- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program	) DOCKET NO. 14-035-114

PUBLIC COMMENTS HEARING PROCEEDINGS

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TAKEN AT: Public Service Commission
Hearing Room 403
160 East 300 South
Salt Lake City, Utah
DATE: Thursday, October 8, 2015
TIME: 5:02 p.m.
REPORTER: Daren S. Bloxham, R.P.R.

Job no. 252864
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APPEARANCES

FOR THE PUBLIC SERVICE COMMISSION:

Thad LeVar, Commission Chair
David Clark, Commissioner
Jordan White, Commissioner

Thad Culley, Esq. (Alliance for Solar Choice)
Sophie Hayes, Esq. (Utah Clean Energy)
Yvonne Hogle, Esq. and Joelle Steward (RMP)
Justin Jetter, Esq. (Utah Division of Public Utilities)
Chris Parker (Utah Division of Public Utilities)
Robert Moore, Esq. (Office of Consumer Services)

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

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CHAIRMAN LEVAR: Good afternoon. We are on the record. And we are here in the matter of Public Service Commission Docket 14-035-114 in the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering program.

This is a docket in which the Commission is working to and is accepting testimony and comments on a methodology or a framework with which to evaluate the costs and benefits of the net metering program.

This is not a rate-making docket. There will be no decision resulting from this proceeding that affects rates in any way. So I wanted to make sure that was clear to all in the room.

This is the time and place set aside for public witness -- for the public witness hearing. This is the opportunity for anyone from the public to comment on this docket. So I'll just make a few comments before we go. For those of you who intend and want to speak, Ms. Murray at the back of the room is keeping a sign-in list for those who wish to speak.

You can present your -- your comments in one of two ways. You can present just unsworn public comment where you come and take the stand, you're not

placed under oath, and you say what you have to say.

You may also give your comments under oath, in which case you'd be sworn in, and you'd be subject to cross-examination questions from any of the attorneys in the room who -- who wish to do that. So that's your option, also, which reminds me I forgot to let the parties in the room give their appearances. So I'll do that now.

Why don't we start at this table.

MS. HAYES: Good evening. Thank you, Mr. Chairman and Commissioners. Sophie Hayes representing Utah Clean Energy. And also I'm here on behalf of the joint parties.

CHAIRMAN LEVAR: Thank you.

MR. CULLEY: Good evening. Thad Culley, counsel for the Alliance for Solar Choice, also on behalf of the joint parties.

CHAIRMAN LEVAR: Thank you.

MS. HOGLE: Good evening. I'm Yvonne Hogle. And with me here today is Joelle Steward, and we are here on behalf of the Rocky Mountain Power. Thank you.

CHAIRMAN LEVAR: Thank you.

MR. JETTER: Good evening. I'm Justin Jetter, and I represent the Utah Division of Public Utilities. With me at the table is Chris Parker, the

Director of the Division of Public Utilities.

CHAIRMAN LEVAR: Thank you.

MR. MOORE: Robert Moore representing the Office of Consumer Services.

CHAIRMAN LEVAR: Okay. Thank you. I think we're ready to go ahead and start with those who have signed the list. Just to make a couple of comments, we're starting to have a fairly long list, and I anticipate it will continue to get longer.

And as the Commission, we want to balance two interests tonight. We want make sure everyone who's here and wants to speak has an opportunity to say what they'd like to say to us.

We also want to make sure that those who weren't fortunate enough to sign up early on the list have an opportunity to speak without waiting an inordinate amount of time.

So the way we're going to proceed this way is we're going to ask people to limit their comments when they take the stand to three minutes. If there are any individuals who feel like you can't say what you need to say in three minutes, when you've finished your comments, you're welcome to move back to the bottom of the list.

After everyone has had an opportunity, if you

want to get back up and speak for longer, that's something that we will allow. But we'd like to move through that first round in that way so those who have come to speak to us tonight have an opportunity without having to wait for a significant amount of time before they have that chance.

I will try to read the next three or four names ahead so those who are next can have an idea. The first four we have to speak today are Mr. David Bennett, Lincoln Hobbs, Stephen Glines, and Malin Moench. So we'll start with Mr. Bennett, if you'll come up.

Mr. Bennett, do you want to give unsworn comments, or would you like to be sworn in and provide testimony?

MR. BENNETT: I'd like to be sworn, please.

--oOo--

DAVID BENNETT,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Go ahead and take a seat. You may begin.

MR. BENNETT: Thank you. I'd like to start with a quote from the Salt Lake Tribune editorial

writer George Pyle of a couple weeks ago. "In the case of a corporation, if it means more profit, it is not just an option. It is obligatory. That is because the single, solitary, and only reason a corporation exists is to maximize profit. If it does anything, anything that fails to maximize profit, it has defrauded its owners."

The difference here, though, is that this as you well know is a regulated public utility, a monopoly. And to simply -- to understand what Rocky Mountain Power is trying to do is one thing, but to simply rubber stamp it is another.

My name is David Bennett. I'm a 40-plus year resident of Utah. I'm a jail and criminal justice consultant. And I want to speak today about some of my feelings about this.

I sat through some of the testimony of a couple days ago, and I have to tell you I felt like Alice in Wonderland having gone through the looking glass.

Couple points, first of all, the idea that the just south of 3,000 of us that have rooftop solar are harming the 800,000 families that don't have rooftop solar is nothing but absurd.

Look at the case of the rural rancher. The

rural rancher might live 20 or 30 miles outside of town. They pay the same per kilowatt hour. We don't differ because they're a rural rancher.

The other part of that issue is where are the commercial and -- and corporate -- the commercial and corporate solar -- rooftop solar people? They are not part of this rate structure.

They're not because they have big attorneys. And -- and the attorneys in this room don't want to have to go up against them. So they're just picking off the residential rooftop solar customers.

The second point with this is the issue of message. Mr. Ritchie from the Sierra Club tried to get the Division of Consumer Services to acknowledge that what happens here sends a message.

We saw that in Arizona when they went ahead and instituted the tax on solar. The next year, new installations dropped by 40 percent. Of course this is the message. Rocky Mountain Power owns the coal company. They own that method of power. That's what they want to continue.

They want to continue the generation of coal-burning power because they're a corporation. They want to maximize their profits. That doesn't fit Senate Bill 208 when you examine the cost-benefit

analysis.

When you take a look at the costs of continuing to burn coal that it has upon the environment, has upon the health of the people here in the state of Utah, these are very real issues.

Climate change is very real. The glaciers are melting. I was in the Carolinas over the weekend, and they called it biblical amounts of rain. We're going to look back on this period of time. This is the time right now.

We do need to send a message, and that message is we want to encourage rooftop solar. We want to protect our environment. We want to do what we can to turn the corner on -- on climate change and do what's best, not for you or I.

We've lived our lives, and we're going to live our lives without too much interruption. It's our children. It's our grandchildren. Now is the time to stop the subsidization of a dying industry, that being the coal industry, and to make our stamp on we want to support solar. Thank you very much.

CHAIRMAN LEVAR: Thank you, Mr. Bennett.

MR. BENNETT: I'd also like to submit on behalf of UCARE a copy of a submittal that has gone into the record already. I'd also like to at your

convenience any time invite you to come join me for a ride in my electric car totally powered by the solar panels on my roof. Thank you.

CHAIRMAN LEVAR: Do any of the -- does anyone have any questions for Mr. Bennett? No? Thank you, Mr. Bennett.

MR. BENNETT: Thank you.

CHAIRMAN LEVAR: Next is Lincoln Hobbs, and then Stephen Glines.

MR. HOBBS: Good afternoon. I'd be happy to present sworn testimony today.

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LINCOLN HOBBS,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

MR. HOBBS: Good afternoon. Thank you for your time. As I indicated, my name is Lincoln Hobbs. With my wife Karen, I own -- we own a commercial system that we installed in October of 2011 at the gross cost of 43,000.

We also installed a residential system in 2013 with gross costs of $6,200. Both of those have been providing solar power through the net metering system for two and four years respectively.

We installed our systems because of concerns we have for the environment, concerns we have for the air, concerns we have related to climate change. I want to thank you for your time and working to develop a framework for evaluating the cost -- as the statute says where the costs incurred from the net metering program will exceed the benefits of the net metering program or whether the benefits of the net metering program will exceed the costs.

I understand from what I've read about these proceedings that you're concerned that -- the utilities are concerned about the reduced revenues resulting from the use of solar, increased use of solar.

It's a legitimate concern when a business loses costs. If I lose cost as a result of the fact there are two law schools producing perhaps too many lawyers, that is a consideration I have to make in my business.

But it is a cost. It should not be considered solely on the cost-benefit. I think that the analysis -- the proposal that this Commission or the mechanism -- methodology this Commission comes up with needs to balance both the cost and the benefits of the solar. And I think that needs to be done by a rate analysis, coupled with a cost analysis as has been

proposed by some of your participants.

Lastly, I want to return to the statutory directive and suggest strongly that although it is difficult, there needs to be a way to evaluate the benefits of the net metering program that are not quantifiable by the rates that are charged by our utilities.

What is the value to the citizens of this state of clean air, of carbon reduction from the many companies that have undertaken the time and the expense to install solar?

What is the value of ultimately reducing the cost of solar, which ultimately will reduce the cost of energy to everyone in this room, including Rocky Mountain Power? There is a benefit, a clear benefit, to reducing costs and a clear benefit to reducing the carbon. And that is the end of my sworn testimony.

CHAIRMAN LEVAR: Okay. Thank you, Mr. Hobbs. If I could -- I forgot to clarify this for the first witness, so I'll ask him this. You're here representing Hobbs & Olsen; is that correct?

MR. HOBBS: Yes, Hobbs & Olsen.

CHAIRMAN LEVAR: Mr. Bennett, you were representing Utah Citizens Advocating Renewable Energy, if you're still in the room?

MR. BENNETT: That's correct.

CHAIRMAN LEVAR: So as people come up, I'll ask you if you're representing any organization, to identify such. And if you're just representing yourself, to tell us that.

Do any of the parties in the room have any questions for Mr. Hobbs? Seeing none, thank you.

MR. HOBBS: With that, with the conclusion of my sworn testimony, I can't testify on behalf of others, but I do have a letter, copies of which I have for the Commission members, presented by a number of businesses and local entities that I would like to just present.

Again, this is not sworn, but it is presented on behalf of 3form, Inc., Alta Ski Area, American Lung Association, Architectural Nexus, BacGen Technologies, Black Diamond, BOMA Utah, Creative Energies, eBay Incorporated, the Ensign Group, Electric & Gas Industries Association, the ETC Group, Evelar, Frog Bench Farms, Futura Industries, Garbett Homes, Gardner Engineering, Grace Carter Design, GSBS Architects, Hobbs & Olsen, LLC, Hobbs Mediation, Hunt Electric Incorporated, InScope Energy, LLC, Intermountain Wind and Solar, LLC, Johnson Powers, LLC, Kuhl, Lone Peak Valuation, McKinstry, Nash Insurance, Overstock.com,

Packsize, LLC, Park City Municipal Corporation, Petzel America, Powdr Corporation, RenewableTech Ventures, Roger L. Armstrong, Esq., Salt Lake County, Siemens Industry, Inc., Sound Geothermal, Ski Butlers, SF Fleming Studio, Summit County, Sunrise Renewable Energy, Treasure Mountain Inn, Uinta Brewing Company, USANA, Inc., Utah Paperbox Company, Variance Ventures, and Zions Bank.

CHAIRMAN LEVAR: Thank you, Mr. Hobbs.

MR. HOBBS: Thank you for your time.

CHAIRMAN LEVAR: Our next few names -- I'll just read the next two ahead each time. Our next is Stephen Glines, followed by Malin Moench.

Is Mr. Glines here?

MR. GLINES: Hello.

CHAIRMAN LEVAR: Hi, Mr. Glines. Are you here on behalf of yourself, or are you --

MR. GLINES: Yes. I'm here on behalf of myself, my family, and the public in general at large.

CHAIRMAN LEVAR: Okay. Would you like to present unsworn statements, or would you like to be sworn in?

THE WITNESS: I would be happy to be sworn in. I've included a written copy of my statements because my thoughts go way beyond three minutes. I'd

like to invite myself to be available to work on this anytime you want to call me in. I'm not going to stop working on it --

CHAIRMAN LEVAR: Okay.

MR. GLINES: -- at the end of this meeting. And I was at the last meeting when --

CHAIRMAN LEVAR: Mr. Glines, would you like me to swear you in before you go on?

THE WITNESS: Yes, that would be great.

--oOo--

STEPHEN GLINES,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. GLINES: You're welcome.

CHAIRMAN LEVAR: You can take a seat. Continue.

MR. GLINES: I was here at the last meeting when former Congressman Barry Goldwater was here. At that time I made a recommendation. I did meet Mr. White -- Mr. Letz and Mr. Clark, but I haven't met Mr. White yet. Pleased to meet you.

Again, I make myself available to come and work on this anytime I'm invited. I'm an independent

businessman. And I have no interest -- tie to the energy industry either side, carbon or solar or either way. I'm just a Blue Sky user on multiple accounts. I'm a legacy Utah Power & -- Light & Power user too, account holder.

But I had a career of business technology and consulting, and I spent my entire career improving business models. I would go and study the business, I would automate them, and I'd do cost-benefit ratios and sell them improvements that would improve their business model and would intend -- pay back off on the promised cost-benefit in order to get paid. It was largely on a commission basis.

And I spent a lifetime improving models, business models, and improving business processes, speeding up the performance, making them more accurate, making them a higher quality, making better customer service, lowering their costs, and paying for themselves.

And on my own business, I installed solar panels for the economic return they provide. I put them on my own house with a 10-year payback with Bountiful Power. And then I -- that worked so well. That was three years ago.

I put them on a rental property with an

eight-year payback with Rocky Mountain Power's help and guidance and a net metering -- another net metering agreement.

That worked so well it paid for itself. They've run fault tolerant, provide 100 percent of my power. And I'm happy to support the grid. I know we have to support the grid. And the grid's the backbone of the whole thing.

What I want to do is contribute clean power to it. My goal would be to fill the grid as it is with absolutely clean power, clean up the air, and get rid of the carbon problem.

We have to have the grid. We'll always have the grid. Right now the Utah population is set at three million. By 2060, it's projected to go to six million. I don't think there's any of us who would rationally stand up and say that we can do business as usual in industry and our housing and transportation, do business as usual and double the population load in the Great Basin.

All the physicians and our scientists tell us now that it's not sustainable at our current rates. So we can't do business as usual doubling it. And we've got to support Rocky Mountain Power, and we've got to support the grid.

And I've got -- last time I recommended a way to fix the model to do them both. I'd like to re-recommend it again. The carbon energy costs continue growing. I remember 25 cent gas believe it or not. And the solar power costs are coming down dramatically. It's a product of technology.

And this is just a technological problem. We -- we advanced civilization miraculously for the first 100 years in the Industrial Revolution. And it changed our entire lifestyles.

We didn't understand and I didn't understand that every ton of carbon I put in the atmosphere stayed there for a thousand years. And the planet wasn't capable of regenerating it.

During my lifetime, the population doubles. During my son's lifetime, the population doubles again. During my grandchildren's time, the population is going to double again.

Not only has it doubled three times, but the energy consumption has gone up twice as fast, exponentially, and so has energy production. So we can't keep doing business as usual. That's not a sustainable model.

But what we can do -- what we can do, what I'd like do -- and last time I testified, I said -- I

asked Rocky Mountain Power to begin -- embrace the formula of buying clean net meter overage from all the net users. Like my friend Sam Raby, he produces more than he uses.

The rest just falls off the bucket. He doesn't get any credit for it. There's no incentive for that overproduction. What I asked at that time, last July, is that we take that excess energy, clean energy, and we pile it back into the Blue Sky program and sell it to everybody who's begging for it and wants it.

CHAIRMAN LEVAR: Mr. Glines, just looking at time, are you able to wrap up quick, or shall we -- would you like to come back again after we've been through the first round?

MR. GLINES: I'll wrap it up quickly.

CHAIRMAN LEVAR: Okay. Thank you.

MR. GLINES: If we take all that clean power, fill the grid with it, pay a wholesale basis for that clean power, the same we're paying for carbon power, resell it at a margin, Blue Sky prices, we support the grid. We support the Rocky Mountain Power model.

The system continues to work. We can double the capacity of the grid without toxifying our air shed. And that's the model I ask you to do is buy

clean power and fill the grid with it and quit trying not to punish -- right now we've got a cost-benefit model that is very interest selective at the corporate interests. It's a subinterest.

But it's in conflict with the cost-benefit of all their customers. All the customers want the clean power, but they don't want the damage. And any organization that has a cost-benefit model that's in conflict with their big customer base is headed for trouble.

And I'm offering a way to align it with the customer base. Just fill the grid with clean power. We'll support the grid, whatever it takes to maintain. That's the end of my thoughts.

CHAIRMAN LEVAR: Okay. Thank you, Mr. Glines. Does anyone -- do any of the attorneys have questions for him? Thank you.

Then our next two speakers are Malin Moench on the telephone and Jim French. Do we have Mr. Moench on the telephone?

MR. MOENCH: Yes. I'm here on the telephone.

CHAIRMAN LEVAR: Okay. We're getting a microphone to the phone right now. Give us just a second.

Mr. Moench, are you here today on behalf of

yourself or on behalf of any organization?

MR. MOENCH: I'm here on behalf of myself.

CHAIRMAN LEVAR: Okay. Would you like to be sworn in or prefer to provide unsworn comments?

MR. MOENCH: I'd like to be sworn in, but what I really have here is primarily technical comments confined to framework issues mostly about whether the 2015 Integrated Resource Plan and whether Schedule 37 are enough to do a cost-benefit analysis here or whether you need a special study.

It's going to take more than three minutes. So rather than repeat myself, I'd rather be put to the back of the program, as long as you can guarantee that people will still be there.

CHAIRMAN LEVAR: Sure. Okay. We'll move on ahead, Mr. Moench. And we'll come back to you once everyone else who has signed up has had an opportunity to speak. Thank you.

MR. MOENCH: All right.

CHAIRMAN LEVAR: Okay. Our next person is Jim French, followed by Richard Petty.

MR. FRENCH: Hi. I'm speaking for myself. I'd like to be sworn.

--oOo--

JIM FRENCH,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you. Make sure the microphone is close enough to you so it picks you up.

MR. FRENCH: Okay. So my name is Jim French. I'm a resident of Salt Lake City. Six and a half years of operation, 29,000 kilowatt hours produced over that time, and 23 tons of CO2 saved, those are the numbers behind my family's rooftop PV solar system, which is right here.

It's a little small, but it was done in two stages - first one in 2009, and the last four panels in April of this year. As I say, those are the numbers behind my family's rooftop solar system.

And this is my family. Again, a little small, but -- and this picture was taken in 2009, which was the same year the first set of solar panels went onto our house.

Taylor is a junior in college now, and Adam is a senior at East High. They -- Taylor and Adam, they both know that unless grownups put the brakes on fossil fuel use and speed up the inevitable switch to clean energy, their future may be very bleak.

Clean, cheap, safe energy for me, for them,

for all of us is the direction I believe we need to be headed. Clean, cheap, safe energy, and that's why the future of renewable energy is so important to me. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. French. Does anyone have questions for him? No? Thank you.

Our next speaker is Richard Petty, followed by Stan Cortsen.

MR. PETTY: Good evening.

CHAIRMAN LEVAR: Mr. Petty, would you like to be sworn in?

MR. PETTY: I would like to be sworn in. Thank you.

--oOo--

RICHARD PETTY,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Go ahead.

MR. PETTY: I'm a member of UCARE, but I am not here representing them.

CHAIRMAN LEVAR: Thank you.

MR. PETTY: Thank you for letting me speak by the way. So this is a picture of -- my finger's not working. This is a picture of my youngest

granddaughter. This is basically the reason why I got involved with solar. I have a prepared statement. Pardon me if I stumble. I'm not used to public speaking.

With the growing popularity of rooftop solar, monopoly utilities like PacifiCorp increasingly view renewable energy generation as lost revenue. Rocky Mountain Power is lobbying the PSC for permission to implement a rate increase on solar customers in order to discourage further investment in solar energy under the guise of fairness.

This duplicitous stance enshrouds many benefits that solar provides to the power company and all ratepayers. Rooftop solar power is produced and consumed in the neighborhood. This prevents transmission line power loss and reduces strain on the grid.

Solar panels produce electricity most efficiently near peak load periods, resulting in a smoother demand curve helping to prevent power outages. Solar providers have invested their own money to put the sun's energy into the electrical grid, lessening the need to invest in additional power plants.

My interest in renewable energy was not financially driven. The return on my investment will

not be realized for years. The reason I installed solar panels is to do my part to help the environment for my community and for my offspring. I find it offensive Rocky Mountain Power and PSC seek to discard this obvious benefit.

During previous hearings, OCS, DPU, and RMP lawyers argued that -- and the PSC seems to have greed that environmental benefits of renewable energy resources are unquantifiable and should not be a factor in these proceedings.

Allow me to quote the 2010 Synapse system study titled "Co-Benefits of Energy Efficiency and Renewable Energy in Utah," funded in part by the Office of Consumer Services and the Division of Public Utilities.

Quote: "In our analysis, we estimate that fossil power generation in Utah today consumes about 73,800 acre feet or 24 billion gallons of fresh water per year, results in 202 premature deaths per year, contributes to 154 hospital visits per year for respiratory injuries and 175 asthma-related emergency room visits each year.

"We estimate that the health and water impacts from Utah fossil power generation have a monetary value between $1.7 and $2 billion per year."

Sounds like a quantifiable benefit to me.

"Americans increasingly understand the environmental, health, and other social advantages of switching to fossil fuels -- from fossil fuels to renewables. The fossil fuel industry denies these impacts and refuses to take responsibility for the harm it is causing. Will PSC be part of this travesty?"

I encourage you to look at this from a holistic position. As people have said, we all should be concerned about our environment, and this is definitely part of it.

I really am not sure what sort of logic we're using in thinking that we can somehow remove ourselves from a power industry that uses the most coal of any state in the United States and is trying to punish people that are putting renewables in.

I would like to leave you with this. It's part of a different study from Mississippi or something to that effect, but it shows some of those. Thank you very much for your time.

CHAIRMAN LEVAR: Thank you. Any questions for Mr. Petty? No? Thank you.

Next is Stan Cortsen, followed by Elias Bishop.

MR. CORTSEN: I would like to be sworn in. I

am a member -- founding member of UCARE, but I'll speak as an individual.

--oOo--

STAN CORTSEN,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. CORTSEN: I will provide you copies of the testimony I'm going to give. Thought I had another. Okay. As well as the graphic that illustrates part of the data that I'm going to give. I will read.

So a few years back, the State of Utah, Rocky Mountain Power, and the federal government recognized the need to help along the transition to cleaner energy sources. They collectively set up rebate programs and net metering programs to encourage this technology, specifically because there's a general understanding that they are needed for economic, health, and environmental reasons.

At that time, Utah and RMP coordinated to enable an excellent net metering program to encourage the public to support the development of new

technologies and adopt systems that support and enhance distributor power production and more efficient distribution.

That may not have been their entire intent, but that was the reasoning behind where we are today. I was an early adopter and have benefited from this partnership.

I received a rebate from Rocky Mountain Power, which was paid for by funds they collect from their ratepayers. That, along with my large investment, allowed me to install my system, including additional expenses for metering and shutoffs to enable the net metering and protect the grid.

This has been a mutually beneficial arrangement so far. It supported a fledgling local business, provided employment for a whole crew of roofers, installers, and electricians. It's provided me a good return on my investment so far, though it's still several years from returning the planned investment value.

And with the incentives that were currently in place, I sized my system such that I'm still using grid power and paying RMP an average monthly power bill that is more than they calculate is needed per customer to cover my share of the grid costs.

So I still use the grid, and I pay my share, but at the same time my system helps reduce costs for RMP. It's producing power during their peak needs, as you'll see in that graph, with my output peaking around 2:30 and still providing as much as 2,000 watts at 6 p.m.

Building capacity for peak demand is something that they, Rocky Mountain Power, has identified as a primary objective and a cost driver, yet they try to pretend that my contribution does not benefit them. In reality, I'm reducing their peak demand.

In addition, last year my system fed almost 3,000 kilowatt hours back to the grid, which traveled directly to my neighbors without needing to travel long distances and utilize substations. This power they did not pay to generate but do bill to those users. This is a good and functional program that works to ensure the intended results.

However, last year, RMP took a step backward with a proposal to impose a monthly fee on the solar providers. This was clearly not an economic issue. At present the net metering program is barely a blip on their bottom line.

It was really a notice that they intend to

discourage continued growth in the solar industry and the ability of individuals to offset their own expenses by partnering with the utility.

Their new proposal does the same, and it is bad business. The same recognition of need for cleaner energy, which RMP is now calling unquantifiable, has driven similar programs globally, which has resulted in rapid advances in new technologies that will continue, regardless of the actions of RMP. RMP is now becoming an outdated outlier in this advancing field.

The result is where I had incentive to partner with RMP a few years ago, I or a new investor would now not see RMP as a reliable partner. New investors would see more options, including electric cars with smart battery technology that offsets their need for dedicated battery storage. There are also newer lower cost battery solutions and home fuel cell generators and other technologies that they could consider.

So in the future, there are two directions that this could potentially go. RMP can choose to plan for a future that has more distributed power sources and provide a smart grid that is used by all, or they can set in place a long-range plan that continues with outmoded technology and an ongoing emphasis on their

unsustainable fossil fuel reliance.

The grid will always continue, but people now have more options. RMP will need to do some smart partnering that this plan does not represent in order to continue the rate participation that they enjoy now.

The grid is it a national public asset, and RMP should be working to modernize it for all, not working to make it another of their stranded assets. Thank you.

CHAIRMAN LEVAR: Thank you. Before you go, any questions for Mr. Cortsen? Thank you.

MR. CORTSEN: Thank you.

CHAIRMAN LEVAR: Next is Elias Bishop, followed by Peter Cartwright. Mr. Bishop, are you here on behalf of an organization?

MR. BISHOP: Yes. Utah Solar Energy Association.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. BISHOP: Yes.

--oOo--

ELIAS BISHOP,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you. Go ahead.

MR. BISHOP: So I'm here on behalf of the Utah Solar Energy Association as I said. We are the solar energy trade organization of Utah. I'll start off by saying that as we are opposed to the net metering facilities charge proposed by Rocky Mountain Power, we are grateful for the Commission's order for a cost-benefit study analysis to more thoroughly consider this. So thank you for that.

The Utah solar industry represents over 75 businesses and nearly 2,000 jobs. Most of these businesses are rightfully concerned about a fee or fee like it because it would negatively affect them and their employees. The approval of such a fee would deal a blow to Utah's solar industry and harm our businesses, our jobs, and our livelihoods. These are Utah jobs.

We ask the Commission to consider all the costs and benefits when deciding whether or not a fee should be implemented. Benefits that should be considered include, but are not limited to, economic benefits, environmental health contribution, and avoided costs.

These benefits of distributed generation solar are more quantifiable than the company has deemed

them to be. With that, we'd like to thank you the Commission for looking to develop a framework to analyze the long-term benefits of solar. We ask that the framework should consider the long-term best interests of the health and the energy economy of Utah.

In closing, I'd like to add that the Utah Solar Energy Association supports the testimonies of the joint parties in this docket. Thank you for your time and consideration.

CHAIRMAN LEVAR: Thank you. Any questions for Mr. Bishop? Thank you, Mr. Bishop.

And next is Peter Cartwright followed by Emmy Thomson.

MR. CARTWRIGHT: Peter Cartwright. I'm representing myself. And, yes, I would like to make a sworn statement.

--oOo--

PETER CARTWRIGHT,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. CARTWRIGHT: I really struggled with what to say here tonight. First of all, anything I'd say has already been said or is going to be said. So it's

really hard to come up with something that's profound enough that people will listen to and that you will take for consideration.

And I really didn't know what to say. Finally, I decided about the only thing I can contribute to this is I hope you all appreciate, and I suspect you do, what a historic position you currently are in.

The solar energy community in this country is at a critical nexus. As I'm sure you all know, the cost-benefit ratio of solar is barely break even right now. And this year and the coming years are critical for it to survive as an industry.

First of all, the tax credits are going to possibly go away at the end of next year, which I'm sure the utility companies are going to lobby very heavily in favor of. And then second of all, if the utility companies continue to win these rate increases with solar, it will only increase its ability to pay it back.

So I hope you all appreciate, and, again, I think you do, that this is a very historic moment for this country, and it's historic across all of the public service commissions.

I read Mississippi is going through the same

thing. Arizona has gone through it, and they clearly voted in favor of the utility companies. But if we allow these kinds of things to continue, it will effectively kill solar energy for a number of years. We saw that happen in Phoenix.

And it won't stop it, but it's going to put it back 10 to 15 years. So I really hope that people will step back and look at the historical nature of these decisions that are about to be made. I hope you will please, please consider the future, and hopefully you'll vote for the right thing, which I'm sure you will. Thank you very much.

CHAIRMAN LEVAR: Thank you. Any questions for Mr. Cartwright? Thank you for your statement.

Next is Emmy Thomson, followed by Vaughn Kinder.

MS. THOMSON: Hello.

CHAIRMAN LEVAR: Ms. Thomson, are you here on behalf of yourself or any organization?

MS. THOMSON: On behalf of myself, and I'd be happy to be sworn in.

--oOo--

EMMY THOMSON,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MS. THOMSON: I was watching the news at 4:00 with my hands full of dirt and realized that this was going on. So I threw on my shoes and a coat and came down here because this means so much to me.

I just recently received solar panels, or it came over and they just -- in two days, up they -- up they went on to my roof. And I've been a teacher for 20 years. I teach at-risk youth all over the valley, and I have to go to Magna often in the winter.

So going to Magna in the winter always feels like some sort of nuclear holocaust. So I talk to the kids, What are we going to do? What are your ideas?

Their ideas were free travel. Their ideas were the sun should be free. Everyone should have solar power. It should be a group effort. You know, all these things that the children are saying seem like a no-brainer to me, like solar power was to me.

I'm so happy to have it. I keep looking at my meter. They've got this cool thing called Enlighten where you open it up, and it says, You've just saved three trees. And I've only had my solar power for a week. So the potential of it is just blossoming in my heart.

Personally, I lost a brother 29 years ago. He's been missing for 29 years. He was a solar advocate. He left a manuscript behind in my basement called "the Solar Kid." And I had that self-published.

And as I read through it, I saw the importance and the value of the sun and the earth and a symbiotic relationship working together free. It also reminded of a book I read to children often, which is The Giving Tree. If the metaphor is that the earth is your mother and you're continually taking and taking and taking, it's finite. And eventually there's nothing left.

So I just -- yeah, I really think that it's a no-brainer in terms of it being free and not being taxed and punished. And I think that the visionary vision of any company that is getting a lot of money for fossil fuels is to be visionary and think of something else. Put their mind in Tesla batteries. Put their -- anything else besides the continual fossil fuel and keep it free, keep it clean, keep it for our children. Thank you.

CHAIRMAN LEVAR: Thank you, Emmy. Before you leave, any questions for Ms. -- okay. Thank you.

We have Vaughn Kinder, followed by Monica Hilding. I think if any of you have questions and want

to ask any of the parties question, why don't you get my attention so I'm not asking you every time. I'll try to make sure I don't miss.

Mr. Kinder, are you on behalf of yourself or any organization?

MR. KINDER: On behalf of myself and Kinder Designs.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. KINDER: Yes, please.

--oOo--

VAUGHN KINDER,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. KINDER: This is very scary. I was born and raised here in Salt Lake City. I have three bicycles that have a combined 100,000 miles on them. I'm a commuter, not for any particular reason other than I just love riding my bike. I always have since I was a little kid.

I work for the department of pathology up here on the Hill for a little over 28 years. And during that time, I've had the opportunity to actually

see sections of people's lungs. Fortunately, they weren't alive still. But the interesting part in that, I'm not a pathologist, but I might play one on TV someday.

They had -- he would frequently lay out slices of lungs of people who lived in the Salt Lake Valley, and he would have slices of lungs of people who lived in Heber. And he'd say, What do you see different here? I could see little black specks on those lungs from -- from the Salt Lake person and a pretty clean pink lung from those people in Heber.

So it's kind of scary, but, yeah, not going to hurt me. Well, a few years later, I was diagnosed with asthma, and I was essentially given three options. Either I stopped riding my bike, which felt like death to me, I could wear a gas mask, which seemed ridiculous, or I could move out of the valley, which I really didn't like because I love Salt Lake City. I've traveled the world, and I love this valley, love the city.

So, you know, what do you do? I mean, I could ride my bike home from up there on the Hill, and you would get this film on the bike, this dirty nasty black stuff that would come off on your hand. I love my bike, so I take really good care of it. I ride home

one day, and you get that black film on there.

So it's no surprise to people this is one of the dirtiest cities in the country. We create that. We individually, every single one of us in this room has a responsibility for that filth in the air. Either it's our Suburbans or it's the fires -- remember when we used to have fires in our fireplaces?

I walk every night at 10:00. I almost never smell a fire anymore. Wow, that was a big change. Fires are kind of like this genetic right we have, right, of bringing home the bison and cooking them over the fire. We quit doing that. I'm pretty impressed by that.

So, anyway, I'm a pretty responsible guy. I'm quiet. I'm terrified of speaking in public. But I'm going to step up and do my part. So about 10 years ago, my wife back there, who is a brilliant architect, done most of the commercial building you see downtown, we said, Let's -- let's do what we can to have an impact here.

So we started in with our own two hands to build the most efficient state-of-the-art green home we could come up with. And in that, we have -- we started out with solar thermal. So I have these panels that make hot water. And they take care of 85 percent of

the heating needs in my home.

It's -- it's -- I kind of get excited about that. I'm a chemist, so things that make magic heat in my water heater -- I have 500 gallons this afternoon of 127 degree water. I could shower all day long and never run out of hot water, and it was free.

Later we added -- in April of this year, we added 14 panels of photovoltaics. They generated since April five and a half megawatts of power. Four and a half of that I shipped back into the grid, so my neighbors who are running three great big air conditioners are like -- they don't know, but it makes me feel good that they're not burning more coal to keep those things running.

So, you know, again, it would be nice to be paid for that. I understand in Idaho, you could get paid for the excess that you generate. To me it's -- it's very cheap. I don't have a lot of burn rate in terms of transmission, etc. So I'm creating clean energy.

I feel pretty good about this. The house we built is -- it's strange I would be here somewhat testifying against Rocky Mountain Power because I am a poster child for Rocky Mountain Power.

I have an evaporative cooler. Rocky Mountain

Power paid for that cooler. I have all LED lights in my house. Rocky Mountain Power paid for three-quarters of those. I am a lottery winner from Rocky Mountain Power. They gave me $4,000 toward my PV system.

And so it's really weird all of a sudden to hear, Now we want you to pay for this -- this system. And I -- again, I understand being responsible, but at the same time, as one of the previous speakers said very well, that we're at this nexus of we either make or break this system. We either create a healthy planet, or we continue to go down a road that we can never recover from.

I personally -- my wife and I have put in over $80,000 in these two systems. I don't expect I'm ever going to recoup that. I don't really care. I get a kick out of what the house is, what it does, the power it generates.

I'm not a rich guy. I'm no richer than anybody in this room. But it does come down to our responsibility to our community, our city, our country, and our planet.

I think to impede any progress toward renewable energy is simply irresponsible. And every -- you guys in particular have the power to impact things in ways I can't even touch. One little house, that's

all we've got. Your family might breathe a little easier, they probably won't know I did anything, they probably won't care. But you guys can influence that, and I hope you do.

In closing, I just wanted to say does anybody remember acid rain? Remember when that was such a big deal. Leaded gasoline? We got rid of that, right? What about asbestos, leaded paint? This pathology place that I used to work for, we had kids contaminated by leaded paint still today. It's been outlawed for 20, 30 years. It's still going on.

So my point here is I would like to say at some point, Remember when cars were powered by gasoline? Oh, did we really do that? When our power plants were powered by coal? Man, am I ever glad we don't do that anymore. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. Cartwright. I think we'll take a short break at this point, about a 10-minute break. And the next two speakers are Monica Hilding and Blake Quinton.

(Recess taken at 5:52, resuming at 6:00.)

CHAIRMAN LEVAR: I think we'll resume. Back on the record. Before we -- before we move forward, I'll just repeat a few points that we made at the outset since there's some in the room that weren't here

when we started at 5:00.

We're here taking public witness in the matter -- public witness comments and testimony in the matter of the investigation of the costs and benefits of PacifiCorp's net metering program.

As I said at the beginning, this docket is an investigation docket. It is not a rate-setting docket, so there won't be any adjustments to rates as a result of these proceedings.

We're taking public comment for those who have come here today. I think we have the final list. So for the information of those in the room, we have about 22 more people who have signed up to speak.

We have two who have requested to come back after having used their original three minutes. Mr. Stephen Glines and Mr. Malin Moench will be returning to -- at the conclusion. For those who weren't in the room at the beginning, we're asking on this round of testimony to limit your comments to three minutes.

If you need more time than that, we'd be happy to put you back at the end of the list, and you're free to return once everyone has had a chance to speak. But we want to give everyone who wants to speak an opportunity to do so without having to wait an

inordinate amount of time to do so.

With that, I think we'll go to our next two who have signed up. We have Monica Hilding and Blake Quinton.

Ms. Hilding, are you here just on your own behalf?

MS. HILDING: Yes, I am.

CHAIRMAN LEVAR: Would you like to be sworn in?

MS. HILDING: Yes.

--oOo--

MONICA HILDING,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MS. HILDING: This is hard for me. I'm not used to speaking in public. But I have installed recently solar panels on my house. It wasn't as recent as the last woman, who was also a teacher, but it's just in the last couple of months. And I still haven't finished paying for it.

But I installed them because I believe it's the right thing to do, especially in Utah when we've got -- one of the reasons I came to Utah is the

sunshine and dry weather, so I love it here.

And now I'm learning that Rocky Mountain Power wants to charge me an extra monthly fee before I've even finished paying for my solar panels to have net metering on my solar panels. So I wanted to come and speak on behalf of my children and my grandchildren.

Discouraging people from installing solar power by charging for net metering is not taking into account the costs of coal power to our environment. My brother-in-law, Von Waldon, is an atmospheric physicist, and he is in Norway right now documenting climate change. And it's happening.

And solar panels on houses in Utah will help reduce our carbon footprint and make our city a cleaner and healthier place. And that's all I have to say. I hope that you gentlemen will remember that when you make your decision.

CHAIRMAN LEVAR: Thank you, Ms. Hilding.

Next is Blake Quinton, followed by Dan Syroid. Dan Syroid I believe. Hope I'm saying that right.

Mr. Quinton, would you like to be sworn in?

--oOo--

BLAKE QUINTON,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: You're representing yourself?

MR. QUINTON: Yes, myself. My full name is Joseph Blake Quinton. I spent a lot of time this last week trying to go through the full cost of services monthly that had been prepared by Mr. Hyatt and reviewed by many others that were present this past week.

There were a number of things that I found kind of duplicitous. I would find one thing that Rocky Mountain Power or Berkshire Hathaway Energy or MidAmerican Energy would say, and I would look through the model, and I wouldn't be able to find the same information.

So we take the easy one, environmental costs. They said, Oh, that's too hard to -- too hard to put a number on. Even if you go, What's the minimum number, not what's the range, just what's the minimum? Well, in 2007, PacifiCorp came out and said $8 per ton of CO2. Why don't we even have that in there?

You go through. Transmission losses. Sorry. As you'll all remember, Dr. Douglas Marks testified

that transmission losses are real.

CHAIRMAN LEVAR: Maybe you want to pull the microphone --

THE WITNESS: And that in neighborhood, we'd lose approximately 3 percent of transmission. But over long distance, we'd lose 7 percent. I said 5 to 8 percent. Why isn't that in the model? It should be. Engineeringwise, we know what it is.

Sorry. Hedging, once again, I went through Berkshire Hathaway's quarterly report. They hedge. Big surprise. We all knew that. It's only $44 million. It appears to be this quarter. I am not a financial analyst. I may be not quite understanding it, but it's clearly in there.

$44 million appears for this quarter. That's over $7.46 billion over this half of the year. It's somewhere between .6 and 1.2 percent of revenue. Once again, if you're getting solar energy off net metering, you don't have to hedge that portion of your production.

Then we go to distributed demand. We were told, Oh, it's really hard with all these net metering customers to be able to move their power from place A to place B. If we use Dr. Marks' presentation that he submitted and his surrebuttal and his graphs that he

presented, and we said that in a neighborhood like my own, all the houses are very similar. They're all about 1,800 square feet. They were built almost exactly the same time. I would imagine their energy profile, plus or minus an air conditioner, is extremely similar.

They were all built with evaporative coolers back in the day. Well, you go through and you take his graph. You find out that that average consumer they listed used 8-1/2 kilowatt hours per day, and that their panels at peak during the middle of the summer, I think he listed June 8th, produce 32 kilowatt hours per day.

That would save the local grid three more houses, so a total of four houses would absorb that 32 kilowatt hours produced. That power is not going anywhere.

CHAIRMAN LEVAR: Mr. Quinton, do you think you'll be finishing up soon?

THE WITNESS: I'll be done within one minute.

CHAIRMAN LEVAR: Thanks.

THE WITNESS: Finally, time of day pricing. Rocky Mountain Power has already acknowledged in two separate tariffs, Tariff 2, Schedule 2, and Schedule 6A, that time of day pricing is real, and that power is

more available between 1 and 8 p.m. than it is at any other time of the day.

Solar power, per the graphs that Mr. Marks provided, is producing up until about 7 and even a little bit towards 8 with a south face. That is not the only option. Rocky Mountain Power could do the same thing as many other power providers in the U.S., Green Mountain Energy, San Antonio Power, they incentivize west-facing power to help capture the afternoon peak demand.

By the way, that difference in power on Schedule 2 is 6.9 cents per kilowatt hour, and on Schedule 6A is between 8.3358 cents per kilowatt hour and 6.9633 cents per kilowatt hour depending on the time of year.

Those should all be adjusted in the model. Without, the model is not even being realistic. It's not even trying. I appreciate your time, and I hope to see a better model from Rocky Mountain Power in the future.

CHAIRMAN LEVAR: Thank you, Mr. Quinton. Mr. Syroid is next, followed by Miranda Menzies.

Mr. Syroid, would you like to be sworn in?

MR. SYROID: I would.

CHAIRMAN LEVAR: Are you representing

yourself or any other organization?

MR. SYROID: Myself.

--oOo--

DAN SYROID,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. SYROID: First of all, thanks for allowing us to testify here. And my wife and I have a personal interest because we installed solar panels over -- about a year and a half ago, and they're doing just great, providing lots of power. And the other factor is that I personally have a lung impairment, so having clean air is very important to me, and clean energy.

So as a solar energy supplier to Rocky Mountain Power, I'm submitting this testimony on the question of the proposal by Rocky Mountain Power to levy an additional fee on solar net metering customers.

The answer is quite simple. Solar power is clean, renewable energy supplied to Rocky Mountain Power. And the solar capital costs are paid for all or in part by the solar owners. So they're getting this benefit at no charge.

This clean energy displaces dirty fossil fuel energy in this state. To impose an additional fee on solar customers will discourage further solar investment by the people.

Note that all solar customers already pay a minimum connection fee to Rocky Mountain Power of $7 per month. This fee -- additional fee would condemn Utah to continue to be a dirty energy backwater.

If anything, the Public Service Commission should be holding Rocky Mountain Power to account for their lack of diligence in planning and developing more solar, wind, and geothermal energy, replacements for our overreliance on dirty, unhealthy coal energy.

Utah gets more than 80 percent of its electrical energy from coal and most of the rest from natural gas. That's based on U.S. EIA information. Utah has a goal of getting 20 percent of energy from renewable sources by 2025. And on that, I would ask you folks how we're doing on that?

Other factors to consider. Much of the solar energy generation occurs at peak usage time with high value to Rocky Mountain Power, as others have indicated. Solar is a clean, non-polluting energy that reduces the alarmingly bad air in the Wasatch region.

And solar energy is generated locally, and

excess energy is used by our neighbors, actually putting less stress on Rocky Mountain Power infrastructure.

So I strongly urge you to reject this fee and do not send Utah energy policy in the wrong direction. And you folks have an awesome responsibility to the people of Utah and also humanity in general. So -- and I'm sure that you'll use it wisely. Thank you.

CHAIRMAN LEVAR: Thank you. Okay. Next is Miranda Menzies, followed by Jeanette Mohlman.

MS. MENZIES: Good afternoon, gentlemen.

CHAIRMAN LEVAR: Are you here on -- representing yourself?

MS. MENZIES: I am, specifically not representing any organizations I'm connected to.

CHAIRMAN LEVAR: Would you like to be sworn in or provide --

MS. MENZIES: Yes.

--oOo--

MIRANDA MENZIES,

having been first duly sworn to tell the truth, and testified as follows:

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MS. MENZIES: My name's Elizabeth Miranda Menzies. I have a background since 1980 being a

geoscientist and environmental consultant working mostly for industry, including a significant number of utilities, GE, GM, Ford, a number of large industrial entities. So I've seen the industrial world and the power generation world from both sides.

I'm now retired. And trying to settle in Utah as a retired person, a number of us are moving here because we see it as a progressive and delightful state to live with wonderful friendly people that's moving forward in the world.

And so I wanted to say something about my perspective as somebody who's moved into Utah. As you can tell from my accent, I'm originally from England. We just spent the last month in England on a hiking holiday.

But during that time, we also spent a weekend listening to lectures at the University of Cambridge. A number of the ones that I went to were on sustainability. I believe the Utah Public Service Commission needs to consider the consequences of its actions in the way that Utah is viewed nationally and globally.

I got a reaction when I said, you know, Where are you living? Oh, Utah. Oh, that's the state with the wonderful landscapes. Isn't it very conservative?

Don't you have a lot of solar power because you've got so much sun?

I had to say, Yes, we do. We have a great net metering system, which my husband and I do use. And I really ask you, is Utah going to now, considering all of the technical and cost data, are you now going to step back and start to look like the dinosaur state with a beholden situation with a fossil fuel industry where that is what we are going to be thought of because we put in a tax on solar? I hope not.

All the major emitting countries of the world are now issuing commitments for their sustainability in advance of the meeting in Paris in December. That includes India. They've most recently made a commitment to solar.

I'd just like to ask you, you have a very powerful position, as several people have noted. Just consider that it's important that you do what is seen to be right on the world stage.

VW have made the mistake of not doing what was right on the world stage, but I believe that Utah is a place of ethics and integrity where you will do the right thing, and we will move forward towards trying to fix the situation that we've created.

You can't fix a big problem, be it climate

change or the U.S. national debt, by making small changes. You have to make significant changes, such as changing our dominant power production system and changing the power consumption and power density.

Currently 40 percent of our energy nationally goes to heating and cooling systems, a lot of that being residential, some of it commercial. Rooftop solar generation can support large reductions in energy use because it is both distributed and efficient.

It avoids transmission losses as several people have noted. If you couple it with improved building code, which I would note that the legislature right now is looking at taking up the improvements in the residential building code, I would ask that we try to improve the building code by another three steps so that we don't use so much power.

If we need to come up with a new rate model to accomplish that, then we need to do it so we improve our air. Air is the reason I've seen people leave Utah. I've seen people move out of Salt Lake because of the air quality, and that air quality is driven by the fossil fuel burning.

So let's get behind solar. Let's do everything that we can to encourage it. My husband and I when we came here, we actually moved from Germany

where, as you know, there's a lot of solar.

CHAIRMAN LEVAR: Your time has expired. Would you like to wrap up?

MS. MENZIES: I'm wrapping up. It's not difficult, as other people have observed, to build a house that is net zero, especially if you couple solar with ground-source heat loop.

I would just ask you to get behind solar and not to put up any obstacles in its way. We the homeowners who have bought solar are the ones who have paid for the generation capacity that Rocky Mountain Power is going to need in the future for this doubling of population that is projected to occur by 2030. So that's my statement. Thank you.

CHAIRMAN LEVAR: Thank you. Next is Jeanette Mohlman, followed by Danny Polk.

Ms. Mohlman, are you here representing any organization?

MS. MOHLMAN: No.

CHAIRMAN LEVAR: Would you like to be sworn in or provide unsworn comments?

MS. MOHLMAN: Does it devalue my testimony if I'm not?

CHAIRMAN LEVAR: I don't think so. It has to do with whether you're subject to cross-examination or

not.

--oOo--

JEANETTE MOHLMAN,

testified as follows:

--oOo--

MS. MOHLMAN: Sure. And I do plan to tell the truth. In July, my husband and I put solar panels on our roof. We did that with the intention of providing ourselves a sure source of power that we can afford in the future.

We had planned on being just a small family of two. And due to some unfortunate circumstances, we have a family of five. And affordable energy has become even more important to us in our family life than it was previously.

But our plan was really for the future. As a child, I remember seeing a picture that made an indelible impression on my mind. It was a picture of a child from a European country who -- whose little nose was surrounded by black dust that was caused by breathing air that was filled with coal that they used to heat their homes.

And I just as a child thought being raised in a rural setting in California thought that that would never be an issue that I would need to worry about.

But I've come to realize that having moved here from Arizona, where there was no incentive for solar power, even though the sun shines there more than probably here, but now I am having to worry about what the future is going to be like for people who live in this valley and in Utah.

I'm grateful for the incentives. I'm grateful for the Commission that has allowed us an opportunity to express our concerns and our hopes. And I really want to just reiterate what a lot of other people have said, you hold the future in your hands.

And I'm hoping that the weight of that responsibility is really something that you're evaluating and considering as you make these decisions about whether or not to -- to allow Rocky Mountain Power to implement fees and taxes on people to decrease the incentive of installing solar rooftop systems to subsidize their -- to subsidize Rocky Mountain Power system.

And we are. I just invested $33,000, and they are able to capitalize on my investment by using any excess power that I produce. And I was kind of sad to learn that in March, if I have any credits that I have not used, that those will just be dumped. They'll just disappear. And whatever power I've produced in

excess of what I use, Rocky Mountain benefits from. To me that seems like a little bit of an unfair practice.

I also know Rocky Mountain Power, and I'm not trying to be contentious, has very expensive lobbyists on the Hill. I also know they have very high-powered attorneys that can represent them. We, the little people, who are willing to invest in the future with the hope that there will be sources of power that are not destructive to our community or to our humanity, they have the power to influence people that are in a position to make rules and regulations.

And so I really learned about this just at the last minute and felt like I needed to come because I need you to be my knight in shining armor, and to not only represent me but to represent lots of other homeowners who are invested in the future.

And we need you to help protect our interests because we don't have the resources to do that. So we're depending upon your fairness and your desire to help those of us who want to invest in the future not be punished or suffer the consequences of a bigger, more powerful influence than we are.

So I would just ask you that, that you would take in consideration as you make these decisions about what fees you're going to allow Rocky Mountain Power to

put on people who are making these investments. I would ask you to take that in consideration as you make these decisions. Thank you.

CHAIRMAN LEVAR: Thank you, Ms. Mohlman. Next is Danny Polk. And the next one after him will be Michael Budig.

Mr. Polk, are you here representing any organization?

MR. POTTS: Well, I'm not Danny Polk, I'm actually Danny Potts, but that's fine. You can poke me all you want.

CHAIRMAN LEVAR: I'm sorry. Danny Potts. Thank you for the correction.

MR. POTTS: Yeah. I'll swear.

--oOo--

DANNY POTTS,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you. Go ahead.

THE WITNESS: Thank you. Yeah, I'm a Utahan. I grew up in Rose Park. In the 1970s, I got so excited about solar that I installed a solar preheater on the roof of my parents' house. They thought I was crazy.

But ultimately, it saved them money, and it

got me more into the solar applications. So I just kept doing that all my life. I'm a long-time school teacher at West High School, so I'm not afraid of being in front of people really. And I really appreciate this opportunity.

My wife and I in 1985, that's like 30 years ago, purchased a condemned house in Poplar Grove. And the reason we purchased that house was because there were no trees. It was awesome. As a person who likes solar power, I was like, Oh, cool. So if the neighbors try to grow any trees, we'll just cut them down.

But we didn't have that problem. You know, we live pretty lean and mean. We garden, and I'm basically a modern -- as some people know, I'm basically a modern day hunter-gatherer. So we don't really have a lot of wherewithal if we were buying a condemned house for $19,500 back in the day, but it was because we wanted to put solar panels on that house.

Well, after all these years, we finally have the opportunity we thought to put those panels on that roof and finally start plugging into the grid in that way and -- and really realize a dream, a 30-year dream to move forward with that idea.

And now all of a sudden, we're feeling like we're de-incentivized to do that. She's the

breadwinner. I just play. I just teach. And I have a fun time at it. But basically this is pretty catastrophic, this whole idea of de-incentivizing the public to not put panels on their roof.

You know, we don't have to put panels on our roof. But like many people have already said, it's kind of the right thing to do. And educated as an ecologist, master's degree and all that, you know, it just seems like this is all going the wrong direction. So I just want to say that I really appreciate the time and that I think you guys will do the right thing. Okay. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. Potts.

THE WITNESS:

MR. POTTS: If anybody wants to throw tomatoes at me, I'll be out in the middle of the football field at West High School at halftime.

CHAIRMAN LEVAR: Thank you. The next two are Michael Budig, am I saying that right?

MR. BUDIG: Budig.

CHAIRMAN LEVAR: And Carolyn Clark.

--oOo--

MICHAEL BUDIG,

testified as follows:

--oOo--

MR. BUDIG: Yes, my name is Michael Budig. And I live in the Glendale neighborhood. And we have 34 panels on our roof. We've invested over $25,000 after rebates in the last five years of our own money in solar power because we know it's the right thing to do.

My calculations show that it will take me something like at least 19 years to repay this investment without any interest or dividend. So it's never really been a financial incentive, but it's the right thing to do. And we plan to add even more panels in the next year or two.

Thanks to the spread of solar, the costs have come down and will continue to drop dramatically. The same thing is now happening with battery powers as backup systems.

The Rocky Mountain Institute in Snowmass, Colorado has done great work in energy research and innovation. They've also been incredibly accurate in forecasting future trends.

In their recent paper, "The Economics of Grid Deflection," they have projected that the cost recovery system under which utilities traditionally build power plants and reduce power and recover cost is gradually becoming obsolete.

And within the near future of 10 to 30 years depending on where you live, off-grid systems of solar with battery backup will become the cheapest alternative for many and possibly most power consumers. The power companies will become power managers rather than producers and sellers.

This can produce new opportunities for enlightened power companies, such as Green Mountain Power in Vermont, or the power companies can choose to try to stand in the way of this future tidal wave.

In Arizona, there was a proposal for a $50 charge for solar producers. This was eventually whittled down to $5 a month by the Utility Commission, but even this has caused a dramatic decrease in rooftop solar additions.

The power companies achieved their goal of killing new solar by adding a huge element of uncertainty to the market. If they can charge $5 a month today, what's to stop them from increasing this to $50 a month tomorrow?

This is the uncertainty that Rocky Mountain Power wants to add to the equation so new solar projects are killed. The PUC should deny this proposal and say no to the solar tax. Thank you.

CHAIRMAN LEVAR: Thank you. Next will be

Carolyn Clark, followed by Ken Schreiner.

Ms. Clark, would you like to be sworn in?

MS. CLARK: Sure.

--oOo--

CAROLYN CLARK,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Are you representing yourself?

MS. CLARK: Myself.

CHAIRMAN LEVAR: Thank you.

MS. CLARK: My husband and I have spent about $30,000, not counting tax -- after-tax rebates, on putting solar on our house. And we currently produce more than we use, so we are basically giving power to Rocky Mountain Power.

We have a bank of panels that faces directly -- they face in many directions, but one faces directly west. It is a real powerhouse during peak hours. And all of our nearby neighbors benefit from that.

So I'd like to speak to a couple of reasons why we did this. One is we love our state of Utah, and we believe that -- we know that Utah has the location

and the capacity to be really a world leader in solar. The question is do we have the smarts? I trust that you do have the smarts.

And we need to take this opportunity to be a world leader and not slink to the bottom of the pack. That's very embarrassing to us as others look at us who might want to come here to live.

The other reason is it's part of our retirement plan. We're senior citizens. I get no pension. We'll -- very soon we'll be transitioning into living on Social Security.

We put this money down as a down payment. We trusted that it was going to reduce our power bills enough that we would be able to easily cover all our expenses in retirement. I never want to go on public assistance to pay my bills.

And I please ask you that you consider those of us who are going to be on fixed income and not pull the rug out from under us when we've been planning all along that this is our -- our way to contribute to -- to our own retirement and not being dependent on others. Thank you.

CHAIRMAN LEVAR: Thank you, Ms. Clark. Okay. Next two are Ken Schreiner and Kyle Oram.

Mr. Schreiner, are you here on behalf of an

organization?

MR. SCHREINER: I'm on behalf of myself and my business.

CHAIRMAN LEVAR: What business is that?

MR. SCHREINER: It's a video production business that I run out of my home, which is also my office.

CHAIRMAN LEVAR: Thank you. Would you like to be sworn in?

MR. SCHREINER: Yes.

--oOo--

KEN SCHREINER,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

THE WITNESS: Thanks, again, for the opportunity to speak to you and to everybody here tonight. My name is Ken Schreiner. I live and work at 2260 Lake Line Drive in Salt Lake City. My wife and I moved to Utah in 2006. She is a teacher, and I'm the sole proprietor of the aforementioned video production business, which I run out of my home.

We were concerned before we moved to Utah about the air pollution problem and rising utility

costs. That's why we decided beforehand that we would outfit our new home with solar power.

Because of Utah's excellent solar footprint and our unique property characteristics, we elected to build a pole-mounted 2 kilowatt array that tracks the sun, increasing the power production up to 40 percent.

When we went to the city engineering department to get the permits that we needed in 2006, they didn't have any regulations regarding pole-mounted arrays like the one we proposed. However, they were receptive and eventually approved our project by zoning it as a shed. Not kidding.

It started operating in 2007 and has been net metered ever since, and we added solar hot water in 2010. Our system can power our entire home and my business, but we chose to also use grid power from Rocky Mountain Power because they too were initially receptive and cooperative in the installation of the net meter in 2007.

We believed they felt, as we do, that our system was a good thing for everyone, including them. There was no indication of any objections until recently.

I won't speculate on why their position changed. I will say that our solar power system has

worked flawlessly for more than eight years, prevented an inestimable amount of pollution from going into our air and water, saved a lot of RMP's power for others, and motivated our neighbors to explore renewable energy too.

Something else to consider. In the last few weeks, Rocky Mountain Power has been working in our neighborhood updating their old equipment. This has resulted in three days of power outages ranging from four to eight hours each, but I was able to keep working and meeting my customers' needs because solar power prepared us for such an emergency.

Emergency preparedness is an important function of solar power. Why the state and RMP would want to discourage that is also something I won't speculate on. Paying questionable fees for producing our own power and sharing it with our utility company seemed inconceivable in 2006.

But because of the new hostile, continuous, and well-moneyed attacks on renewable energy, we're reevaluating our efforts and whether Utah is the right place where we want to continue living and paying taxes.

We're just two people trying to do the best and right things. We don't have the time or money to

battle Super PACs, conglomerates, and ambitious politicians. If Rocky Mountain Power can arbitrarily change its position on renewable energy, then we'll be forced to change our minds about not only them, but about the logic of living in the state with needlessly rising utility costs, worsening air and water, and where the positive contributions of its citizens are ignored, discouraged, or in this case punished. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. Schreiner. Our next two are Kyle Oram, followed by David West.

Mr. Oram, are you here on behalf of any organization?

MR. ORAM: I'm employed with Auric Solar but representing myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. ORAM: Sure.

--oOo--

KYLE ORAM,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. ORAM: All right. Well, so I want to

start off by saying thank you again for what took place here last year in paying attention to what was said and giving I think the public more time to -- for this issue to be considered.

I started working in solar almost five years ago when it was a very new industry to Utah, but was able to get involved and, through that, gain a lot of very valuable business and sales experience. That's really just had a huge impact on my life.

What I want to talk about is the relevance of the business development in Utah to the conversation. We talked about the benefits of solar and the amount of -- the experience that people are able to get selling something that isn't security or pest control. It's something I think great for our young people to be able to engage and very important, I guess, to our economic development overall.

I represent also, I suppose, dozens of people that I've served in getting helped set up with solar. And I can tell you that one of the concerns that people often raise is, you know, that uncertainty of what is it that Rocky Mountain Power could do to me to change the situation.

And what I always have fallen back on is explaining that, you know, you guys are the -- you're

the hero. You're the Batman. You're the one who's there to make sure that any policy that does go into effect is going to be fair to these people.

And so that's my hope is that I think some really great points have been made here today, and that those points will be taken into careful consideration as you move forward on a policy that's going to benefit Utah and benefit and continue to benefit the people that have chosen to be pioneers in this investment in our future.

I think we're a state that is proud of our pioneer heritage, and that clean energy is a new frontier. And we should take care of those people that have been among the first to be a part of it.

CHAIRMAN LEVAR: Thank you, Mr. Oram. The next two speakers are David West and Corey Henderson.

Mr. West, are you here on behalf of any organization?

MR. WEST: Myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

--oOo--

DAVID WEST,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. WEST: I'm a Utah resident for about 30 years, grew up in Southern California. And I've helped establish two public companies here. One is a renewable energy company building geothermal power plants here in the state, and an electric vehicle company, now part of General Motors.

Over this period of time, trying to raise capital from the private sector to do the right thing has been very risky, very challenging, and it's been a long haul.

Working with General Motors, I've come to the conclusion that they will always do the right thing as long as we give them no other choice. So this often happens with large institutions.

The Public Utilities Commission or Public Service Commission, you're here to serve the public interests. And it's very clear that it's in the public interest to get to President Obama's Clean Power Program goal, which is a 33 percent RPS for the entire nation, which has been a voluntary program in different states.

In the home state of California where I grew up in, it's been a very successful program. My wife's

from Germany. On a recent trip to Germany, we noticed that there was solar installed everywhere. I asked, How much solar is actually in production here now? It's over 50 percent of the nation's generating capacity now is coming from solar energy in the summer.

This is a real thing that we can do. We can meet the RPS goals of this country. Utah is in a position with the best geography to generate solar power of any other state in the nation. We are at a high altitude that has cool air, and we have a lot of long hours of daylight.

We're better than California, better than Arizona. We should be a leader in solar energy. Rocky Mountain Power should be a leader in distributed energy.

In all my work in Washington, D.C., I've talked to many people at the Department of Energy. And what's happening in the movement towards our next generation of energy development for this country, energy that doesn't have the carbon tax in it, energy that doesn't have a high carbon content that is a liability to both the climate and to the public, is we talk about distributed energy. It's like the same thing that's happening in other forms of -- of business.

The Public Utilities Commission grants monopolies to certain industries for the public good. The telecommunications industry, Ma Bell used to be granted a very, very strong monopoly because it was needed for us to have telecommunications. When Ma Bell was broken up, things like microwave telecommunications, MCI early in the early years, led to cellphones, which led to the revolution that we all have now from going from centralized information to decentralized information. This has created the benefit that we all have now.

Now, the power generation is going -- that's a similar monopoly that we've allowed is going through the same evolution in business. It's going from centralized models, one power plant sold to many people, to a decentralized model, where people are willing to put their own money into their own power plants, put them on their own rooftops, and hand the power over to a distributing company, who can make profit from that.

Now, we've seen what's happened to the most powerful company in the world right now, Apple Computer and others, who are working on the decentralized model. This needs to be incentivized instead of penalized. If I look at it, it's almost like big tobacco is going to

the FDA and asking for a tax on all the people who quit smoking to pay for the lost revenue. That's what it seems like.

So if we're going to try and hit our RPS goals, if we're trying to reduce our carbon content to meet the international commitments we've made as a nation, we need to be incentivizing those people who are stepping forward on private money, on their own capital, and taxing the polluter, all those people who don't put solar on their house, instead of the ones that are putting solar on their homes.

So I leave it in your hands because it's your job to consider the needs of both the private sector, who fulfill their business obligations to the community, and also the community's public interest. Put the tax on the polluter, not on the clean energy providers. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. West. Our next two are Cory Henderson and Drew Lewis.

Mr. Henderson, are you here on behalf of any organization?

MR. HENDERSON: No, I'm here on behalf of myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. HENDERSON: I do.

--oOo--

COREY HENDERSON,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. HENDERSON: My name is Corey Henderson. I drive an electric vehicle. I have a rooftop solar on my home in West Jordan. I'm an IT engineer. Now, the way I interpret this net metering tax is a question of are we pricing solar power generation correctly? Well, if we're going to ask that question, we need to ask the reverse. Are we pricing CO2 generated by the grid correctly?

Now, one thing that I ask is that you quantify the cost of the bad air quality that the grid contributes to by burning hydrocarbons. Here in Salt Lake City, we have plenty of red air days every winter that contribute to what I would just call a public health hazard, and there are a lot of medical bills associated with that.

As it currently stands, the power generated in Utah is relatively cheap compared to the rest of the nation. But it comes at a great cost. And that cost

isn't borne by the utility company, it's borne by the people who have respiratory issues as a result.

So photovoltaic solar panels do not release CO2, and yet there is this effort to penalize it when it ought to be the other way around. But if we can't price CO2 correctly, the very least we can do is not penalize power generation that does not emit CO2. And that's all I have to say.

CHAIRMAN LEVAR: Thank you, Mr. Henderson. Next speakers are Drew Lewis and Bob Brister.

Mr. Lewis, are you here on behalf of any organization?

MR. LEWIS: No, here for myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. LEWIS: Yes.

--oOo--

DREW LEWIS,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. LEWIS: My name is Drew Lewis. I live in Layton, Utah. I'd like to thank you for allowing us to speak today. Heard of lot of very interesting things,

facts that I didn't -- wasn't aware of.

But I have solar panels on my house. They were installed last month. And I got the report from the solar panel company. Interestingly, they break it down into power, and they also say after one month, I've done the equivalent of 21 trees planted. That's 250 trees in a year, which is amazing to think that you can put something on your roof that will actually displace CO2.

It's basically -- it's changing the environment. And anybody can do this with their house. And at the end of this year, they're going to start rolling back the incentives. So it will be less advantageous to put solar panels on your house. The federal credits will be cut in half.

And other states or surrounding states, like if you go to Idaho or Colorado, they give better incentives, so you see a lot more solar panels on roofs. I went to Colorado last month, and there's a noticeable difference once you cross the state line. You get into Colorado, there's a lot more solar there.

It's because of better incentives. Incentives are what drive people to make choices. This rate change where they're going to penalize people for putting panels on their roof will disincentivize

putting panels on the roofs. You'll see less -- even less panels put on roofs.

I think it's a good move to put solar panels on your roof. It reduces the carbon footprint. It cleans the air because obviously we're displacing trees. They're adding more trees, equivalent of adding trees.

Personally, I like to run. I run ultramarathons. It's very difficult to train in the wintertime here. The air is so bad that unless you drive to Park City or go up to Snow Basin or one of the ski resorts and get above the level of filthy air, it's unhealthy.

They even tell you on the news, Don't go outside. They tell the kids, Don't go out for recess during the day. That's not a society. That's not a place I want to live. Frankly, I won't stay here if it gets any worse. Even businesses are talking about leaving Utah because of the air quality in the wintertime.

Now, we can change this. We can change this. And you have it in your power to make this change in a very powerful way by making it more advantageous to put solar panels on your roof and clean up the environment. So thank you very much for your time.

CHAIRMAN LEVAR: Thank you, Mr. Lewis. We have Bob Brister next, followed by Deb Henry. We'll probably take a break after those two.

MR. BRISTER: Hello.

CHAIRMAN LEVAR: Mr. Brister, are you here on behalf of any organization?

MR. BRISTER: Just myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. BRISTER: Please.

--oOo--

BOB BRISTER,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. BRISTER: I'm very supportive of rooftop solar, and I'm generally in support of solar in general. But solar has to be done right. And rooftop solar is definitely the way to go.

We've seen in some other states that they've been using large tracts of land to do centralized solar projects. Like I know, for example, there's one in Nevada. I think that's the wrong way to go. We don't need to have our landscapes torn up. We don't have to

lose wildlife habitat.

We can get what we need through solar, through rooftop solar devices. That's why I'm very much in favor of doing all we can to promote rooftop solar. And I would very much appreciate anything you can do to do so and to help clean up our air and increase our energy sufficiency and self-reliance. Thank you very much.

CHAIRMAN LEVAR: Thank you. Deb Henry.

UNIDENTIFIED WOMAN: She had to step out. Can she be put at the end, please?

CHAIRMAN LEVAR: Sure. Nia Sherar.

MS. SHERAR: Hi.

CHAIRMAN LEVAR: Are you here on behalf of any organization?

MS. SHERAR: I'm -- I'm with -- I'm a member of UCARE, but I'm here representing myself.

CHAIRMAN LEVAR: Okay. Would you like to be sworn in?

MS. SHERAR: Yes.

--oOo--

NIA SHERAR,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MS. SHERAR: So I'd just like to show you a picture of me on my rooftop cleaning the snow off my solar panels. So I'd like to thank you also for giving us the time to testify.

And I have a 3.1 rooftop solar system that's been on for about two and a half years. And we give our excess power to neighbors and friends. And I like -- I like the thought that I'm giving that green -- putting the green power into the grid. I don't care about getting reimbursed for that.

And I doubt that I would have installed the solar if there had been the solar surcharge at the time of installation. And it's difficult for me to understand how I could go from being a thrifty electric customer with about a $20 monthly electricity bill and be of little concern to Rocky Mountain Power.

And now as a surplus producer of clean renewable energy with a $10 base rate electric bill, now I'm -- I'm being targeted by what amounts to about a 50 percent rate increase due to the proposed net meter fee. So I was a small consumer of electricity before, now I'm -- and I wasn't a concern. And now I'm even less, and now I'm a concern.

And I think rather than singling out a

portion of Rocky Mountain Power's customer base to cover voided costs that don't exist, it would be far more productive to shift the focus to the antiquated electrical rate structure itself, as it is clearly at odds with society's existential interest in transitioning to a clean renewable energy future.

By shifting the way that Rocky Mountain Power recoups its costs from a per-kilowatt basis, where more consumption equals more profit, to a per-customer basis, where less consumption equals more savings and, thus, more profit, both Rocky Mountain Power and distributed solar energy producers could be incentivized to work together to create a 21st Century electric grid.

We can protect a utility's bottom line and society's, but Rocky Mountain Power assault on solar energy producers would do neither. Instead, it would constitute a capricious form of denial of the global challenges we face in 2015 and beyond. It's time to think outside the grid.

I think cleaner energy -- cleaner air makes for a healthier society, improves tourism, corporations coming to Utah for job creation. So I ask that you please consider these areas as well, and including the hard numbers that show solar's values are -- the hard

numbers that show that solar's value is -- those numbers that are provided by UCARE, Utah Clean Energy, and the Sierra Club.

I'm not able to come up with those numbers, which I think by law you're supposed to look at, and I don't know if our personal opinions by law you're required to look at. But I ask that you consider what we're saying along with the hard numbers. So thank you.

CHAIRMAN LEVAR: Thank you. We'll take a brief 10-minute recess at this point. Just to let those know who will be next, has Ms. Henry returned? We could have her next if she's back. Okay. Doesn't look like she is. The next two on the list are Stanford Neering and Ray Klukoske. We'll be in recess for about 10 minutes. Thank you.

(Recess taken at 6:56, resuming at 7:10.)

CHAIRMAN LEVAR: Back on the record. And we'll just continue on with where we were. I'll just ask one more time, has Ms. Henry returned, or shall we put her back at the bottom?

Okay. Then the next is Stanford Neering, followed by Ray Klukoske.

Mr. Neering, are you here on behalf of any organization?

MR. NEERING: No.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. NEERING: Yes.

--oOo--

STANFORD NEERING,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. NEERING: I'd just like to say I had my rooftop panels installed about a month ago, and --

CHAIRMAN LEVAR: If you wouldn't mind getting a little closer to the microphone.

MR. NEERING: I'll sit down. I had my rooftop panels installed about a month ago and haven't seen my first bill yet. It's probably home in my mailbox. I'd just like to say that I decided to do that. I'm one of these people that has lung problems. And every time there's a red air day, I just cringe when I get ready to go outside because they say you're supposed to stay indoors if at all possible.

And, you know, I'm just trying -- I've got my panel. I'm just trying to do my little part because I like those clean air days. And I'd just like to ask

the -- the Commission -- Rocky Mountain Power to kind of do the right thing.

I don't feel that it's fair to penalize people like me that -- I'm just trying to do my part to -- maybe I'm selfish. But, you know, the cleaner the air is, the better I feel. Just ask that, you know, that they be fair and to do the right thing.

CHAIRMAN LEVAR: Thank you. Our next two are Ray Klukoske and Benjamin Jordan.

Am I pronouncing your name right?

MR. KLUKOSKE: It's Klukoske.

CHAIRMAN LEVAR: Klukoske. Okay. Are you here representing any organization?

MR. KLUKOSKE: Just myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. KLUKOSKE: Yes, please.

--oOo--

RAY KLUKOSKE,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. KLUKOSKE: My name is Ray Klukoske. I've been interested in solar power since I was a young kid.

I always thought it was just a real cool idea to begin with. Over time as our energy needs have changed and global warming has become a reality, just seems like a good idea.

So I was able to put solar panels on my roof this spring. I was really excited about that, that it was -- the cost had finally come down that it was a viable option for me, as a lot of people.

The cost came down just -- as the technology has improved, the costs have come down. And then obviously the state and federal tax incentives have helped make solar a reality, rooftop solar a realty for a lot of people.

Like I said, I'm a little confused that we're even here having this conversation today because I know that Rocky Mountain Power has a lot of incentive programs to encourage people to use less electricity, get better appliances that use less electricity.

I even use less electricity during peak demand hours. They have programs to put rooftop solar panels on house. I don't understand why they've sort of changed their tune all of a sudden. We are going to charge people suddenly for something that we were previously encouraging.

Rooftop solar obviously produces electricity

during peak demand hours. That's a time when a lot of people are using electricity. Rooftop solar has to assist the grid. That's less power that Rocky Mountain Power has to create because people are producing their own and actually overproducing during those hours so that they can go to the grid and help other people, help spread out the costs and demand of the grid and the coal and gas power plants.

In fact, I understand a lot of the -- of the West Coast, a lot of electricity during peak demand times is bought from Utah or from Rocky Mountain Power at extremely high rates, a lot higher than what I pay for my electricity.

And yet I'm just -- you know, I'm producing electricity during that peak demand for the grid. And it's -- I'm just trading it for electricity that I'm using later at low-demand times.

I'm not asking that I get paid for that difference. There are whole industries that function on that, like pump storage facilities that function on buying cheap power and selling it back. I'm not asking to get paid. I'm just asking that I don't get charged extra for doing something that seems like it's a net gain for Rocky Mountain Power. That's all.

CHAIRMAN LEVAR: Thank you, Mr. Klukoske.

Our next two are Benjamin Jordan and Tom Mills.

Mr. Jordan, are you here on behalf of any organization?

MR. JORDAN: Just myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MR. JORDAN: Yes.

--oOo--

BENJAMIN JORDAN,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you. Go ahead.

MR. JORDAN: All right. Okay. The public perception is that solar is still too expensive. As a matter of fact, I live in Glendale. We have a lot of low-income families and middle-income families. That is true. It is too expensive.

A lot of the families in my neighborhood, including my own, we get a lot of federal tax deductions for having children. More affluent families can benefit from these tax incentives. You don't see a lot of people represented from this group tonight because they just can't afford it.

Speaking of costs, I have become a proponent

of distributed power generation as opposed to these large megawatt farms. I think it's great. I think we need all the solar that we can get. But there are some costs.

So, for example, these large solar farms, what is the cost of plowing the ecosystems and fencing them off? And people have talked about the trees that they save, you know, when they look at their meter. You're not saving any trees on these lands that have been used, taken away from ecosystem services.

What is the cost of running thousands of miles of lines through national forests, farms, and open spaces? We also do environmental site assessments on those things, and those are very expensive reports to do.

Mercury from primarily burning coal can now be measured in every water body in the United States. I sample for mercury monthly on my job. What's the cost of cleaning that up? These costs are quantifiable though. These are not ethereal things.

I have an Associates in Science and Environmental Technology. I formerly worked in industrial site remediation, environmental compliance, and I still do sampling.

During the economic downturn, I thought I

would change careers, and I got trained in through the Utah Energy Sector program. We studied all forms of energy, not just renewables, but I did go through the advanced PV design and installation courses.

When I completed that, I looked for a job. There was one job opening that I found that was advertised. And then the company before my interview was sold. They disbanded that.

But now if you look around, there are dozens of these small companies. And that's just because of the cyclical nature of not knowing where the regulations are going to come from next. It's sort of -- it's unstable. And for somebody who's looking for a good job, it's a hard field to enter into.

Supporting distributed power creates steady jobs and not a boom-and-bust economy. I personally still manage to use my skills and design and install a couple roof systems. My personal family's residence, we have an east-west exposure, and we covered every inch that we could of our roof feasibly.

We personally -- we paid for the design, the components, the labor, the permit, the insurance, the maintenance, the cleaning, and eventually we'll pay for the disposal as well. These are all avoided costs that Rocky Mountain Power does not have to pay, and they are

quantifiable.

Last year we've had -- after first year of installation, we gave back about 750 kilowatt hours. And for our family, that was about two months of use. And we still pay that base -- all the base fees of approximately $10 a month. Rocky Mountain Power also gets renewable energy credits from our generation of our system. And I know that there's a market for that that I don't participate in. I signed those away.

But if -- if this Commission is going to pass any fees on to just solar producers and renewable energy producers and not to all power users and consumers and not set that price point where people want to actually save power, we're just going to spend another couple of grand and get the battery backup system and take ourselves off the grid. And obviously that done en mass would not be a sustainable model for Rocky Mountain Power either.

So I ask that you consider these things. And I'm happy to take any questions. The lawyers are not asking questions, and I'm not sure if that's living up to due diligence. But that's all I have to say.

CHAIRMAN LEVAR: Thank you, Mr. Jordan.

Our next two are Tom Mills and Ryan Perry.

MR. MILLS: Hello.

CHAIRMAN LEVAR: Mr. Mills, are you here on behalf of any organization?

MR. MILLS: No. I'm just here as a pragmatic visionary.

CHAIRMAN LEVAR: Thank you. Would you like to be sworn?

MR. MILLS: Please.

--oOo--

TOM MILLS,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. MILLS: My name is Tom Mills. In 1987, I wrote an article on the greenhouse effect. And the warning signs were there then, and here we are today. Net zero clients in Utah pay $108 a year for their connection fee. That never goes away.

If approximately 4,000 homes are currently installed with that, they are collectively paying $432,000 per year for their -- their part of being tied to the grid. They're not using the energy, but they're still charged and they're connected, $432,000 per year. I guess an explanation as to what those fees actually cover would really be appreciated on behalf of all of

those who have solar on their roofs.

If Rocky Mountain Power is truly concerned about grid maintenance costs when it comes to rooftop solar, then they must look at overall costs. They should be obligated to buy back overproduced power from rooftop solar based on keystone pricing, a model that is used in retail industry. And basically what that is they get to buy back at half of the going rate.

RMP, I use that acronym a lot, sorry. Rocky Mountain Power would now have a kilowatt hour in which they can profit without having to induce any of the costs in producing that kilowatt hour.

Think about that for a moment. No heavy machinery to harvest that additional coal out of the ground, reduced scarring of the earth, no trucks to transport that additional coal to where it needs to go, and, most importantly, all of the CO2 saved in this infrastructure process not only from these steps but also from that additional burning of said coal.

If you look at the big picture, a long time ago the whale industry had to go through a transition. Everything was powered by whale oil. And then the fossil fuel industry came along. And it was an improvement for everyone, improved their lifestyles. It allowed for the Industrial Revolution to take place.

Well, it was great, but we are now at another crossing point. We're looking at another energy revolution. And not only should this tariff/tax be rejected, we should be reviewing, revisiting the way we view the grid. The grid should now be based, maintained independently by a tax because you now have legitimate economic energy sources competing for access to this grid.

By doing so, Rocky Mountain Power -- a coal company should then have to compete for access to this grid. They didn't -- they didn't start the grid. They didn't build it. Somewhere along the line, they were handed the keys to maintain it. And that's been greatly appreciated by all of us who have gotten power at our homes.

But everything goes through a change. A change can be painful. That's where we are now. Everyone should be competing for access to the grid at a fair market price competitively with the grid being maintained by a tax independently. The coal companies should not be guarding access to that grid. Thank you.

CHAIRMAN LEVAR: Thank you, Mr. Nelson. Our next two are Ryan Perry and David Harris.

MR. PERRY: Hello.

CHAIRMAN LEVAR: Mr. Perry, are you here on

behalf of any organization?

MR. PERRY: I'm here on behalf of myself. I do work for Auric Solar.

CHAIRMAN LEVAR: Thank you. Would you like to be sworn in?

MR. PERRY: Yes, please.

--oOo--

RYAN PERRY,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you.

MR. PERRY: Just go ahead?

CHAIRMAN LEVAR: Yes.

MR. PERRY: All right. Thank you for having me out. I have worked in solar specifically for a year and a half, having worked in backup power generation for hospital and data centers prior to this.

Before I decided to get involved in residential or commercial solar for that matter, I had long been perplexed by the question, which is if a power company, which is in the business of creating power, has the economies of scale that a homeowner can never hope to have, why is it that Rocky Mountain Power isn't doing it, at least not in a large scale?

And it didn't sit well with me for quite a while until I realized that across the nation, around the world, there are quite a few utilities that are leading the charge so to speak. It is Rocky Mountain Power that seems to be a little bit behind the times with it.

To be fair, I don't necessarily fault them to want to make a profit. We're all in this together. We want to feed our families and everything. This morning I had the opportunity to meet Cindy Crane, the CEO of Rocky Mountain Power. Actually, she's a very delightful woman. Their customer service is wonderful to work with when we call in to help a customer size up a system.

But there is an incentive alignment issue. What I realized is that by merit of their relationship with Berkshire Hathaway, PacifiCorp, it also is heavily vested in fossil fuel-centered infrastructure. They have some costs in the billions of dollars, and they cannot just walk away from that. So it makes perfect sense that they would want to try to maximize their return on investment.

So looking at the current situation, in their statements they've indicated that the fixed cost doesn't really cover the cost of maintaining the grid.

So when a customer goes solar, they feel that that customer should, therefore, pay a little bit more.

The problem I have with this is, first of all, why didn't they structure it right in the first place? I can only assume that it's because of financial incentives, not necessarily incompetence. They want to make money.

But when we're looking at the analysis, do we want to have them determining the scope of the analysis that can be done when there's obviously a vested interest that they have there?

Throughout the meeting tonight, we've had a number of people talk about air quality. And quite likely Rocky Mountain Power will point out the fact that a lot of the air quality issues come from cars, and they will try to dismiss that.

But if we're looking at the long-term benefits of solar to our state, to our society, you realize that the sun really is ultimately the sole source of power on the planet. All the wind, fossil fuels are just indirect derivatives of solar power either from recent or millennia ago.

And we could quite literally run all of our energy needs in Utah or around the whole world very easily. We could do it using just rooftop and covered

parking lots. We don't even have to tie up all this other land.

We do have to develop the energy storage technology. But by imposing fees that seek to maximize the short-term gains, they're missing the whole point that down the road, we have this opportunity that we would be foregoing effectively, the opportunity cost, by looking at only the short-term gains.

So while you're looking at this, I certainly hope that you'll consider that they do clearly have a vested interest. I recognize that we all want to feed our families. But for the benefit of the decades to come with all the cars, the transportation, we can clean up the air pollution if we take a much more long-term approach and consider the impacts of discouraging solar, that we'll look more towards our future and encourage policies that are going to foster the development of solar, not just for powering our buildings, but also for our full infrastructure with the transportation as well. Thank you.

CHAIRMAN LEVAR: Thank you. Our next witness is David Harris, and then after that we will return again to Mr. Steve Glines, who spoke to us earlier.

Mr. Harris, are you here on behalf of any entity or organization?

MR. HARRIS: Just myself and my family.

CHAIRMAN LEVAR: Would you like to be sworn in.

MR. HARRIS: I'd have no objection to it.

--oOo--

DAVID HARRIS,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Thank you. Go ahead.

MR. HARRIS: Okay. My name is David Harris, and I live here in Salt Lake City. I grew up in Provo. I apologize. I'm going to mostly be looking at the back of this envelope rather than making eye contact with you just because I had short notice about this meeting, and I want to speak intelligently.

I think that Rocky Mountain Power has done kind of a poor job explaining why a solar surcharge is needed because they've not stated their case very clearly. For a long time, every time I've read an article about this, I've said to myself, Wait, I'm paying the basic fee, I'm paying the minimum fee, I don't understand.

Those are the costs that they claim -- you look at their website, and those are the sites that --

the costs that they claim pay for the maintenance of the grid. So I haven't really understood that. But then recently I read an article in the City Weekly that made me better understand where they're coming from.

They quoted in this article a Berkeley professor, I don't remember his name, I'll send you a link to that article. But basically he explained that two-way metering requires better diodes to regulate the flow. I know a bit about electricity, so I understand that.

I don't understand exactly where -- everywhere in the line those diodes need to be placed, in other words, how many of them there would need to be, but I do understand that there's a cost. One of these diodes currently costs something like $1,000 to $2,000. The new ones that make for better flexibility on the grid cost on the order of 15,000.

So I understand that. I don't remember those exact figures. But this same professor acknowledges that these components are necessary to modernize the grid, in other words, to create flexibility needed to more efficiently utilize all the available sources.

One of these sources is solar. A lot of these other sources haven't been thought of yet. For example, the other day in the -- in a magazine, I read

about a dance club in Holland that runs their lights off of the stomping up and down of the dancing on the ground. Who knows what some of these other sources may be.

If we don't have an updated grid that can handle this passing back and forth of power, we can't take advantage of that. And everyone benefits from that. So, therefore, I don't understand why everyone shouldn't be paying the cost. Why should solar -- why should solar customers bear that cost? Makes no sense to me. We've already invested in our -- in our hardware to generate the power. So why hit us with another fee?

And then, finally, I just want to mention a couple things. I don't know much about retail, so I don't understand keystone pricing. But I did want to point out that earlier in the testimony, they did talk about how peak power, power that's generated at peak demand time, is worth more than power that's generated at other times.

So effectively this keystone pricing -- and, again, I don't understand exactly how it works -- it's automatic, right? Because the power that's being generated when the sun is up is -- everybody acknowledges that that power -- the power generated at

that time is more valuable because there's more demand for it.

The other thing that I wanted to respond to was I had followed these fees -- for example, in Arizona and Wisconsin, they've implemented these fees. And a fellow mentioned that in Arizona, they had whittled it down to $5. I wasn't aware of that. I thought that I had followed that pretty closely. All I understood was that it had been approved at $50. So I need do more research obviously.

But my concern I think is that if Rocky Mountain Power wants to implement a fee for four or five dollars now, they're just trying to get their foot in the door. And they're going to be asking constantly for an increase in that price. And really that's all I have to say. Thanks for letting me present.

CHAIRMAN LEVAR: Thank you, Mr. Harris. I want to invite Mr. Glines to return and speak to us for a few more minutes. Then after him, we will call Mr. Moench, who was on the list earlier today.

--oOo--

STEPHEN GLINES,

returned and testified as follows:

--oOo--

MR. GLINES: I have a couple questions if I

can beforehand. One of them, I would like to know if the renewable energy credits garnered by Rocky Mountain Power -- are they reflected in the cost-benefits -- in the benefits?

CHAIRMAN LEVAR: Questions like that are probably better addressed to other parties after the -- after the hearing.

MR. GLINES: All right.

CHAIRMAN LEVAR: This isn't a cross-examination.

MR. GLINES: I would like to know -- I would certainly expect that they would be included in the benefits of the cost-benefit analysis, the renewable energy credits.

I'm sure you've all heard the phrase "if you don't have your health, you don't have anything." This certainly goes towards your next breath. That's the very top of Maslow's laws. If you don't have a viable atmosphere, profits don't matter that much. They're much farther down on the scale.

And as you allow us to come and testify, you can probably hear increasing passion of the customer base on this topic. And if you hear -- see the polls, statewide polls, that concern is increasing and increasing the cost of continuing to fill the

atmosphere with CO2 and mercury from coal and the energy generation.

What I see developing, and I'm wondering -- I would counsel you to include it in your cost-benefit analysis is the public image of PacifiCorp. There's developing what looks to me like a severe image problem over this. It looks like it's a conflict of interest to many people, self-serving analysis and results that may come from it, a decision, look like they're not objective to many people.

It looks like it's a -- a paradox compared to the Blue Sky program. I would recommend that you also include that in the cost, the image of making the wrong decision.

Of you that have legal backgrounds, I would suggest that you might consider the cost of potential liability if the next generation looks at their atmosphere and looks at their mercury levels and looks back for culpability, who profited from burning all this coal? Where did the profits go to that created their problem? You might want to include the liability, potential liability in that cost scenario, that cost formula.

There's maybe some liability that ought to be included in making the wrong decision. But I'll tell

you, there's also some benefits that I see in the public image and customer appreciation, customer confidence level, the benefits of making the right decision, of making -- of stepping forward and becoming leaders.

We can't always expect the corporation to make the best decision if it rubs against profits right away, particularly quarterly or annual profits. But we do need -- expect that from the leaders, the gatekeepers of the public interest.

I think that's where you guys lie and maybe the public service -- they're the gatekeepers. We expect them to raise above the corporate quarterly profits and look at the big picture.

And the benefits of stepping up as a worldwide leader like Germany has, if Utah could take all those extra clean energy credits, fill the grid with it, and let anybody who wanted to put a solar farm out there add to the grid with clean energy and buy it at a good competitive rate compared to anywhere else and then resell it at a profit, and if you were to expand, vastly expand the amount of clean energy run through this grid, you would gain worldwide attention.

And Rocky Mountain Power would get worldwide national claim ongoing if they became a leading state

instead of a lagging state. And if we could get all the institutions and the governments, like the University of Utah has done, fill all its rooftops up with clean power, you'd be on the nightly news with more notoriety and claim than we were for our leadership in the -- our role in the 2002 Olympics.

It would be consistent with our state image of a clean family culture, consistent with our state image of stewards of national parks, world renowned fame. It would be consistent with our image of an outdoor recreation state, in which you really can run in the winter and not fill your bronchial tubes with carbon.

It would be consistent with where we want to be. And it would be good for -- good for business climate, reputation. We're supposed to be good for business. It would be good for business. Take a leadership role and become the heroes and not look like the villains.

CHAIRMAN LEVAR: Thank you, Mr. Glines.

MR. GLINES: You're welcome.

CHAIRMAN LEVAR: Okay. Sherry, can you try to -- do you have the telephone number for Mr. Moench?

(Telephone call placed.)

CHAIRMAN LEVAR: Mr. Moench, this is Thad

LeVar with the Utah Public Service Commission. We're calling you back for your participation in this hearing.

MR. MOENCH: I appreciate it.

CHAIRMAN LEVAR: Okay. Are you participating on behalf of any organization?

MR. MOENCH: No. I'm appearing on my own behalf.

CHAIRMAN LEVAR: Okay. You have the option of providing your testimony under oath as sworn testimony or simply as public comment. Would you like to be placed under oath?

MR. MOENCH: Yeah, why don't you do that.

--oOo--

MALIN MOENCH,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Okay. Thank you. You had indicated that at the beginning you probably need a little more than three minutes. Does 10 or 15 minutes sound reasonable to you?

MR. MOENCH: I think I can do it in about 15. I realize everybody in there is probably propping their eyelids open to some extent.

CHAIRMAN LEVAR: Thank you. Why don't you go ahead.

MR. MOENCH: If you've heard enough after 10, just let me know. My name is Malin Moench. I appreciate the opportunity to participate in this proceeding. It's the only way I could participate since I live and work in Virginia.

I do, however, own a residence in Utah that I plan to move to permanently in a year or two. And for that reason, I'm concerned about incentives and disincentives to invest in distributed solar that I will encounter when I move there.

I have degrees in law and economics. I've spent 37 years in federal service, most of it evaluating cost of service models in rate-making hearings. Most of my comments address the question of whether a special study is needed to estimate the utilities cost that distributed renewable avoids.

In his surrebuttal testimony, Division witness Davis, pages 4 through 6, argued that a special study of the costs renewables avoid is not needed because the integrated resource planning process is already done.

He claimed that he objectively finds the least cost, least risk option that the company should

follow as it decides what source of the generation to acquire, what sources to retire, and when to do it. As a result, the costs distributed renewables avoid are incorporated in the revenue requirements and the cost of service-based rate elements in Schedules 37 and 38.

He says that the period of cost avoidance calculation reflects, i.e., a disagreed future test here, is a better one for calculating cost of coverage than a 20-year period that reflects the life cycle cost as a single generation resource where the cost has yet to be incurred.

Mr. Davis adds that the cost of service components in Schedules 37 and 38 that are derived from the 2015 IRP may not break out all of the costs that distributed generation avoids. But he says that it doesn't need to in order to do an accurate net cost avoidance.

So what kind of generation resource is the next one that the company will need and when it will need it is fundamental to this framework that we are deciding to adopt in this. Because it is the basis for inferring the type and cost of company resource the customer-sided generation would displace and when it would displace it, in other words, decide when the period of resource sufficiency ends and resource

sufficiency begins.

The validity of the assumptions about what will be the next deferred resource is crucial to the outcome of this net metering docket. As is illustrated by the comments Rocky Mountain Power submitted on June 2012, 2014, in Docket 14-035-P40, which was the renewable power docket, there Rocky Mountain Power explained that prior to its 2013 IRP, the working assumption has been that the next deferred resource would be a gas turbine PT plant. The 2013 IRP assumed instead that the company would turn to front office trades rather than a gas turbine PT plant to obtain what additional capacity it needed.

Changing the next deferred resource assumption in this fashion cut the prices offered by the company in Schedule 37 for distributed solar roughly in half. The 2015 IRP, however, is not suitable for identifying the next deferrable resource or when it will be needed. This is because the process that the 2015 IRP used to identify the least cost, lowest risk path was rigged.

The IRP process is based on an opposition model in which forecasted loads are simulated and the cost as a liability of various resources that could be used to meet those loads are compared.

In the 2015 IRP docket, the Sierra Club's analysts discovered that Rocky Mountain Power had manipulated the optimization process by manually assigning each coal power plant a retirement date that was equivalent to the end of their physically useful lives. This prevented the optimization model from calculating whether closing these coal plants earlier would be cost-effective and, if so, what replacement resources would be optimal.

They found that without this manipulation of the optimization model, the lowest cost, least risk path, would have been to retire five of its coal-fired power units well before they ended their physically useful lives. This manipulation guaranteed that renewable forms of energy would not be eligible to meet the company's capacity needs going forward.

There's another way in which the 2015 IRP was seriously biased for purposes of this proceeding. The lowest cost, least risk path that is identified was driven in part by the company's assumption that the cost of renewable forms of energy as a group would rise at the rate of overall inflation or the 30-year study period.

This is not consistent with the assumption that almost all practicing energy economists share that

the cost of renewable energy will continue to drop substantially over the next 30 years because solar and wind, biomass, and new storage technologies are all still in the early stages of technical development and have already begun to exploit their available economies of scale.

The Edison Electric Institute is as conservative a trade association as exists in the United States on matters of the future direction of the electric power industry. I'll quote the EEI: "As the cost curve of PV," photovoltaic, "continues to bend and electricity rates continue to increase, it will open up the opportunity to PV to viably expand into more regions of the country.

"As the installed cost of PV declines from $5 a watt to $3.5 a watt, a 30 percent decline, the targeted addressable market increases by 500 percent. In addition, other DER technologies," meaning distributed electricity generating technologies, "being developed may also pose additional viable alternatives to the centralized utility model."

In other words, the Edison Electric Institute believes that solar power poses a major threat to the centralized utility model going forward based largely on its forecasted declining costs. PacifiCorp's

modeling, in contrast, treats solar as essentially irrelevant as a future source of electric power, largely because of the assumption that costs will continue to rise with the rate of inflation indefinitely.

Because it assumes that the cost of solar and wind will increase indefinitely at the rate of inflation, the 2015 IRP overestimates the cost of wind power by 18 percent and the cost of solar by 30 percent. Based on the average of other major research organizations that forecast the trends of those costs.

If the approved framework relies on a Schedule 37 and the 2015 IRP, on which that schedule is based, rather than special study, the company's cost of carbon -- forward cost of carbon curb fails to reflect the probable cost of complying with environmental regulations that has taken effect since the 2015 study was completed or will take effect before the completion of the rate-setting portion of this docket. This will be a further source of bias if the 2015 IRP is relied upon to the exclusion of the special study.

The company and its allies argue that the cost of complying with environmental regulations is already taken into account in the 2015 IRP. Therefore, it would be double counting to add anything to the cost

that distributed solar avoids to recognize that distributed solar would help the company meet the newly adopted Clean Power Plan and other pending clean air requirements.

This argument reflects the Commission's conclusion that it reached in Docket 12-035-100 that, quoting, "To the extent potential costs associated with environmental risks and hedging projected is factored into the company's decision making, they should be accounted for in PacifiCorp's IRP modeling and resource portfolio evaluation process, where costs, risks, and uncertainty are evaluated to identify a least cost, risk-adjusted, long-term resource plan."

The trouble with applying that conclusion to this docket is that the 2015 IRP didn't do that. It stipulated from the outset that running the company's coal plants at full capacity until the end of their physically useful life would be a least cost, least risk path.

Despite rapidly declining cost transfer renewables and regardless of their probability, their relying on those plants would make it more difficult and expensive to comply with pending environmental regulations.

The EPA Clean Power Plan has now been

finalized. Under it, Utah is obligated to reduce its carbon emissions by 30 percent by 2030 if mass base compliance is chosen, or roughly 60 percent if emissions rate compliance is chosen.

The 2015 IRP ignored the cost of meeting these emission reduction targets because the Clean Power Plan was not yet a final rule. It is now a final rule and a legal obligation. And the Commission's docket that turn on the relative costs of dirty energy and clean energy can no longer ignore it.

That is precisely what this docket will do if the framework chosen relies on the 2015 IRP to account for the cost of avoiding advantages that distributed solar has in helping the company comply with the Clean Power Plan.

In this regard, the Commission should remember that the least cost, least risk path that the 2015 IRP identifies involves no net increase whatever for the next 30 years in the share of the company's peak capacity that will be supplied from renewables.

Instead, following the selected path, the system satisfies its need for additional peak capacity almost entirely by buying on the stock market, meaning front office rates, and buying in the wholesale power markets, plus some demand side management program.

Purchasing generic power outside the state will not count toward -- toward Utah's obligation to reduce its carbon emissions. And legally there's major challenge in the courts to the idea that demand side management programs, which are outside the fence, can count toward that obligation either. Clearly Rocky Mountain Power will have to go back to the drawing board to comply with the Clean Power Plan.

The initial reduction targets of the Clean Power Plan will have a major impact on our RMP's resource choices going forward, and that impact is not reflected in the 2015 IRP. If its impact on the cost that distributed renewables avoid can be objectively measured, it can't be done through the 2015 IRP.

In administering its reasonable haze rule, the EPA is now considering whether to require Rocky Mountain Power to retrofit its existing coal-fired power plants in Utah with state-of-the-art controls for nitrogen oxide.

It is more likely than not that it will require retrofit, since it already imposed this requirement on PacifiCorp's coal-fired plants in surrounding states, and it has recently made statements that imply it will do the same for Utah.

If the EPA decides to require these

retrofits, they would cost from $950 million to $1.1 billion at the Hunter plant and another $700 million to $800 million at the Huntington plant. This is nearly $2 billion of additional financial risk from running coal-fired power plants at capacity.

This risk is not reflected in the 2015 IRP, since the EPA has not decided whether to require state-of-the-art retrofits. This decision, however, will almost certainly be made before the rate-setting phase of this docket is completed. The framework must allow some way for an EPA decision requiring retrofits, should it occur, to be incorporated in the cost of one's calculations in this docket.

There is also controversy about whether the cost of integrating renewables in the grid should be used to offset the amount by which distributed renewables reduce the company's cost.

It should be borne in mind that thermal plants also have a risk of not being available when needed and, therefore, have their own integration costs. If the integration costs of renewables are to be deducted from the costs that they avoid, only the excess of those costs over the average cost of integrating the remaining forms of power generation should be counted.

Now, if everyone is still -- if anyone is still awake, I also have a comment about how a technical change may pull the rug out from under almost all of the assumptions that are contained in Schedule 37.

To get the most out of renewables, we need the kind of storage that is not available now, something that is more flexible, scalable, and, most importantly, cheaper than the solid state batteries that are currently available.

Flow batteries have these characteristics. They store energy in liquid form in external tanks. They charge and discharge power when those liquids exchange ions through a special membrane. Their capacity can be easily scaled by changing the size of the tanks, and their power output can be easily scaled by changing the area of the membrane.

Flow batteries can also remain idle for long periods of time without losing charge and are not affected by temperature extremes. The main drawback has been their reliance on rare and toxic ingredients, like vanadium and bromide. That is until now.

The September addition of the prestigious Journal of Science reports that Harvard University chemists have developed a flow battery that replaces

vanadium and bromide with chemicals that are abundant, cheap, and safe.

Specifically, the Harvard battery uses naturally-occurring chemicals used in photosynthesis called quinones, carbon, iron, and potassium. Because it is an alkaline battery, the electrolytes can be housed in inexpensive plastic tanks. In its present design, the Harvard battery is already several fold cheaper than lithium ion batteries.

It is also more efficient, with a greater -- the current efficiency greater than 99 percent and a round-trip efficiency of 8 4 percent. And it is much longer lasting, with a lifetime approaching 2,000 cycles.

Its developers estimate that it could be commercially available in as little as three years. This might not be much more than a year after the rate-setting phase of this docket concludes.

The only disadvantage that Harvard's alkaline flow battery has relative to lithium ion batteries is that it has 1/10 the energy density, meaning it will take up to 10 times as much space.

For this reason, it will not be useful in transportation. But for power storage at larger residences that have solar, community-based solar, or

for the grid as a whole. Cost is the primary issue, not the size of the battery's footprint.

In those applications, these cheap, highly adaptable alkaline flow batteries appear ideally suited to smoothing the peaks in power generation for a system like PacifiCorp's, which thus far have not been engineered to accommodate the intermittent power generation.

The availability of such a battery will invalidate almost all of the assumptions incorporated in Schedule 37, including capacity factors, sufficiency periods, deficiency periods, off-peak and on-peak costs, and rate differentials.

The availability achieved in flexible grid storage will also require PacifiCorp to go back to the drawing board in its next integrated resource plan, since it would be imprudent not to take advantage of economic grid storage, and doing so would make the distinction between peak and off-peak capacity nearly irrelevant.

CHAIRMAN LEVAR: Mr. Moench, could I ask you to maybe a take a minute or two and summarize?

MR. MOENCH: I'm done.

CHAIRMAN LEVAR: Good timing. Thank you. Any questions for him? Okay. Thank you for your

testimony today. I believe we have one more, unless you're telling me we have one more than. Our last witness is Deb Henry.

Ms. Henry, are you here on behalf of any organization?

MS. HENRY: No. I'm here just by myself.

CHAIRMAN LEVAR: Would you like to be sworn in?

MS. HENRY: Yes.

--oOo--

DEB HENRY,

having been first duly sworn to tell the truth, and testified as follows:

--oOo--

CHAIRMAN LEVAR: Okay. Go ahead and take a seat and begin.

MS. HENRY: My name is Deb Henry. I'm a structural engineer in the solar energy field. I became a structural engineer because my family is from New York City, and I had several family members that were affected by 9/11, including losing my cousin Joey. My dad was there on 9/11. I became a renewable energy engineer when my dad got lung cancer.

And so I urge you to think about the impact that your decision will have today and in the next

decade and the next generation. As many people have said before, you have a big opportunity here to do something that you might not see the results of immediately, but that will no doubt affect the quality of life of a generation of people who are trying to build an economy based on renewable energy.

My class at Salt Lake Community College, where I learned about solar energy and I became a solar energy engineer, looking towards the NABCEP certification has doubled the size that it was last year.

This is something that is driving the economy in Utah. The research and development that's happening in Utah is unprecedented. And by implementing this fee, you will be putting the brakes on Utah's economy and Utah's quality of life. So I urge you to please stop this fee and please help us create new opportunities for the next generation.

CHAIRMAN LEVAR: Thank you. We're adjourned.

(The proceedings concluded at 8:03 p.m.)

REPORTER'S CERTIFICATE

STATE OF UTAH)

COUNTY OF UTAH)

I, Daren S. Bloxham, a Notary Public and Certified Shorthand Reporter, Registered Professional Reporter, hereby certify:

THAT the foregoing proceedings were taken before me at the time and place set forth in the caption hereof; that the witnesses were placed under oath to tell the truth; that the proceedings were taken down by me in shorthand and thereafter my notes were transcribed through computer-aided transcription; and the foregoing transcript constitutes a full, true, and accurate record of such testimony adduced and oral proceedings had, and of the whole thereof.

I have subscribed my name on this 20th day of October, 2015.

Daren S. Bloxham
Registered Professional Reporter #335