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2 DEPARTMENT OF ENERGY

3 QUADRENNIAL TECHNOLOGY REVIEW

4 BUILDING AND INDUSTRIAL EFFICIENCY WORKSHOP

5 - - - - -

6 Radisson Hotel
101 Radisson Drive
7 Green Tree, PA 15205
May 17, 2011
8 7:11 p.m.

9 - - - - -

10 NIGHTTIME SESSION

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12 TRANSCRIPT OF PROCEEDINGS

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14 Reported by:

15 Kathleen A. Myers
Court Reporter
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2 P R O C E E D I N G S

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4 XXX: We found that

5 this kind of round-table discussion at a couple

6 of the workshops so far is very useful. You

7 get people who are more deeply knowledgeable

8 about the subject, who've been there talking

9 about what we heard, and have a more

10 free-flowing conversation than we've been able

11 to have in sessions.

12 So I guess the first order of

13 business is to go around the table so that our

14 note-taker can know who to blame for various

15 statements.

16 XXX: XXX.

17 I'm XXX's staff director.

18 XXX: XXX.

19 I'm with Rocky Mountain Institute. We're a

20 non-profit inside of Colorado.

21 XXX: XXX,

22 Dow Chemical.

23 XXX: XXX,

24 Under Secretary for Science in DOE.

25 XXX: XXX,

1 DOE-QTR

2 M-c-C-A-D-E, Building Technologies Program,

3 DOE.

4 XXX: XXX,

5 (inaudible) Laboratory.

6 XXX: XXX,

7 Building Technologies.

8 XXX: XXX, DOE's

9 Industrial Technology.

10 XXX: XXX. I'm

11 in XXX's office.

12 XXX: XXX,

13 Industrial Technologies.

14 XXX: XXX,

15 Emerging Technology Application Center.

16 XXX: XXX,

17 Caitin Corporation.

18 XXX: XXX,

19 EPRI.

20 XXX: XXX.

21 Northwest Power Council.

22 XXX: XXX,

23 United Technologies Resource Center.

24 XXX: XXX. I

25 work in XXX's office.

1 DOE-QTR

2 XXX: I'm XXX

3 from Vermont Energy Investment

4 Corporation.

5 XXX: I think we're all

6 going to have to speak up a little, not only

7 for the acoustics, but the fact that there is

8 some party going on and they're starting to

9 play music.

10 I think the goal is to have a

11 free-flowing conversation. We, the team,

12 actually sat for 45 minutes just before we came

13 into the room to list a couple of topics we

14 felt would be useful to focus on. But, as

15 usual, I'm going to open the floor first for

16 reactions, particular takeaways from the day's

17 discussions which I found, at least,

18 particularly educational and useful. There

19 were several uh-huhs.

20 XXX: Well, not so

21 much an uh-huh, but I fully concur with some of

22 the closing statements or observations that

23 although it is about technology and development

24 of technology -- that it is not only about

25 that, but political and economic factors play a

1 DOE-QTR

2 very significant role.

3 XXX: One of the

4 structural problems with the situation, of

5 course, is that the Department of Energy

6 doesn't have it hands on many of those levers.

7 They are either elsewhere in the government, in

8 the executive branch or Congress.

9 It's amusing when you read the

10 enabling legislation for the Department back in

11 1977. The vision was to centralize a lot more

12 of the energy action in the Department. And

13 for who knows what reasons, it never really

14 happened. But you can imagine the reasons.

15 XXX: Going forward,

16 I mean, do you think that collectively the

17 Department can be positioned to reach out and

18 sort of touch some of those other barriers and

19 elements that are involved?

20 I know your comment is there are

21 other levers that are outside, but is there an

22 opportunity, is there an openness to try to

23 build partnership.

24 XXX: I think there is.

25 As we go around -- part of this process has

1 DOE-QTR

2 been meetings with other agencies. And sure

3 there are different cultures. There are even

4 turf issues. But I think we have been without

5 a coherent energy policy for a long time and

6 that there is a willingness to act much more as

7 one government than we had before, at least

8 within the executive branch.

9 And, by the way, notice I said a

10 coherent energy plan. We have had an energy

11 plan for a long time, and it's what we got.

12 XXX: (Laughing) Yes.

13 There's also a default position.

14 XXX: (Laughing.)

15 XXX: I was struck

16 from your first site on this morning where you

17 laid out the different kind of pathways of kind

18 of the strategies and the policy and the need

19 for those to integrate, but then also when you

20 then combine in the other parts of government

21 and how much opportunity there is there, that

22 it's, frankly, pretty amazing what you've all

23 accomplished in the Department of Energy

24 considering the need to kind of keep the silos

25 and to push forward.

1 DOE-QTR

2 And it really gets back to the

3 comment we talked about about linking the

4 strategies to policy and then driving those

5 forward and trying to pull it all together to a

6 more systemic approach rather than just

7 isolating one piece at a time.

8 You know, when all you can do is

9 pick one thing at a time, that's great progress

10 for what it is. But there's so much more

11 robustness and power that comes from creating

12 the alignment, as hard as it's going to be.

13 And I can't begin to understand the depth of

14 the challenges you all face with pulling that

15 together, but it's worth the effort, I think.

16 XXX: I also think that

17 the initiatives that have been undertaken in

18 the last couple of years with ARPA-E, with

19 Hubs, create a framework that can be used in

20 leverage across the organization for -- not

21 necessarily ARPA or Hubs -- but things can be

22 done, I'll say, differently.

23 You can have collaborations across

24 agencies, or you can have aggressive goals and

25 very significant deliverables that are

1 DOE-QTR

2 well-documented, like what ARPA-E does. I

3 think that sets a framework that can be

4 leveraged in other ways, possibly across the

5 organization.

6 I think that's -- you know, my view

7 is really set in a, I'll say, new direction,

8 which could be a new direction that I think

9 could be very beneficial for everybody.

10 XXX: We talked about

11 that. It's worth reflecting on the relative

12 magnitudes of the dollars involved. So

13 building -- I'm sorry -- energy technology are

14 at 4-point-something. ARPA-E is 400 million.

15 It's going to be a 180 NCR. And the Hubs, on a

16 good day, are at 25 million each, times three.

17 So these are small parts of the

18 Department but, nevertheless, that together,

19 frankly, with the ARA experience where the

20 Department did its business processes in a very

21 different way than it had been done previously,

22 I think that's opened up everybody's eyes to

23 what we could do.

24 XXX: That's also an

25 excellent point. That was a very, I'm sure,

1 DOE-QTR

2 challenging time to process all that had to be

3 done, right. And that's my point, is that

4 things can be done differently, not necessarily

5 is there any particular one model to follow.

6 But there are goals to be accomplished and -- I

7 think that's a good point.

8 XXX: Following up on

9 the goals statement, one of the things in the

10 building program that we have a particularly

11 difficult time with is the deployment goals,

12 because we're trying to get -- influence the

13 number of transactions that occur, which we

14 don't have any control of.

15 The R&D goals are, in a manner of

16 speaking, much simpler to lay out. But when

17 you're trying to integrate a program,

18 deployment and research, trying to relate them

19 to each other, looking at it, assistance in

20 trying to think of ways to define some of those

21 goals that are meaningful is -- we're always

22 looking for some ideas.

23 XXX: My idea on

24 that, if you're looking for an idea to be

25 blasphemous to some of the states -- but if a

1 DOE-QTR

2 piece of your SEP was linked to performance and

3 competitive in terms of driving your goals

4 forward, you might -- you'd get innovators to

5 step forward and take the risks with you and

6 you start to drive the deployment and you'd get

7 others realizing the only pathway to some of

8 the dollars is to jump on board.

9 XXX: We did have,

10 given a sense of how long I've been hanging

11 around this place, in the EC Plug legislation

12 in '76, the state SEP grants were tied to the

13 states adopting building codes that were right

14 turn on red and there were some other

15 requirements as well, but those were

16 legislatively established --

17 XXX: Traffic.

18 XXX -- rather than

19 through administration, which then you begin to

20 get some of that push and pull.

21 XXX: Sure. I don't

22 think it would be easy for you to pull that

23 off, but it would be a way forward. There's

24 nothing like showing people the path to the

25 money to create partners who want to help you

1 DOE-QTR

2 accomplish your goals.

3 XXX: Energy

4 efficiency, in my experience, at least talking

5 to the non-technical, ordinary people I know,

6 energy efficiency is -- not for transportation

7 -- high on their minds, as we all pay for

8 gasoline prices.

9 But efficiency in the stationary

10 sector is not on people's agenda. And you're

11 starting to see it a little bit as energy

12 prices have gone up, but I think it's more a

13 derivative effect from the oil, natural gas.

14 Do you think it can ever be high

15 enough that that becomes a significant rival?

16 Because this is really, in the end, about

17 standards.

18 XXX: In the end, it's

19 about?

20 XXX: About standards.

21 XXX: I think it is

22 about standards. Isaac talked about this.

23 (Inaudible). They already have standards for

24 high temperature applications, and we don't.

25 And we could, but we haven't done it.

1 DOE-QTR

2 We have standards for appliances, we

3 have standards for lots of different widgets,

4 and lots of industrial widgets that apply the

5 same philosophy and we haven't done that so

6 far. And (inaudible) recommended recuperators

7 on furnaces. It would be a no-brainer.

8 Now, the problem with industrial is

9 low stock turnover. It takes -- some of these

10 have been operating for 25 years.

11 But there are a lot of ways to

12 reduce that turnover and pursue some things as

13 well. I don't -- as a matter of fact, we

14 talked about this. We don't have a good handle

15 on the efficiency of what the existing stock

16 is. We need to at least know what we're

17 starting with and know what that minimum is

18 that we talked about.

19 I thought the discussion today was

20 excellent. I learned a lot about the way

21 people look at certain issues.

22 XXX: Excuse me. For

23 the sake of the reporter and going back to some

24 stage training that my wife shared with me

25 because she's a thespian, I propose that the

1 DOE-QTR

2 audience is not XXX, but at the end --

3 there's a thermostat on the wall back there

4 (pointing). Because, otherwise --

5 You're straining trying to hear what

6 we're saying.

7 THE COURT REPORTER: Yes.

8 XXX: I want to make

9 a comment.

10 I think the public -- you are right.

11 As of now, efficiency is not in the minds on a

12 lot of public. But, then again, there seems to

13 be a shift in people's perception that

14 efficiency is related to higher quality; okay?

15 So when you're buying more efficient

16 equipment and technology -- and Energy Star is

17 a good example. Many people don't buy it

18 because it's more efficient, but people think

19 it's a better quality product.

20 XXX: Right, it is in

21 one dimension.

22 XXX: And, you know,

23 we see advertisements all over from all

24 companies, Chevron as an example. Every

25 advertisement from Chevron focuses on

1 DOE-QTR

2 efficiency. So they are talking about human

3 efficiency, they are talking about efficiency

4 alone. So I think the public is getting it.

5 XXX: Is getting it?

6 XXX: I think there's

7 a lot to be done, but I think the public is

8 getting it, and especially relating to quality,

9 connective with quality, higher quality product

10 and so on.

11 So I think, you know, pretty soon

12 there should be a lot of (inaudible) concurrent

13 with technology. I think it will take the

14 market soon.

15 XXX: I think you

16 make a good point for the appliances. Energy

17 Star has done a terrific job of branding so you

18 can spot the appliance immediately, you know,

19 what it means for a commercial building or a

20 home. You know, some of the comments earlier,

21 that's missing. And there is no value or

22 little value placed on that by the consumer at

23 this point. It's not visible. Given nicer

24 countertops or something hidden in the attic,

25 they're going to go for the countertops.

1 DOE-QTR

2 XXX: I agree. I think

3 you can drive customer acceptance. On the

4 negative side, if the price of gas was higher,

5 we'd all drive motorcycles. But, on the

6 positive side, customers don't seem to care

7 about energy efficiency, but they care about

8 their pocketbook.

9 So if we fund the projects that give

10 us the quantum, including the technology,

11 that's half of the value. It also has to -- if

12 I can get a payback for the price of my furnace

13 -- we were talking about furnace -- in two

14 years, that's a value. You were talking this

15 afternoon.

16 And, if you do it in steps, maybe

17 the first step is to get the technology

18 quantum. Then you can fund the cost reduction

19 and then you got the consumer. I can get

20 payback in two years. And the manufacturers

21 would love it because the manufacturers really

22 don't like furnaces (inaudible) or that kind of

23 thing. So it can be a win. I think you have

24 to play both sides.

25 XXX: There's another

1 DOE-QTR

2 piece that hasn't been mentioned that I'm --

3 when you look at some of the analysis that is

4 coming out of the 2010 census, you can see that

5 there are a lot of college educated 20 and 30

6 year olds moving into the cities.

7 When you look at Washington, D.C.,

8 for example, in the last ten years the

9 population of D.C. has grown 5,000, but the

10 population of the 25 to 35 year olds has grown

11 by 25,000.

12 Veco is looking at time as far as

13 commuting and other benefits, entertainment and

14 the like, and looking at quality of life. And

15 whether or not it's Washington, D.C., Detroit,

16 all the major cities, you're seeing some of

17 this moving back into the city.

18 So I think when you look at energy

19 consumption and you get the transportation out

20 of it, because these couples are now only

21 buying one car or maybe going into some of

22 these car-sharing programs, that equipment

23 efficiency is great, but I think it's a far

24 larger issue than some of these dynamics I

25 think may end up making the job a lot easier in

1 DOE-QTR

2 a generation or so.

3 XXX: Urban living

4 looks a lot less attractive when you have two

5 or more kids.

6 XXX: I would beg to

7 differ on that. I disagree. I lived in town

8 for 34 years and raised two boys.

9 XXX: Okay. We have

10 the opposite experience, but, okay.

11 XXX: You raised two

12 girls?

13 XXX: No, three kids.

14 Two girls and a boy.

15 XXX: In talking about

16 behavior, I think there's an aspect about

17 behavior. We're discussing individuals and

18 their behavior. I think there's also the

19 behavior of the gatekeepers, the contractors

20 that are installing.

21 And I don't know if we really think

22 enough about targeting the behavior of those

23 groups and organizations. I think the behavior

24 of companies and corporations is different, of

25 course, than individuals. And we often relate

1 DOE-QTR

2 behavior to individuals. It's easy to connect

3 with, but I think if we study behavior

4 differently -- I can't remember the details,

5 you might recall it, but I heard a story

6 recently about Roland when he was at California

7 and some program where he was giving ten bucks

8 for every old refrigerator; something like

9 that. Did you hear that story? I heard

10 somebody talking about it recently. Because a

11 lot of these old refrigerators were ending up

12 in people's garages; one of those things. So

13 he found a way to sort of --

14 XXX: Cash for

15 clunkers.

16 XXX: Yes, one of

17 those.

18 XXX: Today's

19 discussion, I didn't hear this once, but I

20 wasn't at every table.

21 But your question, XXX, of

22 deployment. There's 26 states, roughly, that

23 have some sort of energy performance standard,

24 whether it's RPS or energy efficiency standard,

25 and utilities or public benefit folks are

1 DOE-QTR

2 responsible for meeting some pretty aggressive

3 goals and some major population -- states with

4 major population.

5 And the connection between utilities

6 and those public benefit-charged entities for

7 deployment -- because they are on the hook to

8 make some really probably aspirational goals,

9 in some case, because they are so steep, ramp

10 rates --

11 In California, they are going to

12 need technology to backfill what they've

13 already done. Northwest, same case. Illinois,

14 Ohio, and Pennsylvania is just really starting

15 to ramp up. And they are nowhere close to

16 saturating the current technology, let alone

17 new stuff.

18 So to move new stuff and to sort of

19 tunnel through, since you're not putting in a

20 90 percent, you're putting in a 95-percent

21 furnace, or what a program administrator could

22 actually deliver, which might be the higher-end

23 technology than what the standards are

24 basically going to enforce, and being better

25 connected with those delivery mechanisms in the

1 DOE-QTR

2 regions that are active, I think, has real

3 opportunity there because there's $5 billion

4 worth of deployment money going out, which is

5 probably enough to leverage whatever money you

6 got for research and development of technology.

7 In addition -- and that's just the

8 utilities side of the equation, not what the

9 customers are paying in the form of cost

10 sharing with those rebates. It's probably

11 another 5 billion on top of that. And that's

12 just on the electric side, plus gas. Now you

13 got some more large numbers going out and

14 growing.

15 So figuring on how to play in that

16 platform and working with those who want to

17 play -- and Roland certainly has a lot of

18 connections in that regard -- but they roll out

19 tens of thousands. We're doing 10,000

20 (inaudible) in the last 18 months. We thought

21 we were going to do 3,500. Well, we got

22 success.

23 That was a technology that wasn't

24 even around 18 months ago. So that shows that

25 you can deliver if the technology fits and you

1 DOE-QTR

2 have a program working with utilities to get

3 that out there. You can get some fairly high,

4 quick turnaround information back on those kind

5 of products and their acceptability.

6 XXX: Working together

7 is one of the keys, too. As I mentioned

8 earlier, before coming to DOE, we did this

9 report on unlocking energy efficiency and went

10 to Congress.

11 As usual, a lot of the main points

12 got lost there. One of the most interesting we

13 found was to really unlock something, you had

14 to overcome all the barriers simultaneously.

15 We broke energy consumption up into

16 sort of 14 clusters, and you can look at it

17 individually. So many times we don't have

18 access to all the leverage you need. Appliance

19 energy is one where you do. You say this is it

20 and you're done.

21 XXX: It's not so easy,

22 but, yes, in principle.

23 XXX: Yeah, that's all

24 you got to do.

25 XXX: It's the theory.

1 DOE-QTR

2 XXX: But if you look

3 at something like with the buildings, right,

4 you have problems with risk aversion, you have

5 problems with capital not being available, you

6 have high discount rates, you have not knowing

7 information about all kinds of things.

8 And no particular thing that the DOE

9 can do there necessarily attacks that. We can

10 do a home energy. That's going to overcome

11 four or five of the barriers, but you will

12 still have capital issues.

13 You can couple that now with

14 something like Long Island did or what Berkeley

15 does with amortizing loans over the lifetime

16 and building and utility bills.

17 So, to your earlier question, will

18 we always have this, I almost feel like there's

19 always going to be an energy deficiency. We

20 have decreased the growth of energy efficiency

21 from 2 percent per year, back in the '70s, to

22 1 percent per year. So we've actually been

23 making significant successes.

24 But it almost seems like technology

25 will give you a curve ahead of where people are

1 DOE-QTR

2 comfortable until you can unlock all those

3 barriers simultaneously. And we just may not

4 have access to all the tools.

5 XXX: But I think with

6 -- I mean, it's the utility interface section

7 as well, which works with regulators.

8 So in California, the Northwest, New

9 England, treating efficiency as a utility

10 resource makes a big difference in terms of

11 their ability to pay for things and get rate

12 recovery for making that investment.

13 It deals with many of those

14 barriers, particularly the capital barrier.

15 And getting other states and areas comfortable

16 with the idea that that investment is the

17 cheapest thing you can do, even though it's not

18 new generation, and getting -- that's a big

19 step for most regulators in states that hadn't

20 got that concept.

21 XXX: This is DOE as an

22 information broker, trusted source.

23 XXX: Yeah.

24 XXX: Right.

25 XXX: Chuck Goldman at

1 DOE-QTR

2 LBNL works a lot with the regulators on behalf

3 of DOE under contract to help regulators

4 understand how energy efficiency fits into the

5 portfolio of utilities for resource

6 development.

7 XXX: Many people feel

8 that that's the most effective things we do is

9 to just spread information around.

10 XXX: And getting the

11 credibility there for yes, this is something

12 you can count on, the meter will turn slow.

13 That matters.

14 Another part, if you go out -- all

15 our money that's been spent documenting what's

16 happened as a consequence -- what energy

17 savings did happen as a consequence of that

18 will be really, really important. It's not

19 just the jobs we created, but the jobs we

20 created by not spending money on energy as a

21 consequence of the savings. Those are big

22 numbers, and much more important than the

23 direct jobs that were created.

24 XXX: I'm afraid I have

25 to play the skeptic now. From my point of

1 DOE-QTR

2 view, that's even harder than applying

3 standards. You run into so many issues, both

4 educating public -- you start talking about

5 we're saving energy. That's an especially hard

6 slot. I think it's a great way to go and that

7 plays a critical part --

8 XXX: I know it's a

9 hard slot. I've been pulling that chain for

10 30 years.

11 XXX: The connection

12 to that, though, is there's the credible

13 information as a trusted broker that you talked

14 about. And with that is the need -- and this

15 was done well with Energy Star -- but the need

16 to kind of admit that marketing is an okay

17 thing. And by that mean pure market -- build

18 the market brand and follow it and stay to it

19 and be aggressive with it.

20 We've been 11 years at it with

21 Efficiency Vermont's brand and now we have a

22 market penetration of the brand in Vermont that

23 rivals Pepsi and Coke. We have 85 percent name

24 recognition; they know what we do, they can

25 identify it.

1 DOE-QTR

2 As a result of that, and we don't

3 know the numbers all over the world, but we

4 walked into Ireland and people talked to us and

5 have heard of Efficiency Vermont. And we don't

6 market at all outside of Vermont, but people

7 all over the world have heard about it.

8 We have such market penetration

9 because we spend a lot of money on it to help

10 create that draw that you talked about earlier,

11 about people actually wanting and caring about

12 energy efficiency beyond their cars.

13 We don't have to look for people

14 that want to do energy efficiency, they call us

15 and e-mail us and text us and knock on the

16 door.

17 XXX: One of the

18 frameworks we have been talking about in other

19 documents, which do not center around publicly

20 and maybe never will, is three different modes

21 in which the DOE works.

22 One is this information mode whereby

23 we're informing regulators, industry, and

24 consumers about energy matters.

25 The second is the capability mode,

1 DOE-QTR

2 whereby the DOE maintains an R&D capability and

3 awareness ability first to respond to

4 emergencies like the Golf spill or Fukushima,

5 but also to -- well, you know, building code

6 development, computer code development,

7 modeling is a capability kind of activity.

8 And then we talk about technology

9 push activities where the DOE says, by God,

10 we're going to commercialize and make it

11 commercially viable and see its deployment and

12 so on.

13 You know, I can give more

14 descriptions of each of those, but does that --

15 probably the first time you're hearing it --

16 sound like a plausible way to think about what

17 the Department does? Are there other sorts of

18 things we do in the efficiency space that are

19 not covered by that?

20 XXX: We talked

21 earlier this morning that one of the important

22 roles the DOE could provide is on data. And

23 where does that fit in?

24 XXX: I think that's

25 informational.

1 DOE-QTR

2 XXX: Best practices

3 and that sort of thing.

4 XXX: Yeah. There's

5 efficiency utilities we were just talking

6 about.

7 It also plays into when we advise

8 the EPA on some of the technical issues for

9 cafe standards, for example. That's another

10 sort of informational --

11 I have to say, one of the strong

12 impressions from the day has got to do with

13 data in the sense that we're flying blind in

14 both the buildings and the industry and not

15 knowing quite where the highest leveraged

16 things are, what would be the impacts of what

17 it is we're doing.

18 Directionally, it all sounds right,

19 but quantitatively, boy, it's not a science, or

20 even engineering.

21 XXX: But, just to

22 comfort you, research for that -- data is sort

23 of the fundamental of what we want to do.

24 And we have talked to a lot of

25 European agencies, a lot of Japanese agencies.

1 DOE-QTR

2 And they don't have data.

3 XXX: Either?

4 XXX: Either.

5 XXX: So if I want data

6 on power generation, I can get that. If I want

7 data on automobiles, I can get that, or

8 transporters. Why is it so hard here, because

9 it's consumers and there's many different

10 dimensions?

11 XXX: I don't think. I

12 would like to comment.

13 I think for a large segment of the

14 industry it's not been real stuff. So it's

15 been customer service. We've been the best in

16 making people happy. We just lowered their

17 bill by 50 percent six times because we gave

18 them this and then we gave them that and never

19 checked, couldn't check, don't know how to read

20 their meter.

21 But there's a lot of promise out

22 there on the street. And it really hasn't been

23 done quantitatively or -- where it has been

24 done, that's a less frequent occurrence of

25 where it has not been done that way.

1 DOE-QTR

2 It's been offered as energy

3 efficiency as a good thing like recycling or

4 whatever it is and here's an insulation job, I

5 hope it works.

6 And there have been utility programs

7 that have spent a lot money of an (inaudible)

8 and tie these numbers down. And there are many

9 that just handed out the money because they

10 were charged with handing out the money.

11 And that's a different metric. We

12 spent the money. I did that. That's what you

13 asked me to do. We spent 1 percent of revenue

14 on energy efficiency. I could have spent it on

15 art, but you told me it was supposed to go on

16 energy efficiency.

17 And that's -- I wasn't asked to

18 document that it made the meter turn slower.

19 And I think that is a whole school where that

20 enforcing of the quantitative analysis has to

21 be done.

22 XXX: Do we have the

23 methodology?

24 XXX: I think there's

25 capability out there to do that. There's a

1 DOE-QTR

2 huge -- more than a cottage industry of

3 evaluators who can do billing analysis, who

4 could put meters on, who can follow the

5 international protocols and do this work, but

6 they are not necessarily, up until recently,

7 being charged with documenting.

8 XXX: The protocols

9 are strong enough now that many of us in this

10 business are now actually bidding efficiency

11 gains into the four capacity markets through

12 the regular protocols that they demand so that

13 now efficiency is being considered.

14 And I think this is the right

15 pathway being considered, on par with how do

16 you fill your power supply curve.

17 When we really get to the space

18 where the rigor is around it so that everybody

19 is doing efficiency as a methodology of how you

20 fill your power supply curve, then we will have

21 it on power and the challenges that you are

22 raising will melt away.

23 XXX: It's the

24 quantification because there's money on the

25 table.

1 DOE-QTR

2 XXX: Yes.

3 XXX: Then it gets

4 serious. You do the sample size required.

5 XXX: You can give

6 out a 10-percent return on your efficiency

7 investment, by the way, in the markets. It's

8 not de minimus. You can get paid to put the

9 efficiency in and then you can get 10 percent

10 back to reinvest back into your efficiency

11 programs. So it's a pretty amazing

12 opportunity.

13 XXX: I know that

14 Pennsylvania is doing that under Act 29. But,

15 if you look at it, I mean, it does give it

16 away. Once you verify that you made the

17 production --

18 XXX: That's the new

19 school.

20 XXX: And so our place

21 is doing that. In fact, they are going to take

22 those savings and get credit for them. They

23 can sell those megawatts.

24 And so I think there are models out

25 there that do that. The big issue, of course,

1 DOE-QTR

2 is lack of data of what we can tackle. And

3 that's because in the past, at least in the

4 industrial space, it's been too cheap --

5 XXX: Where have I

6 heard that before?

7 XXX: Can you guys

8 speak up?

9 XXX: It's because it

10 was too cheap to meter read for the industrial

11 customers. So they didn't put the meter in

12 yet. Therefore, the data doesn't really exist

13 except embedded within making sure the process

14 works correctly.

15 That kind of data helps us make

16 decisions on where we ought to put our effort.

17 And some of that you get by virtue of these

18 programs, these energy efficiency programs for

19 utilities. You have to go out and measure,

20 which I appreciate. I don't think you can make

21 a decision on anything unless you measure. But

22 it's not ubiquitous. It's not universal.

23 There's a lot of things we don't know.

24 Through energy intensity studies, we

25 look at and do these industrial client

1 DOE-QTR

2 assessments. We look to see what is your

3 energy intensity and how does it compare to the

4 best in class. A lot of that data doesn't

5 exist.

6 XXX: Comparing.

7 XXX: Right. It's

8 stunning that we don't have that.

9 XXX: If we do, if

10 there is some out there, technology has passed

11 it by.

12 XXX: I think data

13 does exist and it's not like there's no data at

14 all. Data does exist. I'll give an example of

15 human being, companies in California as an

16 example. They have a ton of data. We have

17 some data.

18 There are some organizations that

19 have the data, but perhaps there should be like

20 a national depository.

21 XXX: Right. Well, do

22 you want curated data or all the metadata that

23 goes with it and so on?

24 I have my sight on dessert over

25 there. It's a bit distracting, so I propose we

1 DOE-QTR

2 take a quick break.

3 (Short recess taken.)

4 XXX: It may be time to

5 shift gears a little bit. Maybe turn to the

6 workforce issue.

7 I think there was some debate or

8 tension in the room about exactly what role the

9 government should have and who should do the

10 training. Should we do on-the-job, should we

11 do curriculum development? I'll put that out

12 as a general direction which we might want to

13 take the conversation. Or, as somebody said,

14 are we going to see a sign in a year that says

15 "Will Insulate For Food."

16 Are we doing a sensible job priming

17 the workforce with the stimulus money?

18 XXX: Probably not.

19 Most of the stimulus money went to relatively

20 low-skilled activity on the spectrum of -- at

21 least for the Northwest and California -- where

22 we've been weatherizing houses for 30 years.

23 Most of that money went to weatherizing homes

24 of people that use oil as opposed to gas or

25 electricity. They need to be insulated, but it

1 DOE-QTR

2 also wasn't -- we didn't develop new jobs. We

3 basically had people more fully employed than

4 they were.

5 But they've been doing those jobs

6 for 20 years. And we didn't make a lot of

7 architects and engineers and commercial

8 building managers out of that money.

9 XXX: For people to

10 work.

11 XXX: And skilled

12 training, yeah.

13 XXX: Installing street

14 lights.

15 XXX: Replacing street

16 lights. Most of ours are already LEDs.

17 XXX: Remember the

18 discussion about the caulker who was getting

19 paid $50 an hour.

20 XXX: There was that.

21 Prevailing wage makes a difference how far that

22 money went. We needed the money; I'm not

23 arguing.

24 XXX: We haven't

25 found a problem on the trade side. If the

1 DOE-QTR

2 opportunity arises, at least in the places

3 where we worked -- I was glad to hear there was

4 an efficiency-based certificate and other types

5 of programs popping up in some colleges now,

6 bringing in the engineering-level people, the

7 program design people with some knowledge about

8 efficiency, specifically.

9 There's a lot of general knowledge

10 with people out there, but bringing them in and

11 finding the folks that actually have some basis

12 and understanding of the efficiency sector is

13 more of a challenge. So you tend to look for

14 transferable skills and teach them yourself,

15 which works. I don't mean to be dismissive of

16 that, but there is clearly a gap there.

17 I think somebody said Cal Davis -- I

18 think I wrote down a note this morning about a

19 program at Cal Davis that I wasn't aware of had

20 started, and it sounds like Penn State has

21 something. So it seems like that's beginning

22 to emerge. I don't know their programs, but I

23 was glad to hear that, because that's where

24 we've seen a gap.

25 XXX: Yeah, the

1 DOE-QTR

2 mention about workforce this morning, it seems

3 to be catching on pretty good at the university

4 level.

5 Also, the utilities in other areas

6 have a program to educate the K through 12

7 classes. There is a program available where

8 the utility representatives go to schools and

9 just basically tell the kids all about

10 efficiency and what they can do.

11 XXX: Right, yes.

12 XXX: It's a great

13 program. It catches people's attention.

14 I live in a city, small city, where

15 we're famous for (inaudible). Everything

16 is street light lit, and it's been changed --

17 XXX: Can you speak

18 up.

19 XXX: Sorry.

20 Every single street light has been

21 changed to induction lighting. And the kids

22 are coming to me and saying, tell us more about

23 this, what is this technology and so on, just

24 because there are programs put in place.

25 And I think expanding that on a

1 DOE-QTR

2 national scale, if it's available, that would

3 be great.

4 XXX: Being that of

5 economics, the projects, and the capital

6 constraint, the shortage of capital, ultimately

7 it becomes a question of I have the opportunity

8 to know what I need to know about the energy

9 efficiency project or program, but, ultimately,

10 I'm going to have to put out money to get it

11 done.

12 And we talked at the technical level

13 to trade and engineering schools and such.

14 Does anybody know if there's anything going on

15 with those that generally control the capital

16 within companies and with the financial guys,

17 the MBAs, programs for energy, energy projects?

18 That may be the paradigm we have to

19 go beyond. It's not just a technical issue

20 right now. It's how you look at the economics

21 of energy and build models for funding and

22 getting return on that investment. So you're

23 going to outlay the capital, but here is how

24 you recover it.

25 XXX: You're thinking

1 DOE-QTR

2 in the industrial context?

3 XXX: Industrial

4 context, yeah, not so much the consumers. But

5 then the application to the consumers is okay,

6 so I want to do it, what is preventing me from

7 doing it? Well, I don't have $3,000 to do it.

8 What kind of models can we put out

9 there that says somebody finance it and you

10 don't put the money out of your pocket, you

11 finance it through the savings. It's that type

12 of thinking.

13 XXX: We've had some

14 success both in the C&I, commercial/industrial

15 sectors, where through the Northwest Energy

16 Efficiency Alliance they worked with the food

17 processor industry in the northwest, in

18 particular, and the Trade Association with the

19 processors, talking to them, working with them

20 and upper-level management to get somebody in

21 charge of energy.

22 And the first thing to do is to

23 count how many kilowatt hours and how many

24 you're actually buying to process product and

25 then unitize that in terms of product output so

1 DOE-QTR

2 that they're getting a metric system that

3 basically says we're a ton of apples produced

4 into the apple sauce. And then look at what

5 that product sells for.

6 We worked with the Providence

7 Medical community and basically worked all the

8 way up. Now they have an energy manager and

9 they have a checkmark on a decision for any

10 capital investment made at that health group

11 about whether or not they can move the money to

12 increasing number of patients or putting it

13 into a capital project to improve efficiency

14 and then return more money to their services.

15 So how many patients more do we have

16 to see to produce the same savings, bottom

17 line, and what is the liability of seeing

18 another 100,000 patients? Because there's a

19 risk associated with both of those investments.

20 So quantifying it in terms of what

21 their product is; how much more apple sauce do

22 you have to make to make the same return on

23 this investment.

24 So it's compared in the MBA sense to

25 I got two alternative investments. Working

1 DOE-QTR

2 with that and getting it to stick, it has to be

3 internalized in the corporate mentality.

4 Pointing out that this is the same metric we're

5 talking about, what is wrong with this

6 13 percent ROI compared to this 5 percent?

7 XXX: Uh-huh, because

8 at the worst case, the mentality is energy is a

9 sort of -- it's there, I can't do anything

10 about it, I can't control it, just pay it and

11 move on.

12 XXX: It's not my

13 business, yes.

14 XXX: And from there

15 you have the opportunity to climb the ladder of

16 knowledge.

17 XXX: Right,

18 inseminating information. Getting metrics

19 developed like that can be by industry type, by

20 commercial business type. What is the metric

21 and what is the benchmark, more importantly,

22 for best in class with respect to this dollar

23 per output. Because if you don't have that,

24 you don't know where you stand. Can I be doing

25 better or worse? Maybe I'm atop the class

1 DOE-QTR

2 right now.

3 XXX: And the message

4 can't just be -- again, coming back to the same

5 point -- to the technical folks. It's got to

6 be to the business folks; right?

7 XXX: They are making

8 the capital investment decisions.

9 XXX: In a wonderful

10 example of the government tripping all over

11 itself, there was a discussion about a year ago

12 at the consumer level, taking improvements in

13 your house, the capital costs, and turning them

14 into a lien on the house to be paid off when

15 you sold it by the city, I think.

16 XXX: This is PACE

17 you're talking about.

18 XXX: PACE, yeah,

19 right. FHA said, to hell with you, we're

20 first. And that was the end of that.

21 XXX: We've actually

22 worked on a part and passed it through

23 legislation. We put a loan loss reserve fund

24 in place through the state and we were taking

25 the second space in the mortgage and Freddie

1 DOE-QTR

2 and Fannie had signed on and said that that's

3 perfectly fine with them and we're moving

4 forward.

5 XXX: That's good. So

6 you're taking or the state is taking them.

7 XXX: -- has done a

8 fair amount of work on research and development

9 and they're certainly looking at how to

10 transition post-ARA and get some of those

11 people into the private sector jobs, which

12 involve business training.

13 So I am not up to speed on that as

14 much as I should be, but it's certainly

15 something worth talking about in workforce

16 training.

17 XXX: This PACE

18 thing is actually a good example, though, of

19 the need to bring the finance side in. We have

20 been running into these finance walls for a

21 long time and finally realized that we don't

22 understand how to talk to banks. We don't

23 understand how to talk to financial markets.

24 One of the benefits of -- to the

25 extent there were any -- of the fiscal problems

1 DOE-QTR

2 we had as a nation is there are a lot of Wall

3 Street people looking for jobs. And we

4 actually went and hired a couple of them and

5 brought them on our staff. So we actually have

6 embedded knowledge that we're now teaching to

7 the rest of our staff, which led to figuring

8 out some solutions.

9 XXX: Very interesting.

10 XXX: But, again, we

11 had to make both sides understand how to talk

12 to each other, which was really pretty

13 fascinating.

14 XXX: I think that's

15 a significant barrier. That's great that you

16 are able to minimize it or are at least trying.

17 XXX: What else?

18 I took away a strong message that,

19 at least in this space -- sorry. In the

20 building efficiency, international cooperation

21 could only be a good thing. We need as much of

22 that as we can get.

23 On the other hand, we probably have

24 some selective global interest in making the

25 Chinese factories more efficient.

1 DOE-QTR

2 XXX: Right.

3 XXX: On the

4 competitiveness front, more broadly, one of the

5 things that was sort of a take away from us

6 from the Fuels Workshop was folks saying, you

7 know, you talk about clean energy technologies

8 and selling them to the rest of the world and

9 that's what you mean by clean energy leadership

10 and helping US economy and competitiveness, we

11 think the reason chemical factories are moving

12 back to the US instead of from overseas is

13 because energy here is cheap. Natural gas is

14 cheap.

15 How do we balance that version of

16 competitiveness that's based on cheap energy

17 with an innovation-based -- and lots of people

18 in their discussions today are saying one of

19 the great drivers for efficiency would be high

20 energy prices. We are being pulled both ways.

21 XXX: Yeah.

22 XXX: How do you define

23 competitiveness? Is it the idea that our three

24 goals are life, liberty, and the pursuit of

25 happiness? Is competitiveness the pursuit of

1 DOE-QTR

2 happiness? Is it jobs? Is it prosperity?

3 What is it?

4 XXX: Yeah.

5 XXX: It's the ability

6 of the people to live the life they want to

7 live. I think that's probably the definition

8 of prosperity.

9 On this cheap energy thing you said,

10 most people in the oil and gas business believe

11 that natural gas prices in the US will continue

12 to be low and we will have plenty of it for

13 quite a long time.

14 How does that change the efficiency

15 scene? I think it removes gas prices as a

16 driver; doesn't it?

17 XXX: Maybe in a level,

18 but probably not in terms of the volatility.

19 They may be low, but they may not be stable.

20 XXX: Well, the last

21 couple of years they've actually been pretty

22 stable. They decoupled from oil, which is

23 interesting.

24 XXX: Which is -- yeah.

25 XXX: Perhaps to be

1 DOE-QTR

2 expected.

3 XXX: I think you folks

4 at that McKenzie & Reed have generated

5 conservation supply curves for three decades

6 now. And every time we look at what the

7 potential is -- when you look at the sparks

8 spread, even at three- and four-dollar gas,

9 there is a lot of head room for the efficiency

10 technologies we know today, negative costs or

11 below five cents a kilowatt hour deployed.

12 And so there's a huge amount of

13 resource under what I would call the avoided

14 cost, not counting the carbon issue. When you

15 throw that in there, you have more head room.

16 XXX: That's from the

17 generation side. What about on building,

18 heating, and natural gas?

19 XXX: When you've got

20 direct application, it's a different matter,

21 yeah. But there's still a fairly sizeable

22 amount to be done under cost.

23 XXX: There's ample --

24 I would actually say the natural gas source is

25 a bit of a red area, actually. If you replace

1 DOE-QTR

2 and adjust the 2009 dollars, four- to

3 six-dollar gas, which is what we're looking at

4 going forward, is what we had for 30 years.

5 I still think there's ample, ample,

6 ample cost potential for below four- to

7 six-dollar gas.

8 And then you get into the

9 discussions should you use wellheads or should

10 you use commercial, blah, blah, blah.

11 Technical stuff. It doesn't change the story.

12 Natural gas isn't really changing the story,

13 it's just saying, you know what we've been

14 doing for the last ten, twenty years? We're

15 going to keep going.

16 XXX: For the first --

17 we do an update audit or reasonable plan every

18 five years, so we just did the sixth one.

19 For the first five, we had the same

20 of what it would cost for all generation, and

21 that was around the five cents a kilowatt hour.

22 And those were in real terms each time. So the

23 price of power generation was actually going

24 down. And we still had energy efficiency more

25 than enough to meet 50 percent. So this time

1 DOE-QTR

2 we're at 90.

3 The technology that's there, and the

4 amount of retrofit -- at that low price is

5 still phenomenal, even working on it for

6 30 years.

7 XXX: Doesn't change

8 much.

9 XXX: What about the

10 notion that if I'm producing ethylene and

11 you're producing ethylene and you're my

12 competition, I'm still going to try to drive my

13 efficiency up because I'm competing with you.

14 XXX: Yeah, you want

15 the cost of production a driver to be more

16 competitive.

17 XXX: Exactly. So

18 we're going to keep driving it down.

19 XXX: We're going to

20 drive our production costs down somehow to be

21 more competitive. But only enough to beat the

22 next guy. Not to get to the optimum, just

23 enough to beat the next guy. So it's a

24 suboptimal solution.

25 XXX: Aren't, in fact,

1 DOE-QTR

2 chemical production coming back into the United

3 States because of this?

4 XXX: Dow just

5 announced that we were going to increase our

6 ethylene production because of the gas

7 situation and bring back some of the plants

8 that we were either going to be shutting down,

9 have shut down, or were not planning to build

10 here in the US. So I think that's very

11 positive. It creates jobs.

12 XXX: One question that

13 I had that was never really brought up was the

14 integration of the renewables, the efficiency,

15 how they tie in for the buildings.

16 We all looked at efficiency, but

17 have you looked at the last little part? We

18 talked about having renewables provide that

19 source. And I just wanted to see if anyone had

20 any opinions on renewals being tied in at

21 buildings, you know, at the site that it's

22 actually being consumed.

23 XXX: Well, I'll start

24 with a pet peeve. This goes back to the

25 systems context. California started it, or at

1 DOE-QTR

2 least mimicked somebody else saying it, but the

3 whole concept of zero energy buildings, in

4 absence of what you are doing that for, doesn't

5 make any sense to me.

6 If the goal is to minimize emissions

7 in the cheapest way, which is what I think

8 we're really trying to get at when we say zero

9 energy buildings, they are connected to a grid

10 or pipeline. So you really have to be careful

11 about am I really going to get zero emissions

12 out of this building or am I just going to get

13 zero energy, net energy consumption.

14 That doesn't mean the same thing.

15 So be very specific about your objective

16 function so that you know what you are chasing.

17 Because in the Northwest and west, coal runs at

18 night. And if we're going run solar during the

19 day and run off the grid at night, we're going

20 to produce more carbon than we do during the

21 daytime.

22 So I'm mindful of being -- it's

23 important to state the objective function

24 clearly before we solve the problem.

25 XXX: That's a good

1 DOE-QTR

2 general principle, but the government does not

3 always abide by that rule.

4 XXX: I think about

5 your question this way. Public funding is not

6 going to take us very far, efficiency or

7 renewals. It has a role to play, but if we're

8 really going to do this large scale, we're

9 going to be back to raising capital, which

10 means private equity.

11 So how often are we really going to

12 get people's attention about energy issues? I

13 think when you think through that tree, it

14 won't blow all the way through it.

15 You've got to get to a place where

16 you put the opportunity to make energy choices,

17 whether industrial, commercial, or residential,

18 in an integrated way so that they can make the

19 choices they are ready to make and you convince

20 them to make while they are there with the

21 financing system put together.

22 So you audit everything, the

23 efficiency and the renewal, ongoing renewal

24 opportunity that makes sense for them. The top

25 is -- the front page is very simple, here is

1 DOE-QTR

2 what it is, the financing is lined up, the

3 crews can show up next Tuesday if you sign

4 here. And you get the benefit of the really

5 low-cost efficiency, helping people make

6 choices about renewables. For the consumer

7 that wants that, that's what they do.

8 For the discerning consumer that

9 just wants to maximize short money and says no,

10 I really don't want to do that, I just want to

11 look at the cheapest efficiency, you turn the

12 page over and the cafeteria menu is there and

13 they can check the boxes, have the financing

14 lined up, and have the contractors show up.

15 At least you've maximized your

16 opportunity with that consumer at the moment

17 you have them. Because I don't think you can

18 really get consumers on the broad scale beyond

19 buying light bulbs and products and things. I

20 don't think you can get them more than every

21 two to three years, if you're lucky, to make

22 these choices.

23 We have to eventually figure out how

24 to integrate these things together if we're

25 going to be successful in really meeting these

1 DOE-QTR

2 type of goals.

3 XXX: One of the

4 challenges that I have is making solar water

5 heaters an effective combination, even with

6 cheap natural gas.

7 I am not agnostic with water

8 heating. So that, in and of itself, makes

9 solar water heating a little more challenging.

10 It's a sort of battling of the south and north.

11 And we have a backup system. And with natural

12 gas getting cheaper, it just makes the payback

13 periods even longer, if there is a payback

14 period.

15 XXX: We've got to

16 rip all the silos down; the electric, the

17 thermal, the renewable. They've got to come

18 down if we're going to accomplish the job, in

19 my view. We've got to make this easy.

20 XXX: Yeah, most people

21 don't want to think much at all.

22 XXX: In terms of if

23 it's public money or public money is engaged in

24 it, the parsimonious use of that money is

25 important. And so, you're looking for a least

1 DOE-QTR

2 cost solution that you can market, both

3 politically and for the customer.

4 It may turn out that the least cost

5 solution ends before we get to the point where

6 renewables become economic given the technology

7 we have right now.

8 It may be grid renewables are

9 economic, but site specific is not. So at some

10 point that comes in. But it's not on the

11 supply curve in that order right now.

12 So I think it's important to not

13 stretch ourselves, to beat ourselves, flog

14 ourselves. We just can't make it work. Well,

15 but this works. And that's a lesser cost

16 solution that is still good enough. It's not

17 the perfect one yet.

18 XXX: Sort of like

19 the shell. Build the shell to where it will do

20 what you want it to do, right? And then, if

21 you want to at a later date, yeah, add.

22 XXX: Yeah, don't

23 create lost opportunities in the process of

24 helping that technology.

25 XXX: Have we seen

1 DOE-QTR

2 examples -- I guess we have -- of deployment

3 before its time?

4 XXX: Let me start

5 counting.

6 XXX: Diesel in the US

7 is one where I think we lost the public by

8 pushing too hard. CFLs in this space. What

9 else?

10 THE FLOOR: (Inaudible) pump

11 water heaters.

12 XXX: Yeah, the first

13 round, but it didn't shut it off.

14 XXX: We didn't have

15 enough to destroy the market.

16 XXX: Mine ran for 13

17 years.

18 XXX: But mine worked.

19 Mine ran at least that long. We sold the house

20 and it's still running.

21 XXX: I fixed all the

22 problems.

23 XXX: Condensing water

24 (inaudible) 90 percent, that was very short

25 because it was a materials issue with corrosion

1 DOE-QTR

2 of the vent pipe. So we quickly found that and

3 fixed that.

4 XXX: Some of the

5 electric ballasts that first came out were

6 pretty dicy. That didn't last too long.

7 XXX: In all of these

8 cases, do we understand what we did wrong or

9 why we did that? You know, we can't help

10 ourselves, we just rushed into it, or --

11 XXX: I think we

12 learned a lot from the CFL example. Going to

13 the testing procedures now and having a set of

14 specifications before we unleash and giving

15 product -- getting tested product/certified

16 product on the marketplace, if we'd had that

17 with CFLs, we probably would be five, ten years

18 ahead of where we are.

19 XXX: Adding to what

20 Tom said, we learned from the CFLs and we're

21 able to apply that to the program. We're not

22 having -- stepped over those problems and has a

23 product that is going to be more deployable and

24 rapidly.

25 XXX: And I think we

1 DOE-QTR

2 did the advent of -- the NFRC testing for

3 Windows was a huge improvement over taking the

4 center of glass value from the ASHRAE Handbook.

5 Measuring things and testing things -- I guess

6 we're back to this -- but having that assurance

7 and empirical evidence that this product

8 actually isn't the Amish wood stove that burns

9 up in the middle of the yard --

10 XXX: But to make that

11 work, required legislation.

12 XXX: It did, yeah.

13 But I think either in the standards process or

14 your own R&D efforts, having that testing

15 procedure to verify, or empirical evidence to

16 verify, that the product does as advertised,

17 makes a huge difference in terms of utilities

18 being able to pick up and deploy because now

19 you have the confidence that the DOE has tested

20 this, has verified that it does what it says

21 and we're not in the alpha test mode, we're in

22 the beta test mode or something else.

23 So it's really a confidence builder

24 that we can -- for the regular utilities -- are

25 they going to be able to recover spending money

1 DOE-QTR

2 on that. It wasn't just a false promise. And

3 that's a real critical ingredient to getting

4 that deployment part done.

5 XXX: For anything

6 industrial, I mean, there's already risk

7 aversion in adopting technology that supposedly

8 has been demonstrated, but there's a lot of --

9 and, understandably, you put it in, it doesn't

10 work, you've lost a heck of a lot of

11 production, you've lost a lot of money. So do

12 that a few times and --

13 XXX: Yeah, right.

14 Aren't going to do it again.

15 XXX: Right.

16 XXX: The silver lining

17 of the economic downturn, at least in the

18 Northwest, is we can now get into plants that

19 are only operating one shift instead of three.

20 XXX: What are we

21 missing? Anything? We're good? Do we have

22 other things?

23 XXX: I guess sort of

24 the balance between the fundamental engineering

25 science, this going out and characterizing the

1 DOE-QTR

2 operations, trying to develop the systems

3 analysis tools, design rules, that kind of

4 stuff, relative to our traditional mode of

5 technology development.

6 How would or -- should we re-write a

7 portfolio? It's that other fundamental

8 engineering science stuff. You know, nice if

9 that's where you put the marginal dollar, but

10 not worth restructuring the portfolio over?

11 XXX: I'll take a

12 crack. It should be nice to spend some

13 faction, I don't know, whether it's 10 percent

14 or 20 percent or something like that, on these

15 basic things in order to fly less blind, let's

16 put it that way.

17 I don't know what the balance is

18 right now.

19 XXX: Not a lot.

20 XXX: It varies a lot.

21 So if you think about what you would need -- if

22 you think about the solar program. Solar has

23 seven technologies or less. Their annual

24 analysis, and just analysis, is probably 3,

25 4 million. We have 700 technologies. So if

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2 you're going to get 3, 400 million dollars --

3 XXX: Right. And some

4 technologies are more important than others.

5 XXX: Right.

6 XXX: And can you work

7 through industry agencies.

8 XXX: We couldn't hear

9 you down here.

10 XXX: Can you work

11 through industry agencies.

12 XXX: We currently do.

13 If you look at appliance standards, most of the

14 investment is the market research. There's

15 very overstated analysis done. It has to be

16 very rock solid because it's all legal.

17 If you move from there to something

18 like the lighting program, very, very industry

19 driven; right? That's actually what is going

20 on this week. There's a big lighting

21 conference.

22 But the level I think that

23 XXX is looking for is sort of

24 economy-wide modeling, et cetera, effort.

25 I mean, you are talking about a

1 DOE-QTR

2 dedicated effort that is somewhere between the

3 2 million and $350 million mark.

4 XXX: If you take the

5 geometric lien, you get 25.

6 XXX: I think even four

7 or five million dedicated to that could get you

8 a better characterization of the sort of

9 building stock in the US now.

10 It's ironic to say this, given the

11 (inaudible) Study was just found inadmissible

12 and that the REC's budget is basically

13 attacked, which are both EIA products that are

14 very difficult, that costs $10 million every

15 four years and are tremendously valuable. So

16 it's hard to say in a budget cut that given

17 that data right now, well, give us 25 million

18 more and we'll do it right.

19 XXX: Again, I would

20 like us to produce statements that are at least

21 defendable technically and economically. One

22 can worry about the politics at the next step.

23 XXX: Without the

24 baseline information, it's really hard to know

25 where to target. And at the middle level, it's

1 DOE-QTR

2 hard to know what your impact has been.

3 So you can go five years and do

4 another survey and see that's the difference.

5 I don't know what happened or why it happened,

6 but that's the difference.

7 And, at that level -- that's kind of

8 a level that you can talk to congressional

9 staff on. Any less than that gets pretty

10 fuzzy.

11 XXX: If you want

12 government with impact, you've got to be able

13 to measure it.

14 XXX: This is where we

15 are now, it's different.

16 XXX: About 15 years

17 ago when we were taking deployment programs,

18 research programs, and regulatory programs and

19 trying to estimate not where we were or where

20 we are, but where we would be in order to rank

21 order the different programs, and based on

22 energy savings would be the top and apply the

23 budget accordingly, we found that we were

24 arguing over consumer behavior because research

25 in itself isn't going to save any energy. It's

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going to be the market picking it up.

And so you had some of the rosy scenarios where, say, 75 percent of the market would be picking it up. You would see these huge savings. And appliance standards would come in, say, 100 percent.

At that point, everything would have been invested in appliance standards and nothing in research to feed the beast. And you need the research in order to continue the other programs in trying to come up with a way to get good estimates as to the impact, was one, but then recognizing that you've got a program that is going to stop everything else, how to balance that program with other programs which are very different but necessary.

XXX: Good. All right.

Are you good with that? Last call for thoughts or remarks.

(No response.)

XXX: This has been good. It's a deeper -- I think a couple of new things emerged this evening.

I thank you all for your time.

1 DOE-QTR

2 Again, the inbox is open if there are other

3 things that you would like to amplify or say.

4 We will look forward to your

5 continued engagement in these things. This is

6 an adventure for us. We'll see what happens.

7 Thank you.

8 (Whereupon, the above-entitled

9 matter was concluded at 8:31 p.m., this date.)

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2 C E R T I F I C A T E

3 I hereby certify that the

4

5 proceedings and evidence are contained

6 fully and accurately to the best of my

7

8 ability in the stenographic notes taken

9 by me on the hearing of the within

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11 cause and that this is a correct

12 transcript of the same.

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15 S/Kathleen A. Myers

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