
5 cases, you're going to have a certain amount of
6 cooling capacity there -- it's open more -- than if
7 you had closed cases, and you've got to design the
8 store that way.

9 So, yes, I would prefer to have this
10 analysis, but only because I think there is climate
11 distinctions that need to be drawn.

12 MR. BALESTRINI: One thing I want -- this
13 is Chris Balestrini again. One thing I wanted to
14 throw in here, too, is if you want to make the
15 climatology piece go away, put it in your test design
16 for your efficiencies and stuff like that, that you're
17 going to put these refrigeration units in a room
18 temperature such and so.

19 Specify the range for the conditions that
20 you're looking to do your efficiency testing for the
21 outside environment outside of your coolers and
22 freezers and stuff, too, and that way you can make the
23 whole climatology -- climatological piece just go
24 away, because you've set up that control in your
25 testing protocol to basically say, you know, most

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1 grocery stores across the country operate in a 65- to
2 70-degree window or whatever. So you make sure all
3 your testing for efficiency is done there.

4 MODERATOR BERRINGER: Okay. I saw Steve,
5 and then Don.

6 MR. NADEL: This is Steve Nadel. In terms
7 of this question about how to analyze things, I think
8 I agree with you that for large systems you do need to
9 look at the directions with the building, the heating
10 and cooling load.

11 However, I wonder for small, self-
12 contained equipment whether it's just going to be the
13 tail wagging the dog, and the information will be so
14 dominated by the building effects that you won't
15 correctly get at the individual equipment effects.

16 And I wonder for the smaller self-
17 contained equipment, you know, an eight cubic foot ice
18 cream freezer, whether working up from more of a
19 residential refrigerator freezer model -- I know DOE
20 was doing some work a couple of years ago adapting
21 those models for self-contained commercial products,
22 you know.

23 It may not be one size fits all, as
24 opposed to larger systems, whether it's a supermarket
25 system or, you know, a whole wall system in a

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1 convenience store, that you need the building
2 approach. But for self-contained small systems I'm
3 not sure the whole building analysis is most
4 appropriate, and certainly whether it's the simplest.

5 MODERATOR BERRINGER: Don?

6 MR. BRUNDAGE: Don Brundage, Southern
7 Company. Just a quick comment on Chris Balestrini's
8 comment. If you get into some of your products like
9 open cases in a cooling dominated climate, doing the
10 whole building approach means you take credit for the
11 cooling losses into the store against the air
12 conditioning.

13 So it has some significant impacts on what
14 efficiency level you'd come up with. So I think it's
15 to your advantage to include a whole building
16 approach, especially on open cases.

17 MODERATOR BERRINGER: Okay. Any
18 additional comments? Seeing none, we'll go to
19 Item 6.2. "The Department specifically requests input
20 on the variability of defining a limited set of
21 building prototypes for all equipment classes in order
22 to characterize energy use. If a limited set of
23 building prototypes is acceptable, the Department
24 seeks stakeholder input on how to properly
25 characterize the building prototypes."

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1 Any comments on that? I see Tom Eckman.

2 MR. ECKMAN: Tom Eckman again. Certainly,
3 picking a grocery and a small deli, or what have you,
4 from a physical configuration may be pretty
5 straightforward, but you've got different HVAC
6 systems. Some are packaged depending on the size of
7 the unit; some are not.

8 I suspect you'll have to -- that even if
9 you pick the same building configuration you're going
10 to have to deal with gradations from the Wal-Mart to
11 the Kroger to the superstore/non-superstore. Those
12 probably have different space cooling/space heating
13 interactions. Again, this all makes the analysis more
14 complex. It's -- as Marshall said, if we're not going
15 to make it different by climate, it may be overkill.

16 It would be nice to look at the
17 sensitivities to see whether it would, but in the end
18 getting the rulemaking done on schedule -- I may bite
19 my tongue for saying this, but, you know, less
20 complexity might be better. On the other hand, if
21 it's significant, it probably -- as Andrew said, some
22 of us don't necessarily agree that one rule fits the
23 entire country. It would certainly provide us with
24 information to discuss that point further.

25 MODERATOR BERRINGER: Okay. Thank you.

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1 any other comments?

2 Okay. We'll go on to Item 6.3, then.
3 "The Department seeks data or data sources that could
4 be used to characterize the energy use in a loading of
5 commercial refrigeration equipment." So are there any
6 data or data sources out there? Scott?

7 MR. MITCHELL: Scott Mitchell, Southern
8 California Edison. I just wanted some clarification
9 on what you meant by "loading." Is that product
10 loading or load on the grid?

11 MR. WINIARSKI: We basically aren't -- the
12 term "loading" there may have come across a generic.
13 Basically, what we're trying to do is to get
14 information primarily with regard to kilowatt hour
15 type consumption. But it may be that in some cases
16 what we're actually going to get is information with
17 regard to refrigerant load from the display case
18 itself on the compressor. So either type of
19 information would be useful.

20 MODERATOR BERRINGER: State your name for
21 the record, please.

22 MR. RIVEST: This is Mike Rivest. I think
23 we're struggling a little bit with finding out what
24 the value of the whole building modeling really might
25 be, recognizing that it could be important because of

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1 the interactions of the HVAC system, but not really
2 knowing the magnitude of that.

3 Now, I happen to have looked over an EPRI
4 study on this topic where they modeled refrigeration
5 -- more efficient systems in various parts of the
6 country. And the conclusions, from what I can make,
7 was that it really didn't impact the economics -- you
8 know, recognizing that people's systems will be
9 adapted to their climate anyway, their HVAC systems,
10 and you have to make a lot of assumptions in your
11 modeling as to how well you recuperate the
12 refrigeration in one side of the store to the whole
13 store.

14 So one possible avenue is to do a little
15 bit of research on case studies and to -- where this
16 very issue has been studied and to quickly come back
17 to you maybe with findings about the magnitude of this
18 issue, to see if it's worth the effort of the
19 modeling.

20 MODERATOR BERRINGER: Bob Tanner?

21 MR. TANNER: Bob Tanner, Hill Phoenix. To
22 answer Item 6.3, most of that data is available on the
23 manufacturer's website --

24 MR. WINIARSKI: In terms of --

25 MR. TANNER: -- and talking about the BTU

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1 load of a refrigerated display case.

2 MR. WINIARSKI: Oh, yes. Right.

3 MR. TANNER: Our website has all that
4 information right on it. I think everybody else's
5 does, too.

6 MR. WINIARSKI: Okay.

7 MODERATOR BERRINGER: Larry?

8 MR. HOWINGTON: Larry Howington, Hill
9 Phoenix. We also could give you some guidance in
10 terms of how we provide customers information to do
11 calculations for air conditioning credit, because a
12 lot of times, you know, they want that and they use
13 that information in sizing their air conditioning
14 systems. And we kind of -- you know, we give them
15 some guidelines that kind of help them.

16 MR. WINIARSKI: Right. If I could jump in
17 here, that is the type of alternative that we might be
18 looking for. And, again, I'd like to reiterate, there
19 is really maybe three different issues here that have
20 to be dealt with. One is I think what Don referred to
21 here. Basically, you're talking about that air
22 conditioning credit, right?

23 You know, you're trading off air
24 conditioning in this large store with lots of
25 lighting. So there's value to that, and

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1 manufacturer's may have an interest in taking that
2 into account. A second issue is variation between the
3 climate, and that may or may not be significant. And
4 that will depend somewhat on the case loading.

5 That could be a function of climate, as
6 well as, for instance, if in certain climates they use
7 different condensers' strategies. The outside
8 condenser efficiency is a function of the outside air
9 temperature, so --

10 MODERATOR BERRINGER: I see Sriram or --
11 Mike Rivest, did you have a comment or question.
12 Okay. Then, Andrew Delaski.

13 MR. DELASKI: Andrew Delaski, Appliance
14 Standards Awareness Project. I want to pick up on
15 Mike's suggestion, Mike's concept of looking at some
16 of the field work that has been done out there, the
17 EPRI study or others. I think that's an excellent
18 suggestion.

19 I think the Department, in its plan for
20 the rulemakings over the next three years, next five
21 years, published in January described its desire to
22 reduce complexity. And I'm just concerned that as
23 noted here that we're adding complexity without
24 necessarily adding any benefit. It could be very
25 interesting but not yet help us answer the question

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1 for this rulemaking. So let's make sure we spend our
2 resources wisely.

3 MR. RIVEST: My comment -- Mike Rivest --
4 was from the perspective of a guy born in Montreal.
5 It's not just the air conditioning credit. It's the
6 heating penalty.

7 MODERATOR BERRINGER: Thank you. So do we
8 have any more comments on Item 6.3, then?

9 All right. Moving on to Item 6.4, "The
10 Department seeks feedback on this approach to energy
11 use and end use load characterization." I think we've
12 got quite a bit of comments sort of in the background
13 as far as the complexity that might be added to this.

14 Any additional comments? Seeing none, we'll go on to
15 the next slide.

16 MR. WINIARSKI: Okay. So now, once we've
17 basically used the markups to come up with a consumer
18 price, and we have some assessment of the energy use
19 of products at different efficiency levels when placed
20 in the field, we're going to use that information in
21 terms of generating life-cycle costs, and, in
22 addition, simple paybacks for the different efficiency
23 levels that we're going to be examining.

24 Again, the purpose here is to assess the
25 net life-cycle cost impacts of these different

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1 efficiency standards on the consumer. Life-cycle
2 costing can be done at different levels. In
3 particular, the Department's approach is to look at
4 this based on the consumer or the customer for the
5 equipment.

6 As a quick background, the life-cycle
7 cost, LCC here, is described as the consumer's price
8 for purchasing a product plus the sum of -- and
9 installing the product, plus the sum of all his annual
10 costs associated with maintaining and operating that
11 equipment over its life brought back to a present
12 value cost. And this is shown in the lower graphic.

13 Again, the economic evaluation that the
14 Department proposes will be from the perspective of
15 the consumer. The analysis will, as has been done for
16 previous rulemakings, be implemented in an Excel
17 spreadsheet. So the analysis will then be available
18 and posted on DOE's website for the review of various
19 stakeholders. That provides this level of
20 transparency that the Department seeks in its
21 rulemakings.

22 MR. BRUNDAGE: Don Brundage, Southern
23 Company. How do you -- what do you foresee using as a
24 source for electricity costs for this rulemaking?

25 MR. WINIARSKI: Can I hold that to a

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1 follow-up slide?

2 MR. BRUNDAGE: Sure.

3 MR. WINIARSKI: Okay. Again, for this
4 analysis, the results will be expressed from the
5 spreadsheet in terms of the life-cycle cost difference
6 between a baseline subsequent standard level that is
7 analyzed. In addition, we will report simple payback
8 in the analysis.

9 The next slide is a quick overview of how
10 that is actually done using the information and data
11 sources that will be collected in the rulemaking so
12 far. First, up in the upper left-hand corner in
13 yellow -- and if you're looking at black and white I
14 think that's a light shaded color, we take -- the
15 engineering analysis generates a baseline manufacturer
16 price and a standard-level manufacturer price for
17 different efficiencies for any given class of product.

18 To that we apply the markups that are
19 calculated in the markup for equipment price
20 determination analysis, and use those to generate an
21 eventual price to the consumer. And the markups,
22 again, would include distributor markups, mechanical
23 contractor markups. We also tend to include sales tax
24 in there.

25 To address something that was brought up

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1 earlier, I think the Department has often not
2 separately tried to include a freight to different
3 portions of the country. And I think that may have
4 been brought up in a previous rulemaking event that
5 was here.

6 Since we're looking at differences between
7 a different standard level, the importance of that
8 only occurs if the freight is expected to increase the
9 eventual price to the user. For instance, if the
10 product got heavier, as you pointed out earlier.

11 We take the markups and the engineering
12 price and we -- and the engineering price,
13 manufacturer price levels, and generate a consumer
14 price. We then develop data to characterize the
15 installation cost for the product, and those are used
16 to develop a total installed cost shown in green here
17 as an intermediate analysis step.

18 On the bottom part of the graph you'll see
19 that we use the energy consumption information that's
20 calculated from the energy analysis, and, if
21 necessary, we would include power demand impacts, if
22 that's important. We adjoin those with electricity
23 prices to come up with an annual energy expense. The
24 annual energy expense is then added to data for repair
25 costs and maintenance costs for the equipment, and

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1 those are used to generate an annual operating
2 expense, again, for each class of equipment.

3 The annual operating expense is then
4 applied over the life of the equipment, and then the
5 total expenses are -- over the life of the equipment
6 are then discounted backwards to a present value --
7 present value being the -- when the equipment was
8 initially purchased. To do that, we have to use a
9 discount rate for the consumer. We also have to use a
10 price trend for the fuels -- electricity, and, if
11 necessary, gas. That was important to take into
12 consideration.

13 Once we've got those, we have a lifetime
14 operating expense. The lifetime operating expense can
15 be added to the total installed cost to give a life-
16 cycle cost. In addition, we can take the annual
17 operating expense directly and the total installed
18 cost directly for the different standard levels and
19 use the differentials between those to generate simple
20 paybacks for improvements in efficiency. And so both
21 of those are done and reported in the life-cycle cost
22 analysis.

23 MODERATOR BERRINGER: Don?

24 MR. BRUNDAGE: Yes. My question again --
25 I guess my question is, and you may not have reached

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1 the point of considering this, so I'll make it a
2 comment. If you were -- it would be very tempting in
3 that analysis to use the commercial price as the price
4 for this equipment. But compared to the average of
5 the commercial class, this equipment is going to be
6 used in locations with higher load factor and probably
7 larger size than your average commercial.

8 Therefore, the price of electricity is
9 probably going to be somewhat lower than the average
10 commercial price out of Annual Energy Outlook 2006.
11 So some sort of consideration of that, an adjustment
12 of price, to what -- where the customers that are
13 actually using this equipment would be useful, because
14 I think --- I think there would be a tendency in doing
15 this to overstate the price that these customers are
16 paying for electricity.

17 MODERATOR BERRINGER: Okay. Marshall.

18 MR. HUNT: Marshall Hunt, Pacific Gas &
19 Electric. Speaking for California consumers, I think
20 there will be a lot of times where you'd be
21 understating the cost. We have a heavy ratcheting
22 from KW charges. We are going to see the advanced
23 metering initiative throughout California, which will
24 convert more and more people to time of use, with
25 significant penalties for time of use.

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1 Coincident demand is very, very high with
2 these units. They tend to really add up to the demand
3 of a store. So I see it entirely differently, and I
4 guess we're talking about a sensitivity analysis here.

5 But you've got to think of this as a regional
6 economy, and it seems to me the marginal cost of doing
7 business would be that if these appliances would save
8 energy, say, in Nevada and Arizona or Oregon, and
9 allow them to sell power at a nice, high cost to
10 California, it seems that's the value of the energy.

11 So you have to think of societal also.
12 But certainly, the customer comes first. What is that
13 real charge? And the rate structures are changing
14 dramatically in some parts of the country in response
15 to the natural gas issues and other peak constraints.

16 MR. BRUNDAGE: Don Brundage. I don't
17 necessarily disagree with you. My point was that you
18 need to not just use a straight commercial class
19 average. You need to look at what these types of
20 customers are actually paying.

21 MODERATOR BERRINGER: Marshall?

22 MR. HUNT: Marshall Hunt. Thank you.
23 That would be good. And do the sensitivity, because
24 there is tremendous differences for parts of the
25 country.

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1 MR. WINIARSKI: We talked about most of
2 the slide --

3 (Laughter.)

4 -- before I got started. A couple of
5 things that we didn't talk about is the Department's
6 original proposal, which starts to address that, is --
7 was at least to initiate discussion -- the use of
8 commercial average prices. And I think it obviously
9 did that.

10 The next portion of that is the Department
11 is interested in -- or has proposed here to look at
12 the regional variation of those as part of its
13 sensitivity analysis, although the eventual analysis
14 gets a weighted sort of national average figure for
15 that.

16 As we're talking about that, the second
17 issue here is sort of this impact in terms of the fact
18 that these are very high load factor and larger
19 buildings. And any information that can be provided
20 from stakeholders would be useful here in terms of
21 characterizing that.

22 With regard to the escalation prices, the
23 Department's intention here is to use the Energy
24 Information Administration's Annual Energy Outlook, as
25 it has done in previous rulemakings, to project energy

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1 prices on into the future, over the life span of the
2 equipment in this case for the LCC.

3 MODERATOR BERRINGER: Yes. Let's go ahead
4 and -- just go ahead and hit -- I know we've had some
5 of the discussion on 8.1 already, but Item 8.1 says,
6 "The Department seeks comment on the proposed
7 approaches for estimating current and forecast energy
8 prices." Was that what you were --

9 MR. NADEL: Two comments.

10 MODERATOR BERRINGER: Steve Nadel?

11 MR. NADEL: Steve Nadel, ACEEE. Don
12 pointed out that the supermarket-type systems may be
13 used in larger buildings, but some of the self-
14 contained equipment may actually be used in smaller
15 buildings. So you have to decide, is it worth trying
16 to differentiate and use higher prices for some and
17 lower prices for another, or is this more trouble than
18 it's worth? But it goes both ways, the different
19 types of pieces of equipment. That's one.

20 Two, you're going to be using the AEO
21 forecasts, and those forecasts at this point are
22 causing a lot of head-scratching. When we talked to
23 economists for commercial, the forecast says it's --
24 the average price is 8.2 cents per kilowatt hour, but
25 somehow it's going to decline to 7.4 cents by 2015,

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1 despite the fact that people are -- gas has gone up,
2 coal has gone up, and people are building more
3 expensive powerplants.

4 Just like EIA had to revise its oil price
5 forecast substantially in the AEO 2006, I'm hearing
6 from people I've talked to that there's an excellent
7 chance that the -- some problems with the model and
8 these prices are going to go up significantly the next
9 few iterations. So you should plan on that.

10 As I understand, you'll be starting with
11 these prices, but don't be surprised if they go up and
12 don't eliminate options that all of a sudden might
13 become cost effective when they start revising their
14 forecasts. Instead of assuming declines in prices, at
15 least start assuming level if not some type of
16 increase.

17 MODERATOR BERRINGER: Yes, Chris.

18 MR. BALESTRINI: Chris Balestrini, FPA.
19 Back on slide 55, I was look at the flowchart, and
20 where you have -- was it total operating expenses?

21 MR. WINIARSKI: Annual operating expenses.

22 MR. BALESTRINI: Annual operating
23 expenses, if you're going to take repair costs and
24 maintenance costs, don't you also have to take
25 depreciation costs into account there as well? I

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1 don't see anything there about depreciating the
2 equipment. That will add into the true cost in the
3 life cycle.

4 And then, but that's for the overall for
5 the unit. Does it make sense to do a flowchart like
6 this just on -- just for the energy piece by itself as
7 well? Because right now you have the total for the
8 equipment with the energy worked in. Does it make
9 sense to do the equipment piece by itself and the
10 energy piece as separate? Because that would give you
11 the flexibility to look at different scenarios on the
12 energy, then.

13 MR. WINIARSKI: Basically the -- I think
14 if -- if I'm catching what you're saying here, you're
15 asking -- basically, this type of flowchart
16 illustrates that we're going to have a spreadsheet
17 that takes all of this information into account, and
18 then comes up with a life-cycle cost analysis. And
19 are you thinking about basically showing and maybe
20 implementing the same process for the energy?

21 MR. BALESTRINI: Yes.

22 MR. WINIARSKI: Okay.

23 MR. BALESTRINI: Yes, because the thing
24 is, you're going to look at this total cost to the end
25 user, correct? That's the whole point for this, to

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1 show that whatever your regulations are that you end
2 up coming up with, what the cost is going to be to the
3 end user basically is what you're trying to
4 demonstrate. It will be nice to show them what the
5 end is overall, and what the end is energy-wise, where
6 you can show, you know, the energy savings
7 potentially.

8 Even though you may have to pay a little
9 bit more on the front side, here is what you're going
10 to save on the energy down the road. And then, the
11 life cycle is going to be a variable. And it may be
12 four years, it may be 10 years. So the longer you run
13 it out, the more savings you're going to generate on
14 the energy side. And you might need to demonstrate
15 that to get the buy-in from everybody.

16 MODERATOR BERRINGER: Any other comments?
17 Okay. Next slide?

18 MR. WINIARSKI: Okay. Discount rates.
19 Obviously -- and this gets a little bit -- ties in
20 with maybe the discussion of depreciation here. I'm
21 not prepared to go into that right now, but
22 essentially the Department's approach involves the use
23 of calculated discount rates basically for the end
24 user, how he discounts the time value of money in
25 order to make his choices in the -- between equipment

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1 or between spending his money on new equipment or
2 something else.

3 The Department's approach to the use of
4 discount rates in order to discount those streams of
5 operating expenses is to develop what's called the
6 weighted average cost of capital for stores and
7 companies that are expected to be the prime users of
8 commercial refrigeration equipment.

9 In the third bullet there, basically the
10 point that we're trying to say here is that we want --
11 we believe we can go out and get information again
12 from those consumers that you spoke with -- or spoke
13 about with regards to sort of how they value the time
14 value of money in their businesses, and use that to
15 implement our life-cycle cost analysis.

16 With that, Bryan, I think that you can go
17 into the two items there.

18 MODERATOR BERRINGER: All right. Two
19 items. Item 8.2, "The Department seeks comment on the
20 proposed approaches for estimating discount rates for
21 consumers using the equipment covered under this
22 rulemaking." Any comments on discount rates being
23 used?

24 All right. Seeing none, I'm going to move
25 on to 8.3. "Given the relatively narrow commercial

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1 application for most of the equipment covered under
2 this rulemaking, which, if any, commercial sectors
3 beyond grocery stores should be considered in the
4 evaluation of discount rates? In addition, do
5 stakeholders feel the government purchases of this
6 equipment are large enough to require that they be
7 included in the evaluation of the discount rates?"

8 Not seeing a whole lot of -- Chris?

9 MR. BALESTRINI: Chris Balestrini, FPA. I
10 can tell you from what our members' feedback has been,
11 one of the fastest-growing sectors of food
12 distribution is the convenience store. Okay? So I
13 would think you might want to be looking at the
14 C-stores as well as the traditional grocery stores.

15 MODERATOR BERRINGER: Okay. Okay. Thank
16 you. Any additional comments?

17 Okay. Next slide?

18 MR. WINIARSKI: If I can, I'd like to add
19 a thought with regard to that one, which is another
20 fast-growing segment I believe are these -- what they
21 call a supercenter, like a Wal-Mart, that does lots of
22 other things in addition. And any information that
23 you can give us on whether that would be an important
24 group to take into account in developing discount
25 rates would be useful.

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1 MR. BALESTRINI: Actually, the superstore
2 type concept is a morphing of the traditional grocery
3 store. So we kind of consider those together.

4 MR. WINIARSKI: You consider them
5 together.

6 MR. BALESTRINI: In our association, we
7 consider them to be pretty much the same pot.

8 MR. WINIARSKI: Okay.

9 MR. BALESTRINI: The C-stores are another
10 offshoot, because they're not traditional -- they're
11 not a traditional grocery store type of setup.

12 MR. WINIARSKI: Okay. Karim?

13 MR. AMRANE: Karim Amrane, ARI. I guess
14 the feedback from us is that you should consider that
15 source as well.

16 MR. WINIARSKI: Okay. In order to
17 complete the life-cycle cost analysis there is another
18 couple of pieces of information that the Department
19 needs. The first is -- I show the four issues here.
20 First is the installation cost of the equipment.
21 Primarily here, again because we're doing differential
22 life-cycle cost, it's most important to get this
23 accurate if, indeed, we expect the installation cost
24 to change as a function of the efficiency of the
25 equipment.

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1 An example here, not to go into this in
2 detail, might be that if the market or if the analysis
3 suggested that we were going to look at hot gas
4 defrost, and putting equipment in stores that don't
5 currently have hot gas defrost, that could be a
6 significant installation cost issue. So any
7 information that's available would be useful.

8 The Department seeks data on equipment
9 lifetime in the field, and sources of information that
10 might refer to that. Also, on repair costs and on
11 maintenance costs for the equipment in the field.

12 MODERATOR BERRINGER: So Item 8.4, "The
13 Department seeks feedback on whether it is correct to
14 assume that the changes in maintenance, repair, and
15 installation costs will be negligible for equipment
16 with lower energy consumption." Is that -- does that
17 make sense? Does that assumption -- Steve Nadel.

18 MR. NADEL: Steve Nadel. I guess it will
19 depend on the measures being employed. If you're
20 talking, you know, heat exchange area, yes, that's a
21 reasonable assumption. Sometimes, you know, a more
22 efficient motor may have a longer life. Sometimes the
23 controls may have a -- you know, a shorter life,
24 require more maintenance. You need to probably at
25 least look at what is being assumed here before making

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1 a blanket assumption.

2 MODERATOR BERRINGER: Any other comments?
3 Karim?

4 MR. AMRANE: Karim Amrane, ARI. I guess
5 it's more like a question for Dave. Are you also
6 looking into finding out the installation costs with
7 respect to different product classes? Or are you
8 going to assume that's going to be flat or --

9 MR. WINIARSKI: We will probably -- in
10 terms of different product classes, we will probably
11 try to develop typical installation costs. Again,
12 going back to the "as simple as needed," in terms of
13 calculating a differential life-cycle cost, this
14 really doesn't come into play. It doesn't impact the
15 economics unless there is a significant differential.

16 MODERATOR BERRINGER: Additional comments?
17 Okay. Go on to Item 8.5. "If it is not
18 appropriate to assume that the changes in maintenance,
19 repair, or installation costs would be negligible for
20 the equipment with lower energy consumption, the
21 Department seeks comment on appropriate methodologies
22 for assessing changes to each of those costs." So a
23 similar sort of question. Steve Nadel?

24 MR. NADEL: I guess as you're doing the
25 design option analysis, you can consider this and see,

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1 are there particular measures that will have a
2 significant impact? If the impact is not significant,
3 it's not worth including. But I would tend to add it
4 to the design option analysis as a way to incorporate
5 this relatively straightforwardly.

6 MODERATOR BERRINGER: All right. Then,
7 we'll go on to question -- Item 8.6. "The Department
8 seeks comment on the appropriate equipment lifetimes
9 for the equipment covered under this rulemaking."
10 Again, the lifetime, are the assumptions correct?
11 Karim?

12 MR. AMRANE: Karim Amrane, ARI. I think
13 this sort of -- in this particular case, it's
14 important to get other stakeholders involved, you
15 know, FMI, I don't know. I mean, they have
16 information about how often those types of products
17 are being, you know, changed over and things like
18 that.

19 So, yes, you're going to get some feedback
20 from us as to what the lifetime is, but the reality is
21 really more with those products and how often, you
22 know, stores are being renovated and things like that.

23 MODERATOR BERRINGER: Additional comments
24 on lifetime? Steve.

25 MR. NADEL: Can I give a couple of things?

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1 One, I believe ASHRAE, in their handbook series, has
2 some estimates of lifetime for different pieces of
3 equipment. The Department has used that for some of
4 the other rulemakings, so if you haven't already you
5 should look at that.

6 Two, I know there is a number of measure
7 life studies done in the northwest. Tom Eckman may be
8 able to comment. But they may have some information,
9 some stuff done in past years, for the Bonneville
10 Power Administration.

11 Third, I noticed in the framework document
12 where you refer to Appliance Magazine. I'm not sure
13 if they cover any of these products, but in general we
14 found their measure life estimates to be quite low,
15 lower than any of the other sources, so I would be
16 very careful about using them.

17 MODERATOR BERRINGER: Additional comments
18 on lifetime? Seeing none, next slide?

19 MR. WINIARSKI: Once -- let's see. I
20 guess we continue here. Once we've look at life-cycle
21 costs, the next step is to try to assess the shipments
22 of the different classes of air conditioning or --
23 different classes of refrigerating equipment as they
24 go into the field, that we do that in the shipment
25 analysis, and the combination of both of those will

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1 lead for a national impacts analysis.

2 So, again, the purpose of the shipments
3 analysis is to try to project the rate of new
4 equipment shipments under a proposed standard. In
5 that process, one of the things we do is we track the
6 stock of equipment that's out there in the field by
7 vintage over the timeframe characterized by the
8 standard.

9 The methodology is basically that
10 equipment is sold, purchased, shipped to a building,
11 it's installed, it operates for a number of years, and
12 then in some cases it will be retired and replaced.
13 In other cases, the building may actually be torn down
14 or moved to a different type of operation, and it's
15 simply removed from service. And so the shipments
16 analysis tries to take that into account.

17 Data sources that are used include things
18 like product lifetimes, estimates of the commercial
19 floor space that's out there currently, and saturation
20 rates -- how many pieces of equipment do we expect to
21 be in existing square feet of a given building type,
22 like a grocery store.

23 We then develop a model that tries to take
24 into account all of this information, and then
25 calibrate that model backwards, looking at historical

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1 shipments and historical market saturation data.

2 MODERATOR BERRINGER: Okay. That leads us
3 to Item 9.1. "The Department seeks information on
4 representative saturation rates for each product class
5 covered under this rulemaking, as well as industry
6 trend data regarding relative growth in each product
7 class." Is there information out there? Is that
8 something that ARI will --

9 MR. AMRANE: Karim Amrane, ARI. As we
10 mentioned before, we will be providing you with some
11 shipment data that we've collected. As far as trends,
12 we don't project trends, so we'll leave that to you
13 guys. But we'll give you -- we'll give you what we
14 have as far as historical data to date.

15 MODERATOR BERRINGER: Okay. Thank you,
16 Karim. Any other comments on that issue?

17 Okay. Item 9.2. "As part of its
18 preliminary manufacturing impact analysis, the
19 Department will seek input from manufacture of the
20 potential impact of new energy conservation standards
21 on product shipments. Other stakeholders are also
22 welcome to provide input. The Department also seeks
23 -- also requests input on any market pull programs
24 that currently exist to promote adoption of more
25 efficient products."

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1 The second part -- are there any other
2 areas, market pull, other programs, that are sort of
3 out there for these particular products? Steve Nadel.

4 MR. NADEL: The only thing -- you have an
5 Energy Star program for the ice cream freezers. You
6 have California Energy Commission, the standards for
7 the ice cream freezers. You have the Energy Star
8 grocery store program, recognizing the most efficient
9 equipment.

10 And then, some utilities also do
11 incentives for supermarket refrigeration, but not that
12 many at this point. Those are a few of the things.
13 It's an area where there's not as much activity as
14 many of the other products the Department is
15 investigating.

16 MODERATOR BERRINGER: Let me go as far as
17 the manufacturers are concerned here. We -- sort of
18 the first part of that on the preliminary
19 manufacturing, the Department seeks input from
20 manufacturers on potential impacts of the new energy
21 conservation standards on shipments. Is there any
22 preliminary comments you have at this point? The
23 impact of standards? I know this is a new area
24 that's, you know, under EPACT 2005.

25 Okay. All right. We'll move on to the

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1 next slide.

2 MR. WINIARSKI: And as I said, once we've
3 done the life-cycle cost and we have shipments, we
4 actually try to expend that into doing national
5 impacts of the adoption of higher efficiency standards
6 for this product.

7 The methodology that the Department has
8 adopted and used in previous rulemakings involves
9 using a spreadsheet-based tool that implements this
10 analysis in, and provides for stakeholders to review
11 it -- the ANOPR.

12 And the analysis in particular is looking
13 at two different things. It's going to try to develop
14 estimates of national energy savings for the adoption
15 of higher efficiency standards. It also looks at
16 what's called the national net present value.
17 Basically, what's the impact of the economics of
18 having to adopt higher efficiency standard levels on
19 the consumers over the nation, as well as some other
20 corollary impacts?

21 The process by which the Department does
22 this is they develop essentially from the life-cycle
23 cost analysis as a starting point the energy impacts
24 and economic impacts. It then over -- does this over
25 a defined analysis period. That period has not yet

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1 been defined by the Department, but typically in the
2 past it has tried to look at these impacts over about
3 a 30-year time period.

4 We estimate the cost and energy use in the
5 analysis for a given unit of a given product class in
6 each year over that time period at a given efficiency
7 level, starting with the baseline efficiency level and
8 subsequent higher standard levels.

9 We then aggregate all of those costs and
10 all of that energy backwards by vintage for all the
11 years in the analysis period, and we report those
12 estimates back to the stakeholders. Those estimates
13 in terms of energy, will be done looking at what's
14 called source energy. Source energy basically takes
15 into account all of the energy losses in its
16 transformation down from its original fossil fuel
17 source or other source down to the eventual
18 distribution to the customer.

19 The economic impact will be reported in
20 dollars, and typically it will be in constant year
21 dollars, like Dollars 2003, for example.

22 The reports estimate the -- or the
23 reports, pardon me, account for the time value of
24 money, just like the LCC did, using a discount rate.
25 However, one difference is the Department is, I

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1 believe, mandated to use specific discount rates by
2 the Office of Management and Budget for this
3 particular set of studies. So it will use those.
4 They may be slightly different from what is actually
5 used in their life-cycle cost analysis.

6 MODERATOR BERRINGER: Okay. Which leads
7 us to Item 10.1. "The Department seeks comments on
8 its plan to develop national energy savings
9 spreadsheet models for estimating national impacts of
10 amended energy conservation standards." So, again,
11 we're looking at using spreadsheet models. Are there
12 any other tools out there that we should consider or
13 look at? I see Marshall.

14 MR. HUNT: Marshall Hunt, PG&E. How are
15 you handling the time value of energy in your
16 calculations?

17 MR. WINIARSKI: I'm not sure I understand
18 the question. The energy -- the EIA escalation rates
19 are used to establish the energy prices for each year
20 in the study. In calculating the national economic --
21 or the NPV analysis, that's taken into account. Those
22 costs are then incorporated as dollar values and taken
23 back to a present value. So it's discounted that way.

24 In terms of the national energy savings
25 analysis, we're just adding up BTU for BTU, or quads

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1 in this case, of energy.

2 MR. HUNT: But the demand -- Marshall Hunt
3 again. The demand at 3:00 in the afternoon on a hot
4 day is a lot harder to meet, a lot more expensive.
5 You're using peaking equipment, and it's much more
6 valuable, and this is an example of a use that you
7 cannot curtail without damage -- huge damages to the
8 industry. It seems to me that this time value of the
9 electricity should be thought of.

10 MODERATOR BERRINGER: Karim.

11 MR. AMRANE: Karim Amrane, ARI. I guess I
12 fail to understand how this concept can be applied to
13 the national level. I mean, yes, California is doing
14 it, and maybe that's the way that you guys are used
15 to. But on a national level, I don't see how this
16 concept can be applied.

17 MODERATOR BERRINGER: I see Don Brundage.

18 MR. BRUNDAGE: Don Brundage, Southern
19 Company. I'm not quite sure what the difference
20 between this and using actual costs for -- actual
21 electricity costs for customers as opposed to averages
22 would be.

23 MODERATOR BERRINGER: Marshall, do you --

24 MR. HUNT: Marshall Hunt, PG&E. The time-
25 dependent valuation that we use looks at both the

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1 absolute source energy but also the economic value of
2 that energy. And it could be -- the multiple could be
3 way up there, just not a simple three times.

4 So we'll get back to you on that, but it
5 just is something that is coming up hard and fast.
6 Usually most public utilities commissions would
7 regulate IOUs of others -- will not expose the
8 customer to the true societal cost of that peak power.

9 We're all protected from that, thank goodness,
10 because if you were to look at the extreme excursions
11 from cost, the value the last KW brought into the
12 marketplace, it would be astounding. And yet this is
13 a national impact, and we're looking at powerplants
14 worth of constructions here and demand.

15 So it seems to me we've got to figure out
16 some way to at least consider this, because it's not
17 adequately reflected in rates. But it is a load on
18 society. And I think the life-cycle cost is getting
19 -- there is a societal impact here. Correct? Is this
20 where we consider societal impacts?

21 MR. WINIARSKI: This is part. Basically,
22 the Department I think historically has set it about
23 as these two separate analyses. But this is where
24 those sort of national impacts are taken into account.

25 MODERATOR BERRINGER: Don?

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1 MR. BRUNDAGE: Don Brundage again. I
2 think what you're getting into is sort of the
3 regulated versus deregulated market on whether
4 everyone is paying margin, or whether you're dealing
5 with average costs. In my area, not all customers are
6 exposed to the marginal costs, because we have cost-
7 based rates.

8 And for a national study, if that's the
9 actual cost that customers in California are paying,
10 it certainly needs to get included within the totals
11 and in the sensitivity analysis. But not all
12 customers are paying the marginal cost.

13 MODERATOR BERRINGER: Any additional
14 comments? Steve Nadel.

15 MR. NADEL: The one other thing that
16 affects this is the load shape of commercial
17 refrigeration equipment. For something like air
18 conditioning, where there is a significant load, it's
19 very important to look at time of use, because that
20 has a major impact.

21 For this equipment, I'm less clear. I can
22 think of some things that increase peak use, some
23 factors that decrease it. If I recall correctly, PG&E
24 may actually have some load shape data on this type of
25 equipment, or at least on grocery stores. It would be

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1 interesting to look at that, see whether it differs
2 significantly from the average load shape, and,
3 therefore, time of use will be an important factor in
4 this.

5 MR. HUNT: Thank you, Steve. That's a
6 good idea. Marshall Hunt.

7 MODERATOR BERRINGER: Okay. Thank you.
8 Any other comments?

9 Dave, go ahead and proceed with the next
10 section.

11 MR. WINIARSKI: Okay. So once the impacts
12 analyses are done, that basically takes us up through
13 the ANOPR phase of the analyses. And at that point,
14 the Department of Energy has a -- or typically has a
15 public meeting. They provide the information on the
16 analyses that's been presented so far, and they look
17 to get stakeholder feedback to -- on those analyses
18 and what improvements might be necessary.

19 And then, the next phase of the rulemaking
20 we refer to as the NOPR analysis phase. The first
21 phase of the NOPR analyses is to take into account
22 whatever comments were received on the ANOPR. And, if
23 necessary, we will then revise the ANOPR analyses to
24 take into account those comments.

25 Once any revisions have been made to the

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1 ANOPR analyses, the next step is to begin the path for
2 the analyses that will be new to stakeholders when the
3 NOPR -- Notice of Public Rulemaking -- is actually
4 presented. The first of those -- although these are
5 not necessarily sequential, they are shown here --
6 many of them can actually be done in parallel. But
7 the first of them that we show here is the life-cycle
8 cost subgroup analysis.

9 And, basically, the life-cycle cost
10 subgroup analysis is supposed to essentially try to
11 analyze the economic impacts on specific subgroups of
12 consumers. We try to identify groups that might be
13 disproportionately impacted compared to the general
14 user population. And that's -- the information that
15 comes out of this then can be used in order to set
16 policy or to describe policy issues with the
17 implementation of higher standards.

18 The methodology that the Department would
19 like to do is to basically extend the life-cycle cost
20 analysis that was presented earlier to examine
21 particular -- and to develop inputs to that analysis
22 that would be reflective of certain elements of the
23 overall user population. And maybe that's a good
24 reason for expressing it in terms of that flowchart,
25 because you can see how those inputs might change.

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1 MODERATOR BERRINGER: All right. Just a
2 question. Item Number 11.1, "The Department seeks
3 input on what consumer subgroups the Department should
4 consider in the present rulemaking. Examples of
5 possible subgroups the Department could consider
6 appropriate for commercial refrigeration equipment
7 include independent grocery stores and small
8 convenience stores." That was mentioned earlier, as
9 far as adding that.

10 So any other additional subgroups that we
11 need to consider? Seeing none, just at this time I
12 would like to -- we're about on time. We're scheduled
13 to have a break. Do people want to have a break,
14 press on, what are people -- we have two more sections
15 to go. Everybody need a short break? Do you want to
16 press on? Raise your hand, okay, if you want a break.

17 Press on? Press on. All right. Let's go ahead and
18 press on, then.

19 I think we have -- Aris is up at this
20 point.

21 MR. WINIARSKI: I'll turn this over to
22 Aris.

23 MODERATOR BERRINGER: Great. And, again,
24 while they're making the switch, people do -- I see
25 Marshall had to leave. If you do, if you can fill out

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1 your evaluation if you have to leave before the
2 adjournment of the meeting, please do that and turn it
3 in at the back table. Thank you.

4 Okay. Aris.

5 MR. MARANTAN: Okay. The next analysis in
6 the NOPR phase is the manufacturer impact analysis.
7 The purpose of the MIA, the manufacturer impact
8 analysis, is first to assess the impacts of standards
9 on manufacturers; second, to identify and estimate
10 impacts on subgroups of manufacturers that may be more
11 severely impacted than the rest of the industry as a
12 whole; and also to examine impact of cumulative
13 regulatory burden on the industry.

14 And in order to conduct the MIA we really
15 have two tools available to us. First of all, we have
16 the GRIM, which is the Government Regulatory Impact
17 Model. And we also have the interview process. First
18 of all, the GRIM is a discounted cashflow model that
19 calculates the industry net present value before a
20 standard and at several other efficiency levels beyond
21 the baseline of the standard.

22 The second is the interview process, and
23 this is where the Department refines inputs to the
24 GRIM, developed the subgroup analysis, and also
25 addressed qualitative issues. The output of the MIA

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1 is the industry net present value impacts, the
2 subgroup net present value impacts, and other impacts
3 which I'll describe next.

4 Okay. This describes some of the
5 legislative requirements that DOE faces. The
6 manufacturer impact analysis fulfills a legislative
7 requirement to determine if a proposed standard is
8 economically justified. In the statute, the Energy
9 Policy and Conservation Act provides factors that DOE
10 must evaluate. Two of those factors are addressed in
11 the MIA.

12 The first one is economic impacts of
13 standards on manufacturers, and the second one is
14 impacts of any lessening of competition in the
15 industry. For the second one, the impacts of any
16 lessening of competition, the Department produces a
17 technical support document that's reviewed by the
18 Department of Justice, so we go to those lengths in
19 addressing that impact.

20 In addition, in 1995, the Department
21 announced a formal effort to further improve the
22 process, and this includes principles for the
23 analysis, which pretty much gave the Department -- it
24 resulted in the development of the GRIM.

25 And, finally, the Department also

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1 announced recently this year in a report to Congress
2 that they will also assess manufacturer impacts in the
3 ANOPR phase. They'll be conducting a preliminary
4 manufacturer impact analysis. This is done to
5 understand and quantify and explain the nature of
6 impacts that the industry will face.

7 Okay. This slide describes in a little
8 more detail the three phases that are conducted for
9 the MIA. The first phase is conducted before the
10 ANOPR is published, and that includes an industry
11 profile. For the industry profile, the Department
12 will gather information from publicly available
13 sources.

14 This includes financial statements,
15 filings to the SEC described earlier. This is all to
16 get a baseline of what the industry cost structures
17 are. In this phase, we also conduct the preliminary
18 MIA interviews.

19 After the NOPR is -- the ANOPR is
20 published, we get into phase 2 of the process. That
21 includes development of the strawman GRIM. This is
22 done using all of the collected data and also creating
23 some scenarios within the GRIM. Here in phase 2 we
24 also developed the interview guide for the more
25 comprehensive manufacturer interviews, which is

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1 conducted in phase 3.

2 For phase 3, interviews and industry-wide
3 subgroup analyses are conducted. And, again, this is
4 a more detailed interview process which involves site
5 visits for the most part. And also, we assess the
6 direct employment competition and cumulative burden
7 impacts on manufacturers.

8 The next couple of slides describe each of
9 these phases. Okay. Here, for phase 1, this consists
10 of an industry profile and a preliminary manufacturer
11 impact analysis. The industry profile consists of
12 data-gathering from public sources, developing
13 financial inputs to the GRIM, and manufacturer markups
14 for the LCC. Also, the preliminary MIA interviews are
15 conducted, and listed here are some of the topics that
16 are discussed.

17 I'll point to a couple of them. For
18 example, for conversion costs, this is critical for
19 small manufacturers. For product mix and
20 profitability, we want to determine what the
21 relationship is between premium products and the
22 differentiation of those from baseline products.

23 We also take this opportunity to get a
24 sense of manufacturers' impacts on shipments. As an
25 example, we look at product-switching that's not

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1 apparent in any price elasticity value, for example.
2 And we discuss that with manufacturers and what their
3 specific impacts are.

4 Phase 2 consists of a strawman GRIM and
5 the interview guide preparation. For the strawman
6 GRIM, we have inputs here listed. We take these
7 inputs from several other analyses. For example,
8 manufacturer prices and manufacturing cost estimates
9 are taken from the engineering analysis. The
10 shipments forecast from the shipments analysis and
11 financial information is derived from the initial
12 industry profile.

13 We also have the interview guide
14 preparation, and I've listed here some of the topics,
15 again, that we include in the interview guide. The
16 interview guide is sent out to manufacturers ahead of
17 the interview itself, so you'll have a chance to
18 review the topics that are included and possibly think
19 about some of the responses.

20 So we have an engineering analysis. We'll
21 be discussing shipments as well, cost structure,
22 conversion costs, cumulative burden, direct
23 employment, import and export issues, consolidation.
24 Again, for this part, the consolidation and
25 competitive impacts -- our analysis is sent to the

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1 Department of Justice for review to examine those
2 impacts specifically, replacement parts or
3 refurbishments, and also impacts of the standard's
4 effective date.

5 However, for this rulemaking the effective
6 date is established in EPACT 05. So that's not as
7 much of a concern as other rulemakings.

8 Okay. And the last phase includes the
9 manufacturer interviews, the detailed version this
10 time, and also the assessment of the impacts or the
11 results.

12 One thing to point out is that when we get
13 into the manufacturer interviews it may take some
14 period of time to schedule those interviews, because
15 what typically happens is a manufacturer would want to
16 have representatives from various departments of their
17 firm present to answer the various questions that we
18 will go through.

19 And so, you know, we will be sending out
20 the request for those interviews far in advance, as
21 well as the interview guide itself.

22 Okay. That leads us to the feedback
23 questions. Okay?

24 MODERATOR BERRINGER: Item 12.1, "What
25 procedures should the Department follow when

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1 scheduling interview and requesting information?" So
2 this is sort of towards the manufacturers. Karim?

3 MR. AMRANE: Karim Amrane, ARI. I guess
4 the Department has done those interviews in the past,
5 and those have been acceptable to industry. So I see
6 no reason to change the way you've done it.

7 MODERATOR BERRINGER: Okay. Bruce?

8 MR. HIERLMEIER: Bruce Hierlmeier, Zero
9 Zone. Just a longer lead time, so we can get the
10 people organized to be there when you come or set an
11 appropriate date where you have the other people in
12 the company available for you.

13 MODERATOR BERRINGER: I know that has been
14 an issue in other ones. Just scheduling and getting
15 the right people there, so, you know, a long lead time
16 will -- so start planning on it now. We'll --

17 (Laughter.)

18 Any additional comments on 12.1? Okay.
19 Seeing none, we'll go to 12.2. "The Department seeks
20 comment on the establishment of manufacturer subgroups
21 for commercial refrigeration equipment." So are there
22 any subgroups that are needed here? Manufacturer
23 subgroups. Okay. Karim?

24 MR. AMRANE: Karim Amrane, ARI. I guess
25 in the past, you know, in other rulemakings you have

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1 looked at subgroups, compressor manufacturers, and so
2 on. In this case, I think the component manufacturers
3 may be -- might be a subgroup that you need to look
4 at. Motor manufacturers, others, I don't know.

5 MODERATOR BERRINGER: Okay. Thank you.
6 Any additional groups? I see Mike Rivest.

7 MR. RIVEST: Mike Rivest, Navigant
8 Consulting. In terms of the subgroups, we might be
9 interested in understanding, and part of the market
10 characterization -- we'd like to know if there are
11 some manufacturers that are much larger than others,
12 so that we might treat them separately, or there might
13 be manufacturers who only participate in some niche
14 markets that for some reason might be impacted
15 differently by standards. So just something to think
16 about.

17 MODERATOR BERRINGER: Okay. Any
18 additional comments? All right. We'll go to 12.3.
19 "What regulations or pending regulations did the
20 Department consider in the analysis of cumulative
21 burden, regulatory burden?" This in the past has been
22 sort of like the phaseout of HCFC, so we have similar
23 type of things. You know, there's EPA, other
24 regulations that may affect or be a cumulative burden
25 on the manufacturers. Karim?

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1 MR. AMRANE: Karim Amrane, ARI. I guess,
2 as just was mentioned before, in the CFC -- or the
3 HCFC phaseout of 2010 is, of course, one issue that
4 the Department needs to look at carefully. But also,
5 cumulative burdens on certain manufacturers in the
6 room, and particularly in the case of Carrier, for
7 example, it's not only commercial refrigeration. It's
8 also commercial unitary, it's also furnaces, it's also
9 other things.

10 So on certain manufacturers, in particular
11 Carrier in this room, I think the Department has to
12 look at that seriously.

13 MODERATOR BERRINGER: Okay. Any
14 additional comments? Andrew, did I see your hand?
15 Okay. Anybody else?

16 All right. Moving right along.

17 MR. WINIARSKI: Okay. The next stage that
18 we'll talk about here is what's called the utility
19 impact analysis. The utility impact analysis is
20 really designed to address -- again, it's an impact
21 analysis. It addresses the impact on domestic energy
22 supplies and the utilities that basically produce
23 that, in the case of electricity resulting from the
24 imposition of standards for commercial refrigeration
25 equipment.

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1 It's a relatively straightforward idea.
2 In terms of implementation, the Department's proposal
3 here is to use essentially a similar tool that it has
4 used in the past called the National Energy Modeling
5 System, or NEMS. In particular, NEMS, which comes
6 from the Department of Energy's Energy Information
7 Administration, is a tool that they use to analyze the
8 national energy use and projected national energy use
9 for electricity and gas and fuel oil on into the
10 future.

11 And the NEMS modeling system was developed
12 primarily for that effort. NEMS-BT is a variant.
13 Basically, any variation away from the actual NEMS
14 modeling system, EIA wants to be very careful to
15 distinguish that from what it uses in its development
16 of the Annual Energy Outlook Report. So we refer to
17 that as NEMS-BT when we do any kind of variation on
18 it.

19 The process that we would like to use here
20 for consistency with the previous analysis is to take
21 the energy savings that are calculated from the
22 national energy savings spreadsheet that we did in the
23 ANOPR stage, and then revised if necessary directly
24 after the presentation of the ANOPR, to take that
25 information and use it to reduce the electrical demand

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1 and energy demand that NEMS predicts coming from the
2 commercial sector -- in this case, the commercial
3 sector module and the overall NEMS, national energy
4 modeling system.

5 These energy savings are then translated
6 in the utility portion of that module to a reduction
7 in the electrical demand faced by the system, and that
8 has subsequent impacts in terms of the types of
9 electrical generation being brought online in
10 outyears.

11 So the question there at the bottom --

12 MODERATOR BERRINGER: Okay. So we're now
13 down here at Item 13.1. "The Department seeks input
14 from stakeholders on its proposed use of NEMS-BT to
15 conduct the utility impact analysis." As Dave said,
16 this is pretty consistent with what we've done in all
17 our rulemakings. Does anybody have objections, or do
18 you think we -- there are some other alternatives that
19 we should use? I see Don Brundage.

20 MR. BRUNDAGE: I think we're down to two
21 utility people in the room. Don Brundage. Doing it
22 the way you've done it in the past using NEMS is fine.

23 The biggest problem I see is the current Annual
24 Energy Outlook in my opinion is hopelessly optimistic
25 on energy prices, but that's not a major factor,

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1 because you'll be using a different one by the time
2 you come up with any actual levels.

3 MODERATOR BERRINGER: Okay. Additional
4 comments? Seeing none, we'll move on.

5 MR. WINIARSKI: The next impact analysis
6 that I'll talk about here is what's called the
7 employment impact analysis. The goal of the
8 employment impact analysis is to sort of assess the
9 impact on national employment that may come about from
10 the imposition of efficiency standards. That impact
11 may be positive or negative in terms of the total
12 employment in the nation.

13 The analysis incorporates both direct and
14 indirect employment impacts. Direct employment
15 impacts come directly from the manufacturer impact
16 analysis that Aris spoke about. Indirect employment
17 impacts, however, are those impacts that may occur
18 downstream or as a result of the change in standards,
19 and they come from basically two different types of
20 economic variation that are going to occur with the
21 imposition of standards.

22 The first is what's called the
23 substitution effect, and in the substitution effect a
24 good way to think about this is if the price of a
25 product goes up, maybe instead of buying that product

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1 I do an alternative. Right? I change how I shift my
2 expenditures that I have as a consumer to different
3 purchases.

4 The other way that indirect employment
5 impacts come about is from what's called the income
6 effect. Basically, changing standards will result in
7 both changing first costs for equipment as well as
8 changes in expenditures for electricity or other
9 energy possibly. And that results in an overall net
10 change in the income that's out there for the
11 purchasers of the equipment, as well as any downstream
12 impacts as they proceed to use their money for
13 different items. And so the income effect tries to
14 take those into account.

15 The proposal here is to use something
16 that's very consistent with what the Department has
17 done in recent rulemakings. They propose to use a
18 model referred to here as ImSET, or if you look back
19 in historical rulemakings the terminology ImBUILD was
20 used. And basically, ImSET -- impact of sector energy
21 technologies -- is a tool that was developed for BT,
22 not necessarily for this Department, but for BT as a
23 whole to try to come up with what's the overall
24 employment impact of changes in energy technologies.

25 And that tool is -- basically tries to

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1 account for all of these downstream impacts on
2 employment. For instance, OEMs that are producing
3 motors would be an example of how that might come
4 about.

5 So, Bryan?

6 MODERATOR BERRINGER: Yes. Item 14.1,
7 "The Department requests feedback on this approach for
8 assessing employment impacts." Again, this is similar
9 to what has been done in the past. We have a newer
10 version software model that's being used, software
11 tool. Is that something that is acceptable, or is
12 there something else out there?

13 Hearing no comment, I assume that it's
14 okay, so we'll move on to the next area.

15 MR. WINIARSKI: The next area to talk
16 about is the Department's environmental assessment.
17 Basically, the Department tries to go and make an
18 estimate of what will be the environmental impacts
19 from the adoption of higher efficiency standards for
20 each class of equipment that it's going to analyze.

21 In terms of the methodology that the
22 Department proposes to use here, the NEMS modeling
23 system at -- when it is run actually outputs various
24 environmental emissions from the utilities and other
25 powerplants that are going to be affected. This could

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1 -- these emissions result from perhaps a reduction in
2 actual energy use, but they also result from possible
3 shifts in the number of powerplants that are installed
4 and the type of powerplants that are installed.

5 NEMS estimates that -- those -- both those
6 impacts, and then will report, for instance,
7 quantities of carbon dioxide emissions for each
8 standard level, and nitrogen oxide emissions from
9 powerplants. In addition, it attempts to make an
10 assessment of the impact on sulfur dioxide emissions.

11 But what complicates that is there is a
12 commercial trade in powerplants and between industrial
13 people -- users on sulfur dioxide emissions. And so
14 in that -- where there's this trading going on, a
15 reduction in someplace may be sold so that someone
16 else can go ahead and make an emission. So any
17 measurable impact from NEMS will probably be reported
18 in a reduction in the estimated trading price in the
19 future of sulfur dioxide.

20 In addition, if we're looking at doing
21 building modeling, we may try to make an assessment of
22 the environmental impacts from any reductions of
23 fossil fuel use that occur at the building level.

24 MODERATOR BERRINGER: Item 15.1 again.
25 "The Department requests feedback on the approach to

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1 assessing the environmental factors." Again, pretty
2 consistent with what we've done in past rulemakings.
3 We're going to be using NEMS-BT, so -- I see Don
4 Brundage has a comment.

5 MR. BRUNDAGE: I would just -- Don
6 Brundage. I would just want to make sure that NEMS
7 adequately was forward-looking. There is a tremendous
8 amount of investment being done by electric utilities
9 on nitrogen oxide and SO₂ reductions and -- at this
10 time. And the historic emission rates are not going
11 to be representative of future emission rates. So
12 make -- just a caution to make certain that it's
13 adequately forward-looking in your modeling on
14 projected emission rates.

15 MODERATOR BERRINGER: Just to follow up,
16 is there information out there that -- you know, that
17 the Department could access to see what these forward
18 trends look like? Data sources?

19 MR. BRUNDAGE: I'm not -- it's not really
20 my area. I just know we're spending an awful lot of
21 money on that.

22 (Laughter.)

23 Other people are, too.

24 MODERATOR BERRINGER: Okay. Any
25 additional comments? Andrew?

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1 MR. DELASKI: Andrew Delaski, Appliance
2 Standards Awareness Project. I think one change in
3 the NEMS modeling since it was last used for
4 rulemaking is that I believe it now reports out
5 mercury and particulates as well, or at least one or
6 the other of those. So if mercury particulates is an
7 outcome of the model, I would urge the Department to
8 include that in their report and in their analysis.

9 MODERATOR BERRINGER: Additional comments?
10 Next section?

11 MR. WINIARSKI: The last stage in the NOPR
12 analysis is what's called the regulatory impact
13 analysis. Basically, the regulatory impact analysis
14 is a tool that's used to explore the potential for
15 non-regulatory alternatives that might provide
16 equivalent or close to equivalent energy savings.

17 As Steve Nadel spoke about, it's not clear
18 that there are a lot of these non-regulatory
19 alternatives in place right now. And the Department's
20 sort of obligation is to look at the actual impacts of
21 any such initiatives that have occurred to date in
22 terms of identifying the energy savings from those
23 initiatives.

24 But it will certainly consider any
25 information that can be presented regarding the

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1 impacts that any of those initiatives or possibly new
2 initiatives might have in the future if something has
3 come about.

4 One issue that is, again, a slight wrinkle
5 in this particular rulemaking is that if -- where the
6 Department does not set standards that does not
7 preempt other authorities -- in particular, states --
8 from establishing their own standards for a given
9 piece of equipment. So that's something that needs to
10 be taken into account in this, and it may suggest that
11 -- or when we get to this stage in the analysis we may
12 want to look at that and see if -- how much effort we
13 want to spend on this for particular products.

14 Bryan?

15 MODERATOR BERRINGER: That leads us to
16 Item 16.1. "The Department is unaware of any current
17 non-regulatory programs that specifically target the
18 commercial refrigeration equipment covered under this
19 rulemaking. Are stakeholders aware of any such
20 programs that could be examined as optional or non-
21 regulatory approaches?" Any programs out there in
22 the -- I see shaking of heads that they're -- nobody
23 is aware of anything. Okay.

24 We'll move on to Item 16.2. "There are
25 specific subgroups of end users whom the Department

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1 should consider in its review of potential adverse
2 impacts from standards developed under this
3 rulemaking." Any subgroups would be -- or end users
4 that we should consider? Okay. Seeing none, let's
5 move on.

6 MR. WINIARSKI: Okay. And I think at that
7 stage that finishes the NOPR analysis. I'll turn this
8 over to Jim.

9 MR. RABA: After we've done all the
10 analyses, gone to all the public meetings, heard all
11 the comments, oral and written, we take them all into
12 account, we finally come to a final rule. And the
13 final rule sums up everything you've heard today, but
14 fast-forward three years, and we have a lot to cover
15 between now and then. Once we get there, that final
16 rule will consist of a thorough review of all these
17 analyses taken in total.

18 And the energy efficiency levels, if
19 analyzed at later stages, once we go through some
20 levels to look at. And then, we'll look at the notice
21 of proposed rulemaking analysis, which comes after
22 this analysis, and see what adjustments have to be
23 made there as well and come up with a final rule. So
24 there's a lot more to cover, a lot more opportunity
25 for comment, a lot more opportunity to explore and

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1 provide more information and data.

2 And also, by the final rule stage we will
3 have to consider other comments from other
4 departments. The Department of Justice will have to
5 weigh in on the impacts of any standards that we set
6 in the Department and the impacts on levels of
7 competition.

8 So the final rule would not become
9 effective until three years later. We say January 1,
10 2012. So there will be time for manufacturers and
11 other users to adjust. So with all that, the final
12 rule is published.

13 Are there any questions about the analyses
14 we've had today, about today's public meeting?

15 So, again, at the final rule stage, we'll
16 revise the analyses as appropriate, Department of
17 Justice review, and that will be it. Any questions or
18 comments so far at this stage, what we've heard on the
19 analyses? Yes, Bill.

20 MR. KISTNER: Yes, Jim. Bill Kistner,
21 Carrier. Back on that last page or page 10, which was
22 in the early part of the presentation, do you have
23 milestone dates for the end points of those segments
24 already targeted? I mean, we know when the final
25 ruling is. But if you back up to each of those

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1 stages, where are the target dates for those
2 milestones?

3 MR. RABA: We have the target dates in-
4 house. Basically, those are milestones for us to
5 complete. What we typically do is do a timeline, a
6 critical path analysis, really in this case starting
7 from the end and working backwards, knowing we have to
8 meet a statutory deadline.

9 How long it will typically take in a
10 rulemaking to do these analyses -- other requirements
11 that the government puts upon us. For example,
12 Department of Justice, the Office of Management and
13 Budget, others, have requirements of time they have to
14 look at as well. These are often factored in.

15 Ron Lewis, you had some comment about
16 that?

17 MR. LEWIS: Yes. Specific dates that are
18 targets at this point -- and looking at these being
19 dates we want to publish by and not to be exceeded, we
20 have the ANOPR in July of '07, the NOPR in May of '08,
21 and the final rule in January of '09.

22 And if you look at the website, I opened
23 up this morning saying if you hadn't looked at the
24 report to Congress on our website -- I think it's
25 page 52 if I remember correctly. We have a model

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1 there that shows the time to do all the analyses, when
2 we're going to do things, when it's in review,
3 etcetera, and there's a three-year time period there
4 that shows exactly what the sequencing is of things.

5 MR. KISTNER: Oh, okay.

6 MR. LEWIS: So those are the approximate
7 dates right now.

8 MR. KISTNER: Okay, good. That gives us
9 the target dates to work towards. Thanks.

10 MODERATOR BERRINGER: And I'd just like to
11 add I think those dates are also published in the
12 regulatory agenda for the Department also.

13 MR. RABA: One other thing, too, that was
14 asked before about where we could find information
15 from the commercial unitary air conditioning
16 rulemaking previous to this about the markups,
17 distribution channels, and the like, and we've
18 mentioned a website.

19 Brenda Edwards-Jones has made some copies
20 of those pages, and if she has not -- if you have not
21 received them already, please stop by the desk over
22 there, the sign-in desk, and pick up a copy from her
23 on the way out. It will give you the exact website to
24 go to, save you some time, and you can see what we're
25 talking about there, give you the comparison you asked

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1 for earlier on.

2 MODERATOR BERRINGER: Karim.

3 MR. AMRANE: Karim Amrane, ARI. Would it
4 be possible to get a copy of this presentation in PDF
5 or PowerPoint?

6 MR. RABA: Yes. This presentation today
7 will be available on our website in the next few days.

8 It's now public domain. When we put it on the
9 website, you can download it, and it will be in color.

10 MODERATOR BERRINGER: So at this time, I
11 think we're at closing remarks now. Does anybody have
12 any specific closing remarks from the audience --
13 manufacturers, stakeholders that are in the room?

14 MR. RABA: Wait, I have one more.

15 MODERATOR BERRINGER: We're almost there.

16 MR. RABA: Thank you very much for your
17 participation today.

18 (Laughter.)

19 Again, the websites are shown up here, for
20 further information. Please submit your written
21 comments thus far for our framework document, and in
22 today's public meeting, not later than May 30th.
23 Short window, but necessary to meet the schedule.

24 Written comments can be submitted directly
25 by e-mail or written on paper as well and delivered

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1 both either in person, postal mail, or courier as
2 well.

3 Any questions, you may also contact me.
4 This phone number, e-mail address, is also on the
5 public meeting notice for today.

6 This concludes our public meeting. And if
7 there are any further questions at this time, anything
8 I've covered, or the other information here about
9 website and the like? Yes, sir. Chris.

10 MR. BALESTRINI: This is Chris Balestrini.
11 Do you happen to know if you're planning any kind of
12 further working group sessions before the ANOPR is
13 issued? Like a further discussion where you might
14 have some results and stuff to sit down and go through
15 some of that? Or was this --

16 MR. RABA: There is nothing planned at
17 this time.

18 MR. BALESTRINI: Nothing planned.

19 MR. RABA: No.

20 MR. BALESTRINI: Okay.

21 MR. RABA: Well, the purpose of today's
22 public meeting was, indeed, to familiarize you with
23 the analytical tools that support the commercial
24 refrigeration rulemaking. And we appreciate your
25 participation today, and the comments, oral that we

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1 heard today, and written comments that are to come,
2 and other information and data.

3 We have a long way to go, as you can see.

4 But working together we'll get it done on time and
5 hopefully to the satisfaction of all.

6 Thanks goes -- special thanks to our
7 presenters today -- Mike Christopher and Aris Marantan
8 of Navigant Consulting, and Dave Winiarski, Pacific
9 Northwest National Laboratory, and the others of our
10 consultants and contractors behind the scenes who are
11 really making this possible and doing the analytical
12 work and heavy lifting as well.

13 Special thanks, and I think a round of
14 applause, to our facilitator, Bryan Berringer.

15 (Applause.)

16 And for you who have participated today
17 openly, it's been good discussion, a lot of good
18 things, valuable information, valuable comments have
19 come out, interesting points have been made. We'll
20 take them into consideration. So on your own behalf,
21 give yourselves a round of applause.

22 (Applause.)

23 Well done, ladies and gentlemen. We look
24 forward to your continued interest, and those comments
25 and participating in the public rulemaking process as

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1 it goes on.

2 Bryan, any further final comments or
3 thoughts?

4 MODERATOR BERRINGER: Yes. I'd just like
5 to follow up on Chris. At the ANOPR stage, there will
6 be analysis posted on our website at that point -- a
7 notice published, and we will have another public
8 meeting at that time for additional comments. So
9 that will be the next public forum that we will have.

10 And I want to thank everybody for their
11 participation. There was a lot of good information, a
12 lot of good discussion today. So thank you all very
13 much.

14 MR. LEWIS: Just one last note, too.
15 Because this meeting had so many people that have not
16 participated in one of these processes before, if you
17 go to our website there are other appliances and other
18 pieces of equipment that existing regulations are
19 there. It might be good guidance to just take a look
20 at the depth of the analysis and look at some
21 specifics there that -- ahead of time, give you an
22 idea of what we do, the extent that we analyze things.

23 And even though it's not your specific
24 product, it may be informative to you. So by going to
25 the website, there is some information there that may

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1 be helpful in understanding the process.

2 So thank you again for attending. Safe
3 journey home.

4 MR. RABA: And don't forget to turn in
5 your critique sheets as well to Brenda Edwards-Jones
6 in the back of the room.

7 MODERATOR BERRINGER: Okay. At this
8 point, we are adjourned. Thank you again.

9 (Whereupon, at 3:32 p.m., the proceedings
10 in the foregoing matter were adjourned.)
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