

1 BOARD OF WATER SUPPLY

2 COUNTY OF MAUI

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10 REGULAR MEETING

11 THURSDAY, NOVEMBER 20, 2008

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16 Held at the Department of Liquor Control Conference

17 Room, David Trask Building, Room 105, Wailuku,

18 Maui, Hawaii, commencing at 9:08 a.m.

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28 Transcribed from the audio recording by Gaye

29 Hayashida, Commission Support Clerk, Department of

30 Water Supply, County of Maui.



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1 CHAIR ALDRIDGE: It is Thursday, November 20<sup>th</sup>,  
2 2008. This is a regular meeting of the Board of  
3 Water Supply. Attendance, board members in  
4 attendance include Ted Yamamura, Michael Howden,  
5 Marion Haller, Carl Holmberg Vice Chair, Kui  
6 Lester, and Scott Luck. We are still anticipating  
7 that Phyllis Robinson will show up when she,  
8 unfortunately has a virus and doesn't want to  
9 spread it to everybody, at least not yet. And I  
10 think we are expecting Kelli Myers although we  
11 haven't heard back from her but in any event if she  
12 doesn't show up she's excused. Announcements, I  
13 would like to ask Scott Luck who is the chair of  
14 our committee on hearings and appeals to just bring  
15 us up to date on the committee activities.

16 MEMBER LUCK: We are as you know gung ho to try to  
17 get through our, our list of appeals but given the,  
18 the holidays are conflicting with our regular  
19 schedules and basically the only days the room's  
20 available I think that we prefer to defer until  
21 2009 to do the, to, first committee case if that  
22 works for both of you. But I also think we should  
23 probably have a little bit of discussion about  
24 which types of cases are appropriate for the  
25 committee versus which we should all hear together.  
26 And that's, that's the update.

27 CHAIR ALDRIDGE: We can do that. And we will.

28 MEMBER LUCK: Ok.

1 CHAIR ALDRIDGE: Thank you, Scott. Thank you for  
2 that information. Approval of the Minutes, Gaye,  
3 the minutes aren't ready yet, right?

4 MS. HAYASHIDA: My apologies to the Board, I still  
5 have not completed that. I have a lot of excuses...  
6 (laughter)

7 MS. HAYASHIDA: But it's not done.

8 CHAIR ALDRIDGE: You wanna enumerate?  
9 (laughter)

10 MS. HAYASHIDA: But yeah, so I will, it's almost  
11 done.

12 CHAIR ALDRIDGE: Alright, thank you. Appeals.  
13 Item 6A, Appeal 07-03, an appeal by Thomas L.  
14 Behnke on behalf of John C. Behnke, Jr., MD., of  
15 the director's decision/order dated September 7<sup>th</sup>,  
16 2007 to deny their proposal to connect a new  
17 waterline to the Department's water system to  
18 provide fire protection to their subdivision  
19 located at 150-170 Haiku Road. Director Eng, can  
20 you bring us up to date on this issue?

21 DIRECTOR ENG: Yes, I can. There's not much to  
22 report. We have finalized an, the agreement with  
23 the Behnke's. They have in their hands the final  
24 document. We are awaiting execution and return of  
25 that document to the Department.

26 CHAIR ALDRIDGE: Alright, thank you. We'll  
27 continue this item to the next board meeting until  
28 this matter is resolved.

1 MEMBER HALLER: Mr. Chair?

2 CHAIR ALDRIDGE: Yes.

3 MEMBER HALLER: I'm just curious, how long have  
4 they had this document? Do you know?

5 DIRECTOR ENG: You know, it, it, they're moving on  
6 it. I don't think there's anything that's...

7 MEMBER HALLER: Ok.

8 DIRECTOR ENG: Really impeding their completion of  
9 it. They want to execute it so.

10 MEMBER HALLER: Ok.

11 DIRECTOR ENG: Just a matter of, you know.

12 MEMBER HALLER: Ok. Thanks.

13 DIRECTOR ENG: Alright.

14 CHAIR ALDRIDGE: Let me apologize I did not  
15 complete the attendance, did not recognize the  
16 Director, who is present, Director of Water Supply,  
17 Corporation Counsel, Ed Kushi is here. Our board  
18 secretary, Gaye Hayashida. And we have a court  
19 reporter, whose name I don't know.

20 MS. HAYASHIDA: Tonya.

21 MS. MCDADE: Tonya.

22 CHAIR ALDRIDGE: Tonya. Thank you, Tonya. And,  
23 let's see members of the audience include Ms. Susan  
24 Burns and, and her husband, I presume.

25 MS. BURNS: Scott.

26 CHAIR ALDRIDGE: Scott Burns. And let's see, Mr.  
27 Mancini, represents them. And...

28 MS. HAYASHIDA: Mr. Conway.

1 CHAIR ALDRIDGE: Mr. Conway.

2 MS. HAYASHIDA: He's gonna give testimony.

3 CHAIR ALDIRDGE: I see. And...

4 MS. HAYASHIDA: Herb Chang.

5 CHAIR ALDRIDGE: Herb, oh, hi Herb. Herb Chang  
6 from the Department. Thank you. Let's get back on  
7 the agenda. I apologize for that.

8 (At this time the Board heard testimony regarding  
9 Appeal No. 07-05, an appeal by Susan Burns. The  
10 regular meeting then resumed with a presentation by  
11 Chris Mentzel and Eric Beale)

12 CHAIR ALDRIDGE: You all set?

13 MR. MENTZEL: Well, yeah. I'm here to talk about  
14 technology and as you see it stops working right  
15 away (referring to his power point projector).

16 (laughter)

17 MR. MENTZEL: My name is Chris Mentzel and I've  
18 studied a lot about the energy issues on Maui.  
19 I've written a plan how we could move completely  
20 into renewable energy if we wanted to. I've come  
21 to the conclusion it's all a matter of political  
22 will and so I'm shifting into that whole of what we  
23 know about that. And the presentation that, I  
24 don't know, maybe you can see a little bit of it  
25 here...

26 MEMBER HALLER: If you sit in the chair over there  
27 instead of there I could see...

1 MR. MENTZEL: Yeah and you can see it, right? And  
2 is made especially for you. Well, talking about  
3 the water supply, let's start with the economic  
4 impact and as you know, the 2007 water bill was \$11  
5 million and one six million dollars. The 2008  
6 water bill will be, what, 16, 20, \$24 million, we  
7 don't know. It's, really depend on the cost of  
8 oil, and that gets, yeah, gets us to the problem of  
9 how insecure the budget is. It's very hard to  
10 budget if we're so dependent for all our  
11 electricity on the cost of oil. In terms of energy  
12 use, the County hasn't complete, has in 2007 an  
13 electric bill of \$22 million. The Department of  
14 Water Supply's about half of that. We add in  
15 Wastewater, we wind up with about 75% of the  
16 County's electricity use going to pump water. I'm  
17 part of the Mayor's working groups for renewable  
18 energy and there's one group that's really  
19 concerned how to optimize the County and, and be of  
20 a very big example and obviously if the water, the  
21 wastewater pumping is such a huge part of the  
22 entire bill, it's much more interesting to change  
23 something around in that, rather than focus on  
24 exchanging the light bulbs.

25 MEMBER ROBINSON: And it's just not Wastewater,  
26 it's water pumping, you know.

27 MR. MENTZEL: Yeah, yeah, both together. And,  
28 yeah, this is the Water Department, also the MECO's

1 biggest customer. It's about 5% of the production  
2 of Maui Electric goes to pump the water. The  
3 environmental impact, what propelled me into this,  
4 is about, and this is just the Water Department,  
5 just the pumps, 100 million pounds of carbon  
6 dioxide, that's 40 million tons of carbon dioxide  
7 gets emitted into the air at Maalaea in order to  
8 drive the water pumps. To put that into different  
9 term if we had changed, if we would change all the  
10 water pumps to use clean energy there would be  
11 equivalent to 15,000 people in Maui exchanging  
12 their car for a Prius. That's huge. It's a big,  
13 big impact. Yeah, a little bit, a few numbers and  
14 costs would be nice to have them up there but  
15 that's technology. We, we had it running 20  
16 minutes ago.

17 (laughter)

18 MR. MENTZEL: The pumps of the Water Department, so  
19 just the pumps not the treatment processes, need  
20 about 35 million kilowatt hours. Price of that was  
21 about \$40 million dollars per year. And we can go,  
22 if we look at, yeah, conventional book,  
23 conventional clean energies, we can go solar or  
24 wind. I just want to give you picture if we wanted  
25 to create this amount of kilowatt hours and the  
26 solar farm, it would be 11 times as big as the  
27 Lanai solar farm that is just going in and getting  
28 inaugurated in January. Eleven times that would be

1 110 acres and system cost of about \$117 million  
2 dollars. And wind farm, if we would, yeah say it  
3 would be up in Kaiawa (Kaheawa) and with that  
4 fantastic wind that's up there, would cost \$40  
5 million or even less. So, what will really happen  
6 is not that, yeah, the gigantic farm goes in but  
7 that there will be different installations and  
8 different places, some places have wonderful  
9 sunshine and no wind and other ones just are much  
10 more better suited to wind. And the, and the  
11 normal circumstances, yeah, this is the end of the  
12 discussion because everybody's is, yeah. We don't  
13 have that money yeah. We don't have \$40 million or  
14 \$120 million. But the way we can do it is what's  
15 called a PPA or Power Purchase Agreement. Power  
16 Purchase Agreement means that an external company  
17 comes in builds the wind farms, runs the wind  
18 farms, repairs the wind farms or solar farms and  
19 they don't need any up front payment. They finance  
20 the entire system. The only thing they require is  
21 a 20 year contract that the purchaser buys  
22 electricity for 20 years at a fixed price. And  
23 this can be a fixed price, linearly higher price,  
24 or maybe in some cases indexed to the cost of  
25 living. But not cost, not indexed to the cost of  
26 oil. And the, the good or bad thing here in Maui  
27 is that our energy costs from MECO are so high that  
28 immediately, whether it's solar, whether or it's

1 wind, it is cheaper than what we're getting  
2 completely from MECO. So the, the common argument  
3 that clean energy is too expensive for us in Maui  
4 is pretty much out of the door. Here's a little  
5 explanation, now that all, placed together so the,  
6 the PPA provider is the company that pulls it all  
7 together by pulling all of, yeah, most of this  
8 outside of the public sector and into the private  
9 sector with no up front costs I think we have the  
10 best chance of doing that. And they, yeah,  
11 negotiate with the equipment manufacturer, with the  
12 installer, and get the investments from private  
13 investors or banks or, yeah, your 401K forms, then  
14 it gets hosted somewhere on or near the water pumps  
15 and interconnected with the utility because, yeah,  
16 there needs to be a backup when the sun is not  
17 shining, the wind is not blowing, the  
18 interconnection agreement with the utilities is  
19 very vital, very important. And so in a, in a  
20 private company this would be it yeah, you would,  
21 you would say ok, you send me the power for 2/3 of  
22 the cost of MECO and no up front payment, where do  
23 I sign, yeah. Done, yeah. County has to do it  
24 differently. The purchasing rules say that and,  
25 and this is how much I know, it's yeah, you might  
26 know this better than me. Say that everything has  
27 to go through competitive bids, makes sense, yeah.  
28 We don't want to pay too much even if it's cheaper

1 than MECO, we don't want to pay to a PPA provider.  
2 So there's got to be an element of competition in  
3 there. And the formal way to induce that is a  
4 Request For Proposals or an RFP, which is like 40  
5 to 120 page document that gets put out there. And  
6 the interesting thing we can do here is, and I  
7 talked with Purchasing about that, is to issue an  
8 open RFP where we will, requesting for different  
9 proposals. We basically say we have as much as the  
10 Water Department, the Water Department has as much  
11 35 kilowatt hours that it would like to buy in  
12 clean energy every year. And yeah, give us your  
13 proposals, yeah. And that's easier to do and gets  
14 much more creativity in the process, then what we  
15 would see if, if we would have a fixed RFP and we  
16 say we want yeah, a windmill in Haliimaile in, in  
17 that area. And so this could create yeah, quite a  
18 flurry of project proposals and influx of capital  
19 and investment capital. And, yeah, so that's,  
20 that's the idea of having an open RFP. It's still  
21 competitive. Because you can boil it down to the,  
22 the power purchase costs in the end, and so every  
23 company will strive to squeeze it down to the  
24 lowest possible amount. And the steps to do that,  
25 although are relatively straight forward, yeah, the  
26 Water Department decides if once through an RFP if,  
27 talk with Eric Yamashige about that, then because  
28 the Water Department doesn't really have people to

1 write that, the Energy Commissioner of Maui, Victor  
2 Reyes has agreed to help with that and so, yeah,  
3 design an RFP that can be used for the Water  
4 Department but in the future also for parking lots,  
5 and PV's (photovoltaic) on the roofs. Then  
6 Purchasing of course, comes in, helps structure the  
7 RFP and approves the RFP, the RFP gets issued and  
8 sent out. I know at this point seven larger  
9 providers of power purchase agreements, but there's  
10 probably a few dozen that's interested bodies that  
11 would participate in that. And for the mainland  
12 companies it's very interesting because Maui is  
13 highly visible, projects they do here, yeah, get a,  
14 get a different recognition then being somewhere in  
15 Nebraska. The cost of electricity, yeah, almost  
16 the highest in the nation, and we have plenty sun  
17 and wind. So this is a, a prime spot and so  
18 mainland companies with their money will compete to  
19 bring us that technology and all we are offering is  
20 that we buy the electricity at a price that's  
21 cheaper than we would normally do. So I think  
22 overall this is a fantastic thing for Maui. And  
23 interesting part in the RFP would be to specify  
24 that whenever possible people from Maui should  
25 build it and materials from Maui should be used and  
26 bring us not just the money and the systems but  
27 also labor and work. Yeah, and then the RFP goes  
28 out there for a few months, the responses come in,

1 they get evaluated and then, yeah, we can see what  
2 are the most interesting projects. And in my  
3 personal opinion I say, yeah, we need everybody.  
4 We, we just need all hands on deck. It's, it's  
5 humongous how much energy we need on Maui. And 72  
6 million gallons of diesel gets, get burned for  
7 electricity here. Yeah, I'm, I'm, I think it's a  
8 nice idea to have competitive element in there, but  
9 in the end, yeah, what I would like to see is to  
10 just let everybody come in there and bring us your  
11 money. Get, get the economy rolling here. We have  
12 2 examples, one is solar example, and then we'll  
13 have a wind example. Solar example just, just a  
14 small idea. This is the, the tank at Kilohana,  
15 just below Maui Meadows. And we have 2 pumps next  
16 to the tank. Yeah, I wish the picture was bigger.  
17 They're not, they're not, they're just that size.  
18 They cost about \$500,000 a year to operate, just  
19 the pumps. And they're responsible for pumping the  
20 water up to a tank that's above Maui Meadows. And,  
21 that is just one of two tanks that then supplies  
22 Maui Meadows. As far as I understand Kihei is all  
23 downhill from, from Wailuku, so gets, gets its  
24 water by that. But Maui Meadows does need the  
25 pumping system. Which all means that if we don't  
26 have power then yeah, Phyllis and me will have no  
27 (inaudible) and nothing to drink. So, very  
28 interested in that. So, this tank is about I'd say

1 about 30 meters in diameter, it's pretty much flat  
2 on top. You can see on there, the satellite photo.  
3 And it would fit PV system that doesn't create all  
4 the energy that's needed but approximately \$180,000  
5 of, worth of electricity out of the 500,000 that  
6 the pumps use. That would be a system cost of \$2.1  
7 million and for a PPA it would sell electricity  
8 somewhere, yeah, hard to, hard, to put down in  
9 concrete number, but somewhere between 27 and 33  
10 cents per kilowatt hour.

11 MR. KUSHI: Compared to? What is MECO?

12 MR. MENTZEL: MECO's cost right now is about 43  
13 cents. You'd probably get a, a lower rate, you'll  
14 probably get something like 40 cents right now. So  
15 it would be cheaper from the get go but it would  
16 also be a static rate, that wouldn't be often  
17 accelerated. And, it becomes really interesting  
18 once you look at the numbers, how they increase.  
19 In California we have year by year increases of  
20 electric costs of 7.5%. Don't have a number for  
21 here, would be much more jumpy in the development.  
22 But if you just take the 43 cents that it costs us  
23 this year and you add some 25% every year then by  
24 2022 we'll be at \$1.18 and by, in, in 30 years when  
25 the solar panels are still working, we'll have a  
26 cost of \$3.50 per kilowatt hour. But the contract  
27 for the PPA says that solar power should costs us

1 30 cents. So, I think that's really not much that  
2 can go wrong with that. And...

3 MR. BEALE: My turn?

4 MEMBER ROBINSON: Do you, do you wanna, do you  
5 wanna field some questions first to you before Eric  
6 goes on or you wanna have questions...

7 MR. MENTZEL: We'll do it together afterwards I  
8 think, yeah?

9 MR. BEALE: Yeah. Ok. Hi, my name is Eric Beale.  
10 I work with a company called RTS in England and  
11 they provide a lot of services to the wind industry  
12 in Europe. I, I've lived on Maui for 25 years and  
13 been interested in getting into this business and  
14 looking at what is available as technical solutions  
15 to, to help us power Maui with all of the wind and  
16 solar that we have. So this is just a little  
17 schematic of the pumping station at Kamaole  
18 (Kamole) which is in Haliimaile, which is the one  
19 which uses the most electricity I believe on the  
20 island out of all the Department of Water Supply's  
21 pumping stations. This is what exists, is the  
22 actual, the pumps here and this is just the  
23 electrical side of the system. I'm not showing the  
24 water schematic. But you have 4 pumps, two 400  
25 horsepower pumps, a 500 and a 600. And these are  
26 the equivalent kilowatts of these pumps. Usually  
27 they run up to 2 of these pumps simultaneously,  
28 drawing up to 800 kilowatts. Right now the

1 electrical system comprises of a, a Maui Electric  
2 Company transformer, you have a line from the, Maui  
3 Electric, from the utilities coming in feeding  
4 these pumps and then the Department of Water Supply  
5 has its own back-up generator with one single tank.  
6 The, the way, you know, this thing could work is to  
7 have 2 or more wind turbines on adjacent land with  
8 a total output of 1.6 megawatts, which is roughly  
9 double what the pumps need. The reason for this is  
10 that in order of the pumps to be able to run all  
11 night, you have to take the rated power of these  
12 turbines and halve it. So, you're saying that  
13 they're rated at between 25 and 30 mph of average  
14 wind. So, you're saying ok, what will happens at  
15 night when if it drops down to 15 mph wind, so  
16 basically, the system is designed so that even when  
17 it's running at 50% capacity it can still power the  
18 pumping station. This goes through, this is AC  
19 current goes through it, DC power conditioner which  
20 is basically a buffer; it takes out the peaks in  
21 the wind and provides for better power quality for  
22 the pumps. It then goes through a transformer  
23 which kicks it up to the volt, the pump voltage  
24 which is 4,160 volts. All of this right now is  
25 controlled manually. So, the guys up there, they  
26 would switch if there was a problem with Maui  
27 Electric, they would start up diesel generator and  
28 try as best to, to run these pumps. So, part of,

1 what's interesting about this is to actually  
2 automate the, the electrical side of the, of the  
3 pumping station, so that you have basically an  
4 intelligent, you have a computer which is sensing  
5 how much power is available from the wind turbines,  
6 whether MECO is online, even how much diesel is in  
7 these tanks. And so then it can make a decision  
8 that you know, to run, if it's only getting 4 or  
9 500 kilowatts from the turbine, it might decide ok,  
10 we can run one of these pumps. When it's up at  
11 full power it's no problem you can run all the  
12 pumps. If there's no wind at all, it can choose  
13 between MECO and its own generation. And there's  
14 also the option of dispensing with Maui Electric  
15 completely, it can say ok, well, if you add more  
16 storage capacity in the, the diesel tanks then you  
17 can run purely with your own electric generating  
18 unit when there isn't any electrical, electricity  
19 available from the wind turbines. The wind  
20 turbines, realistically, probably be a sort 300  
21 days out of 365. There's, for sure there's gonna  
22 be 2 months of the year where as anyone who's lived  
23 here for a long time knows there's no wind, it's  
24 anti-cyclonic in the middle of the winter, you get  
25 a couple of weeks where it's just dead still. So,  
26 you have to provide for that but there's also the  
27 opportunity to just simply change the pumping  
28 regime and just like you know, the old adage you

1 make, make hay when the sun shines, you would pump  
2 water when the wind blows. And so that would be a  
3 question looking more closely at the wind regime  
4 and also when the, the water needs to be pumped in  
5 order to come with the best, the most economical  
6 way of, of marrying those 2 things together. The  
7 actual dollars and cents of this whole system is  
8 extremely up in the air right now. We don't know  
9 what the tariff will be for MECO for buying  
10 renewable energy. Whether they can be used as a  
11 backup so that the extra power from the wind  
12 turbines, when they're running at full capacity,  
13 they're basically providing, they, they have double  
14 the output that the pump station needs. So the  
15 logical thing to do would be to sell the extra 800  
16 kilowatts a day back to Maui Electric. So that you  
17 actually have that as a, as credit and be able to  
18 draw on that power when you need it. That number  
19 is unknown. This system here roughly with 2 wind  
20 turbines or 4 smaller ones is probably around \$5  
21 million dollars, just as a rough estimate and  
22 certainly at that level of investment it would be  
23 possible to sell the electricity to the Department  
24 of Water Supply significantly under the MECO rate  
25 as it exists right now.

26 CHAIR ALDRIDGE: Would the MECO rate go up though  
27 because they're used not as a...

28 MEMBE ROBINSON: 'Cause they've lost 5% of their...

1 CHAIR ALDRIDGE: Right, exactly.

2 MR. BEALE: They, that is a good question. If  
3 you're using them as backup, they may charge a, a  
4 backup, backup rate or standby rate which would  
5 almost certainly be higher...

6 CHAIR ALDRIDGE: Then their current rate.

7 MR. BEALE: Then their current rate.

8 CHAIR ALDRIDGE: Yeah. And that has...

9 MR. BEALE: The main point being that you'd  
10 primarily switched to wind as being your primary  
11 power source and, and you know, you would use them  
12 as a last resort. It may well be and this is  
13 something which I need to look in to more closely  
14 with the people who run the pump to actually find  
15 out how much money the electricity costs when it's  
16 generated by the diesel pump. It may be more  
17 economical just to like I said to add an extra tank  
18 and simply have your own generating capacity for  
19 whenever days when you need to, when you need to  
20 pump water and there's no wind power available.

21 MEMBER HALLER: Would you consider a dual system  
22 where you put in solar as well as, because most of  
23 the time when we don't have wind we have lots of  
24 sun so.

25 MR. BEALE: Well, the, the solar seems to,  
26 especially with a very high power system like this  
27 where it's' it's needed to put out 800 kilowatts.  
28 If it, if it's 4 million for the wind turbine it

1 will be 40 million for the equivalent solar. So it  
2 doesn't make economic sense to do it with the  
3 solar, apart from pairing the remainder of the  
4 plan, which is to say all of this 110 and 240  
5 usage, to maybe put the solar panels on the roof  
6 and so you power all the lighting and all of the  
7 sort of the, the low amperage, low voltage power  
8 with, with, with PV also. Sunny hybrid systems are  
9 a good idea and we're currently working on  
10 developing a map so that we can look at each site  
11 and say ok, it's you know, 60% wind, 40% PV or  
12 whatever the ratio is, whatever is the best mix.  
13 It's not necessarily wind, it can be PV, or be a  
14 combination of both.

15 VICE CHAIR HOLMBERG: How far developed has the  
16 idea of pumped hydro gotten for energy storage or  
17 is that not, is that too, too, add too much expense  
18 to be practical?

19 MR. BEALE: I saw a study on the Big Island where  
20 they were talking about something like \$4,000 a  
21 kilowatt.

22 VICE CHAIR HOLMBERG: Oh.

23 MR. BEALE: Up to \$13,000 for a, depending on the  
24 region. It would make a lot of sense if, if it was  
25 phased and if it was part of the bigger plan. So  
26 for example, this is building the uphill part of  
27 the system, so then I know that the Department of  
28 Water Supply needs 300 million gallons of storage

1 Upcountry. So, if you build those tanks and then  
2 build the downhill part of the system that is the,  
3 the pipes going back down and the turbines, and you  
4 phase it so that you can bring that on and as it  
5 were, absorbed the cost of it as part of building  
6 other infrastructure, I think it's, it's certainly  
7 viable and 300 million gallons would give you the  
8 extra hundred megawatts that you need of, of, of  
9 hard power for the rest of the island. I don't  
10 think it's, it's achievable, you know if you put  
11 that project on the table right now and you know,  
12 you'd be whatever, I have no idea but it would be a  
13 big number, big probably hundreds of millions if  
14 not billions. But I think if you go about it in  
15 this way where we, we know what the overall system  
16 needs to be and we just start to build it as, as a,  
17 separate chunks, then it may be achievable. It  
18 might take 10 years, 15, 20 years to actually get  
19 there but it's certainly possible.

20 VICE CHAIR HOLMBERG: Take advantage of ponds that  
21 we'd have to build anyway.

22 MR. BEALE: Right. And configure them so that  
23 they, and maybe set it up so that the authority to,  
24 the easements in place to be able to run the pipes  
25 so that ultimately we want to connect point A to  
26 point B. That would make..

27 MR. MENTZEL: It's working (referring to his power  
28 point projector)!

1 MEMBER ROBINSON: Now that we're done.

2 MR. BEALE: Now that we're done, yeah. So, yeah I  
3 think that's a, that's an idea for one, one system.  
4 It would be nice to develop it. Each one of these  
5 things would look different, each pump station  
6 would look different. Some would have like you  
7 said a mix of PV and whatever else can be  
8 incorporated.

9 MR. KUSHI: You know, since you're only dealing  
10 with one customer, assuming the Water Supply, the  
11 Department of Water Supply, I'm assuming you're not  
12 gonna be subject to PUC regulations or another,  
13 another bureaucratic..

14 MR. BEALE: No. No, this is just a straight deal  
15 between, obviously you guys have got a lot  
16 contracts with a lot of private companies for  
17 whatever supply and equipment, maintenance, pumps  
18 and so we'd be, it would be a contract like that.  
19 Directly between you and the private company.

20 MEMBER HALLER: So in order to produce this RFP,  
21 are you designing a recommendation for each need so  
22 that this RFP in fact goes out and says this is  
23 what we need at Kamole and this is what we need at,  
24 how, do 20 people come in here and study our Water  
25 Department?

26 MR. MENTZEL: No, no, I think the private sector is  
27 much more ingenious in doing that. So the idea of  
28 an open RFP is as we say we want 35 million

1 kilowatt hours, yeah, every year so take any chunk  
2 out of that, study the system, come up with  
3 recommendations and then offer what you would like  
4 to do.

5 MR. BEALE: So, for example this would be an  
6 example for Kamaole, I would come in with my  
7 company and say ok you guys I can supply you with  
8 800 kilowatts hours at that location for 300 days a  
9 year, this is roughly what the mix is between down  
10 time and up time and..

11 MEMBER HALLER: I, I'm still concerned.

12 MR. BEALE: Somebody else might come in and say we  
13 can do this with solar..

14 MEMBER HALLER: I understand. But what I'm  
15 concerned about is 30 people coming in and having  
16 to bug the Department to study the Department. So  
17 do you provide the number of days of sunshine and  
18 the amount of wind that's in each location so that  
19 company doesn't have to come here and do all that?  
20 Is that what you do?

21 MR. MENTZEL: They, they, they have met, yeah..

22 MEMBER HALLER: Oh, those exists.

23 MR. MENTZEL: The number of sunshine, there's,  
24 there's sunshine..

25 MEMBER HALLER: That exists.

26 MR. MENTZEL: There's wind maps that the companies  
27 have, they, they know that thing. The only  
28 involvement would be that people would like to know

1 where are the pumps, yeah, what amounts of energy  
2 are needed at the pumps. And we have to see I  
3 think, I think those information cannot, make, be  
4 public because of Department of Homeland Security  
5 issues but under non-disclosure agreement I think  
6 they can be available. Yeah, just basic list of  
7 how much energy every pump uses with this.

8 VICE CHAIR HOLMBERG: Any case, if you're putting  
9 out an RFP you're just, you, in essence telling  
10 them what your, your needs are. I need X amount of  
11 power, so much dependability and then it's up to,  
12 up to them to determine where do I need to site  
13 this stuff so I can meet the need.

14 MEMBER HALLER: But that's the problem, 35 people  
15 coming here to bug the Department to find out..

16 VICE CHAIR HOLMBERG: But they wouldn't, it, it's  
17 not all that much bugging, I mean there's a certain  
18 amount of data that they can supply as far as you  
19 know, this is where you plug in, things like that.  
20 And then, but then as far as coming up with the  
21 solar studies, the wind studies, you know that  
22 would be their kuleana.

23 MR. MENTZEL: That's, that's their job here. Yeah,  
24 I just participated in and assumed the RFP for HECO  
25 on Oahu and that's how I came up with the idea and  
26 they're looking for hundred, 100 megawatts of  
27 capacity and they got a nice amount of  
28 participants. I'd say, yeah, probably around 30.

1 MEMBER HALLER: And how long did they give people  
2 to respond?

3 MR. MENTZEL: About 4 months.

4 MEMBER HALLER: So then, how does this get  
5 evaluated? Who, who makes this decision in the  
6 organization, do you know?

7 MR. MENTZEL: That, I don't know.

8 DIRECTOR ENG: I guess we would be working with  
9 Victor Reyes who is the County's Energy  
10 Commissioner. He's kinda focusing on some to the  
11 things you guys are doing, and others...

12 MR. MENTZEL: Yeah, yeah.

13 DIRECTOR ENG: So, yeah, we'd rely on him.

14 MR. MENTZEL: Yeah, Victor would...

15 DIRECTOR ENG: This is all brand new territory.

16 MEMBER HALLER: Yeah, right, right, right, right.

17 MR. MENTZEL: Yeah.

18 DIRECTOR ENG: Yes, or, yeah.

19 CHAIR ALDRIDGE: And who would negotiate with MECO  
20 then on these standby prices or energy...

21 MR. MENTZEL: Well, that's, that's interesting  
22 'cause I was yesterday at, at MECO and there was a  
23 pretty large group to hear what's going on now with  
24 the new agreement that the governor and HECO and  
25 MECO signed. And everything's up in the air. So  
26 it, it's hard to say what the rates will be, it's  
27 hard to say what the involvement would be, yeah.  
28 Anything can happen in the next few months. And we

1 might see a MECO that's much more geared to it's  
2 renewable energy, yeah. We might see, yeah, the  
3 same thing going on, we might see the governor  
4 forcing more open door. And it's, it's a big time  
5 of change over there.

6 MR. BEALE: All that's for sure is that the price  
7 is gonna go up. There's no question about that.  
8 You know, as long as it's indexed to oil, I mean  
9 it's proven. Oil is not gonna run out, I mean,  
10 people who say peak oil is gonna, it's not gonna  
11 run out but it's just gonna get a lot more  
12 expensive. The sooner we switch to green energy,  
13 anyone who's lived here, I have over half my life,  
14 you know. What happens on Maui, it's sunny and the  
15 wind blows, so the sooner we tap into that the  
16 better. It's just, it's a no brainer. What's  
17 interesting is to see how the political process,  
18 the County, if it's possible to, to arrive at a  
19 quick process to allow private individuals,  
20 entrepreneurs first from outside to come in and to  
21 make quick, you know, study it, make good proposals  
22 and the thing move forward quickly. I think, like  
23 Chris is saying, there's room for everybody in  
24 this, you know, I'm Maui based, I'd love it if it  
25 was you know, I'd love to build a company which  
26 could do it all but there's more work than I could  
27 possibly ever do, how ever many people I hire. We  
28 need it all and we need it soon. I was here last,

1 last year when we had the big storm which knocked  
2 the power out and I know that pumping station, they  
3 were out of diesel, you know, after 2 days they,  
4 they couldn't keep pumping. So, to have  
5 distributed power, to have multiple power stations  
6 makes a lot of sense when you're, you're remote  
7 place. Your big power station could go down quite  
8 easily. The overhead lines are very vulnerable  
9 too. Even moderate storms are, 60 mph storm is, is  
10 a very moderate event. So, so, the more the  
11 better.

12 MEMBER LUCK: Are there any examples of where this  
13 has worked yet?

14 MR. BEALE: Costa Rica. Ninety-eight of their  
15 power is renewable. We go down there each year,  
16 it's amazing. You go down there and this whole  
17 country is powered and I guess the 2% must be, they  
18 must have some little island somewhere where they  
19 have a diesel generator but...

20 MEMBER LUCK: Is it primarily wind there?

21 MR. BEALE: It's pumped hydro backed up by wind, so  
22 when, when they have, they have pretty good wind  
23 regime but it's quite concentrated. But they use  
24 those turbines and they pump the water straight  
25 back into the lake continuously.

26 MEMBER LUCK: What was their key to success?

27 MR. BEALE: After the second world war they decided  
28 not to have a military and they re-invested all of

1 their GDP into their health system, their  
2 education, and their energy. And they started  
3 building dams and hydro-electric systems which is  
4 obviously, was one of the first, I mean, massed  
5 production ways of creating power, it dates back to  
6 you know, 1910, 19...the beginning of electricity.  
7 And, and the system runs, runs brilliantly. I  
8 mean, here's it's the hard thing I mean, pumped  
9 hydro here to really do it on that scale is a hard  
10 thing because you know, there's, you can't dam  
11 valleys here, you know, it's not politically  
12 correct. So big reservoirs, but things like you  
13 know, for people that thought about this earlier,  
14 things like a, instead of using the quarry as a  
15 landfill, you just build a giant reservoir and all  
16 you have to do dam one end of it. So, rather than  
17 filling it up with trash that could've been the  
18 bottom end of that system. But you know, now  
19 there's an opportunity to build these new  
20 reservoirs. Three hundred million gallons is, is  
21 plenty of water to power the whole island. And  
22 it's only, the big turbines now are 2.5 megawatts,  
23 they're already twice as big as these and they're  
24 testing 4 and 5 megawatts turbines. So, actually  
25 with the current technology it would only take 40  
26 of those to power the whole island. But you,  
27 people don't want to look at them, yeah you can put  
28 'em on the back side, you can put 'em behind those

1 ones. There's places you could put them but you  
2 need it in combination with the pumped storage in  
3 order to get it to store power. We have a last  
4 word I think for the...

5 MR. MENTZEL: And, and I want to say Germany has  
6 yeah, I went away from there because it didn't have  
7 sunshine. And, not much wind either. But half of  
8 the PV panels of the world are in Germany, half of  
9 the wind turbines are in Germany and reason is that  
10 the government yeah, just takes one politician,  
11 yeah, opened up the door to competition in the  
12 electric sector and made rules so that yeah, on a  
13 level player field, playing field, renewable energy  
14 could compete. And suddenly yeah, you have tens of  
15 thousands of farmers and normal citizens and, and  
16 bankers come together and design energy systems.  
17 And, yeah, the moment the market enters the playing  
18 field, that is yeah, the real power. Yeah, we have  
19 a, one last word.

20 (at this time a video of an interview with  
21 President-Elect Barrack Obama was played for the  
22 board members)

23 *INTERVIEWER: Does doing something about energy, is*  
24 *it less important now?*

25 *MR. OBAMA: It's more important. It may be a*  
26 *little harder politically but it's more important.*

27 *INTERVIEWER: Why?*

1 MR. OBAMA: Well, because this has been our  
2 pattern; is we go from shock to trance. And we,  
3 oil prices go up, gas prices at the pump go up,  
4 everybody goes into a flurry of activity and then  
5 the prices go back down and suddenly we act like  
6 it's not important and we start filling up our  
7 SUV's again and, and as a consequence we never make  
8 any progress. It's part of the addiction, alright,  
9 that has to be broken. Now's the time to break it.

10 MR. MENTZEL: There you go.

11 (applause)

12 CHAIR ALDRIDGE: Thank you.

13 DIRECTOR ENG: Thank you very much. Appreciate it.

14 (background noises. Several people speaking at the  
15 same time)

16 DIRECTOR Eng: We recently had on Monday, our Water  
17 Resources Committee meeting in which Chair Anderson  
18 proposed a new, somewhat like a water allocation  
19 bill. In which really was, in essence was as new  
20 water becomes developed there's an allocation plan.  
21 What priority projects there are for affordable  
22 housing, whatever, no interest by the other  
23 committee members, so it died. So it died even  
24 though everyone's talking about giving affordable  
25 housing priority. No interest.

26 MR. KUSHI: Died for a lack of second.

27 DIRECTOR ENG: Yeah, she just...

28 MEMBER LUCK: Oh, really, wow.

1 MEMBER HALLER: Didn't it also die because she  
2 wouldn't compromise and there was, there was a  
3 request for some comprising. She stayed kinda  
4 firm.

5 DIRECTOR ENG: No, it wasn't that so much it's just  
6 that it, it was just quite sudden, you know, one  
7 meeting, pass out a new proposed bill in one  
8 meeting, you know.

9 VICE CHAIR HOLMBERG: They didn't get warmed up.

10 DIRECTOR ENG: And so that was really the reason.  
11 We were really hoping that, I was trying to  
12 encourage her the past few months to attack the  
13 fire flow requirements so that we're consistent  
14 with the Fire Department. We've been meeting for  
15 the past few months, I think we're there you know,  
16 but she just wanted to take on something else.  
17 That was really unfortunate. As you know we got  
18 some rain Upcountry so we're looking pretty good.

19 (a chorus of yays)

20 DIRECTOR ENG: And the reservoirs now and the  
21 ditch. I think that H'poko Wells are operational.  
22 Like on Monday then it rained Monday night. So  
23 that's what I'm gonna do every time.

24 (several people speaking at the same time then  
25 laughter)

26 DIRECTOR ENG: Rainmaker called. But that was just  
27 to go into Hamakua Ditch that serves Kula  
28 Agricultural Park. And that's all I really have.

1 MEMBER HALLER: Chris, Chris, Chris...

2 MEMBER ROBINSON: Chris.

3 MEMBER HALLER: We're trying to have a meeting.

4 MEMBER ROBINSON: Yeah, we have to finish up our  
5 discussion here.

6 MR. MENTZEL: Sorry.

7 MEMBER ROBINSON: Thank you, guys.

8 MEMBER LUCK: Yeah, thank you very much.

9 CHAIR ALDRIDGE: What's the drought conditions and  
10 forecast? That changed at all?

11 DIRECTOR ENG: Well, if you look at the, there's a  
12 climate prediction center and the worse they'll say  
13 we'll be done in a year, but right now, this week  
14 they say we'll get some more rain but this weekend  
15 it's pretty (inaudible). So, we'll see you know,  
16 this is the time we should finally should get it.  
17 Last December we had that bad Kona storm so, and  
18 anything, anything can happen now but maybe we're  
19 over the hump.

20 CHAIR ALDRIDGE: That's great.

21 MEMBER HALLER: Can we talk about this?

22 MR. MENTZEL: We'll come back in five minutes, it's  
23 cooling off.

24 MEMBER HALLER: How come Kahakapao can't, doesn't  
25 fill up with Waikamoi both filled?

26 DIRECTOR ENG: Ok, that, that Waikamoi water does  
27 get transferred to, to Kahakapao, so...

28 MEMBER HALLER: It just takes a couple of days or?

1 DIRECTOR ENG: It doesn't reflect it here but  
2 you'll see slowly the Waikamoi declining and it  
3 should be going that way...

4 MEMBER HALLER: Kahakapao.

5 DIRECTOR ENG: But hopefully it will be increasing  
6 with rains. Hopefully everything will rise but  
7 yeah there is that connection to Waikamoi's feeding  
8 into Kahakapao.

9 CHAIR ALDRIDGE: You know I compared with last  
10 year's to this year's too and actually last year  
11 was 7.7 mgd for that same period of time, where as  
12 this year it's 6.1, so it's quite a bit less. It's  
13 like 20, 20%.

14 MEMBER HALLER: It's amazing.

15 DIRECTOR ENG: Then maybe the year before that was  
16 around 10, 9 or 10. So Upcountry's...

17 CHAIR ALDRIDGE: People are conserving or using  
18 less.

19 DIRECTOR ENG: It, it's the domestic but also ag you  
20 know. Ag comes off this quite a bit (inaudible)  
21 domestic and I think I saw something the other day  
22 like 40%...

23 MR. KUSHI: Upcountry.

24 DIRECTOR ENG: Yeah, it is ag, is ag customers.  
25 So, they may be cutting back too.

26 CHAIR ALDRIDGE: Well, they're anticipating that  
27 they're not gonna have water.

28 DIRECTOR ENG: Yeah, yeah.

1 CHAIR ALDRIDGE: They may have left some land  
2 fallow.

3 DIRECTOR ENG: Yeah, yeah, right, right so.

4 MEMBER ROBINSON: And coming up with better  
5 irrigation systems.

6 DIRECTOR ENG: Yeah, all of that. They're all  
7 conserving even the farmers are becoming more  
8 efficient.

9 MEMBER ROBINSON: So of the things that they're  
10 been having with this "slim" conferences has  
11 indicated that people are starting use more of the  
12 flat drip pipes.

13 DIRECTOR ENG: Yeah, right.

14 CHAIR ALDRIDGE: Ok, well thank you, Jeff.

15 DIRECTOR ENG: Well, thank you.

16 CHAIR ALDRIDGE: And, you have the items that you  
17 want on the next December meeting. Anyone? Carl?  
18 Any board type...

19 VICE CHAIR ALDRIDGE: No, no, I think, we, the, a  
20 lot of things I was interested in right there.

21 CHAIR ALDRIDGE: All right then, meeting is  
22 adjourned.

23 MEMBER HALLER: Do see this, do you have any sense  
24 of when this RFP's gonna get done, is there  
25 progress, what is the...

26 DIRECTOR ENG: I really don't know how quickly this  
27 County works.

28 (laughter)

1 DIRECTOR ENG: It's amazing the most simple things  
2 that you try to you know, implement like I'm doing  
3 some things to control our overtime and standby and  
4 schedules, and (inaudible) union, pretty much on  
5 your own too. You know it's a, I find, so I'm  
6 pushing certain things as far as cost cutting  
7 measures and it's, yeah...

8 MEMBER HALLER: Wow.

9 VICE CHAIR HOLMBERG: Well that reminds me one  
10 thing, well maybe you could answer now but...

11 DIRECTOR ENG: Sure.

12 VICE CHAIR HOLMBERG: One thing that if you can  
13 answer now I'd want to put it on in the future is,  
14 is it seems that the Mayor and the County have  
15 backed off on the whole condemning of Wailuku Water  
16 just because you know, they're wondering what's,  
17 what's the allocation gonna be, and are they really  
18 gonna, as far as you can tell, they really gonna  
19 sit on that until the State decides who gets what?

20 DIRECTOR ENG: Gee, I really don't know what the  
21 status of, we haven't heard anything in a year?

22 MR. KUSHI: I think basically you're correct in  
23 your assumption. They wanna, when I first looked  
24 at what that the, Avery's application for a private  
25 water system, and see what the PUC does there and  
26 then compare that with the allocations for the  
27 surface water designation. That would affect the  
28 value of the whole system...

1 VICE CHAIR HOLMBERG: Right, right. Oh, so we're  
2 gonna wait to see whether the system is worth the  
3 paper it's printed on.

4 MR. KUSHI: Yeah.  
5 (laughter)

6 MR. KUSHI: And if we're gonna condemn, where are  
7 we gonna condemn.

8 DIRECTOR ENG: And I think even the Administration  
9 gets a better understanding is that our domestic  
10 needs I believe are a public trust, protected  
11 public trust use. I mean, early on is all  
12 everything mauka to makai flows. Which is nice to  
13 see but there are a lot of needs that need to be  
14 balanced. And we certainly have our needs too.  
15 And I think with a lot of the commission's decision  
16 like in East Maui, it could impact our, our  
17 domestic water sources so we're really kind of also  
18 monitoring it more closely in fact.

19 CHAIR ALDRIDGE: Yeah, I, I was concerned about  
20 'cause that was 12.21 mgd, that they required to be  
21 maintained for 5, just 5 or 7 of them, I forget how  
22 many there were.

23 DIRECTOR ENG: It's something, well, 5 hydrologic  
24 units...

25 CHAIR ALDRIDGE: Five hydrologic.

26 DIRECTOR ENG: With 8 or 9 streams something like  
27 that, kinda lost here but...

1 CHAIR ALDRIDGE: There's still like 19 or 27 more,  
2 depending on whether it's units or streams.

3 DIRECTOR ENG: Yeah, yeah, there's another 19, I  
4 think, more that they have to..

5 CHAIR ALDRIDGE: So what's left at the Kamole Weir,  
6 right, ditch?

7 DIRECTOR ENG: And they are adjusting those  
8 diversions now. I know Garrett Hew of EMI has been  
9 going out with the Water Commission and setting the  
10 diversions and, we'll see. We're monitoring Wailoa  
11 even closer now than ever, to see if that, with all  
12 those, definitely serve Wailoa.

13 VICE CHAIR HOLMBERG: Well, that, then that brings  
14 up for me a final is, ok, so we had 2 conservation  
15 attempts shot down in a row, one by having the  
16 higher water rate for major water suckers and the,  
17 and then by killing the irrigation measure. Now  
18 Baisa was throwing out that thing about you know,  
19 the perfect plan sometime in the future, what's  
20 with that?

21 DIRECTOR ENG: You know..

22 VICE CHAIR HOLMBERG: Is that, is that a, is that a  
23 vapor wear or somebody actually applied pen to  
24 paper on that?

25 DIRECTOR ENG: I don't know. I mean I just emailed  
26 and if I may keep this confidential, we had the  
27 show me the water ordinance there is a meeting set  
28 up next week with the Mayor, one of her assistants;

1 something about amending it. Now I've just emailed  
2 the Mayor, secretary and assistant saying give me a  
3 clue what you guys are proposing. 'Cause my  
4 secretary Jerry, says so what's this all about? I  
5 said I don't know. How do we amend it? You know  
6 it's a...

7 VICE CHAIR HOLMBERG: Amend it which way?

8 MEMBER ROBINSON: Yeah, and to who?

9 MEMBER HALLER: Maybe you amend it by saying like  
10 developers with affordable housing don't have to  
11 comply or something maybe that's a way to sneak  
12 that in there?

13 MEMBER ROBINSON: Yes, that's an idea.

14 DIRECTOR ENG: But I think this, this allocation  
15 allotment proposal that day was the way to address  
16 that. You're sure that affordable, if there is  
17 water available, gets that high priority. You  
18 know, the Show Me the Water Bill may not be it  
19 because that is making sure that water is available  
20 for the project.

21 CHAIR ALDRIDGE: Is available, period.

22 DIRECTOR ENG: So, it's not good, it's more  
23 workload for us but it, it makes sense right now.  
24 Why start approving all these subdivisions if we  
25 don't have water available. We still have this  
26 backlog that we are still addressing and we're  
27 still trying to issue meters to keep the economy  
28 somewhat healthy and, and so it's that balance of

1 things. But I don't think you know, again,  
2 amending the Show Me the Water this time but I,  
3 I'll keep you folks posted.

4 MEMBER ROBINSON: Ok, thank you.

5 DIRECTOR ENG: I'm, I'm always surprised around  
6 here.

7 MR. KUSHI: It's all gonna depend on who's gonna  
8 chair that Water Resources Committee.

9 DIRECTOR ENG: Right.

10 MR. KUSHI: Or if there would, if there's gonna be  
11 a Water Resources Committee.

12 DIRECTOR ENG: Yeah, see that's a difficult  
13 committee. It takes really you know, I mean  
14 Anderson should be commended. She did her  
15 homework.

16 CHAIR ALDRIDGE: Well, she was dedicated.

17 DIRECTOR ENG: On weekends she would email me  
18 stuff, revisions and you know, and by Monday all  
19 the other committee members just, they, they didn't  
20 do anything. So, it should, and you know I might  
21 be frightened off from taking on something like  
22 that complicated, we'll see.

23 VICE CHAIR HOLMBERG: Yeah.

24 DIRECTOR ENG: You know.

25 CHAIR ALDRIDGE: Alright, thank you.

26 DIRECTOR ENG: Thank you very much. Good seeing  
27 you folks.

28 (The meeting adjourned at 2:11 p.m.)

Prepared and submitted by:

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Gaye Hayashida  
Commission Support Clerk

Approved on: \_\_\_\_\_