In the Matter Of:

In RE: RMP - Approval of Resource Decision to Repower Wind Facilities

HEARING, DOCKET NO. 17-035-39

May 03, 2018

Job Number: 434925

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

Voluntary Request of Rocky Mountain Power for Approval of Resource Decision to Repower Wind Facilities

Docket No. 17-035-39

HEARING PROCEEDINGS

TAKEN AT: Utah Public Service Commission
4th Floor
160 East 300 South
Salt Lake City, Utah

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TIME: 9:00 a.m.

REPORTER: Mary R. Honigman, R.P.R.

Job No. 434925

APPEARANCES

COMMISSION CHAIR:
Thad LeVar

COMMISSIONERS:
David Clark
Jordan White

FOR ROCKY MOUNTAIN POWER:
Katherine A. McDowell
MCDOWELL RACKNER GIBSON, PC
419 Southwest 11th Avenue, Suite 400
Portland, Oregon 97205
(503) 595-3924
katherine@mrg-law.com

Adam Lowney
MCDOWELL RACKNER GIBSON, PC
419 Southwest 11th Avenue, Suite 400
Portland, Oregon 97205
(503) 595-3926
adam@mrg-law.com

Yvonne R. Hogle (appearing telephonically)
ROCKY MOUNTAIN POWER
1407 West North Temple, Suite 320
Salt Lake City, UT 84116
(801) 220-4050
Yvonne.hogle@pacificorp.com

FOR THE DIVISION OF PUBLIC UTILITIES:
Patricia E. Schmid
Justin Jetter
160 East 300 South, Fifth Floor
Salt Lake City, Utah 84114
(801) 366-0335
pschmid@agutah.gov
jjetter@agutah.gov

FOR THE OFFICE OF CONSUMER SERVICES:
Robert Moore
Steven Snarr
160 East 300 South, Fifth Floor
Salt Lake City, Utah 84111
(801) 366-0158
rmoore@utah.gov
steven.snarr@agutah.gov

FOR THE UTAH ASSOCIATION OF ENERGY USERS:
Philip J. Russell
HATCH, JAMES & DODGE, P.C.
10 West Broadway, Suite 400
Salt Lake City, Utah 84101
(801) 363-6363
prussell@hjdlaw.com

FOR INTERWEST ENERGY ALLIANCE:
Lisa Tormoen Hickey
TORMOEN HICKEY, LLC
14 North Sierra Madre
Colorado Springs, Colorado 80903
(719) 302-2142
lisahickey@newlawgroup.com

Mitch M. Longson
MANNING CURTIS BRADSHAW & BEDNAR, PLLC
136 East South Temple, Suite 1300
Salt Lake City, Utah 84111
(801) 363-5678
mlongson@mc2b.com

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PROCEEDINGS

COMMISSIONER LEVAR: Good morning. We're here in Public Service Commission Docket No. 17-035-39, Voluntary Request of Rocky Mountain Power for Approval of Resource Decision to Repower Wind Facilities. Before we go to appearances, are there any preliminary matters we need to address? I'm not seeing any indications -- Ms. Schmid.

MS. SCHMID: Only that Division witness, Mr. Thompson, would request to be put on today as he has an obligation out of state tomorrow. And the parties have agreed to that, if that's acceptable to you.

COMMISSIONER LEVAR: Okay. And maybe early afternoon, we'll see where we are on Rocky Mountain Power's witnesses and see if there's a need to take him before the conclusion, but we might want to address that in the early afternoon.

MS. SCHMID: Thank you.

COMMISSIONER LEVAR: Thanks. I'll make a note of that. Any other preliminary matters? I'm not seeing any, so we'll go to appearances. We'll start with the Utility.

MS. MCDOWELL: Good morning, Chair Levar and Commissioners White and Clark. So pleased to be here this morning. I'm Katherine McDowell, on behalf of Rocky Mountain Power, and with me is my partner, Adam Lowney.

COMMISSIONER LEVAR: Thank you. To the Division of Public Utilities.

MS. SCHMID: Good morning. Patricia E. Schmid with the Utah Attorney General's Office for the Division of Public Utilities. Also, Justin Jetter is here representing the Division from AG's office as well.

COMMISSIONER LEVAR: Thank you. Office of Consumer Services.

MR. SNARR: Yes. I'm Steven Snarr with the AG's office, representing the Office of Consumer Services. With me for this case is Mr. Robert Moore, also with the AG's Office and representing the Office of Consumer Services.

COMMISSIONER LEVAR: Utah Association of Energy Users?

MR. RUSSELL: Good morning. Phillip Russell on behalf of UAE.

COMMISSIONER LEVAR: Any other appearances?

MS. HICKEY: Yes, sir. Good morning, Mr. Chairman and Commissioners.

Lisa Tormoen Hickey. I represent the Interwest Energy Alliance. With me to my right is Mitch Longson, also representing Interwest.

COMMISSIONER LEVAR: Thank you. Any other appearances or other preliminary issues from anyone? I'm not seeing any indication, so I'll go to Ms. McDowell.

MS. MCDOWELL: Thank you so much. Before we call our first witness, can I approach and give you our exhibit list?

COMMISSIONER LEVAR: Certainly. It's just a list of exhibits? Do the other parties have that list? Just make sure our court reporter gets a copy of that also.

MS. MCDOWELL: I've given it to them. Thank you. We call Mr. Gary Hoogeveen.

GARY HOOGEVEEN,

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

DIRECT EXAMINATION

BY MS. MCDOWELL:

Q Good morning, Mr. Hoogeveen.

A Good morning.

Q Can you state your name and spell it for the record?

A Gary Hoogeveen, G-a-r-y, last name, H-o-o-g-e-v-e-e-n.

Q Mr. Hoogeveen, how are you employed?

A I am Senior Vice President and Chief Commercial Officer with Rocky Mountain Power.

Q In that capacity, have you prepared or adopted testimony in this proceeding?

A I have.

Q And is that testimony the direct rebuttal and supplemental direct testimony of Cindy Crane, and then the supplemental rebuttal testimony of Gary Hoogeveen?

A That's correct.

Q Do you have any changes or corrections?

A I do not.

Q If I asked you the questions that are in that testimony, would your answers here be the same?

A Yes, they would.

MS. MCDOWELL: Commissioners, would you like me to offer these at the time that I'm presenting the witness, or do we stipulate them all in at one time?

COMMISSIONER LEVAR: There have been occasions where we've done a stipulation, but I think typically parties make motions to present each witness's testimony as we go. Unless there's been an agreement among the parties to do it en masse.

MS. MCDOWELL: So we would offer the direct rebuttal, supplemental direct testimony, and supplemental rebuttal testimony as previously identified.

COMMISSIONER LEVAR: If anyone objects to this motion, please indicate to me. I'm not seeing any objections, so the motion is granted.

MS. MCDOWELL: Thank you.

BY MS. MCDOWELL:

Q Mr. Hoogeveen, have you prepared a summary of your testimony today?

A I have.

Q Can you please present your summary to the Commission?

A Good morning, Chairman LeVar, Commissioner Clark, Commissioner White. As Senior Vice President and Chief Commercial Officer of Rocky Mountain Power, I'm pleased to serve as the Company's policy witness in this case. I appreciate the opportunity to testify in support of the Company's request for approval of its resource decision to repower 12 wind facilities with install capacity of approximately 1,000 megawatts. I also want to thank the Commission, the staff, and all parties in this case for their extensive work leading up to this -- today's hearing.

I believe that repowering is a great opportunity for our customers. By using production tax credits -- or PTC -- benefits to upgrade the company's wind fleet, we can reduce production costs, increase reliability, and deliver significant savings to customers.

We estimate that repowering will cost approximately $1 billion -- which, by the way, is 2.4 percent less than our original filing -- but it will generate $1.26 billion of production tax credits over ten years.

With me today are key team members who have worked very hard over the last year to deliver this opportunity to our customers: Vice president of resource -- excuse me -- Vice President of Resource and Commercial Strategy, Mr. Rick Link; Director of Renewable Development, Mr. Tim Hemstreet; Vice President, CFO and Treasurer, Ms. Nikki Kobliha; and Vice President of Regulation, Ms. Joelle Steward.

So what is repowering? If I may, it's a simple wind turbine upgrade that adds new rotors with longer blades and new nacelles with higher-capacity generators to existing towers. If I may, I'll use a simple analogy, albeit an imperfect analogy, but I think it's helpful. Repowering is like reinvesting in and expanding your home. Let's suppose your current home was aging and experiencing increased maintenance costs. In addition, let's suppose your family would benefit from a larger home. Finally, let's suppose that there were significant federal tax credits available for home upgrades. In such a case, you might gut your existing home and replace it with entirely new appliances, and updated, and even upgraded furnishings. You might replace your 10-year-old inefficient furnace with a new high-efficiency model. You might even expand your house by adding on a new room. That, simply, is repowering. You keep the foundation and the towers -- the shell of the old house -- and upgrade the technology in the new nacelles -- the new furnace and appliances -- and you even do so with larger blades that produce more energy -- the expanded new room. And to top it all off, the entire cost of upgrading your home is more than paid for by federal tax credits. You get a bigger, newer, upgraded home for free.

Repowering will result in energy production at the lowest reasonable costs to our customers and meets the public interest standard under the Commission's resource approval law.

Repowering has five main benefits: First, repowering increases the energy production of the Company's wind fleet by an estimated 26 percent. We hired an engineering firm, Black & Veatch, to help us substantiate that estimate. They used millions -- literally millions of data points from our actual operation of our facilities. This increased energy translates into approximately 750 gigawatt hours annually before 2037, and after 2037, 3,500 gigawatt hours annually. And that's from 2037 to the depreciable life of 2050.

Second, repowering reduces ongoing capital costs, for example, by providing a two-year warranty on all the new turbines.

Third, it extends the useful life of the wind facilities by up to 13 years.

Fourth, it enhances voltage support and power quality.

And fifth, it requalifies our wind facilities for 100 percent of PTCs for another ten years.

Quantifying these benefits shows present value savings between $1.14 billion and $1.48 billion over the life of the facilities, again, compared to project costs of $1.1 billion, this clearly demonstrates that repowering is very much in the best interest of our customers.

The Company recognizes that full PTC qualification is critical to delivering the benefits to repowering to our customers. For this reason, the Company has agreed to guarantee PTC benefits, except in extraordinary cases like change in law or force majeure.

The Company has also worked hard to ensure it will meet the three factors for PTC qualification. Let me describe them. I think of them as, you have to start by wind, you have to finish by wind, so a little more on that. So you have to start by wind is really the 5 percent "safe harbor," how we qualify. According to the IRS tax laws, you have to purchase at least 5 percent of the cost of the facilities in 2016, which we did in December of 2016. In fact, we purchased enough to cover a little more than 6 percent, so that's clearly covered. For the finish by wind, we are on track to finish these by the end of 2020, which they have to be finished by 2020 in order to qualify. In fact, we plan to have 11 of the 12 facilities online in 2019, more than a year ahead of time, so it clearly qualities. The 12th one is Dunlap, and we have chosen to do that in 2020 to maximize the current PTC benefits for customers.

And then, finally, 80/20 rule. We retained Ernst & Young to verify that the value of the retained equipment is less than 20 percent of total value of the facility. So in my example, that would have been the foundation, the walls, the shell of the house has to be less than 20 percent than the total value of the new facility.

Our analysis shows that repowering is likely to lower costs to customers in any reasonable forecast. The Company looked at this in two ways: Total project basis and then on a facility-by-facility basis using two different models, nine price scenarios, and multiple sensitivities. While the various scenarios are used to measure risk, the Company strongly urges the Commission to principally rely on the medium/medium case. And that's the medium natural gas forecast and medium CO2 forecast. This forecast is based on the Company's official forward price curve, which is currently used for setting Utah rates and avoided costs.

Through the life of the repowered facilities, the Company shows net benefits of $273 million. So that's, again, through the life of the facilities, which we have as 2050. Through 2036, the Company shows net benefits of between $189 million and $204 million. On a project-by-project review, all facilities show net benefits through 2050. All facilities, except Leaning Juniper, show net benefits through 2036. 2036 is the IRP time frame, 2050 being the entire life of the assets. And Leaning Juniper, in 2036, is really a break-even. It's a zero-cost, zero-benefits.

The 2036 analysis, I want to point out, is conservative because it does not consider substantial benefits in years after 2036, in which the current turbines would reach their depreciable end of life and be shut down. So the 2036 analysis really doesn't consider or incorporate any of those benefits. Because of that, we believe that the Leaning Juniper decision should be made to go forward with it.

While the DPU, OCS, and UAE oppose

repowering, their own analyses actually confirm that repowering will reduce costs to customers. Under the medium/medium case, DPU shows net benefits for all facilities except Leaning Juniper. I understand that the Commission also reviews risk in determining whether repowering is in the public interest. The Company's extensive scenario modeling addresses price and policy risk, and its substantial modeling of historical wind operations addresses performance risk. We delayed this case to address tax risk, and the results of tax reform are now reflected in our economic models.

Thanks to our excellent project team, other risks have steadily decreased as this project has taken shape. Virtually all of the turbine equipment and installation costs are now fixed or near final. The turbine contracts provide production and availability guarantees, making production estimates more certain. The GE contract for the eight Wyoming facilities includes full damages if GE fails to meet the deadline for PTC eligibility; the Vestas agreement for the other four facilities has liquidated damages, or LDs, to deter construction delays. The eight Wyoming facilities are covered by a full-service agreement with GE, meaning that the costs for O&M for the first ten years after repowering are fixed.

Permitting risk is largely revolved. The Company has filed for permits for 11 of the 12 wind facilities and expects to complete permitting for the final facility soon.

And finally, engineering studies are substantially complete, meaning that this project is now ready to move forward once the Company receives regulatory approval from this Commission and from the Wyoming Commission, where a partial stipulation is now pending. The Idaho Commission approved the Company's stipulation in December 2017.

Given the low risk profile of the repowering project and the substantial savings it promises to deliver to customers, there's simply no justification for imposing the onerous conditions proposed by some parties in this case, or for approving only a portion of the project. The analysis shows that not repowering or repowering only some of the facilities, is likely to result in higher energy production costs to our customers, contrary to the public interest considerations in this resource approval statute.

As the project moves forward, the Company will prudently respond to new information and changed conditions. In the event of a major change in circumstances, including project-specific changes, the Company will return to the Commission for an order to proceed under section 54-17-404.

The Company has committed to delivering the near-term benefits of repowering to customers without an immediate rate increase. Through the resource tracking mechanism, or RTM, the Company will align the benefits and costs of repowering and pass along net benefits to customers, but not net costs.

For the future energy needs of our Utah customers, I firmly believe that wind repowering is a prudent and beneficial investment, and its implementation is in the public interest. Respectfully, I ask the Commission to approve, 1) the resource decision to repower the 12 wind facilities included in the Company's request, and (2) the recovery of the remaining costs of the legacy equipment. That concludes my summary.

MS. MCDOWELL: Thank you, Mr. Hoogeveen. This witness is available for cross-examination.

COMMISSIONER LEVAR: Thank you.

Ms. Schmid, does the Division have any questions for Mr. Hoogeveen?

MS. SCHMID: We do.

CROSS-EXAMINATION

BY MS. SCHMID:

Q   Good morning.

A   Good morning.

Q   The application discusses wind projects in various states. Is there an agreement among the states and the state commissions as to how expenses and allocation of costs with this requested approval will be handled?

A   The allocation of costs will be handled through the typical allocation process, which is agreed through -- currently through the MSP 2017 protocol.

Q   And the 2017 protocol has been extended through December 31st, 2019; is that correct?

A   Subject to check, I believe that's correct.

Q   So after December 31st, 2019, we don't have an agreement; is that correct?

A   That's correct.

Q   You mentioned the stipulation in Idaho that has been approved and the stipulation in

Wyoming that is pending. I'm not going to ask you any questions about those because they were settlements, except that I will ask you if you will accept DPU Cross-Exhibit 1 and DPU Cross-Exhibit 2 which I will represent to you to be a copy of the Idaho stipulation, and at the back of DPU Exhibit 1, there's a copy of the Idaho order. And I will note that the Idaho order did require a supplemental filing if the tax law changed, and Rocky Mountain Power has made that, but I have not included that in this packet. And then, if you will accept, subject to check, that DPU Exhibit No. 2 is the Wyoming stipulation which, as you said, is pending.

A That appears to be so.

MS. SCHMID: I'd like to move for the admission of DPU Cross-Exhibits 1 and 2.

COMMISSIONER LEVAR: If any party objects, please indicate to me.

MS. MCDOWELL: No objection.

COMMISSIONER LEVAR: I'm not seeing any objection, so the motion is granted.

(DPU Cross-Exhibits Nos. 1 and 2 admitted.)

BY MS. SCHMID:

Q In your summary and in your testimony, you talked about mitigation of risks. You said that the

Company would guarantee -- and I'll use that term qualified -- risks of the PTCs not occurring except for extraordinary circumstances outside the Company's control. Is that a fair representation?

A That's fair. We've carved out change of law and force majeure.

Q If there is a change in law and it is something that the Company has not agreed to -- a risk the Company has not agreed to assume, who assumes that risk? Is it true that it's the ratepayers?

A It would be the normal course of proceedings between utility customers and the Commission, that's correct.

Q Is it likely that the Company would seek to have the ratepayers absorb or pay for any discrepancies or differences?

A Per the normal course of business, when we should incur a cost that's outside of our control that hasn't been agreed to in a separate settlement, yes, that would most likely be filed for recovery.

COMMISSIONER LEVAR: Ms. Schmid, I'm sorry. I think we need one more copy of Exhibit 1 up here.

BY MS. SCHMID:

Q And I have some questions that refer to Mr. Peaco's testimony. Do you have his testimony in front of you?

A I do not.

Q Okay. This is not a cross-exhibit, but it is portions of Mr. Peaco's testimony that I've had copied for your convenience. And I will represent that they are true and accurate copies of his testimony. I'll give you just a minute. This is on white paper and the title does say Confidential, but there is no confidential information in the portion that I've copied. So if you would, turn to line 565 of Mr. Peaco's testimony.

A I'm there.

Q Have you had a chance to read that?

A Yes.

Q So is the Company willing to assume the risk of federal legislation? And we've already said no, so I don't need to ask that. What about a change in the IRS private letter ruling that affects collection of the PTCs? Is the Company willing to accept that change or that risk?

A I believe that would qualify under a change in law.

Q If we look at Peaco's 575 and 578, and I'm

contrasting this against your testimony, lines 31
and 32, is the Company willing to assume the risk
that market conditions prove to be unfavorable to
the project economics?
MS. MCDOWELL: I'm sorry to
interrupt, but you were saying you're contrasting it
to Mr. Hoogeveen's testimony? What cite are you --
MS. SCHMID: His supplemental
rebuttal at lines 31 and 32.
MS. MCDOWELL: Thank you.
BY MS. SCHMID:
Q And I will read that. You state that the
Company has addressed or mitigated the major risks
identified by the parties, including cost overruns,
facility-specific economics, permitting, tax reform,
PTC qualification, and wind performance. And I'm
just seeking to explore what that means in a little
bit more detail.
A Okay.
Q So is the Company willing to assume the
risk that market conditions may prove unfavorable to
the project economics?
A No. The Company, I think -- we've listed
there in what you've just read, a rather extensive
list of things under our control that we have an

ability to make an impact on.

Q Isn't it true that the project economics are based largely on forecasts and assumptions?

A So the forecasts -- excuse me, the analysis -- is based on a considerable amount of analysis based on wide-ranging forecasts, precisely in order to test the theory of whether this is in the customer's benefit or not. And I think you would agree that the vast majority, in fact, nearly all of the model runs in the different scenarios show that there's substantial customer benefits in this project.

Q But if those forecasts are wrong, the benefits won't materialize as projected; is that correct?

A So the reasons for a wide range in forecast is because you're not going to know what the forecast is going to be, so you take a wide range from low natural gas costs to high natural gas costs, from low CO2 to high CO2, and everything in between. And I think the analysis that Rick Link has done is fantastic. It's one I would encourage you to explore with him. He can explain, certainly, the nuances of the modeling better than I can, but it is certainly my opinion that the wide range in forecasts is exactly meant to answer the question from Counsel about will the forecast be wrong, yes, and it will be higher or lower, and so therefore we've taken a high-end, a very low -- aggressive low, low numbers and aggressive high, high numbers, and everything in between in order to account for that.

Q What about the risks that actual costs are higher than projected? You said that the Company could and would come back again for approval of more capital expenses; is that correct?

A I'm not sure where that was said.

Q I thought that was in your summary. I thought you said that under the statute, the 402 statute, if the Company needed to, it could come in due to the changed circumstance?

A Yes. Due to a changed circumstance, yes, that's correct.

Q You said, also, that the Company has -- scratch that. Is the Company willing to assume the risk that the actual incremental production proves to be less than the Company's estimated production? In other words, the wind doesn't blow or the turbines don't produce as much as forecasted?

A So the contract negotiations that we've achieved with GE and Vestas both have some performance guarantees, and I would encourage you to ask Mr. Hemstreet the details of that when he's up here, but I think they're rather fantastic contracts for the customer's benefit. There will be some guarantee of availability and perhaps performance, depending on which contract we talk about. So that, we are willing to stand behind as per the contract negotiations. The fact of the wind blowing or not, we do not guarantee, of course, but I think we have substantial analysis with millions of data points that we've used. And again, these aren't new sites; these are the sites we've been operating in for years. We have a plethora of data, and we're certainly able to say that this is a very solid forecast of what's going to happen.

Q But you're taking out the existing equipment and putting in new equipment. So that is a change; is that correct?

A So the new equipment we're putting in, again, has the guarantees per the contracts.

Q If the Company needs to seek remedies under those contracts, would the Company need to go to litigation, or do you expect the companies just to pay per the contract, in your experience?

A I can't comment on that.
Q Okay. If we turn to lines 154 to 156 of your testimony --
A Which testimony is that?
Q Sorry. Your testimony, the supplemental rebuttal testimony.
A I'm sorry. Which lines?
Q 154 to 156.
A I'm there.
Q Is a fair characterization you assert that the Division's analysis of results through 2036 shows all facilities show net benefits in medium/medium and low/no scenarios?
A That's correct.
Q Do you know the source of the DPU analysis you referenced, where you're using to base your testimony upon?
A I can't quote you the line number or the exact spot, no.
Q If we turn to what you passed out, the little packet --
MS. SCHMID: Can I have just one moment, please?
COMMISSIONER LEVAR: Yes.
MR. JETTER: What I'm passing out is

not an exhibit, but it will just be a few pages of copies from testimony from our witness that we don't intend to enter into the record, but we'll pass it to the parties for convenience.

MS. SCHMID: And what Mr. Jetter is passing out contains confidential information, so it is on yellow paper. And I'm not going to refer to numbers, so we don't need to close the hearing.

BY MS. SCHMID:

Q In the packet that you have just been handed, do you see Table 1? You'll have to flip through a little bit, but Table 1 is in there.

A I see it.

COMMISSIONER LEVAR: Ms. Schmid, would you mind letting us know what testimony you're referring to.

MS. SCHMID: Sorry. Mr. Peaco's response testimony, Table 1.

COMMISSIONER LEVAR: Thank you.

BY MS. SCHMID:

Q When you look at that, do you agree that the numbers are sourced from Rocky Mountain's testimony, not Mr. Peaco's? I think if we check the footnote, it cites the source.

A I see that.

Q And do you agree that's what it says?
A I have no reason to question that.
Q Are all the values presented there positive?
A No, they are not.
Q Then yesterday, Rocky Mountain Power filed an integrated resource plan update. Are you familiar with that filing?
A I'm aware of the filing.
Q We'd like to pass out just some points of interest in the filing. We haven't had a chance to analyze the impact of these, but we would like to bring them to the Commission's attention. And we will ask that this be a cross-exhibit.
COMMISSIONER LEVAR: You did move for this to be entered as an exhibit?
MS. SCHMID: I will. And if we could pre-mark this as DPU Cross-Exhibit No. 3.
BY MS. SCHMID:
Q Will you accept, subject to check, that what you have been handed and what's been identified as DPU Cross-Exhibit No. 3, consists of page 23 and page 24 from the 2017 IRP update that the Company filed yesterday?
A That appears to be correct.

MS. SCHMID: The Division would like to move for the admission of DPU Cross-Exhibit No. 3.

COMMISSIONER LEVAR: If anyone objects to this motion, please indicate to me.

MS. MCDOWELL: No objection.

COMMISSIONER LEVAR: I'm not seeing any, so the motion is granted.

(DPU Cross-Exhibit No. 3 admitted.)

BY MS. SCHMID:

Q So looking at this, is it true that the IRP update, the 2017 IRP update as compared to the 2017 IRP, shows a decrease in annual forecasted load?

A That is what it appears to show.

Q And then if we turn the page over, we see figure 4.2 which is a forecasted annual coincident peak load, and is it true there, that the graph shows a decrease in forecasted annual coincident peak load from the 2017 IRP to the 2017 IRP update?

A I agree that's what it appears to show.

Q And that appears to be roughly -- because we're just looking at a graph -- that it's an approximate 500-megawatt decrease, starting in, say, 2022 and moving through 2027, and that the decrease

in 2018, '19, '20, and '21, appears to be, maybe, 250 to 400 megawatts, a rough approximation?

A Rough approximation. I would not dispute the rough approximation.

MS. SCHMID: And can I have just one more moment?

COMMISSIONER LEVAR: Yes.

MS. SCHMID: Thank you. The Division does not have anything else for this witness.

COMMISSIONER LEVAR: Thank you. Mr. Snarr, do you have any questions?

MR. SNARR: No questions from the Office.

COMMISSIONER LEVAR: Thank you. Mr. Russell.

MR. RUSSELL: Thank you. I do have a number of questions for Mr. Hoogeveen.

CROSS-EXAMINATION

BY MR. RUSSELL:

Q I'm going to start in -- most of these questions, Mr. Hoogeveen, will relate to your supplemental rebuttal testimony. Do you have that testimony in front of you?

A I do.

Q You indicate a couple of times in that

testimony that the Company's economic evaluation is based on the IRP models. Do you recall that?

A That's correct.

Q When you refer to the IRP models, I assume you're referring to the SO, the system optimizer model, and the PaR, the planning and risk model; is that correct?

A That's correct.

Q In your summary and also -- the summary you have given today and also in the supplemental rebuttal testimony, you cite certain numbers for projected benefits for these projects, right?

A I do.

Q And in doing so, you are using numbers provided, presumably by Mr. Link, in his most recent economic analysis; is that correct?

A That's correct.

Q Is it your understanding that Mr. Link, in his most recent economic analysis of these projects, uses nominal values for production tax credits rather than levelized values for production tax credits?

A That's correct. I believe that there was a change and improvement in methodology that was introduced in the February 2018 filing.

Q Do you acknowledge that in the IRP planning process, the IRP models you referenced earlier use levelized production tax credits rather than nominal production tax credits?

A That's my understanding, yes.

Q I'm going to have you jump to your testimony at lines 150 to 175. It's actually the same portion of your testimony in your supplemental rebuttal testimony that Ms. Schmid directed you to earlier. And this is a portion of your testimony where you indicate that while other parties recommend against approval of the repowering project, their own analysis shows repowering provides customer benefits. Do you recall that?

A I do.

Q I'm going to focus on the portion of your testimony related to the UAE analysis. In that portion, which starts at line 168, you reference three tables, really, of Mr. Higgins' April 2 response testimony, and those tables are KCH-7-RE, KCH-13-RE, and KCH-14-RE, correct?

A That's correct.

Q And is it your understanding that each of those tables uses nominal values for PTCs rather than levelized values for PTCs?

A I believe that's correct. Subject to check, yes.

Q And do you understand that Mr. Higgins also presented analysis using only levelized values for PTCs in his testimony?

A I agree, he did.

Q Okay. And you've reviewed his testimony?

A I have.

Q Okay. And is it your analysis or your testimony that the portion of Mr. Higgins' testimony using levelized values for production tax credits shows that repowering provides customer benefits under nearly every scenario studied?

A I almost had it. Repeat that question, please.

Q Sure. Up above in lines 151 to 153, you indicate that other parties' analysis "Shows that repowering provides customer benefits under nearly every scenario studied. And then in referencing UAE's analysis, you reference three tables from Mr. Higgins's testimony that use nominal values for PTCs, and I'm asking whether Mr. Higgins' tables using levelized values for PTCs shows that repowering provides customer benefits under nearly every scenario studied?

A   No, I don't believe they do.

Q   Okay. I'm going to direct you to the question and answer in your testimony, starting at line 128. Rather than read the question and answer, I'll give you a minute to read it if you need it, but you indicate in your response to the question here that you disagree that the Commission should approve the wind repowering project only if it meets a specified threshold for benefits under every scenario studied. You indicated earlier, I think, that this project -- sorry. If you need time to read it, I'm happy to give it to you.

A   I've read it.

Q   You indicated earlier that this project will cost approximately $1.1 billion; is that correct?

A   That's correct.

Q   Is there a level of benefits that the Company would consider to be insufficient to pursue these projects?

A   So the level of benefit really, I think -- the Commission, I would encourage to look at, as I've said before, the medium/medium case, but to really take into account the full breadth of the analysis that we've done. The -- from low/low to high/high and everything in between with the different models and so forth. And in particular, the different time frames, the 2036 for the IRP window, the 2050, the full life. And we really think it's most appropriate in order to capture the full benefit in this project, which occurs for the full life of the project, you should look throughout 2050.

Counsel has been asking questions around nominal versus levelized. Maybe I'll just share the way I'm thinking of this and the way I've digested and understood it if it's helpful. If not, I think it's certainly germane to the questions that have been asked. The testimony that I've provided points out that the intervenors -- I'll just call them the DPU, OCS, and UAE -- that their testimony shows positive numbers, if you will, beneficial numbers in nearly every case, that is using what Counsel is referring to as nominal values. But I think there's an easier way to talk about this. It was identified -- and Mr. Link can provide, again, the full accounting of how and when this all happened -- but the valuation of the PTCs was done very conservatively, and I might even say inaccurately, including the 2017 IRP. It was something that nobody caught for years, and it hasn't been around for a long time. However, what the change is, the improvement in the analysis, is that in the levelization calculation, it levelizes over 30 years.

MR. RUSSELL: Mr. Chairman, I apologize. I'm going to interrupt the witness here because I don't think any of what he's said thus far is responsive to the actual question that is before him.

THE WITNESS: Give me a second, I'll get there.

COMMISSIONER LEVAR: To deal with the objection, could you repeat the question that you asked?

MR. RUSSELL: Sure. The question that I asked Mr. Hoogeveen was, is there a level of benefits that the Company would consider to be insufficient to proceed with the project.

COMMISSIONER LEVAR: I think I'm going to rule that, at least so far, the answer is still relevant to that question. If you feel that changes, feel free to object again, but I don't think we've gotten past it.

A I'll remember that. That's what I'm

trying to get to, is there a level. What I'm trying to get to is how to look at it, which numbers to look at and should there be a level given those numbers. So to resume, the argument around nominal versus levelized for the PTCs is really around which period to levelize those PTCs. I will explain. It's my understanding that if you levelize the PTCs over the appropriate ten-year period -- the ten years in which they exist -- you will get to the same answer as nominal using nominal values. If you levelize over 30 years, which was done previously and to which the intervenors have continued to use, you get an inappropriate answer because you levelize something that has values for 10 years and 0 for 20. That gives you an incorrect value when you do the analysis.

So getting to the answer, I expect I would recommend, if you will, that the Commission should look at the 2050 analysis, the full life of the project, using the appropriate period for levelization of the PTCs, which is 10 years, which is equivalent to nominalizing them, so look at that analysis and then look at the full breadth. Concentrate on the medium/medium. And to answer the question, if it is a benefit, and in our opinion if there's any benefit, if it's a beneficial number, that would imply that it will most likely deliver the lowest cost resource portfolio for our customers. And so that's how I would answer the question, if it's beneficial at all looking at those number and for those reasons.

Q Any benefit at all, even if the benefit were a dollar?

A Again, looking at -- through the lens of looking at the entire analysis, I would say that if all the numbers, except a handful in the low/low case for certain projects only -- if you look at it as a complete project basis, that they're all beneficial. And, yes, if they're just a dollar beneficial, that means that through all the analysis, the wide ranging of inputs, this is the lowest cost option and that should be the one that is chosen.

MR. RUSSELL: I don't have any further questions.

COMMISSIONER LEVAR: Thank you, Mr. Russell. Ms. Tormoen Hickey, do you have any questions?

MS. HICKEY: No, thank you.

COMMISSIONER LEVAR: Ms. McDowell, do

you have any redirect?

MS. MCDOWELL: Yes. One moment.

REDIRECT EXAMINATION

BY MS. MCDOWELL:

Q Mr. Hoogeveen, do you remember when Ms. Schmid asked you some questions about your statement in the summary regarding changed circumstances to what might require the Company to come back to the Commission? Do you remember that?

A I do.

Q And Ms. Schmid asked you whether you were saying that the Company might come back under that provision for cost overruns. Was that the intention of your statement with respect to changed circumstances?

A So the changed circumstances I'm referring to is if, for example, in the event of some major change, which might include some project-specific changes that occurred due to various circumstances that would change the economics themselves, we would come back to the Commission.

Q So if there are costs overruns, do you understand that the benefit approval -- or excuse me -- the resource approval that the Company is seeking in this case would have a cap that would

require the Company to come back and establish the prudence of any cost over that amount that was approved in this docket?

A   That's correct. A complete cap on the entire project, I believe, is the commitment.

Q   So Ms. Schmid also asked you about whether the Company assumes the risk of performance with respect to the wind blowing and the energy production from the wind facilities. Is it your understanding that customers currently bear the risk of energy performance from wind facilities?

A   That's correct. In our current wind facilities, they certainly benefit when the wind blows more and do not when it blows less. And that's kind of a characteristic of wind facilities that is natural to them.

Q   So there's no increase or decrease in that risk?

A   It's the same.

Q   So Ms. Schmid also asked you about your statement on page 7 of your supplemental rebuttal, and specifically with respect to lines 154 though 156?

A   Yes.

Q   Do you have Mr. -- the exhibit in front of

you that contains Mr. Peaco's Table 4? I think it is the confidential exhibit.

MS. SCHMID: That would be DPU Cross-exhibit No. 3. Pardon me. That is not a cross-exhibit.

BY MS. MCDOWELL:

Q So let me hand you Mr. Peaco's testimony.

COMMISSIONER LEVAR: If you would, just indicate to us where you are so we can find it.

MS. MCDOWELL: Of course. I'm at Mr. Peaco's confidential response testimony. I'm at Table 4, which begins at line 399.

COMMISSIONER LEVAR: And do you anticipate that we'll be discussing confidential numbers in this discussion?

MS. MCDOWELL: No. I'll try not to.

MS. SCHMID: Objection. This was not part of what I asked on cross, so I would object that it's beyond the scope of cross.

COMMISSIONER LEVAR: Ms. McDowell, can you identify what part of the cross-examination this is relating back to?

MS. MCDOWELL: This is about the cross-examination on lines 154 through 156.

COMMISSIONER LEVAR: And you're using

this table to clarify those statements from Mr. Hoogeveen's testimony. I think we probably have to let the questions go forward before we decide whether it's relevant to the cross-examination. But if you feel like it's going beyond the scope, feel free to restate your objection.

MS. SCHMID: Thank you.

BY MS. MCDOWELL:

Q So, Mr. Hoogeveen, your testimony at lines 164 through 162 was referring to the Division's analysis in Table 4; is that correct?

A That's correct.

Q And in that first bullet from 154 to 156, were you referring to the first two columns where the DPU calculated the cost benefit analysis of the various cases that the Company had provided?

A That's correct.

Q So I'll just represent to you that that chart contains analysis through 2050. So in that case, do we -- is a correction required to your testimony at line 154 that should say "through 2050" instead of "through 2036"?

A Can you point me to where it says 2050?

Q The previous page, I think, should say the testimony -- let me find you a reference. Is page

23 on the backside of that?

A Correct, yes.

Q So do you see at line 389, it refers to the study period through 2050?

A Yes, thank you. I see it. I stand corrected.

Q So just to clarify, on line 154 it should say "through 2050"?

A That's correct.

Q With respect to the Table 1 that Ms. Schmid did refer you to, Mr. Peaco's Table 1, which is -- that is the cross-exhibit, the confidential cross-exhibit. Do you have that?

A I do.

Q This table refers to levelized PTCs. Do you see that?

A I do.

Q And do you agree that that method of calculating PTC benefits is not appropriate in this case?

A I agree that the appropriate way to look at it is the nominal PTC benefit column, not the levelized PTC for the reasons I explained earlier.

MS. MCDOWELL: That all I have.

COMMISSIONER LEVAR: Thank you. Any

recross, Ms. Schmid or Mr. Jetter?

MR. JETTER: Thank you. I'd like to ask just a few brief recross-examination questions.

RECROSS EXAMINATION

BY MR. JETTER:

Q Mr. Hoogeveen, in your redirect, you mentioned that it's your opinion that the risk of wind fluctuation or variation in wind outlet would be the same with the current wind turbines over the next, let's say, 20 years, as compared to the repowered wind turbines. Is that accurate?

A Whether it's exactly the same or not, it's certainly similar.

Q Okay. Is it correct to say that with the current wind turbines, beyond two years from today, there are no production tax credits associated with each kilowatt hour of output?

A Could you repeat the question?

Q Let me -- I'll rephrase it a little bit. Is it accurate that the production tax credits for the existing turbines you're seeking to repower will run out in the near future?

A That's correct.

Q And after that date, is it accurate that the variation in wind output would affect customers

by increasing or decreasing the generation from those turbines?

A   That's correct.

Q   And the risk that ratepayers would have then, would be solely the cost of replacement energy. Is that accurate?

A   That's correct.

Q   And with repowered wind turbines, is it accurate to say that the Company's modeling forecasts for the value rely on the production tax credits from each of those kilowatt hours' output to pay for both the continued amortization of the costs of the existing wind turbines along with the new ones?

A   Yes. The new wind turbines have more benefit associated with the production tax credits.

Q   Is it fair to say as a result of that, that the value of each kilowatt hour of output is higher?

A   I agree with that.

Q   And so is it fair to say that the variation in wind output has greater dollars per kilowatt hour variation under the proposal than going forward with the existing turbines?

A   Going forward, yes. I believe the

question was -- or my answer was, it's similar to the risk associated with the turbines in the past during PTC years.

Q Okay. But you would agree with me that the value of that risk is significantly higher under this proposal?

A Precisely why I think we should be doing it, yes.

Q Okay. So yes, it is more risky?

A There's more value associated with it, I agree with that.

Q And you also agree that the risk is higher?

A I agree that the variability will be higher and if we hadn't done the work that we've done, we would be more uncertain. But given where we are, we have a very high certainty that we will be capturing the PTC values that we have forecasted going forward.

Q I think we're not quite getting the answer to the question I'm asking, which is, is it accurate that the variability of wind risk holds a higher dollar value under the proposal than it would have continuing with the existing turbines?

A Yes. I'm trying to answer in the

affirmative there.

MR. JETTER: Okay. Thank you. Those are my questions.

COMMISSIONER LEVAR: Thank you. Mr. Russell, any recross?

RECROSS EXAMINATION

BY MR. RUSSELL:

Q I do have a question that relates to -- I think it was Ms. McDowell's last question, which asked you your view on whether it was more correct to use nominal or levelized PTCs. Do you recall that question?

A I do.

Q And your testimony is you think it's correct to use nominal values for PTCs and not levelized values?

A That's correct. Again, through the description I had earlier, the levelizing over ten years is equivalent to nominal, and that's the basis for my answer.

Q You acknowledge, though, that the Company used levelized values for PTCs in its 2017 IRP planning process, correct?

A I agree.

Q It also used levelized values for PTCs in

its direct testimony in this case?

A It did.

Q And in its rebuttal testimony in this case, filed in October?

A Yes.

Q And its surrebuttal testimony filed in November of 2017?

A That's correct. The change in modeling happened between -- just prior to the February 2018 submission.

Q And you acknowledge that the Company has used levelized values for PTCs in IRPs prior to the 2017 IRP planning process?

A Subject to check, that's my understanding, yes.

MR. RUSSELL: Thank you.

COMMISSIONER LEVAR: Thank you. Commissioner Clark, do you have any questions for Mr. Hoogeveen?

COMMISSIONER CLARK: Yes, thank you.

BY COMMISSIONER CLARK:

Q Good morning, Mr. Hoogeveen. It's my understanding that this matter is before us on the basis of the Company's volunteer request for approval of a resource decision. Has the Company

determined whether it would go forward with these projects without the approval that you're seeking from us?

A We have thought of it. We have not made a decision. It is much riskier for the Company. You're talking about a billion-dollar investment with, in essence, no expectation or -- that's not the right word -- certainly no commitments from the Commission for recovery. That makes it very difficult to get past. I think it would be very difficult to go forward.

Q Looking at it from, again, from that perspective and from the elements of benefit and risk that the Company would evaluate in making the business decision about these investments, what would you or how would you summarize the benefits that would potentially exist for the Company in making the investments?

A Just so I can clarify your question, are you asking if we go forward with it under this --

Q No, no. I'm speaking of in the absence of Commission approval, you are addressing this as a business decision exclusively and without that assurance --

A Yes.

Q -- but assuming that standard ratemaking remains in force with respect to rate base and investment and prudence and all of those principles. On the benefit side, can you summarize how you would evaluate this set of projects from the Company's perspective?

A Sure. As with anything, it's a playoff between the risks and the benefits, so you're asking about benefits appropriately.

Q We'll get to risks.

A Fair enough. The benefits certainly would be the ability to invest and the opportunity to, you know, achieve our return from the shareholders' perspective. From the customers' perspective, I think I've been clear that there's tremendous benefits as well.

Q And on the risk side, you've mentioned the greater assurance of recovery that you would have under the statute. In the absence of that, you would not have the assurance. But to be more granular in your assessment of risks, are there risks other than the ones that have been discussed in the prefiled testimony that the Company would consider?

A I think all of the risks have been

discussed. And related to -- relating to your question that if we do not get a pre-approval and just go through the normal process as you describe it, would indicate to us, inevitably, that it would be riskier, recovery would be riskier. The fact that we have the statute and this fits very well within it, we believe indicates that it should be approved and adjudicated in this hearing this morning. And for it not to be, I think would be an indication of high-risk for our recovery.

Q So the Company would infer some things from the disapproval, I suppose.

A It would be hard not to, I think.

COMMISSIONER CLARK: That includes my questions.

COMMISSIONER LEVAR: Thank you. Commissioner White.

BY COMMISSIONER WHITE:

Q Just going back to a question from Ms. McDowell about the total cost for approval and potentially going back and you know, requesting a change to that. There was some discussion, I believe, in Mr. Hemstreet's testimony about potential change in cost based upon modified transmission interconnection agreements. I guess my

question is, is there a -- you said a billion, but what would be the number that would be on the order if it were to be approved, of the total cost for what the Company is asking for?

A   So specifically, the filing that we've made has a commitment that if we come in above 1.1 I believe the number is, whatever the exact number is, we would have to show prudence for that. So that is the number that we're talking about, and that's the commitment, that we would come back in. The change in conditions -- and I apologize if there's some confusion there -- really is if there's a major change or even on a project-by-project basis, if something should change regarding the cost or performance that we're aware of, then we would come back in and talk to the Commission about that.

Q   That's the 1.1?

A   Yes.

Q   The other question I had is, I guess, there's been a lot of discussion testimony about project-by-project economics, the benefits of it. If we're looking at the total public interest and other standards, is it an all-or-nothing proposition? How are the -- why should we be looking at it on a project-by-project basis for the

public interest or the, you know, the economics of each of these projects.

A   No, I think it is appropriate to look at it on a project-by-project. I think it's instructive to know what the total basis is and, again, it's our position that each project stands on its on own and is beneficial to customers.

Q   Let me ask about this. Mr. Russell was asking you about this nominal versus levelized. Help me understand -- again, you mentioned something, it was determined that it was, maybe, a potentially inappropriate -- give me some more color on that, I guess. And then the second part of that question is, now that the Company has discovered that was potentially inappropriate, what is the plan for consistency going forward?

A   Whether it's inappropriate or not is not the right characterization. I'd say it's an improvement in the analysis and as I say, we've been -- and as Counsel has said -- this has been going on for years. We realize now that the way that the PTCs were handled should be over ten years, they should be levelized over ten years, or done on a nominal basis. Those are equivalent. So I would defer you to talk to Mr. Link about what he plans going forward. I do know that the IRP update that we just filed includes this change in methodology because it is a more accurate way of looking at it.

Q In your mind, is there a distinction between the type of look or methodology as between an IRP picking projects on an optimized basis versus what we should be looking at here, or should those be one and the same?

A I think they're one and the same. This really is an effort to establish -- again, per the statute -- what is most likely to result in the lowest cost to our customers. That is precisely what is done through an IRP process in a model. And I recognize this was inserted late into the process -- the IRP process and through the IRP acknowledgment that the commission -- it was certainly noted it was not given fair time. I think that the expansion of this 10 to 12 months of doing this IRP analysis that you talk of is helpful to continue to ferret out the right answer, but I think it is exactly the right model. Because what you want to know is, does this set of assets, is it the lowest cost, most reasonable portfolio to serve our needs. And that's precisely what those models show.

Q Is this, in your mind, something different

than the typical -- I mean, typically in the statute we forecast, you know, need for energy capacity, whatever, in IRP, and we need, let's just say, a gas plant, or et cetera. Is there any distinction -- this is partially playing off of Commissioner Clark's question -- is there any distinction in terms of, like, what the drivers behind this project are versus, say, just the typical, vanilla need for energy and capacity?

A I think the difference here is the PTC capturing and the fact that we've got to act in a very time-constrained manner, and we need to operate to make the decision quickly. And again, it fits very directly, I think, within the statute of -- of the pre-approval statute for a resource acquisition. I think it's for that reason. That's the reason we're here.

Q And the other benefits, the reliability benefits, is that something -- I'm kind of curious about that, to understand a bit more. Maybe that's a better question for Mr. Link, but do you have any thoughts on that? It doesn't seem like that was something addressed in great detail, but it was something that was, at least, put forward as a potential benefit.

A   I agree. And I think Mr. Hemstreet probably answers that better.

COMMISSIONER WHITE: That's all the questions I have. Thanks.

COMMISSIONER LEVAR: I don't have any additional questions at this time, so thank you for your testimony, Mr. Hoogeveen. And why don't we take a ten-minute break and then we'll come back to your next witness. Thank you.

(A recess was taken.)

COMMISSIONER LEVAR: We're back on the record. Ms. McDowell.

MS. MCDOWELL: We call Mr. Rick Link to the stand.

RICK LINK,

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

DIRECT EXAMINATION

BY MS. MCDOWELL:

Q   Good morning, Mr. Link.

A   Good morning.

Q   Could you please state your name and spell it for the record?

A   Yes. My name is Rick Link, last name is L-i-n-k.

Q   Mr. Link, how are employed?
A   I am vice president of resource and commercial strategy with PacifiCorp.
Q   In that capacity, have you prepared testimony and exhibits in this proceeding?
A   I have.
Q   So I'll state for the record, the testimony you've sponsored in this proceeding is your direct testimony and exhibits, filed on June 30th, 2017; your rebuttal testimony and exhibits, filed on October 19th; your supplemental direct testimony and exhibits, filed on February 1st, 2018; and your supplemental rebuttal testimony filed on April 23rd, 2018. Have I included all of the testimony and exhibits you've filed in this case?
A   Yes.
Q   If I were to ask you the questions that are set forth in your prefiled testimony today, would your answers here be the same?
A   Yes.
Q   Do you have any changes or corrections to your prefiled testimony or exhibits?
A   I do not.
MS. MCDOWELL: So we would offer

Mr. Link's direct, rebuttal, supplemental direct, and supplemental rebuttal testimony and exhibits.

COMMISSIONER LEVAR: If anyone objects to this motion, please indicate to me. I'm not seeing any objections, so the motion is granted. And as is the case with Mr. Link and several other witnesses in this proceeding, there's some confidential material -- we've already discussed this -- but I'll ask all the attorneys to be mindful if we start to move into that area, there would be a need for a motion and thus to consider whether it's in the public interest to close the hearing if we need to do so.

BY MS. MCDOWELL:

Q Mr. Link, have you prepared a summary of your testimony?

A I have.

Q Please proceed.

A Good morning, Chairman Levar, Commissioner Clark, and Commissioner White. I am pleased to summarize my testimony supporting the Company's proposal to repower 12 existing wind facilities.

By upgrading its wind resources, the Company can lower customer costs by generating wind production tax credits, or PTCs, producing additional zero-fuel cost energy, improving system reliability, and extending the operating life of these assets. It is my understanding that in order to approve the Company's voluntary resource request, the Commission must determine that repowering is in the public interest after considering several factors. My testimony primarily addresses three of these considerations identified in the voluntary approval statute, and these factors generally address cost, near-term and long-term impacts, and risks.

First, and importantly, the Commission must determine that repowering will likely result in the acquisition, production, and delivery of utility services at the lowest reasonable cost to the retail customers of an energy utility located in this state. The economic analysis which relies on the same models used to develop our IRP has been extensive. This analysis measures customer benefits under nine different price policy scenarios, each containing their own assumptions for market prices in CO2 price inputs. This analysis also considers how uncertainties in load, market prices, hydrogeneration, and thermal unit outages affect the benefits of repowering. Through a number of sensitivities, this analysis further quantifies how customer benefits are affected by other system variables, like the new wind and transmission projects proposed in a different docket.

The economic analysis was prepared for all 12 wind facilities on a project-by-project basis. Study results were also presented over the 20 year time frame that's used in the IRPs through 2036 and through the 30-year life of the repowered facilities, or through 2050. The economic analysis shows that repowering all 12 wind facilities will lower customer costs in all nine price policy scenarios studied, and this result holds true whether analyzed through 2036 or 2050.

When using base case assumptions, the present value net benefits of repowering total $180 million dollars when assessed through 2036, and when assessed through 2050 using base case assumptions, the present value net benefits total $273 million. The present value of gross benefits range between $1.4 billion and $1.48 billion, and the range depends on the price policy scenario, which is well in excess of the present value project cost totaling $1.02 billion. The project-by-project analyses also show that repowering each project is most likely to lower customer costs over the life of the repowered wind facilities.

In addition to the Company's economic analysis showing that repowering is most likely to lower customer cost, the record now contains alternative analysis from the Division of Public Utilities, the Office of Consumer Service, and the Utah Association of Energy Users that largely confirm the Company's results. Although these parties emphasize a different approach in its economic modeling and each party chose to interpret those results differently, their analyses show that repowering is expected to lower customer's costs. The comprehensive economic analysis in this case shows that repowering satisfies the lowest reasonable cost standard.

Regarding short-term and long-term impacts, in the short-term, repowering will generate $1.26 billion in PTC benefits over a ten-year period. This is nearly 115 percent of the 1.1 billion in service capital costs of repowering 12 wind facilities. The economic analysis summarized in my testimony shows that revenue requirement will be lower with repowering than without repowering from 2021 -- which is the first year that the projects will be in full operation with new equipment -- straight through to 2029. The long-term impacts of repowering are also favorable to customers. Repowering will reset the useful life of these wind facilities, extending the life of the assets by 10 to 13 years, which results in a significant increase in energy and capacity over the 2037 to 2050 time frame.

The Company's economic analysis shows that nominal revenue requirement is projected to be lower than with repowering than without repowering in all years over this period. And these results are conservative, considering that this analysis assigns no incremental capacity benefits to this project. The present value benefits discounted back to 2030 -- which is the year that the PTCs would expire from repowering -- is over $210 million. The comprehensive economic analysis in this case shows that the short-term and long-term impacts of repowering are to deliver substantial benefits for customers.

The statutory factors addressed in my testimony -- or the third statutory factor -- is risk. And risks are evaluated in several ways.

First, the Company tested the benefits of repowering under several different price policy scenarios, and this analysis confirms that repowering provides customer benefits in all of those cases.

Second, the Company's economic analysis captures stochastic risk in a way that is identical to how these risks are analyzed in our IRP, which is to factor in volatility, load, hydrogeneration, thermal unit outages, and market prizes.

Third, the Company has updated its analysis three times since this case was filed to account for changes in cost, performance, and load. And I'll note that the load assumption update is identical to the load forecast that's in our recently filed IRP update. It was also updated to account for tax reform and price policy inputs. Changing conditions over the last year demonstrate the durability of the net benefits from repowering.

Fourth, the Company included several sensitivities to test how customer benefits are affected by other changes in our system, notably, benefits of the repowering project are retained if the new wind and transmission projects proposed in a separate docket move forward.

While the Company analyzed various

scenarios to measure risk and to ensure customer benefits under a range of market conditions, as Mr. Hoogeveen noted, I, too, recommend that the Commission principally rely on the medium case, which is based on our official forward price curve. It's the same used to set Utah rates and to establish avoided-cost pricing for qualifying facility projects. When assessing the risk of repowering, it is also important to consider the risk of not moving forward with this amazing project. Choosing not to repower would leave substantial PTC benefits on the table, it would increase net power costs and increase customer exposure to market volatility. The economic analysis in this case overwhelmingly shows that without wind repowering, revenue requirements will be higher.

Parties have explicitly or implicitly suggested that repowering is higher risk than doing nothing, because the Company has no need for the resources. But this position is contrary -- is contradicted by some facts. First, repowering provides incremental, low cost energy that will displace higher cost energy resources when balancing our system. To argue that wind facilities should not be repowered because they're not needed is the same as arguing that the Company should not optimize its system resources in real time to minimize net power costs simply because that activity is not required to serve customers.

Second, it is my understanding that the voluntary resource decision approval statute does not require a resource need in order to approve a decision like this one, where repowering involves upgrading and optimizing an existing resource to reduce customer costs.

In conclusion, taken together, the economic analysis provided by the Company, the Division of Public Utilities, the Office of Consumer Services, and the Utah Association of Energy Users demonstrates that the wind repowering project is in the public interest. Repowering is most likely to lower customer costs, has beneficial near-term and long-term customer impacts, and the robust customer net benefits of repowering have withstood significant stress testing, demonstrating that repowering is not only lower costs, it is lower costs across a broad range of potential future market and system conditions. And that concludes my summary.

MS. MCDOWELL: Thank you, Mr. Link. This witness is available for cross-examination.

COMMISSIONER LEVAR: Thank you. Ms. Tormoen Hickey, do you have any questions for Mr. Link?

MS. HICKEY: No thank you, sir.

COMMISSIONER LEVAR: We'll go to Mr. Snarr next. Do you have any questions?

MR. SNARR: Yes, I do. Thank you.

CROSS-EXAMINATION

BY MR. SNARR:

Q Good morning, Mr. Link.

A Good morning.

Q I have just a few questions, and they focus on some of the issues that I'm sure you're familiar with.

Isn't it true that the Company changed its 2036 study analytical approach in showing how the recovery of production tax credits would impact the Company's cost and benefits in its February 2018 filing?

A Yes. The Company improved its approach to account for the PTC benefits from the project.

Q Is it fair to say that -- we talked about it here -- that involves a changing from showing the

production tax credits on a levelized basis to a nominal basis that would coincide with the anticipated taking of the tax credits?

A   Yes. The change is as you described it.

Q   And this is a change from what the Company used in prior IRP filings?

A   Yes, that's correct.

Q   And as was pointed out, also a change from the two initial filings in this docket; is that right?

A   Correct.

Q   Isn't it true that using the levelized approach as you have done in the past at looking at PTCs provides a consistency with the way that the capital revenue requirements are modeled?

A   I disagree.

Q   But the capital revenue requirements are modeled over the life of the assets; is that correct?

A   The capital revenue requirement when we're running our models through the IRP window, so through 2036, are levelized through the full life of the asset, and then only accounted for through the 2036 period.

Q   And so that is a method that is used for

the capital requirements, which is inconsistent with what you're currently planning to use for the PTCs; is that correct?

A It's not correct. I disagree with the fact that you're characterizing it as inconsistent.

Q Isn't it true the new tax law does not require any different approaches as to how you would look at or take the PTCs?

A I'm not aware of -- if I understand the question correctly -- of how any tax law would suggest analyzing the potential tax benefits of PTCs.

Q And was -- is it true to say that the coming forth of the new tax law didn't have any relationship to the impact or to the decision that you made to change the approach you're taking to PTCs?

A Correct. The changing tax law had no bearing on our decision to improve the representation of PTCs in our IRP modeling.

Q When did you make that decision to change the modeling?

A So we -- really, it dates back to the separate docket I mentioned in my opening comments in speaking to the new wind and transmission projects that we're proposing there. In that forum -- and I have to kind of explain that to address the question -- it's the first time that we have ever used our IRP models to optimize or select from specific commercial structures, actual bids submitted through a competitive solicitation, where we had PPA, power purchase agreement proposals, and bill transfer agreement or owned asset where PTCs are taken upfront. It's the first time that I'm aware of in my role in running the IRP models and implementing RFPs where that model, that tool, was used in that type of situation.

So as we were progressing to evaluating bids through that competitive solicitation process, we made this improvement to the modeling methodology to accurately account for the very fact that under one commercial structure where it's an owned asset, that those PTCs are taken in the front ten years, they're front-end loaded, and that the present value calculations should appropriately account for the timing of that benefit occurring -- relative to an alternative structure, say a power purchase agreement -- where those circumstances don't apply and you're faced with a power purchase agreement cost that's consistent or increasing that inflation or some other rate, or the term of that proposed agreement. So in that setting, that is what triggered our review of making this modeling improvement for that intended purpose.

Considering the concurrent timing of that process with this docket in this proceeding, we made that same adjustment there -- here, in this proceeding -- because it is more accurate and more correct. The old approach was essentially understating quite significantly the value of PTCs in that IRP viewpoint. Traditionally, in the IRP itself outside of an RFP solicitation, that differentiation is not an issue. We don't model in an IRP framework, owned assets, power purchase agreement assets, different commercial structures.

From a planning perspective, we assumed one structure and then the RFP dictates, ultimately through market bids, which one to pursue. And so it was in that process -- again, to restate that that was the first time we needed to account for this -- and then applied it for consistency in this proceeding because it is more accurate. And then in addition, as Mr. Hoogeveen mentioned, we've adopted that path forward for the IRP update which was just filed this week, and intend to continue down that path in future IRP filings.

Q Now, in your summary today, you pointed out, I believe, that the range of benefits that you had determined were in the range of $180 million to $273 million, depending on the length of the term of what you're looking at in 2036 to 2050?

A Yes.

Q And so isn't it true that the change in PTC's methodology makes a difference of approximately $200 million that, in effect, if we had maintained the levelized approach in taking PTCs, that the benefits might be -- that you have referenced here -- might be less by about $200 million?

A I'm familiar with that number. It's a bit less than $200 million, but for the sake of discussion, I'm fine with that characterization. But I would highlight that it's not that the benefits would be less, it's that the prior benefits -- given my comments on why we changed the approach to begin with -- were overly conservative by about that same amount, so roughly $200 million.

Q Isn't it true that levelizing the capital revenue requirements over the life of the asset is inconsistent with the way that capital costs are

recovered in rates?

A Capital costs are not recovered on a levelized basis, yes.

MR. SNARR: Thank you. I have no other questions.

COMMISSIONER LEVAR: Thank you. Ms. Schmid or Mr. Jetter?

MR. JETTER: I have a few questions.

CROSS-EXAMINATION

BY MR. JETTER:

Q Good morning. I'll start out with just a few questions about the PAR and the SO models. Are you the lead individual at the Company or the head of the team that develops, maintains, and runs those models?

A Yes. I'm responsible for the team that runs and maintains the models.

Q And how confident are you on the accuracy of the outcome of those models?

A I'm confident.

Q And is that confidence both in the calculation accuracy as well as the accuracy of the forecast's information that you put in?

A Yes.

Q And so if, let's say, the CEO comes to you

and says, We didn't get pre-approval for this project, but we recognize that if it turns out to be in the black throughout its life -- meaning it actually does lower revenue requirement throughout its life -- we want to go forward with the project. Would you tell her or him -- I believe it's a her in this case -- would you tell her, yes, go ahead and do the project?

A   Under such a hypothetical, I don't know all the other conditions and parameters around which that hypothetical discussion might occur. I would say that this -- consistent with my testimony in this case -- that this is an amazing project, it is expected to deliver benefits over the life of the project, both near-term and long-term, under the broadest range of scenarios we've analyzed.

Q   Okay. And so you would -- is it fair to say that you would recommend, if the Commission were to deny pre-approval but in its order make it clear that you may come in for prudency review -- you would be confident that this would be found as a prudent project?

A   I'm not a regulatory specialist in that regard. Again, I would provide my input to those who would have more experience and direct knowledge of the regulatory processes, the risks associated with it, the accounting under such a circumstance, but my role in that hypothetical scenario would be to advise that team that this is an amazing project, it will deliver near and long-term benefits, and it is a project worth pursuing.

Q Okay. Thank you. With respect to the inputs to those models, are you familiar with the IRP update that the Company has recently filed in its Henry Hub gas forecast pricing?

A Yes.

Q And are you familiar with the 2013 IRP that the Company filed?

A I'm familiar with it, I haven't memorized that one as well as the more recent.

Q Would you accept, subject to check, that in the 2013 IRP model, that the gas forecast prices through the current period and now through years, let's say, 2023, were over a dollar higher than they are in the current IRP forecast?

A Without checking, but subject to check, they are what they are in the IRP.

Q Okay. And would you also accept, subject to check, that the low gas scenario that you have used in this case was approximately 30 to 75 cents

lower over that same time period?

A   Again, subject to check, the numbers are what they are.

Q   Okay. And so, subject to check, if those numbers are accurate, would it be fair to say that the current IRP forecast would be outside of the same range that you've used in this IRP forecast and model as the lowest reasonably likely gas price?

MS. MCDOWELL: Objection. I don't think that question is clear for the record. If you would restate which forecast you're talking about.

BY MR. JETTER:

Q   So I'll restate for the record that I believe the witness has agreed, subject to check, that the 2013 IRP forecast is more than a dollar higher, which is about 35 percent higher than the current IRP forecast for gas prices. And what I'm asking -- the question is, is it accurate that the use of the low gas forecast in your modeling in this instance is somewhere in the range of, let's say, 30 to 75 cents, depending on year, lower than the middle case forecast that you view as the most likely?

A   Again, subject to check, if I understood the question, was what do the numbers in the document say?

Q Yes.

A They speak for themselves.

Q Okay. Does that represent to you that your -- had you done this model in 2013, the Company's current middle case gas forecast would have been outside the range of what you consider reasonable, given the reasonable range you're using in this forecast?

A I don't know that I understand the question. What I believe you've stated to me, again, subject to check on whatever the numbers say, is that in 2013 -- which, presumably is probably a 2012 price curve, something six years ago, I'm guessing -- was about a dollar higher than our current base case projection, and that our low case is 30 cents-ish, if I recall your statement, again, whatever the numbers say, lower than our current medium case. And I'm not quite sure if you're saying if our current medium is outside the balance of what?

Q So what I'm trying to get to here is that, if you used a low gas price case scenario in the 2013 numbers, it would have resulted in the low gas price being projected through years 2023 somewhere

in the range -- if you were dropping those by, let's say, 50 cents -- you would have projected the low gas scenario today being around $3.75, subject to check.

MS. MCDOWELL: I just object to this. I don't think there's any foundation for these questions. I know there's a fair amount of subject to check, but now we're asking questions that are, I think, pretty vague in terms of the range and the comparison. So without more foundation, I don't think this question is proper.

COMMISSIONER LEVAR: In context of that objection, if you'd like to clarify where this is going, maybe, that might help.

MR. JETTER: I think where this is going is pointing out that the low gas case is not even as low as changes in IRP change in the gas price. That the Company's projected, kind of, outer bound low gas price is so close to the middle gas price that it's outside the range of what we would have been using -- what we would have projected today -- using the 2013 IRP. And so the core of the question is, is the range broad enough in the model to be confident in the results? Is the range, away from the projected gas price, broad enough, is the low gas price low enough to be a reasonable representation of the future range of what we would expect to see?

MS. MCDOWELL: I just want to restate my objection. I don't think that helps at all. I think it's still vague in terms of what's being compared, the time frame in which it's being compared, and what the ratios are that he's trying to compare. I don't object generally to some subject to check questions and some questions around comparisons, but they need to be clear on the record and I don't think these are at all.

COMMISSIONER LEVAR: Based on the explanation, I don't think I'm prepared to rule that that issue is not relevant or has some value. I think I'll let you continue on, but I note the concern, and I was having some challenge following where we were going.

BY MR. JETTER:

Q Okay. Maybe I'll ask a few questions to kind of let them speak for themselves, let's say that, which I think we've sort of covered but we'll reiterate. Would you accept, subject to check, that the 2013 Rocky Mountain Power filed business plan would have shown 2018 natural gas prices at just

over $5?

A   I do not know.

Q   Okay. Would it surprise you if it was just over $5 in that model and just a few years later, we're at a point where, in the same year of forecasts, the Company's high gas price range is about $4.25?

A   Again, I'm not sure what number was used in a business plan from five years ago and how to compare that to where current markets are.

Q   Would you accept, subject to check, that your projections in the 2013 IRP weren't very accurate?

A   I disagree.

Q   Would you say that gas prices today are in the range of $4 to $5?

A   I'm not sure over what time frame.

Q   Let's say, the prices between 2017 and 2018, average?

A   So I'm going to check my testimony. I believe I've got a graph that tells us what the market prices are. If we want to go down that path, I can point you to the exact figure if you give me a moment.

Q   Okay.

A So for the record, I'm looking in my supplemental direct testimony, line 97, which shows our figure 1-SD --

MS. MCDOWELL: Mr. Link, I don't want to interrupt you -- but I just did, so sorry. I'm just saying I need to because I know you're looking at a yellow piece of paper, so I just want to caution you if you do get into confidential information, give me the signal so I can then make the appropriate motion.

A Thank you for the reminder. Nothing that I say will, I think, be confidential. That graph speaks for itself, in terms of what the current base assumptions are for Henry Hub natural gas prices included in the economic analysis for this case, the most recent.

BY MR. JETTER:

Q And so why should we be more confident? We know that the next most recent ones were off by significant margins. Why should we be confident this one is more accurate?

A Given the back and forth that we've had, I'm not sure that I can say with certainty -- because I'm a little confused around which references we were pointing to up to this point --

that these are any less accurate than anything from prior forecasts. But I will say that these are nothing more than projections of forward market prices. In fact, through the front end of our forecast period, we don't really do a forecast. We rely on observed market quotes at a given point in time, which is applicable through about a six-year window. They have an influence through the first seven years of our forward price curve, so this is through approximately, I think, the 2024 time frame if I did my math correct there, and then beyond that period, we go through a pretty extensive review of the most current baseline forecast.

Our methodology is not to do a regression off of, let's say, past history, and that history is an indicator of where prices will go moving forward. We rely on these third-party experts over the long term and fundamental assessments of what it costs to produce gas, what is -- where pipelines are likely to be constructed, what policies might influence those prices, and factor those variables into our long-term projections. And so from that standpoint, I believe they are the most accurate and representative projection that we have available to us at this time.

Q Would you agree that the forecasts have substantial risk in fluctuation up or down?

A There is no question that any forecast is uncertain, that they can go up and that they can go down from current expectations. And I'll mimic some comments that Mr. Hoogeveen mentioned in his remarks this morning, which is that this is precisely why we look at a range of scenarios and sensitivities also informed by the most recent review of fundamental factors that could cause gas prices and therefore, power prices to go lower or higher over time. And I'll also say the further out you go, the less certain, I think, those things get over time.

Q If your gas forecast price were a dollar high throughout the range, would that substantially change the economics of this project?

A I don't know that I have the ability to tie it to a specific gas price assumption. We ran the high gas and the low gas case, and so I think there's probably some inferences that could be made from that. I just don't have it at my fingertips right now.

Q Thank you. I'm going to change direction just a little bit here. You mention in your opening statement that there would be a reliability benefit

from these turbines. Could you explain what reliability benefit, as compared to the existing fleet of utility generation assets, would be the result?

A I can generally respond to this question, which is, the new equipment has better controls and ability to improve power quality on the system, they provide additional voltage support. Beyond that, I think Mr. Hemstreet is best if we want to dive into the specifics of that information, but generally, that's the intent. And I would note that there's no specific value attributed to that dollar value in the economic analysis, it's simply a recognition that this more modern equipment provides those additional reliability services that are not available with the current equipment.

MR. JETTER: Thank you. I have no further questions.

COMMISSIONER LEVAR: Thank you, Mr. Jetter. Mr. Russell.

CROSS-EXAMINATION

BY MR. RUSSELL:

Q Thank you, Mr. Chairman. I have a few questions, and I want to focus our discussion on the use of nominal PTC values while using levelized

capital costs. You mentioned in response to a question -- and I apologize, I don't remember whether it was a question from Mr. Snarr or Mr. Jetter -- but you indicated that capital costs are not recovered on a levelized basis; is that right?

A That's correct.

Q Okay. The justification for using nominal values for PTCs is that that's a more accurate reflection of how PTCs will flow through in rates; is that right?

A It's a -- that's correct. It is a more accurate representation of how they flow through in rates. And it's also a more accurate and consistent treatment with how we handle costs, levelizing of costs, over different time periods within our IRP or IRP models in this instance. As Mr. Hoogeveen noted this morning, essentially -- and I complete agree with his testimony -- using a nominal stream of PTC benefits over 10 years would, by definition, generate the precise same present value stream of benefits of those PTC benefits over that same 10-year window. The issue here is that PTCs have a 10-year life, not a 30-year life. If they had a 30-year life, then our approach of levelizing them all the way out for the 30 years would have been more appropriate.

Q If at least part of the justification for using nominal values for PTCs is that it more accurately reflects how PTCs flow through to rates, why is it appropriate to use levelized capital costs because you've acknowledged are not recovered on a levelized basis?

A The easy and quick answer is that the capital costs are spread over the full life of the asset, so through 2050, let's say, in this instance, which goes beyond the forecast period that we're using when running our IRP models, which terminates in 2036. For PTCs, they fall within, wholly within, the 20-year forecast period within the 2036 time frame. That's the quick and easy explanation for why there's a differentiation. The logical rationale as to why that makes sense is because with the capital costs, not only are we not -- we're not capturing the way it's capturing rates when we levelize those, but we're also not accounting for any benefits that that capital cost provides -- that opportunities provides for the last, in this instance, 13 years of the asset life. And so that's the primary justification.

I will highlight, though, that the analysis performed by parties in the most recent round of testimony that attempts to provide nominal capital costs and nominal PTCs through 2036 without going all the way to 2050, shows that these projects provide economic benefits in all cases. So while I do not agree with that approach, that's where my statement in my opening comments of my summary comes from. I don't agree with the approach, but it still shows that our conclusions are valid.

I will also say that if one has concerns with this whole levelization issue, it's a complete nonissue when looking at the results through 2050. Which, again, as Mr. Hoogeveen stated and I support, is the appropriate time frame to analyze for the unique opportunities here in these specific projects, because right after the IRP models stop forecasting, right after 2036, that is the timing when these assets, without repowering, would otherwise hit the end of their lives, essentially retire, and so the incremental energy that they produce goes from roughly 750 gigawatt hours a year up to 3,500. They also, at that time, begin contributing system capacity. So that's the appropriate time frame for those specific reasons on this project to look at, and in that instance, all costs are nominal. And the reason we're able to do all costs nominal -- tying back to my earlier comments in response to the question from Counsel -- is that we're covering the full life of the asset. So in that instance, using nominal capital revenue requirement, nominal PTCs together, makes sense.

Q Doesn't pushing the analysis to 2050 get us away from the 20-year planning process that's used in the IRP, though?

A I will say that going out to 2050 is longer than the 20-year IRP planning window.

MR. RUSSELL: Okay. I don't have any further questions.

COMMISSIONER LEVAR: Thank you. Any redirect?

MS. MCDOWELL: Yes, thank you.

REDIRECT EXAMINATION

BY MS. MCDOWELL:

Q Mr. Link, you had some questions from Division's counsel around the forward price curves used in this case. Can you clarify, has the Company updated the forward price curve throughout this case?

A Yes.

Q And in which analysis did the Company update its forward price curve?

A Well, we had our original filing, and I believe we made an update -- you're challenging my memory on this -- I believe we made an update in our rebuttal and again, we made our final update with our supplemental direct filing.

Q In all of the analysis that incorporated those forward price curve updates, did the Company continue to show net benefits associated with the repowering project?

A Yes. Throughout the entire analytical time frame of this docket, every time that we made an update, the projects continued to show net economic benefits for customers across all the cases, supporting my comments in my opening summary that the fact that we're updating to account for the most current information and circumstances related to this project demonstrates the durability of the benefits that we're projecting for this investment opportunity.

Q And with respect to issues around the low natural gas price curve, does the project continue to show benefits in that low price curve scenario also?

A Yes. There's three low gas curve scenarios with varying CO2 assumptions. All three of them, even the one with no CO2 price assumptions, shows benefits for these projects.

MS. MCDOWELL: That's all the questions I have. Thank you.

COMMISSIONER LEVAR: Any recross, Mr. Snarr?

MR. SNARR: No.

COMMISSIONER LEVAR: Thank you. Mr. Jetter?

MR. JETTER: No, I don't have any recross. Thank you.

COMMISSIONER LEVAR: Mr. Russell?

MR. RUSSELL: I do have one question, just on that last one.

RECROSS EXAMINATION

BY MR. RUSSELL:

Q Not all of the individual repowering projects show benefits in the low gas scenario, correct?

A I believe that's a fair statement. I will clarify that when we go out through the 2050 time horizon, the Leaning Juniper project in the worst, worst, worst case outcome with low gas, zero CO2, is essentially, I believe, break-even economics.

Q   In the 20-year look -- and I'll just refer you to your Table 2-SD in your supplemental direct testimony --

A   I'm sorry. Could you repeat the table number?

Q   Yes. Table 2-SD. It's on page 14.

A   I'm there. Thank you.

Q   Okay. In that table -- correct me if I'm wrong -- this is through 2036, correct?

A   Yes.

Q   And in that table which shows each individual project in the low natural gas, zero CO2 price policy assumption, the Leaning Juniper project shows greater costs than benefits in all three of the model runs that were used in that scenario, correct?

A   Yes, it does. I think in my response to the previous question, I noted it was through the 2050 year results, which consist of with my prior comments, as what I see is the best way to look at these projects. And so, yes, in that one scenario under the 2036 analysis, Leaning Juniper shows costs slightly higher -- or shows a roughly slight net cost for that for this particular project.

Q Okay. Let's turn back one page to Table 1-SD, which is a similar table except this is each project in the medium natural gas, medium CO2 price policy assumption. And in that price policy assumption, the Leaning Juniper shows zero benefits in each of the model runs. And again, this is through 2036, correct?

A Yes, that is what the table shows. And maybe I'll take this moment to highlight that I'm also framing up my comments from a perspective of the conservatism built into our analysis, recognizing there's no capacity value captured in these analyses, that the 2036 does not account for the significant energy increase that occurs right after this time horizon in the capacity value.

MR. RUSSELL: Nothing further.

COMMISSIONER LEVAR: Thank you. Commissioner White, do you have any questions for Mr. Link?

BY COMMISSIONER WHITE:

Q There's a wide range of different scenarios based upon gas prices, carbon outlook, et cetera. Is it -- I understand that some of the projects maybe have potentially higher risk or potentially less benefits. Is the total value

proposition dependent on the entire package, I guess, or is it something from the Company's perspective where it's like, well, yes, we could drop this or not this, you're not -- even the customers are not going to get as many benefits?

A   Again, I'll try to -- I'm willing to make Mr. Hoogeveen's comments on this, that it is fair to look at each project on a project-by-project basis to ensure that we're making the right decisions on a project-by-project basis. And I think we view the Leaning Juniper project as an example as one that shows under -- out of nine price policy scenarios, there is one, potentially, out of nine, that shows it to be unfavorable under one look, under a look that does not account for any of the long-term benefits that I've mentioned. And that when you look at the longer term analysis -- which I believe is the most appropriate in this particular instance -- that does show benefits and accounting for the conservatism. And so, again, taken on a whole, most likely deliver these benefits, one out of, say, nine price policy scenarios under one view is not sufficient to say that that project is not most likely and why we're still supporting the fact that that is a worthwhile and valuable project that we should proceed.

Q I understand that wind is -- you know, it's an intermittent source of energy and there's a lot of wind on the system -- and I apologize if this is in your testimony -- but was the potential effect on how other of the Company's resources are utilized in this new world of, you know, increased wind, was that ever modeled as a cost -- in other words, I'm talking specifically about heat rates of plants.

A Yes, and that's partly why this modeling -- these modeling tools are the appropriate tool to analyze these sort of investments where this incremental energy from these projects will be about 26 percent higher than their current level of production once repowered. That added energy on the system was modeled with an hourly shape and profile that mimics the type of volatility that we have seen in operating these facilities since they've been brought online, roughly ten or more years ago, such that when the output actually increases over time, our system has to redispatch and in fact, when -- in my testimony, I make reference to net power cost benefits and those sorts of things, it's really that dynamic where in hours where the wind is up, it may back down, let's say, an existing generating unit or redispatch a coal or gas plant, avoid the fuel costs there, that is the net power cost benefit accounting for redispatching our system and why it makes sense, again, to analyze these projects in that type of model.

Q So even though it may affect efficiency of certain plants, the overall net power cost benefit is a plus, is what you're saying?

A Yes. Absolutely accounts for -- our models account for heat rate curves and the fact that if they're running at lower levels, that the heat rate goes up, essentially.

Q I just have one other question. I think I heard you correctly -- in your summary, you mentioned something about it's your understanding that the statute by which we're looking at the facts and applying it to the law would not necessarily require need. Can you expand on that? I wasn't sure if that's what you said, and I apologize if I --

A That's my read of the language, you know, that lays out the various factors when determining a request is in the public interest, in this case, and I don't recall seeing the term "resource need." In that instance, it talks about those considerations I mentioned that I cover, I think in my testimony, most likely to deliver the lowest reasonable cost, risk, near-term and long-term impacts, and those elements. So my basis for that statement is on my interpretation of those factors in the statute.

COMMISSIONER WHITE: That's all I have. Thank you.

COMMISSIONER LEVAR: Commissioner Clark?

BY COMMISSIONER CLARK:

Q Thank you. Just a few questions. Good morning. First, can we assume that the cost information on a per unit basis that's in the Company's presentation would apply were the Company to only build one of the projects? Another way to ask that, I suppose, is, is there some element of synergy that's operating in this portfolio of projects and bringing them to fruition that we haven't yet been told about?

A My understanding is that the pricing that we have modeled is a direct reflection of the progress we've made in negotiating agreements with GE and Vestas. And I believe Mr. Hemstreet is certainly better equipped to directly hit on that question.

Q Okay. We'll come back to that, then. Thank you. I thought that might be the case. Now, on the subject of looking at the PTCs from a nominal perspective and the cost -- well, I'll call it the cost stream -- from a levelized perspective, in the case of the 30-year study horizon, did I understand you to say that as you've evaluated that 30 years of costs, that you looked at that on a nominal basis, or was it only nominal from 2036 to 2050?

A The entire time period uses nominal revenue requirement for capital and for the PTCs.

COMMISSIONER CLARK: Thank you. That concludes my questions.

COMMISSIONER LEVAR: I don't have any additional questions, Mr. Link. Thank you for your testimony today. Ms. McDowell.

MS. MCDOWELL: Mr. Lowney is going to handle our next witness, so I'll turn it over to him.

MR. LOWNEY: Rocky Mountain Power's next witness is Tim Hemstreet.

TIM HEMSTREET,

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

DIRECT EXAMINATION

BY MR. LOWNEY:

Q Mr. Hemstreet, could you please state and spell your name for the record?

A Tim Hemstreet, last name is Hemstreet, H-e-m -- street, like a road -- s-t-r-e-e-t.

Q And how are you employed, Mr. Hemstreet?

A I'm the director of renewable development for PacifiCorp.

Q And in that capacity, did you file testimony in this case?

A Yes, I have.

Q And I will represent to you that the testimony you've filed is your direct testimony and accompanying exhibits, your rebuttal testimony, your surrebuttal testimony, your supplemental direct testimony, and your supplemental rebuttal testimony. Does that sound correct?

A Yes.

Q And, Mr. Hemstreet, do you have any corrections to that testimony today?

A I have two corrections to typographical errors in my testimony. The first is on line 350 in my direct testimony. On that line, I said 10 of 32 wind turbines that would not need to be repowered; that number should actually be 12. And that's the number that's correctly reflected in our economic analysis. And my second correction is in my rebuttal testimony filed in October 2017, at line 503. I stated that 160 million data points were used to assess the energy production estimates, and that number should be corrected to 130 million points.

Q Thank you, Mr. Hemstreet. And with those two corrections, if I were to ask you the same questions today, would your answers be the same?

A Yes, they would.

MR. LOWNEY: The Company moves to admit Mr. Hemstreet's testimony into the record as just described.

COMMISSIONER LEVAR: Thank you. If anyone has any objection to that, please indicate to me. I'm not seeing any objections, so the motion is granted.

BY MR. LOWNEY:

Q Mr. Hemstreet, have you prepared a summary of your testimony for the Commission today?

A Yes, I have.

Q Please proceed with that summary.

A Commissioners, thank you for the opportunity to testify today on an amazing project that's available to our customers.

I have worked as an engineer and project manager for the Company since 2004. In 2016, I assumed the role of Director of Renewable Energy Development. In this role, I oversee the development of the Company's renewable energy resources. I feel very fortunate to have a role in this project, which is going to deliver extraordinary benefits to our customers. My job in delivering this project is to help expand the Company's supply of zero-fuel cost energy resources and to achieve the lowest cost of energy for our customers. I look forward to a couple of busy years ahead as they have been in the past, as we work to make this opportunity a reality.

Today's hearing is an important step in this project and in this process. I appreciate the opportunity to testify on the technical aspects of the repowering project, our due diligence in the development of the project, and the favorable commercial arrangements the Company has negotiated with it's suppliers.

At the outset, I want to be clear that the repowering project is on schedule and on budget. Assuming the Commission approves the project by early June, we'll begin work this summer improving foundations and engaging in other construction activities necessary to bring most of the facilities to commercial operation in 2019. This will ensure qualification for PTCs with ample time for unanticipated project issues.

First, I will provide some engineering and commercial background on the repowering project. Wind technology has advanced substantially since the facilities were first constructed between 2006 and 2010. Improvements in materials and design have allowed blades to become longer, and have allowed new control and sensor technologies to mitigate the loads on existing wind turbines. This now allows for our existing towers and foundations to be fitted with more efficient, larger, more reliable equipment. The improved sensor and condition monitoring systems in these new turbines will also allow us to more accurately diagnose and predict maintenance failures so that we can address those before they become issues.

The turbines with which the Company proposes to repower will also include enhanced voltage power quality and inertial support to the transmission system. This will make it easier to integrate wind energy into our system while enhancing grid reliability. The repowering project will also allow the Company and its customers to realize these technological advancements while qualifying the repowered facilities for a hundred percent of the value of production tax credits, resulting in the lowest cost alternative through the continued operation of these facilities.

In November 2016, the Company determined that repowering can be implemented at a subset of our facilities. Our group then moved quickly to secure safe harbor equipment before the end of 2016. This enabled subsequent repowering projects to qualify for that 100 percent of the production tax credit. We then negotiated commercial arrangements with General Electric and Vestas to implement the repowering project, bringing these turbines online in 2019 and 2020. Subsequent refinement of the equipment specifications has materially increased the value of the repowering project and materially decreased uncertainty and risk.

Our eight Wyoming facilities employ GE turbines. For these facilities, the Company has negotiated a turnkey master retrofit contract that provides for repowering at a fixed price with significant risk mitigation provisions that ensure that the repowering can be delivered consistent with the Company's economic analysis. Significantly, the GE master retrofit contract mitigates risk related to achieving commercial operation of the repowered turbines by the end of 2020. This certainty on operations costs provided by a service agreement with the GE turbines also significantly reduces customer risk related to the ongoing operations costs of our wind fleet.

The Company's negotiated contract with Vestas, for the facilities in Oregon and Washington provides similar attractive pricing at fixed cost. We are now finalizing negotiations with wind energy construction companies for the installation of these turbines, and we expect to conclude that process shortly.

Over the last year, we have completed significant due diligence on the repowering project. This increases the certainty that we can deliver all of the benefits described in the Company's testimony.

First, the Company retained Ernst & Young to conduct an independent evaluation analysis of the retained components of the wind facilities to ensure that the retained value of the components does not exceed 20 percent of the final value of the repowered turbines. This is necessary for these turbines to be eligible for the PTCs.

Second, the Company's engineering consultant, Black & Veatch, verified that all the foundations of the facilities are suitable to accept the new equipment with modifications to two of the facilities. Additionally, Black & Veatch has verified that the foundations can withstand additional loading for the longer service lives anticipated through 2050 for these repowered facilities.

Third, we also worked with Black & Veatch to develop estimates of the increase in generation that will result from repowering. We developed the production estimates using the extensive generation data history available for these facilities, incorporating millions upon millions of data points reflecting actual operating conditions to assess the expected generation increases. These estimates also incorporated additional modeled wake losses that will result from the installation of larger rotors to more accurately reflect expected generation. The energy production estimates we have developed are conservative, because they do not take into account additional generation that we expect as a result of increased turbine availability that will be delivered pursuant to the Company's negotiated contracts for service and maintenance.

Fourth, we diligently pursued the permitting necessary to implement the repowering project and now have the major permit approvals required for 11 of the 12 facilities.

What are the benefits of repowering from an operations perspective? As mentioned before, repowering is estimated to increase energy production by approximately 26 percent, with production increases ranging from 17 to 39 percent, depending on the facility.

Repowering will also avoid capital expenditures to address certain major components in the wind fleet that are experiencing significantly higher failure rates than similar equipment. Given the two-year warranty periods for the Wyoming facilities and for the Vestas facilities, repowering also provides a greater certainty related to ongoing operations cost.

Being designed to the same standards as new wind projects, repowering will also extend the asset lives of the repowered facilities by up to 13 years, creating significant additional energy and capacity after the existing facilities would have otherwise retired. The repowered turbines, being of more modern design, will also provide enhanced voltage, power quality, and inertial support, and make it easier to integrate this energy into our portfolio.

As Mr. Link has explained, our economic analysis demonstrates that repowering is the least cost alternative available for the continued operation of these 12 wind facilities. There has been much testimony regarding which projects provide the greatest benefits to customers on an absolute basis, relative to their costs, or relative to other projects. But it is important to remember that the Company's analysis, as well as that performed by others, demonstrates that repowering all these facilities is the least-cost alternative.

Our goal is to operate the Company's wind generation assets in an efficient, cost-effective manner that reduces risk for the long-term benefit of our customers. Repowering offers us the opportunity to do just that and provides us that least-cost, least-risk alternative for the continued operation of these facilities.

Repowering makes sense for customers, and everyone in my group is fully committed to bring this project to reality. I respectfully request that the Commission approve the Company's resource decision and allow the repowering project to proceed so that these substantial benefits can be delivered to our customers.

This concludes my summary. Thank you.

MR. LOWNEY: Mr. Hemstreet is available for cross-examination.

COMMISSIONER LEVAR: Thank you. Ms. Tormoen Hickey, do you have any questions for Mr. Hemstreet?

MS. HICKEY: No, thank you.

COMMISSIONER LEVAR: Ms. Schmid or Mr. Jetter?

MS. SCHMID: My turn.

CROSS-EXAMINATION

BY MS. SCHMID:

Q Good morning.

A Good morning.

Q At lines 396 through 434 of your supplemental rebuttal testimony, you address concerns --

A I'm sorry. Can I catch up with you? This is my February testimony?

Q No. Your supplemental rebuttal. That would be April.

A And line 396?

Q 396 to 434. Here you respond to concerns that Dr. Zenger and Mr. Peaco raised on the estimates of the wind resources, and I have some questions pertaining to your responses.

A Okay.

Q Is it true that you consider the long-term average value to be the appropriate estimate of the energy value to use in the Company's economic analysis?

A Yes. We have used the full output history of these facilities as our baseline assumption for generation.

Q Have you done other estimates regarding uncertainty? So apparently, a P-10 value means that the value will be met or exceeded 10 percent of the time. Have you done any analysis of the range of uncertainty on the annual production, such as estimating the P10, the P50, and the P90 values?

A No, we have not. That's an analysis you do for wind modeling for resources that you're planning to construct, not resources that you have actually operational data from.

Q But despite the fact you have some operational data, you're putting new equipment in; is that right?

A Correct.

Q If we turn now to your chart, your Table 2, which is at line 421 at the bottom of that page.

A Okay.

Q Do you agree that the chart shows an asymmetry of outcomes, some are higher, some are lower?

A I agree that it shows variability in wind production and estimates.

Q Given that for 2015, the value is 12.6 percent lower, do you have an estimate of what the lower bound value might be?

A No, I do not. I believe that was provided in discovery for each year of that four-year period, but I don't have it in front of me.

Q Do you agree that the economics of the project are particularly sensitive to production levels in the first ten years, which is the PTC period?

A   I actually don't, because the PTC is earned on the entire output of the facility, you know, the actual energy production increase. You're earning the full PTC on the entire output, and so the production increase is actually a relatively small increment of the economic return of the entire project.

Q   What happens, however, if the PTC output for the whole project is lower than -- or the production of the project is lower than anticipated? Won't the PTC values be less?

A   Yes. The benefits from the PTC will be less.

Q   For my hypothetical, do you know how much less the PTC benefits would be reduced if there were a 10 percent drop?

A   I do not.

Q   And I don't know if this number is confidential or not. Can you give me just one second?

COMMISSIONER LEVAR: Yes.

BY MS. SCHMID:

Q   Since the number I want to use is confidential, can I just say that would you accept, subject to check, it could be a significant drop?

A No.

Q Okay. We'll leave that. You offer reasons why the Company didn't offer an analysis, prepare an analysis, of a plan to do repowering only on -- I'm going to call them the problematic turbines -- the turbines that are likely to have failed components. And I'm referring to your testimony at lines 435 through 467, and this is also your supplemental rebuttal testimony. I'll give you a chance to get there.

A Okay.

Q Some of this is confidential, so I will steer away from that. For example, one of the issues is confidential. And so it's number three, which is not a confidential thing, so I'm going to refer to it as the third issue. So is it true that -- are the Glenrock I and III and the Rolling Hills facilities each going to be completely repowered?

A No. There are 32 turbines that will not be repowered at those facilities.

Q In your testimony at lines -- around 435 to 467, you say that -- and if I read this correctly, it's on line 439 -- "The analysis that Mr. Peaco suggests presents many challenges as it

would be inconsistent with negotiated contracts with turbine suppliers to repower all turbines at its facilities that can be repowered and qualify for PTCs."

A   Yes, I see that.

Q   Then you say that repowering certain turbines but not others would implicate the service and maintenance agreements. Is that a fair representation of your testimony on 442 to 444?

A   Yes.

Q   So how -- with regard to the Glenrock I and III and Rolling Hills facilities, how did you address the issues that you state here? And in your testimony, you list five, the third of which is confidential.

A   So you want me to go through each of those five?

Q   If you could.

A   Sure. So the first issue relates to pricing, essentially, for the amount of turbines that we have proposed to repower and so that -- from the get-go, once we had identified through our evaluation analysis that we wouldn't be repowering those 32 turbines, that's a negotiated element of part of our GE master retrofit contract, so they're aware of that. That's also included into our service and maintenance agreement with them, that they will maintain as well, the existing turbines that won't be repowered, and they will provide the same exact availability guarantees for those turbines as the remainder of the new turbines. So that's the first two.

The third, I'll just say that that issue can be resolved -- given that General Electric would be working on all those turbines -- that that's not an issue for them since it's a GE turbine facility that we repower with GE turbines.

Fourth, regarding the land rights issue, the Company owns the Glenrock/Rolling Hills project sites, so land rights are not an issue for that facility.

And then, fifth, that's not really an issue that's resolved in terms of -- that would still be an issue in this case because if we were to -- our economic analysis just assumes that those 32 turbines that won't be repowered falls away and so we don't have any -- because we own the land there, we don't have any land lease issues and we also don't really have any issues in terms of needing to use that site later on and finding a new way to repower those 32 turbines in the year 2038.

Q Since you were able to resolve these issues for this subset of projects, why couldn't you have resolved these issues with regard to the other projects? Why did you have to do -- let me rephrase. Why couldn't you have resolved these issues the same in the other contracts?

A Well, I guess I would explain it that my testimony doesn't say that they are unresolved. I'm simply saying that they have been resolved, where this is an issue at the one project site where we are not repowering all turbines. For others project sites, we are not repowering turbines with the same manufacturer, and so that creates an issue in terms of control of that project. And we also have not entered into discussions with landowners about potentially retiring turbines. We're not impacting the land leases in a way that would substantially drop off production from their land as we retire turbines earlier than others.

MS. SCHMID: Thank you. Those are all my questions.

COMMISSIONER LEVAR: Thank you. Mr. Snarr or Mr. Moore?

MR. SNARR: Yes. We have just a few

questions.

CROSS-EXAMINATION

BY MR. SNARR:

Q Mr. Hemstreet, in your April 2018 testimony, back to line 14, you indicate the Company's cost and performance estimates have become more certain, resulting in decreasing risk; is that correct?

A Correct.

Q And in the following line, you also state that the cost estimates are largely fixed. What do you mean by largely fixed?

A I mean that for the GE -- for the turbines that will be repowered by GE, we have a turnkey contract that essentially sets the price, and we don't have any uncertainty about construction delays or other -- I guess to say, if they're doing the whole project at a fixed price, and so we have very known costs, and because these projects -- as well as the Vestas projects because, say, 80, 86 percent -- some range of 80 percent or higher -- of these project costs really relate to the turbine supply, bringing the turbines to the site, and that's the bulk of the cost. The installation cost is much less in the project than just the actual equipment. Those equipment prices are now fixed, and so we have great certainty about the majority of the costs of these projects.

Q You talked about the mitigation of risks related to construction delays and any concerns that might compromise the production tax credits eligibility. I believe that's referenced in lines 15 and 16. Do you have any provisions in your contract that provide some recompense for the failure to get the project completed timely, and the failure being, the inability of the Company to take any of the production tax credits?

A In our GE contract, we have -- we have a guarantee that these projects will be brought online by the end of December 2020, or any turbine not brought online by that deadline will essentially be repowered for free.

Q Do you view that as an appropriate offset -- or is it a comparable offset to what the costs would be and the production tax credits might be if it were brought online timely?

A I think that's -- it may even be -- well, I don't want to overstate. I don't want to -- this is not a confidential discussion, so I would just say, I think that very fairly reflects the loss of production tax credits because in that instance, the Company, its customers, would have received a repowered turbine that will last ten years longer and produce, say, 22 percent more energy, and all that will be offered, essentially, for free. From General Electric, there would still be costs on the Company's side of implementing the cost of that turbine retrofit.

Q Do you have similar -- and are there similar guarantees or protections with the Vestas contracts?

A No, there are not.

Q And isn't it true that both for the GE activities that are required, as well as the Vestas activities that are required to accomplish the repowering, that there may be a whole host of other contracts dealing with other contractors to accomplish the task?

A Well, there's really just for each project one other -- for the Vestas projects, there will be Vestas and then there will be for turbine supply, and then there will be, essentially, one major contractor for installation. There will be other project management personnel that the Company will hire, engineering oversight, but the major -- for

GE, really, one contractor, GE for Vestas as well as an installation contractor.

Q So with respect to the GE contract, if the repowering wasn't accomplished timely, basically it would be zero cost to you and then that would be zero cost flowing through to the customers; is that right?

A I believe so. Still, I would say we will have management costs, project management costs, related to oversight of getting a turbine repowered. So that would -- those costs, I'm sure we would seek to bring into rates, but also remember in addition to that contractual provision from GE, the Company has also guaranteed PTC qualification for all of these turbines. And so whether it be contractual mitigation through the GE contract or just the Company's assumption of that risk, the customers would be held harmless for that failure to qualify for PTCs.

Q But the way in which that would be implemented would be to -- basically, you're selling this project based upon the idea that we have certain costs and we have a certain number of PTCs to offset that cost. So if there's a failure of meeting a deadline to acquire the PTCs, then are you

suggesting, basically, the guarantee that the Company is providing that no cost associated with any of those repowered facilities might come on too late to acquire PTCs, that basically there will be no cost flow through to the customers with respect to those specific facilities; is that right?

A   I don't think that's the nature of the guarantee. I think the guarantee of the Company is guaranteed PTC qualification so you know, there would be project management costs of bringing that turbine online. So let's say, as a hypothetical, a turbine was brought online on January 2nd and didn't qualify for PTCs. I think we would treat that turbine -- there would be costs of that installation. The Company would assign its normal project management cost allocation to bringing that turbine online, but you know, presumably, the PTC value would be imputed in our rates because the Company would have assumed that risk and of course, the GE contract provides for that to be reimbursed to the Company, or the value of that to be -- that turbine would be repowered for free. So exactly how that would show up in rates, I would refer to Ms. Steward. But essentially, it would be -- it's a zero-risk proposition for the Company and the customers.

Q And because you said zero risk, I'm going to pursue this a little bit further. You could accomplish that zero risk for the ratepayers by not charging anything for the repowered facility that might not acquire the PTCs. Or alternatively, couldn't you accomplish that by charging for the costs that you've incurred, but then imputing the full value of PTCs, which basically the Company would eat if they weren't actually being able to take that under the IRS code?

MR. LOWNEY: Objection. I believe Mr. Hemstreet indicated that the ratemaking consequence of the Company's guarantee is better addressed by Ms. Steward, who is our witness on regulatory policy issues and ratemaking issues. So I believe these question would be better directed to Ms. Steward who is available and will testify shortly.

COMMISSIONER LEVAR: Mr. Snarr, do you want to respond to the objection?

MR. SNARR: I'll wait and we'll consider pursuing the issue with Ms. Steward.

BY MR. SNARR:

Q You do talk about risks associated with

the repowering projects, do you not?
A I do.
Q I want to focus just a minute about the risks of cost overruns. Do such risks exist?
A I think such risks always exist in any type of project. I think we've really mitigated the risks of that with our fixed price contracts that we've negotiated.
Q Now, you've mitigated them, but to the extent that construction costs still could rise, that risk is an element in connection with pursuing this project; is that right?
A Yes, it is.
Q And aren't there also risks associated with this project, associated to the ultimate performance, even if that's dependent somewhat on wind on a given day?
A I'm sorry. I want to correct my last response. I would say the construction costs related to the Vestas turbines, those are still subject to change as we complete the negotiations for the GE projects, which are two thirds of these projects. Those costs are fixed.
Q I appreciate that clarification. With respect to the risk of whether these completed

projects will actually perform to bring on the energy that has been projected, how have you addressed that in any of the contracts?

A The contracts have standard performance guarantees in terms of the power curve that's represented, so the manufacturers essentially guarantee that -- have a warranty provided for the power curve, meaning that the amount of energy that you expect to get -- you know, that they're not misrepresenting the amount of energy that you would anticipate getting from the installation of these turbines. So a standard provision of every turbine supply contract I've ever seen is a power curve guarantee. So that's -- we have the ability to hold them to that guarantee contractually. And so if we see production being less than we think it ought to be, or if we have a suspicion that they've overrepresented what these turbines can do, we can initiate a test that would allow us to verify that the production from a nominated turbine is -- matches their power curve.

Q Hypothetically, if you did one of those tests and you were able to verify that the energy being produced from a particular turbine after repowering is coming in at, let's say, 93 percent of

what the guarantee was or the production curve was, what would the remedy be and how will that be provided to the Company?

A There are liquidated damage provisions in the turbine supply contract that say, you know, for each incremental percent off that they are, they will pay liquidated damages for that amount and that's supposed to represent, essentially, the lost energy that you're not achieving by having a deviation from that power curve.

Q And I'm curious, then, as to how those liquidated damages -- in the event that something happened that would require the payment of liquidated damages -- how that would provide any kind of compensation or benefit to the ratepayers who would be otherwise sitting there without the promise to energy that has been projected in this docket.

A Well, again, those liquidated damages are intended to reflect, you know, the economic harm that that would cause and so again, how that would be passed to customers, I would refer to Ms. Steward about that.

Q With respect to the possibility of cost overruns, or even the possibility of lack of full

production of the energy that is projected -- two risks that we've just talked about -- isn't it true that this Commission could require the Company to meet certain conditions or provide certain recompense in order to ensure that the customer might be protected, based upon the suggested guarantees the Company is making?

A I would really have to defer that also to Ms. Steward in terms of the regulatory authority of the Commission to impose certain conditions on the performance of a project.

MR. SNARR: I have no further questions.

COMMISSIONER LEVAR: Why don't we go ahead and take a break, and we'll continue at 1:00 with Mr. Russell's examination of Mr. Hemstreet. Thank you. We're in recess.

(A recess was taken.)

COMMISSIONER LEVAR: We will continue with Mr. Hemstreet's testimony. You're still under oath from this morning, and we'll go next to Mr. Russell, if you have any cross-examination.

MR. RUSSELL: Thank you, Mr. Chairman.

CROSS-EXAMINATION

BY MR. RUSSELL:

Q Mr. Hemstreet, I wanted to follow up on some questions that you had discussed with Mr. Snarr related to the fixed price contracts, the GE contracts. You indicated that they are fixed price contracts, and I'm curious whether there is any opportunity for that fixed price to change as a result of a work order, or a change order, or some other similar mechanism?

A I think the opportunity for change orders is very limited. I'd have to go back and review all the contract provisions about change orders, but they have assessed the sites, they've visited these sites, and they've maintained these sites, and so they really know what they're getting into. So we really did our best to eliminate any opportunity for changes. There are, of course, force majeure provisions and standard contractual provisions around changing law and other things like that that could impact the overall price of the contract, but it's really pretty locked down in terms of its price.

Q In your summary, you indicated that -- and if I'm wrong about this, please correct me -- I believe you indicated that 11 of the 12 facilities,

you've received full permitting for. Is that consistent with what you said this morning?

A Yes.

Q Tell me about the 12th one. Which facility do you not have full permits for?

A That's the Leaning Juniper facility, and I think we'll receive that approval in the next week or so.

Q What permits are you waiting on?

A That is a conditional use permit from the county, and in the state of the Oregon, that's what governs our facilities.

Q Thank you. When the Company filed its direct testimony, it provided its economic case for this project based on certain rotors or blades. And I gather that over the course of this case, the rotors or blades that you intend to use has changed; is that right?

A That's consistent with my testimony.

Q Can you explain what that change has been and what the intention is now with respect to which rotors and blades you intend to use?

A Over the course of the case, we did make a change in October in rebuttal testimony. GE was able to prove out a new rotor diameter, a 91-meter rotor instead of an 87-meter rotor, that that would technically work for our facilities. And so that was the change that was reflected in our cost and performance update back in October.

Q And will all of the repowered wind facilities receive that new -- I think you said 91-meter blade?

A In Wyoming, yes.

Q But not in Washington and Oregon?

A No. Those are Vestas projects with different equipment supply.

Q Okay. Thanks for that clarification. You also indicated, I think, in your testimony and in your summary, that certain of the facilities required some work to be done, I think, on the foundations, but it may have been something else. Can you expound on that a little bit?

A Yes. So the foundations for the Leaning Juniper and the Goodnoe Hills facility, those needed standard retrofits, essentially, to strengthen the foundations so that they will meet current code related to the loads that they're subjected to.

Q And with those changes in foundation, will the Leaning Juniper and Goodnoe Hills be able to utilize the new blade technology? I understand that

those are in Oregon, I think, and so they're not the GE blades, but will they be able to utilize new or more economical blades?

A Those foundation retrofits are consistent with the blade specification that we have for those projects as reflected in the Company's economic analysis.

Q There was also some discussion in your testimony about new interconnection agreements for the Marengo I and II facilities. Do you recall that?

A I do.

Q Okay. And can you tell me what the status of that is?

A We have been issued a new, large generation interconnection agreement for the Marengo I and II facility that allows us to add that additional capacity to the transmission system.

MR. RUSSELL: Okay. That was all I had.

COMMISSIONER LEVAR: Mr. Lowney, do you have any redirect?

MR. LOWNEY: Yes, I do. Just a few questions.

REDIRECT EXAMINATION

BY MR. LOWNEY:

Q Mr. Hemstreet, do you recall when you were being asked by Ms. Schmid some questions about how the Company has used its historical data to forecast the energy production you expect to experience once these projects are repowered? Do you recall those questions?

A I recall general questions, but not specific ones.

Q I'll ask you a more specific one. Ms. Schmid asked you a question about whether or not the historical data that was used can be applied to the new technology and the new turbines that are being applied. And I'd like to clarify for the record, is it your testimony that that historical data is valid on a reasonable basis to forecast --

A I do recall. I think the question was about whether or not -- because the new turbines are a different equipment type, whether using historical generation data from our old equipment was relevant to assessing the generation from the new equipment. And so to clarify what was done, essentially, that generation history tells us that, given the turbine specifications and the power curve for the old equipment and knowing that, at a moment in time, that equipment was able to generate this amount of energy, that equates, essentially, to a wind speed. And so we can use that wind speed that we infer from the generation output to use to apply to the new power curve. And so it's really just a change in the equipment specifications that allows us to use that history to tell us what the winds were, and then apply the new power curve to those winds to generate our generation estimates.

Q Mr. Hemstreet, you were also asked a question about, sort of, the consequence of a 10 percent decrease in the forecasted energy production that's assumed as a result of repowering. Do you recall that question?

A I do.

Q And in your professional judgment, do you believe there's a material risk in this case that your energy productions are going to be off by 10 percent?

A No, I don't. For our energy production to be that low, that would essentially assume that our energy production increases are overstated by about 125 percent. And so nobody, I think, has alleged that there's any errors in what we've done in terms of assessing the energy production. So for us to be that far off of our estimates, we'd really have to be -- I can't possibly imagine how that would come into place.

Q Mr. Hemstreet, you were also asked some questions about the feasibility of doing a more detailed turbine-by-turbine economic analysis, as was discussed in Mr. Peaco's testimony. Do you recall some of those questions?

A I do.

Q Now, when you responded to Mr. Peaco's analysis on these issues, did he demonstrate that even the lower economic -- even the turbines that have a lower economic value would be uneconomic to repower?

A No. His analysis simply showed that it would be more economic to repower turbines that you knew you already had to spend capital to address impacted equipment. And so his analysis didn't show that it was not economic to repower all of the turbines, just that it's relatively more economic to repower those that you know you're going to have to spend additional money on to keep running.

Q I think I have one more question. You were asked, I believe by Counsel for the Office, about the differences between the Vestas and GE

contracts in terms of the schedule guarantee provision. Do you recall those questions?
A I do.
Q And I believe you testified that the Vestas contracts do not have the same schedule guarantees that exist in the GE contracts; is that correct?
A Correct.
Q And despite the fact that they don't have the same guarantees, has the Company taken other steps to ensure, to the best of its ability, that those projects will be online by the end of 2020?
A Yes. Although our installation contracts will have liquidated damages for scheduled delays, but also all of the Vestas turbines are planned to be installed in 2019, so a full year ahead of the deadline for achieving PTC qualification.
MR. LOWNEY: Thank you. I have no further questions.
COMMISSIONER LEVAR: Thank you. Ms. Schmid, do you have any recross?
MS. SCHMID: Can I have just one moment?
COMMISSIONER LEVAR: Certainly. If you'd like, I can go to Mr. Snarr first and see if

he has any recross.

MS. SCHMID: That would be delightful. Thank you.

COMMISSIONER LEVAR: Okay. Mr. Snarr?

MR. SNARR: We have nothing further.

COMMISSIONER LEVAR: Okay. Then you can have a moment.

MS. SCHMID: I do have just a bit of recross if now is appropriate.

COMMISSIONER LEVAR: Yes.

RECROSS EXAMINATION

BY MS. SCHMID:

Q In your redirect, you talked about using performance of -- I'm going to call it the initial equipment -- and taking that sort of data and using it to help project output and other things associated with the replaced equipment; is that correct?

A Correct.

Q When you did that, did you also take into effect the rate of outages and other things that caused the old equipment to produce less than anticipated and apply that sort of analogy or data to the new turbines?

A We did. So essentially, we took our entire data history that had outages for curtailments, any offline turbines for maintenance, and just essentially ran that new power curve through all of that data, you know, at the wind speed. So if the turbine wasn't operating because it was down, then we did not assess a performance increase at that moment in time. So essentially, all of that downtime was baked into that four years of data, so the estimates really reflect the existing outage history that happened in those years. Those performance estimate increases were then applied to our entire generation baseline history from these projects, which includes all of that outage time, all of those curtailments or transmission outages as well. So does that answer your question?

Q That does. And I have just one, perhaps two more.

A I guess I would clarify also, we did not -- our performance -- our service and maintenance agreements have higher availability guarantees than that historic generation baseline, and so because of that, the estimate is essentially conservative because we anticipate that we will get more generation than our historic baseline under which we operated in our service agreements that had lower availability guarantees, but we did not take that into account.

MS. SCHMID: And I don't have anything else. Thank you.

COMMISSIONER LEVAR: Thank you, Ms. Schmid. Mr. Russell, do you have any recross for Mr. Hemstreet?

MR. RUSSELL: I do not.

COMMISSIONER LEVAR: Thank you. Commissioner Clark, do you have any questions?

COMMISSIONER CLARK: Thank you, yes.

BY COMMISSIONER CLARK:

Q Good afternoon, Mr. Hemstreet. Regarding recent FERC orders on -- or requiring certain inertial capabilities, or that new wind turbines have certain inertial-providing capabilities, you're aware of those? I think it's FERC order 842.

A Generally, I'm aware of them, yes.

Q And the equipment that we're addressing, would it meet those capabilities or any issue about additional costs that would be necessary to meet those new requirements?

A My understanding is that those

requirements apply to new installations and essentially, old projects are grandfathered so those inertial requirements aren't applicable to existing facilities. But the turbines we're installing will meet those new standards and provide that additional support. And I should clarify, I'm certain of that in Wyoming; I'm less certain about the turbines that we'll install in Washington because I haven't looked at that issue specifically. But I would imagine that because this is a new FERC requirement, that all turbines manufactured and installed by the manufacturers will be meeting these new requirements.

Q Your direct testimony addressed wind inertia control, I think was one of the -- and wind free reactive power control features. Those are the kinds of things that -- at least relative to the GE turbines -- would satisfy these new requirements. Am I right about that?

A Correct.

Q Okay. As you I'm sure are aware, if we approve some or all of the application, we have to make findings as to approve project costs. And I'm interested in your view as to whether or not we have in the record, the cost information that we would

need if we were going to choose among the projects that have been proposed and not select all of them, or not approve all of them. And I have particularly in mind, the master agreement that -- there are umbrella agreements that address the turbines in question. So do we have those numbers? Do they change if some are -- if some projects are selected and not others?

A   I think we would have to pursue into the GE master retrofit contract, which kind of anticipates repowering all of those projects. I would want to go back and confirm with GE that that price was still valid. So I guess there would be an opportunity there to see if that changed their efficiencies. It's a large contract, obviously, in terms of the number of turbines that are being repowered, so if there were fewer, then I'd have to go back and check to see whether that would allow them to reopen that.

Q   But as you understand the contract terms as they currently exist, at least, don't accommodate that kind of adjustment?

A   No, they don't. I think the contract was essentially also built to allow -- essentially, if regulatory approval didn't happen for a certain project, then there's no automatic adjustment to the contract price.

Q And what would be the best information in the Company's presentation that we would look to to identify the unit-by-unit cost?

A I think in our February 1st filing that had a unit-by-unit project cost estimate, that all added up to our 1.1 billion estimate.

Q Now is your chance to point to any specific exhibits so we don't get confused. And maybe you should do that.

A Yes. So in the supplemental filing, this is my Exhibit TJH-1SD, page 1 of 3. And it's the end of the base case repowering scenario. There's a capital cost column --

Q Right.

A -- that adds up to our $1.1 billion estimate.

COMMISSIONER CLARK: Thanks very much. That concludes my questions.

COMMISSIONER LEVAR: Thank you. Commissioner White?

BY COMMISSIONER WHITE:

Q I'd like to follow up on that question of the wind inertia. In your direct testimony, you

mention that the benefits of having not been quantified in terms of the current economics of the project, but they are an ongoing study; is that correct?

A We had hoped that during the pendency of this case, that we could get an analysis from our transmission provider, PacifiCorp Transmission, about the benefits and how those features offset other reliability needs that would happen in Wyoming. Unfortunately, we were unable to get that study completed. I understand that study may be part of a larger study that's kind of outside of the -- essentially not a request a transmission customer can simply make. So we took that, essentially, out of the case, and the benefits aren't reflected for that equipment, but the -- it will be provided as far as this project, but we haven't been able to assess what those benefits are.

Q But at some point, we may be able to see the potential --

A I would hope that at some point, we can get a transmission study that would reflect, you know, here's what the cost would be if we didn't have these features, and here's what the cost would be if we can't. But I'm not a transmission planner, I don't run that part of our business, so I don't know if that will be able to be provided.

Q And then, just -- I was a bit intrigued by that contract provision that essentially, you know -- if construction schedules are not met by the GE contract, that they will essentially do the repower for free. Without disclosing any confidential provisions in the contract, what is that -- can you give me a ballpark number of what that amount per turbine is, or is that confidential? I'm trying to understand what the magnitude of what the potential hit would be if that date was not met.

A I'm afraid that's confidential, the turbine price.

COMMISSIONER WHITE: Okay. That's all the questions I have.

BY COMMISSIONER LEVAR:

Q Thank you. I just have one question. In your supplemental direct, you make a reference to the current timeline for completing everything except Dunlap in 2019, you make a reference to, "based on the anticipated timing of the Commission's order in this docket." What anticipated timing were you using? Is there some point at which -- if we haven't issued an order by some point -- that starts

to affect the completion dates?
A We really are planning on a June 1st decision, and we're lining up all of our contracts to be able to be executed immediately upon the Commission's order in this case so that we can get those contracts going and get the work done this year that we need to do, and get turbine suppliers, manufacturing equipment, for these projects.
COMMISSIONER LEVAR: Thank you. I appreciate that. Thank you for your testimony today. And I'll go to Ms. Schmid. I don't think we're at the point where we need to change the order of the witnesses to accommodate Mr. Thompson. If we get into another hour or two and it looks like we might need to, we'll reassess, but I think at this point we should continue with the Utility's witnesses. So either Ms. McDowell or Mr. Lowney?
MR. LOWNEY: Thank you. Rocky Mountain Power's next witness is Ms. Joelle Steward. I'm sorry, Nikki Kobliha.
NIKKI L. KOBLIHA,
having been first duly sworn to tell the truth, was examined and testified as follows:
DIRECT EXAMINATION
BY MR. LOWNEY:

Q Good afternoon, Ms. Kobliha. Could you please state and spell your name for the record?

A Nikki, N-i-k-k-i, K-o-b-l-i-h-a.

Q And how are you employed?

A I am the vice president, chief financial officer and treasurer of PacifiCorp.

Q In that capacity, did you file testimony in this case, and that testimony would be your rebuttal testimony, surrebuttal testimony, and supplemental direct testimony?

A Yes, I did.

Q And do you have any corrections to that testimony today?

A No, I do not.

Q So if I asked you the same questions, your answers would be the same?

A Yes, they would.

MR. LOWNEY: I'd like to move for the admission of Ms. Kobliha's rebuttal, surrebuttal, and direct testimony into the record.

COMMISSIONER LEVAR: If any party objects to that, please indicate to me. I'm not seeing any objections, so the motion is granted.

BY MR. LOWNEY:

Q Ms. Kobliha, did you prepare a summary of

your testimony for the Commission today?

A Yes, I did.

Q Please go ahead and provide that testimony.

A Good afternoon, Commissioners. I appreciate the opportunity to be here today to discuss my testimony with you.

In my testimony, I discuss the relevant provisions of the federal tax code that Company relies on to obtain benefits of the federal wind production credits, or PTCs, which provide significant value to the repowering project. I also outline relevant provisions of the federal income tax reform enacted in December of 2017, and confirm that there are no changes to federal income tax law on PTCs.

The Internal Revenue Code provides that a wind facility can generate a PTC equal to an inflation adjusted 1.5 cents per kilowatt hour of electricity that is produced and sold to a third-party for a period of ten years, beginning on the date the facility is placed in service. PTCs, however, are being phased out. A wind facility is eligible for 100 percent of the PTC only if it began construction before January 1, 2017. A taxpayer can demonstrate that construction began by incurring five percent or more of the eventual total cost of the wind facility. The Company relies on this 5 percent safe harbor method to demonstrate that construction of the repowering project began before January 1st, 2017, and are therefore eligible for 100 percent of the PTC.

In addition to the 5 percent safe harbor requirement, the wind facility must satisfy the continuity of construction requirements. The Company intends to meet this requirement through the four-year calendar safe harbor, which in our case means that all facilities must be placed in service no later than December 31st, 2020, in order to qualify for 100 percent of the PTCs.

Repowered wind facilities also must meet the IRS 80/20 test to qualify for the PTCs. The IRS 80/20 test says a repowered facility may qualify as a new asset and originally placed in service for purposes of starting a new 10-year PTC production period, even if it contains some used property, provided that the fair market value of the used property is no more than 20 percent of the facility's total value, which is defined as the cost of the new property plus the value of the used property.

To minimize the risks associated with the 80/20 test, the Company engaged a third-party expert firm to value the retained equipment. In December of 2017, Congress passed and the president signed H.R.1, more commonly referred to as the Tax Act. The passage of the Tax Act resulted in several changes that impact the Company. Most notably, the Tax Act lowered the federal statutory rate from 35 percent to 21 percent, and it modified the bonus depreciation rules as it relates to regulated utilities. The Tax Act, however, does not make any modifications to the federal income tax code or any Internal Revenue Service guidance related to the values of the PTCs, or the methods by which the Company intends for repowering the projects to qualify for 100 percent of the PTCs.

The enactment of the Tax Act, therefore, resolves the uncertainty that existed in late 2017, because the impacts are now known and incorporated into the Company's economic analysis. That concludes my summary.

MR. LOWNEY: Thank you. Ms. Kobliha is now available for cross-examination.

COMMISSIONER LEVAR: Thank you.

Ms. Tormoen Hickey, do you have any questions for Ms. Kobliah?

MS. HICKEY: No, thank you, sir.

COMMISSIONER LEVAR: I'll go to Ms. Schmid or Mr. Jetter.

MS. SCHMID: No questions from the Division.

COMMISSIONER LEVAR: Mr. Snarr or Mr. Moore?

MR. SNARR: No questions from the Office.

COMMISSIONER LEVAR: Mr. Russell?

MR. RUSSELL: I have no questions either, Mr. Chairman.

COMMISSIONER LEVAR: Commissioner White?

COMMISSIONER WHITE: No questions.

COMMISSIONER LEVAR: Commissioner Clark?

COMMISSIONER CLARK: No questions. Thank you.

COMMISSIONER LEVAR: I don't have any questions either, so thank you for your testimony. Mr. Lowney.

MR. LOWNEY: Yes, thank you. I now

call Ms. Joelle Steward to the stand.

JOELLE R. STEWARD,

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

DIRECT EXAMINATION

BY MR. LOWNEY:

Q Ms. Steward, can you please state and spell your name for the record?

A My name is Joelle Steward, it's J-o-e-l-l-e S-t-e-w-a-r-d.

Q How are you employed?

A I am vice president of regulation for Rocky Mountain Power.

Q In that capacity, have you adopted or filed prefiled testimony in this case?

A Yes, I have.

Q And that testimony was the direct testimony, at the time, of Mr. Larsen. It was filed in June, the rebuttal testimony of Mr. Larsen you adopted filed in October, the supplemental direct testimony filed in February of this year, and the supplemental rebuttal testimony filed in April of this year; is that correct?

A Yes.

Q And if I were to ask you the same

questions that are included in this prefiled
testimony today, would your answers be the same?
A   Yes, they would be.
MR. LOWNEY: The Company would move to admit Ms. Steward's testimony into the record.
COMMISSIONER LEVAR: If anyone objects to this motion, please indicate to me. I'm not seeing any objections, so the motion is granted.
BY MR. LOWNEY:
Q   And Ms. Steward, have you prepared a
summary of your testimony for the Commission today?
A   Yes, I have.
Q   Please proceed.
A   Good afternoon. My testimony explains the Company's proposed ratemaking treatment for the costs and benefits of the repowering project, as well as the proposed recovery for the original plant that is being taken out of service.
For the new cost and benefits, the Company proposes an interim mechanism, the Resource Tracking Mechanism or RTM, to recover the costs and pass back the full benefits of the project until the full costs and benefits are included in base rates. The RTM would work in conjunction with the Energy Balancing Account, or EBA, to match recovery of

costs for repowering with the benefits. The RTM would include the capital costs of the projects and the production tax credits. The EBA would include 100 percent of the incremental zero-cost energy from the incremental generation from the projects.

Approval of the RTM is beneficial for a couple of reasons. First, it matches costs with benefits. Without the RTM or some other ratemaking treatment, customers would begin receiving the benefits from the incremental amount of generation through the EBA without paying any of the costs necessary to obtain those benefits.

Second, the RTM will allow the Company to align several rate pressures into one general rate case. Because the repowering projects go into service across multiple years, the RTM will enable the Company to bring all of the repowering facilities as well as the new wind and transmission resources in the 40 docket into base rates in one rate case. This will help avoid the costs and complexity of back-to-back rate cases. In addition to aligning cost pressures into one rate case, the RTM would provide a more timely pass-through of benefits.

The Company has also proposed a cap on the

RTM so that it will not act as a customer surcharge, thereby providing an asymmetrical customer benefit. Following tax reform, however, the Company proposed having the opportunity to defer costs over the cap that are attributable to tax reform, with recovery through an offset from the deferral of the tax benefits. The parties criticized the Company for what they consider a change in the Company's proposal to remove the RTM's asymmetrical benefits. However, we believe this characterization is incorrect. First, the Company never committed to absorb risk beyond its control, such as changes in the tax law and instead, proposed to bring such changes for review and consideration by the Commission and parties, which is what we did in the February filing following tax reform.

Second, the deferral would be related to the change in the tax rate only. The Commission would still absorb costs over the cap for any other changes, and so it remains asymmetrical in the customer's favor. The RTM would remain in effect until the full, annualized cost and benefits of the repowering project are included in base rates. After that, the RTM would remain in effect simply as a PTC tracking mechanism to ensure that customers receive a hundred percent of the PTC benefits resulting from repowering.

The RTM will not diminish the Company's incentive to prudently manage the cost of repowering because all costs and our management of the projects will always be subject to a prudence review before inclusion in rates.

Although the Company believes the RTM is the best proposal to match costs and benefits, the Company is open to alternatives, such as the deferral proposal raised by the DPU, provided that the ratemaking appropriately matches costs and benefits.

In addition to the RTM, the Company is requesting ongoing recovery of the original plant in rates. The economic analysis included recovery of this legacy plant in determining that repowering is lower cost than other alternatives. As such, the Company recommends these assets continue to be recovered in rates, and further recommends that the amortization period for these assets be addressed as part of the next depreciation study, which we are preparing for filing in September.

Several parties propose conditions that they argue the Commission should apply if repowering is approved. These proposed conditions are unprecedented and entirely unnecessary because they are premised on two misconceptions. First, parties claim that repowering is not a traditional utility investment because it is not tied to a need for incremental energy. This premise is incorrect. Repowering provides incremental energy that would otherwise be purchased or generated and does so at a lower cost. Imposing onerous conditions on repowering would provide a powerful disincentive for the Company to pursue economic opportunities for customers in the future.

Second, parties claim that there is an uneven sharing of benefits between the Company and customers. This claim is also incorrect. The only Company benefit is the recovery of its costs, including its cost of capital. Customers benefit through the $1.2 billion in PTCs generated by the repowered facilities, as well as through lower net power costs. Importantly, the fact that customers will receive net benefits indicates that the total benefits received by customers is greater than the costs recovered by the Company. There is no inequity in this case. It's a balanced outcome for both the Company and customers.

In closing, we requested the Commission approve the RTM as an interim mechanism to provide a matching of costs and benefits and recovery of the replaced equipment through depreciation rates. That concludes my summary.

MR. LOWNEY: Ms. Steward is available for cross-examination.

COMMISSIONER LEVAR: Thank you. Ms. Tormoen Hickey, do you have any questions for Ms. Steward?

MS. HICKEY: No, thank you.

COMMISSIONER LEVAR: We'll go to Mr. Snarr or Mr. Moore.

CROSS-EXAMINATION

BY MR. MOORE:

Q Ms. Steward, were you here in the room when Mr. Hemstreet testified?

A Yes.

Q Are you familiar with his testimony, his prefiled testimony?

A Yes.

Q There were two questions that he sort of shifted to you. Why don't we go through those questions?

A Okay.

Q In the event of a delay that would trigger the mitigation measures the Company has received from its contractors, how would such mitigation measures provide rate relief to Utah ratepayers?

A I believe you're talking about the liquidated damages?

Q That's one of them, yes. Why didn't we address that one first?

A We would, based on what the -- what it was that required the liquidated damages to be incurred to the extent where we received the liquidated damages, we would look at the appropriate accounting treatment for those. And there are various ways that those would flow back to customers. They could probably flow back through the EBA -- I don't know that we've done that in this state, we have done that in other states where we've used the EBA -- it could be a regulatory asset or a liability -- we get those two mixed up, which way they go -- but they would go back to customers to the extent that those investments were in rates.

Q Would such mitigation measures provide the same extent of ratepayer benefits the Company is claiming in its filing if the project had been -- if there were no violation of the contract and, for

instance, if a contract was violated and you didn't receive the PTCs, would the ratepayers receive the same benefits that they would if the contract was actually completed on time and the PTC benefits were realized?

A In terms of the liquidated damages in the contracts, I am not familiar with the specific terms of those contracts, so I could not answer if there is, like, a dollar-for-dollar treatment. I'm sorry. That question would have to go back to Mr. Hemstreet.

Q He tossed it over to you.

A The ratemaking treatment, but not the actual value of how those would be calculated through the contract.

Q Has the Company not provided a witness that can answer the question about how liquidated damages compare to the PTC benefits?

MR. LOWNEY: Objection. Ms. Steward just indicated if the question is about the terms of contract, Mr. Hemstreet is available to answer. If the question is about how the consequences of that contract will flow through to customer rates, Ms. Steward is the correct witness to answer that question. We're happy to bring Mr. Hemstreet back up if the question is more properly directed toward the terms of the contract.

COMMISSIONER LEVAR: I think I'm going to sustain that objection. The question to Ms. Steward whether the Utility has provided a witness to answer the question, I don't think is the right question. To me, it's clear on which two issues they can address. If there needs to be supplemental responses on the contract damages, I think we got some answers from Mr. Hemstreet earlier. But it seems to me Ms. Steward has been willing to answer the ratemaking result of those contractual provisions.

BY MR. MOORE:

Q Can we turn to your testimony now?

A Okay.

Q Could you please turn to lines 125 through 128 of your April 23rd, 2018, supplemental rebuttal testimony?

A Which lines again?

Q Lines 125 to 128.

A Okay.

Q It provides Ms. Ramas requested that if approved, the Commission lock in Utah customers' allocation share of repowering investment, based on

the Company's current interstate allocation method. Then it cites Ms. Ramas at lines 303 to 337. And the question was asked if this was reasonable, and you responded no. Did I correctly state your testimony?

A Yes.

Q Also, at lines 132 and 134 of the same testimony, you stated, "In effect, Ms. Ramas is recommending that the Commission predetermine the outcome of the current multi-state process." Is this correct?

A Yes.

Q Are you aware that after you filed your April 23rd testimony, the Office filed an errata concerning portions of Ms. Ramas' testimony that you reference in your April 23rd testimony?

A Yes.

Q In the context of the errata filing which is consistent with the Office's position throughout this docket, is it clear to you that the Office is proposing a cap only on the amount of costs that the Commission pre-approves?

A And I remember seeing Ms. Ramas' errata. I cannot remember exactly which line it was that she deleted.

Q Regardless of whether you're clear on the Office's position, would you agree with me that capping the pre-approved costs does not limit the amount of costs the Company could request to recover from customers?

A Yes.

Q Isn't it true that capping the amount on the pre-approval costs does not violate the 2017 protocol?

A I believe that's correct, yes.

Q Now, let's turn back to lines 81 to 89 of your June 30, 2017, direct testimony that you adopted.

A I'm sorry. Which line again?

Q 81 to 89.

A Okay.

Q The question was asked, "Under what authority is the Company proposing approval of ratemaking treatment for the wind powering projects?" The question was answered by referring to three statutes: Utah Code section 54-4-23, 54-17-402, and 54-17-403; isn't that correct?

A Yes.

Q Isn't it true that none of these statutes have a provision like Section 54-7-13(4)(C) of the

EBA statute which provides an energy balancing account that is formed and maintained in accordance with this section, does not constitute impermissible retroactive ratemaking or single-issue ratemaking?

A I think we're going to have to piece through that one. I don't have that statute you just referenced in front of me.

Q May I give you my code book?

A It's okay with me.

MR. MOORE: May I approach?

COMMISSIONER LEVAR: Yes.

THE WITNESS: Okay. If you could repeat --

BY MR. MOORE:

Q I direct you to 54-7-13.5.

A Okay.

Q And subsection 4, subsection C. It provides, "An energy balancing account that is formed and maintained in accordance with this section does not constitute retroactive ratemaking or single-issue ratemaking." Do you see that?

A Yes.

Q Isn't it true that the statutes I referenced earlier do not provide a similar provision?

A They do not, but that doesn't mean that it's not feasible.

Q In fact, none of these statutes mention the RTM, do they?

A No.

Q Isn't it true that nowhere in your testimony do you make the contention that the RTM is needed because of the occurrence of an unforeseen event that is both beyond the Company's control and has extraordinary impact on the Company's finances?

A No. We proposed the RTM for a matching of costs and benefits.

Q Similar question: Isn't it true that nowhere in your testimony do you make the contention that the RTM taken as a whole is needed because of increases and decreases in recurring costs that are both unexpected and beyond the Company's control?

A No. Again, we proposed the RTM in order to match costs and benefits that will -- since many benefits will flow through the EBA without recovery of the costs. We've also proposed the RTM in order to align several cost pressures into one rate case so we don't end up with back-to-back rate cases.

Q Now, turning to the cap on the RTM -- do you know which cap I'm referring to?

A I believe so.

Q In lines 225 to 227, of your final April 23, 2018, supplemental rebuttal testimony, you stated, "The Company, by committing to repowering the" -- let me wait until you get there.

A My supplemental rebuttal on line 225?

Q You stated the Company committed that repowering the RTM would not impose a surcharge on customers. The Company stands by this comment; is that correct?

A By that commitment, yes.

Q I'm sorry. Now, let's turn to June 30, 2017, direct testimony that you adopted.

A Okay. Is there a line reference?

Q 40 to 43. The RTM as initially -- this is not a direct quote, I'm just referencing the portion of your testimony. The RTM, as initially proposed, capped costs flowing through the RTM so that after zero-fuel cost benefits are accounted for through the EBA, the Company would not charge ratepayers any additional costs; is that correct?

A It will not operate to surcharge customers, correct.

Q Wouldn't charge them any additional costs?

A Correct. At that time, yes.

Q I'd like to direct you to lines 188 and 191 of the October 19, 2017, rebuttal testimony that you adopted.

A Did you say line 188?

Q 188. Doesn't it provide, "To the extent the cost exceeds the benefits" -- and we're talking about the initial cap -- "To the extent the cost exceeds benefits in any given year until the project is fully reflected in rates, the Company bears the risk. In other words, the RTM is asymmetrical in the customer's favor." Did I read that correctly?

A Yes.

Q Will you look at your February 1, 2018, supplemental direct testimony at lines 105 through 109?

A Okay.

Q You stated that because of change in federal corporate income tax rate, the Company proposes to alter the RTM cap so the costs in excess of the RTM cap will be deferred and used to offset the money owed to ratepayers as a result of income tax deferring, addressed in docket 17-035-69. Does that summarize your testimony?

A Yes.

Q Isn't it true that the change in the RTM

cap essentially reversed the position of the ratepayers in the Company, such that the RTM cap is no longer as asymmetrical to the same extent in the customer's favor, and the ratepayers, not the Company, bear the risk of costs in excess of the cap?

A   I would agree it's not as asymmetrical; it is still asymmetrical. We would still absorb costs in excess of the changes from the impact of tax reform, but since tax reform benefits are being deferred for customers, it's only fair that any additional costs out of tax reform also be deferred and recovered through customers. And that's what our proposal is. Tax reform was clearly not anticipated of this magnitude when we made that filing in June.

Q   Isn't it true that by initially proposing that ratepayers are not responsible for costs in excess of the RTM cap, didn't the Company commit to bear the risk of absorbing excess costs? And the Company is not standing by this commitment, is it?

A   Again, absorbing costs that are outside of our control and that were not anticipated of that magnitude, no. We always said we would bring back changes to the Commission for the parties to review, and that's what we did in the February filing.

Q But the change does shift the position of the ratepayer from one where the ratepayer was not responsible for costs above the cap to a situation where the ratepayer is responsible to costs above the cap, although through a different docket?

A Correct. We're seeking recovery of those tax impacts, yes.

MR. MOORE: That's all I have. Thank you, Ms. Steward.

COMMISSIONER LEVAR: Ms. Schmid or Mr. Jetter?

CROSS-EXAMINATION

BY MS. SCHMID:

Q In your summary, you talked about traditional functions of a utility and -- were you here when Mr. Hoogeveen talked about typical ratemaking activities of a utility seeking cost recovery as appropriate, et cetera?

A Yes. I was here when Mr. Hoogeveen testified.

Q Is it traditional for a utility to replace plant assets that have only gone through a third or less than their full useful life for economic reasons?

A I don't know that it's traditional, but it's certainly not unprecedented. We have replaced, for economic reasons, other assets that are in rates early, or retired them early.

Q And were some of those a result of settlements?

A Not the reasons for doing it. The ultimate outcome -- there were settlements around that ratemaking treatment, but not that decision.

Q You talked a lot in your summary about matching, matching costs and benefits. You said that matching was one of the reasons why the Company urges the Commission to adopt the RTM; is that correct?

A Yes.

Q Have you read Mr. Peterson's testimony on intergenerational inequality?

A Yes.

Q And you understand that that's also a matching sort of issue?

A Yes.

Q With the way the Company has set up its economics and set up its rate recovery mechanism as explained here, isn't it true that some ratepayers would not benefit from PTCs because the PTC period

ends before the life of the asset?
A   Yes. And that's the case now, if we don't repower.
Q   Is the $1 billion investment greater than the investment that is currently on the books for the existing wind facilities that are going to be repowered? Do you know?
A   You mean the remaining plans?
Q   Yes.
A   It is greater, yes.
Q   Also, coming back to the intergenerational inequality argument, is it true that, depending on how the PTC and the RTM works, that some ratepayers will not recover as much of the PTC benefit as expected?
A   I guess I'm not sure exactly what you're referring to.
Q   Let me see if I can rephrase. Just one second. I'm going to leave that and see if I can come back to it. Were you here when Mr. Hoogeveen talked about benefits and he and I believe, Mr. Russell, discussed a dollar benefit, being a dollar in the black after costs were counted for, still being a benefit?
A   Yes.

Q In your testimony, I believe it's line 15 of your surrebuttal, you talk about the fact that the repowering projects --

A I don't have surrebuttal.

Q Your supplemental rebuttal. I believe it's at line 15 of the April filing. You talk about substantial benefits. Don't you say that the repowering project provides substantial benefits to the customers?

A Yes.

Q Is a dollar benefit, a dollar in the black, a substantial benefit to customers?

A No. And the overall projects don't show it's a dollar in the black. It's hundreds of millions of dollars.

Q But that is based on if all the projections and forecasts occur as anticipated; is that correct?

A In our medium/medium and in most of the scenarios, yes, it's well over a dollar. It's only in the worst-case scenario that it would be, for one project, less of a benefit.

Q And if the gas prices are lower, as were shown in the 2017 IRP update just filed, isn't it possible that benefits could be even smaller?

A I can't speak to the gas forecasts in the IRP update and how those compare to the filing. That would need to be addressed by Mr. Link.

Q If actual gas prices were lower than forecasted, would the benefits be smaller?

A All else being equal, I believe that would be true.

Q If all else were equal and Utah didn't have a pre-approval process, and the Company had to bear the risk of those projects, and the risks of getting approval after the projects were built, would you recommend that the Company proceed with the project?

A What we're looking at right now in the economic analysis, is our prudence determination, and this is what we would ultimately end up filing. We are at the decision point of going forward. So based on this economic analysis, in my personal judgment, yes, I think there are benefits here for the customers to go forward. But I'm not the ultimate decision maker for the Company.

Q Would you go forward with all the wind segments or with -- sorry. Would you propose going forward with all the winds segments, or with just some of them?

A I think overall this is a great opportunity to update our wind fleet and extend the lives and have long-term benefits and near-term benefits to customers. So in my personal opinion, yes.

Q And the contracts that are for some of the equipment are for the projects as a whole; is that correct? Is that what I heard Mr. Hemstreet saying?

A That's my understanding of what Mr. Hemstreet -- but again, he's the expert on what those contracts look like.

Q Would the Company unconditionally go ahead with these projects?

A No, I am not probably the person who could answer that. I mean, I'm not sure what unconditionally refers to. I mean, as we testified, we think this is a great opportunity.

Q But isn't it true that the projects still place some risks on the ratepayers, risks that the Company was not willing to assume?

A There are risks on the ratepayers and there are risks on the Company still. We have assumed the risk of qualifying for the PTCs under the pre-approval, we assume the risk that if there's a change, we need to bring it back before the

Commission under the law. There are still risks to the Company at this point, even with the pre-approval.

MS. SCHMID: Those are all my questions. Thank you.

COMMISSIONER LEVAR: Thank you. Mr. Russell.

CROSS-EXAMINATION

BY MR. RUSSELL:

Q I have a few questions about a fairly narrow issue, and it relates to the period of amortization on the retired plant, which you brought up in your summary and is also in your supplement rebuttal testimony. As I understand it, the Company's position is in -- your testimony was responding to the period of time that that amortization should take place, and the Company's position as I understand it is, we should deal with that in this separate docket on the depreciation study that the Company intends to file, correct?

A Correct.

Q If the Commission were to decide to deal with it in this docket, what is the Company's position as to the period of time for that amortization?

A Well, I think in our initial filing, we did in Mr. Larsen's testimony, refer to it amortizing that over essentially -- including in the depreciation rates for the new resources, which would be over 30 years. The economic analysis includes them essentially over the current lives as 20 years. I don't have a strong position one way or another, 20 or 30 years at this point. So it could go either way.

Q I was confused about that, so that's why I wanted to clarify. Thank you. That's all I have.

COMMISSIONER LEVAR: Thank you. Any redirect?

MR. LOWNEY: I do have one question for Ms. Steward.

REDIRECT EXAMINATION

BY MR. LOWNEY:

Q Following up on Ms. Schmid's questions about the gas price forecast that was used in the Company's analysis, Ms. Steward, isn't it true that the 2017 IRP update that was filed earlier this week used the same gas price forecast that was used in the Company's supplemental filing in February of this year?

A That's what I believe to be true, yes.

COMMISSIONER LEVAR: Any recross based on that question?

MR. SNARR: Excuse me.

COMMISSIONER LEVAR: Would you like to do a recross?

MR. SNARR: I have one element of recross based on a response provided to the Division's counsel.

COMMISSIONER LEVAR: I'm sorry. I didn't ask because it was in response to her question, but feel free.

RECROSS EXAMINATION

BY MR. SNARR:

Q In response to a question posed by the Division, you stated the Company has assumed the risk of qualifying for the PTCs as opposed to laying that risk off on the ratepayers; is that correct?

A We've assumed the risk that we will meet that qualification, yes.

Q And Mr. Hemstreet did address, in large measure, how the company has taken action through the GE contract to assume that risk and has described how that might play out in the event that some particular project was not qualified. With

respect to the remaining projects not covered by the GE contract, how is it -- how would you propose that the Company cover any risk to the ratepayers for the failure to qualify for the PTCs?

A So even with the GE contract and the Vestas contract, our assumption -- what we've assumed is that we will qualify for the PTCs to the extent there are circumstances within our control. Obviously, often -- or not often -- there are circumstances where it's a force majeure or something outside of our control. To the extent we can control it under either contract, we're assuming those risks. The GE contract has some additional features built into it from the contractor to the Company that we would pass back to customers.

Q Typically though, the word guarantee is to infer that if something goes wrong, you've got me covered for the downside risk. And I'm really posing the question, what if something goes wrong, that there is a timing problem and a project fails to qualify for the PTCs? Your witness earlier has said that the Company is going to guarantee the risk, you said the Company would guarantee that risk, and we're understanding the context is a guarantee to the ratepayers for that eventuality.

I'm just asking, how would you manage to provide that guarantee to the ratepayers as a matter of ratemaking, which is within your stewardship?

A I see your question. There are a couple of ways that could be done. We could either impute the PTCs for any turbines that failed to qualify if we put those turbines into rate base. We could also not include those turbines in rate base and not have customers pay for them. We probably wouldn't put the energy in rates, either, but then customers would not be harmed. And again, our qualification is for circumstances within our control that we can control.

MR. SNARR: Thank you. I have no other questions.

COMMISSIONER LEVAR: Thank you. Commissioner White, do you have any questions for Ms. Steward?

BY COMMISSIONER WHITE:

Q Just a couple. I understand -- from what I understand, there's a pretty illiquid REC market right now. Is there any thought or discussion as to how the potential REC revenues would be -- would this be included in the new RTM, or would that still be dealt with in the RBA?

A I think REC revenues would flow through the RBA.

Q There's been a lot of talk about risk and what the Company is -- I know that the testimony has evolved during the course of the proceeding over acceptance of risk, et cetera. I notice in Wyoming, someone did -- I don't know which party -- file the Wyoming stipulation or submitted a -- I'm just wondering, are you in a position to maybe direct us to potentially the differences in, kind of, risk sharing as between what was currently reached in Wyoming -- I know that's still pending -- as opposed to what the Company's current agreement to take on risk is in this docket?

A Yeah. I happen to, I believe, have that stipulation. So the risk is actually very similar. In the Utah stipulation, it's spelled out in a little more detail from our discussions with parties, and that would be in paragraph 32-C. And you can see that explanation of the risk and how it would be treated, as well as a dispute process is spelled out in that section. And it's essentially the same risk, it just adds a little bit more process to it in the event there isn't an agreement on what that circumstance was if we claim force majeure and parties disagree, there's a dispute process there to debate that. But it's the same qualification of risk that we assume for the PTCs.

Q So it's fair to say it's essentially the same proposal without the additional legal mechanisms to deal with disagreements, et cetera?

A Yes.

COMMISSIONER WHITE: That's all the questions I have.

COMMISSIONER LEVAR: Commissioner Clark?

BY COMMISSIONER CLARK:

Q I just want to test my understanding of what you're saying on page 7 of your supplemental direct. Under the question, why is the RTM still necessary?

A Okay. I'm there.

Q So under the assumption that the application is approved and the Company goes forward with the repower projects, then until the Company files a rate case, the conditions that you're describing here under lines 127 to 131 would exist. Basically, that customers would receive the benefit in net power costs of the zero-fuel cost energy, and the Company would receive the benefits of the PTCs

and would also have the burden of the capital investment without a return? Is that -- would there been some ratemaking device that would operate to cover the Company's capital costs there?

A   So you're referring to without the RTM?

Q   Right.

A   So without the RTM or other treatment -- like, if there was an adjustment to the EBA to remove that incremental generation -- absent that, customers would have that zero-fuel cost energy going through the EBA with no cost recovery, the Company -- for the Company -- of capital costs, and customers would not get the PTCs either.

Q   And a rate case, then, would be the opportunity to put all that back into ratemaking balance, so to speak, right?

A   Yes.

Q   So the -- am I right that the need for the RTM basically assumes no rate case -- general rate case-type proceeding until sometime after the end of 2020?

A   Yes. And I believe I said somewhere in testimony that we currently anticipate the next rate case to be in 2020, with rates effective 2021. That will allow us to align both the repowering projects that start going into service in 2019 and continue into 2020, as well as the new wind and transmission in the 40 docket. We also have new depreciation rates from the depreciation study, which we anticipate will have pressure on rates. That proceeding should be completed by the end of 2019, which will be put into that rate case. We also hopefully will have resolution of a new, revised protocol or a multi-state jurisdictional allocation at that time. So we were trying to align all of these cost pressures into one rate case, and that is what the RTM allows us to do.

Q Would the RTM then be -- would have exhausted its purpose with the filing of the rate case, or the adjudication of the rate case?

A Yes. For repowering in particular, I only see the RTM really, in effect for a year and a half, that we would defer costs within the RTM. Although we do propose to continue the RTM just for PTC tracking after a rate case.

Q So is it really the 2019 -- the completion of many of the project elements in 2019 that's sort of driving the Company's interest in the RTM or advocacy of the RTM?

A Yes. It's all those things that I

mentioned. I mean, we've been making a very concerted effort to stay out of multiple rate cases. We went through quite a period of back-to-back rate cases, and so we are trying to push that as far as we can. These are the first -- these align also with the drop-off of the PTCs currently in base rates that add additional pressure that would drive us into a rate case, but this is the first cost pressure that comes up that's pushing us into a rate case, the repowering projects.

Q So again, in the absence of an RTM, then would we anticipate a 2019 rate case to address the projects?

A We would have to take that into consideration. I couldn't affirmatively say yes or no at this point, but in that period, we see the drop-off, the pressures of the -- eliminating the current PTCs in base as well as the new investments coming on.

COMMISSIONER CLARK: Those are all my questions. Thanks very much.

BY COMMISSIONER LEVAR:

Q Just a couple more follows-ups. You had indicated the Utility's openness to the Division's proposed deferral method as long as costs and

benefits are matched somehow. Do you have any elaboration on how would you view some kind of alternative deferral working?

A There's a couple ways that it could work. Our primary principle here is the matching of the costs and benefits, so either, if we don't have an RTM where we try and pass back the cost and benefits on a more concurrent basis -- which I think helps address some of the intergenerational issues that DPU raised -- but in lieu of that, we would defer all the costs and benefits. I would propose even deferring that incremental generation that would otherwise flow through the EBA to help offset that. So then, as you go to recover that in a future rate case, that helps bring down some of those costs as well. That's the primary alternative to the RTM.

Q Thank you. On a separate topic, Commissioner White was asking you about the provisions in Wyoming related to the regulatory processes that are built into the stipulation -- that's, of course, still pending -- on change in law or force majeure event. That Wyoming stipulation lays out that the Company would file with the Commission and parties would have an opportunity to dispute it. In the absence of any, you know,

stipulated language like that in Utah, if this project moves forward and there were some significant change in law or force majeure event, what would you anticipate the regulatory process to be in Utah? What would be the typical utility response to a situation like that?

A Well, in Utah, under the voluntarily request for resource law that we filed under, there is that provision that exists if there's a change in circumstance or projected costs, we need to bring that back to the Commission, and then there's a process for a 60-day review. I think a force majeure event like that would qualify under that process that we would need to bring that back under that statute.

COMMISSIONER LEVAR: Thank you. I appreciate that clarification. I don't have any further questions, so thank you for your testimony. Ms. McDowell or Mr. Lowney, anything further from the Utility?

MS. MCDOWELL: No. That concludes the Company's presentation. Thank you.

COMMISSIONER LEVAR: Okay. Why don't we take a 10 or 12-minute break. We'll come back at 2:30 and go to Ms. Schmid or Mr. Jetter.

(A recess was taken.)

COMMISSIONER LEVAR: We're back on the record, and we will go now to the Division of Public Utilities.

MS. SCHMID: Good afternoon. The Division would like to call as it witness, Mr. Dave Thomson. May he please approach the witness stand?

DAVID THOMSON,

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

DIRECT EXAMINATION

BY MS. SCHMID:

Q Could you please state your full name, employer, and your business address for the record?

A My name is David Thomson, that's T-h-o-m-s-o-n, without a "P." I'm a utility technical consultant for the Division of Public Utilities and have participated in this docket on behalf of the Division. My business address is 160 East 300 South, Salt Lake City, Utah 84111.

Q In connection with your employment at the Division and your participation on behalf of the Division in this docket, did you prepare and cause to be filed what's been identified as DPU Exhibit

No. 3.0, your direct, which was filed on September 20th of 2017, your surrebuttal with an exhibit, surrebuttal identified as DPU Exhibit No. 3.0-SR, and the exhibit number DPU No. 3.1-SR, both of those filed on November 15th, and then finally, your response testimony marked as DPU Exhibit 3.0-RESP, filed on April 2, 2018?

A That's correct.

Q Do you have any changes or corrections to that prefiled testimony?

A I do not.

Q If I were to ask you today the same questions that are contained in your prefiled testimony, would your answers be the same today as they are in the prefiled testimony?

A Yes.

MS. SCHMID: With that, the Division would like to move for the admission of DPU Exhibit No. 3.0 Direct, 3.0-SR, 3.1-SR, and 3.0-RESP of Mr. Thomson.

COMMISSIONER LEVAR: If any party objects to that motion, please let me know. I'm not seeing any, so the motion is granted.

(DPU Exhibit Nos. 3.0 Direct, 3.0-SR, 3.1-SR and 3.0-RESP admitted.)

BY MS. SCHMID:

Q Mr. Thomson, do you have a summary to present today?

A I do.

Q Please proceed.

A Thank you. The Division believes the Revenue Tracking Mechanism or RTM, is unnecessary because existing methods are adequate for rate recovery if the proposed repowering projects are approved. Therefore, we recommend that the Commission deny the request for an RTM.

If the Commission approves the repowering projects proposed by the Company, the Division recommends that the Company should use a general rate case for ratemaking associated with the repowering. The Company is proposing to add approximately over $1 billion to the rate base. A general rate case is a better mechanism to address the Company's cost recovery concerns where systemwide changes in costs and other issues can be synchronized. The impact of rates and revenue requirement of the above investments with their associated costs and benefits should be synchronized and in balance with other entity-wide changes. Changes in class cost of service, revenue and expense components, and many other factors would be impacted by the addition of so much capital to rate base. Having a general rate case to align rates to match then-existing conditions, would be wise and likely in the public interest, particularly given that the last general rate case concluded in 2014, employed 2013 data, and a 2015 test year.

The Utility suggests that the proposed RTM is one way to avoid more laborious general rate cases. This is not a valid argument in support of the RTM. The general rate case is designed to establish just and reasonable rates based on current actual or close-in-time projected costs. Especially given the costs of the proposed additions and the time since the last general rate case, Rocky Mountain Power's desire to avoid a new general rate case, or the frequency of rate cases may not be in the best overall interest of ratepayers or meet public interest concerns.

And that concludes my summary.

MS. SCHMID: Thank you. Mr. Thomson is now available for questions.

COMMISSIONER LEVAR: Thank you. I'll go to Mr. Moore or Mr. Snarr next.

MR. MOORE: No questions from the

Office.

COMMISSIONER LEVAR:

Ms. Tormoen Hickey, do you have any questions for Mr. Thomson?

MS. HICKEY: No, thank you.

COMMISSIONER LEVAR: Mr. Russell?

MR. RUSSELL: No questions.

COMMISSIONER LEVAR: Ms. McDowell or Mr. Lowney?

MS. MCDOWELL: No questions. Thank you.

COMMISSIONER LEVAR: Thank you. Commissioner Clark?

COMMISSIONER CLARK: No questions.

COMMISSIONER LEVAR: Thank you. Commissioner White?

BY COMMISSIONER WHITE:

Q Does the Division have a proposal -- if the Commission were not to adopt the proposed RTM, how would the Division propose tracking the costs and benefits, or is there a proposal?

A If you adopted these repowering projects, we would propose that you use the means already at your -- that's already at your -- that you can utilize, such as a general rate case. Deferred accounting is something that's already available to the Commission, and depending on the timing of the rate case, the Company could file a major asset addition filing to try to recover these costs.

COMMISSIONER WHITE: Thank you. That's all questions I have.

BY COMMISSIONER LEVAR:

Q If this request, in whole or part, were approved by the Commission, you said one option would be deferred accounting. Do you have any other thoughts to elaborate on how that might work, how that might be structured?

A It would be structured very similar to how the accounting is done in the RTM. It would have benefits, it would have costs, and they would come together every month for a balance. And that balance, whether the costs were more or the benefits were more, would be a liability of a deferral liability. And they would stay in there, those accounts, until a general rate case happened, and then those deferral amounts would be part of the filing and go into the whole synchronized, holistic, generalized rate case. So it would be just a piece out here, and then it would get plugged in with all the other pieces into the big hole where everything would be synchronized.

COMMISSIONER LEVAR: Thank you. I appreciate that. Thank you for your testimony.

COMMISSIONER CLARK: Chair LeVar, can I just follow up on that?

BY COMMISSIONER CLARK:

Q So Mr. Thomson, what would be deferred? The PTCs would be deferred?

A They would.

Q What else would be deferred? Anything else?

A Let's see. The cost of the investment would be deferred; the actual rate base -- what they pay every month -- that would be deferred; the costs associated with those -- depreciation, those things would be deferred; the PTCs would be deferred; and then the energy component would be deferred. Well, the energy component -- the incremental energy costs would flow through the EPA, so there would have to be some sort of adjustment for that.

Q Thanks. That's the piece I was wanting to understand a little better.

COMMISSIONER LEVAR: Thank you, Mr. Thomson. We appreciate you testimony.

Ms. Schmid?

MS. SCHMID: The Division would like to request if Mr. Thomson could be excused for the rest of the hearing if he needs to leave early today, and he will not be able to attend tomorrow. May we have your permission to bless his absence?

COMMISSIONER LEVAR: Let me as if any party or Commissioner feels any need to recall Mr. Thomson for any questions. I'm not seeing any indication, so that sounds fine.

MS. SCHMID: Thank you very much.

THE WITNESS: I appreciate that. Thank you.

MS. SCHMID: The Division would like to call its next witness, Dr. Joni Zenger.

DR. JONI S. ZENGER,

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

DIRECT EXAMINATION

BY MS. SCHMID:

Q Good afternoon. Could you please state your full name, title, and employer, as well as business address for the record?

A Dr. Joni S., like Sam, Zenger, with a "Z", Z-e-n-g-e-r, technical consultant with the Division of Public Utilities. My address is 160 East 300

South, Salt Lake City, Utah 84111.

Q In connection with your employment by the Division and with your participation in this docket, did you prepare or cause to be filed, your response testimony called DPU Exhibit No. 1.0 -- sorry. DPU Exhibit Number 1.0 Direct, in both confidential and redacted form, and that was on the 20th of September; your surrebuttal, marked as DPU Exhibit No. 1.0-SR, filed on November 15th of 2017; your response testimony, entitled DPU Exhibit No. 1.0-RESP, along with DPU Exhibit No. 1.1-RESP, and DPU Exhibit No. 1.2-RESP, all filed on April 2nd of this year?

A Yes.

Q Did you also cause to be filed yesterday, an errata correcting two footnotes and one number in your testimony?

A Yes, I did. I also brought copies in case anyone didn't receive the errata exhibit.

Q Could you please just briefly describe what was corrected in the filing made yesterday?

A Sure. In my response testimony, the one that's dated April, there's a typo on line 143. The number I have is $1,337,000, and the number should be $1,137,000. Billion, actually, billion. It's

$1,137,000,000.

Q And then with regard to the footnotes?

A So that was the first one. Then the footnote on page 10, footnote no. 16, it should have read, Supplemental Direct Testimony of Mr. Timothy Hemstreet, February 1st, 2018, page 4, lines 74 to 76. I had written ID at the same page 4 and line 74 to 76 when it was, in fact, his supplemental direct testimony. Those two changes.

Q Just those two changes. Only one change to a footnote?

A Yes.

MS. SCHMID: With that, the Division would like to move for the admission of the testimonies of Dr. Zenger as previously identified, as well as the errata that was filed yesterday. We do have copies showing clean and redacted portions of the testimony that was corrected.

COMMISSIONER LEVAR: Okay. Thank you. If anyone objects to this motion, please indicate to me. I'm not seeing any objections, so the motion is granted.

(DPU Exhibit Nos. 1.0 Direct, 1.0-SR, 1.0-RESP, 1.1-RESP, and 1.2-RESP marked.)

BY MS. SCHMID:

Q Dr. Zenger, do you have a summary to present today?
A Yes, I do.
Q Please proceed.
A Good afternoon, Commissioners. I'm grateful to be here today. It's getting close to years since we started working on this case at the Division.
The Division's opinion is the Commission should reject Rocky Mountain Power's application because the projects are not in the public interest. The projects are not needed to provide reliable service, and the risks surrounding the projects outweigh even the latest iteration of the speculative projected benefits. Additionally, even if the benefits materialized over the life of the projects, they would be unevenly distributed among various generations of customers.
The new collection mechanism Rocky Mountain Power proposes, the RTM, should be rejected, too. The Division's witnesses will address these and other points in their respective testimonies.
Rocky Mountain Power's requested approval of the projects in this case -- which include

repowering of 999 megawatts of its current wind generating equipment -- the latest estimate puts the project's capital costs at approximately $1.101 billion. This is a massive undertaking and a magnitude that we have never seen before in one filing before this Commission. Rocky Mountain Power stopped pre-approval of this proposal, even though most of the costs were not known and the forecast's alternative costs that the projects are benchmarked against are subject to significant variability. Other technical uncertainties also remain, including engineering and design studies that are still incomplete. In addition to these uncertainties, the fundamental risks of relying on projections built on assumptions remains.

The Company presented this case involving 12 different wind repowering projects. They are located in three different states and as one large billion dollar project, when, in fact, there are hundreds of wind turbine generators at 12 different wind farms in Wyoming, Oregon, and Washington that the Company is proposing to dismantle and repower. Each repowered facility will be tested and commissioned in order to individually qualify for the production tax credits. The Company requests approval to dismantle the existing equipment, bring in new nacelles and towers and rotors -- not the towers, they will remain, the rotors and the blades -- earning a return on the new resources, as well as continuing to earn on the old, retired resources. The currently functioning equipment that the Company wants to remove is less than 10 years old, and it was installed and approved with a 30-year operating life.

This idling of functioning equipment is to be undertaken on the hope that an assumed projected future materializes, but further, Rocky Mountain Power claims that its request is supported by an analysis that aggregates purported benefits over the project's lives, up to 30 years. This aggregation of benefits over long time periods hides the fact that even under Rocky Mountain Power's projections, some customers will be worse off. Although the projects could prove beneficial, even then, the benefits would be relatively small compared to the level of investment.

Nevertheless, there are too many unknowns that could harm ratepayers. Even under those net cost scenarios, Rocky Mountain Power would still be granted an opportunity to earn a significant return.

And in short, ratepayers might see a modest net benefit over the project's lives, but the Utility will see a significant return if these projects are approved. This disparity of risks and rewards for unneeded projects is not in the public interest.

The Company has not reasonably demonstrated or adequately proven that its decision to repower most of its wind facilities will result in the acquisition, production, and delivery of utility services at the lowest reasonable cost to customers -- to Utah customers, in fact. The projects are not in the public interest and should be rejected.

The remaining portion of my opening statements contains my surrebuttal testimony responding to the Company's April 23rd rebuttal testimony. Rather than go through point by point statements where my testimony was mischaracterized or misconstrued, I'd like to address a couple of points. And the first one I'd like to address is the issue of uncertainties and risks.

Now, Mr. Hemstreet claims in his supplemental direct testimony, lines 182 to 209, that the Company has successfully mitigated much of the risk associated with the repowering project.

While DPU acknowledges the efforts the Company has made to mitigate the unknowns on line 182 to 209, significant risk still exists for the ratepayers. DPU is concerned with wind turbine performance, reliabilities risks, ongoing maintenance costs and risks. The construction costs overrun risks. DPU witness Mr. Peaco will discuss the additional risks and the potential concerns in great detail in his testimony.

And second, I'd like to reemphasize that a repowering project is not needed. Mr. Link states in his supplemental and rebuttal testimony, lines 561 to 575, that the proposed repowering wind facilities are needed. Contrary to Mr. Link's statement, the Company has not proven that the proposed repowering project is needed. From the very beginning, the impetus of the project has been the availability of production tax credits or PTCs. This understanding was acknowledged by the Company in data request 16.6, in which the Company stated, "The Company's repowering project was developed as an opportunity to capitalize on the continuing availability of the production tax credits. The Company would not move forward without the -- excuse me. The Company would not move forward with the repowering projects if there were no benefits from the production tax credits, as those are required to produce economic benefits for customers, which was the Company's goal in pursuing this particular project." That was directly quoted from DPU 16.6.

It wasn't until later, the Company changed its position from pursuing an economic opportunity to a need-based resource acquisition. This sentiment is shared by many parties across multiple jurisdictions. And in the IRP docket, we just went through that same change of position. That was Docket 17-035-16. And in fact, the Oregon Commission staff in its recommendation in their IRP Docket LC 67, on page 18, stated, "The understanding that PacifiCorp did not need new resources in 2020 for capacity was not unique to Oregon staff. Many, if not all parties in this matter, were also similarly confused. Additionally, the Company still has not explicitly identified the need for these resources, especially considering the significant risks that ratepayers are being asked to burden."

And then finally, in my response testimony -- I know you guys have read all my testimony -- but I did point out, "The ratepayer's uncertain benefits could materialize or disappear, depending on a suite of unknowns and risks that can happen."

That concludes my summary. And Mr. Peaco will go into detail on these risks, and Mr. Chuck Peterson will talk about intergenerational inequities as well. Thank you.

Q Dr. Zenger, you mentioned the public interest. Utah Statute 54-17-402 states that when the Commission is making a resource decision and determining if it is in the public interest, the Commission -- I'll just read it. "...is in the public interest, taking into consideration: (1) whether it will most likely result in the acquisition, production, and delivery of utility services at the lowest reasonable cost to the retail customers of an energy utility located in this state; (2) long-term and short-term impacts; (3) risk; (4) reliability; (5) financial impacts on the energy utility; and (6) other factors determined by the Commission to be relevant." Is it your testimony and the Division's position that in determining whether or not approving the application is in the public interest, the Commission should consider that there is no need for these projects?

A Most definitely, yes.

MS. SCHMID: Dr. Zenger is now available for questions.

COMMISSIONER LEVAR: Thank you. Mr. Snarr or Mr. Moore, do you have any questions?

MR. SNARR: No questions.

COMMISSIONER LEVAR: Thank you. Mr. Russell?

MR. RUSSELL: No questions. Thank you.

COMMISSIONER LEVAR: Ms. Tormoen Hickey, do you have any questions for Dr. Zenger?

MS. HICKEY: No, thank you.

COMMISSIONER LEVAR: Thank you. Ms. McDowell or Mr. Lowney?

MS. MCDOWELL: The Company does have some questions for Dr. Zenger.

MS. SCHMID: May I have an additional copy? Thank you.

BY MS. MCDOWELL:

CROSS-EXAMINATION

Q Good afternoon, Dr. Zenger.

A Good afternoon.

Q So I wanted to ask you a question about your direct testimony if you can turn to that, and

specifically, the line reference is lines 241 to 243. It's the last page of your testimony. Do you have that? So there, you ask the Commission to reject repowering because there is not, using your words, "A high probability of significant savings when compared to the no-action option." Do you see that testimony?

A   Yes.

Q   So now, Ms. Schmid just read a portion of the voluntary resource decision statute to you, and I specifically wanted to ask you a question about the provision of the statute that requires the Commission to consider as a part of its public interest determination, whether repowering will most likely result in the acquisition, production, and delivery of utility services at the lowest reasonable cost. Are you familiar with that provision of statute?

A   Yes, I am.

Q   So I want to represent to you that in the course of preparing for this hearing, I looked up the term, "most likely" in merriamwebster.com, and it says, "Most likely means either more likely than not or probably." Does that seem like a reasonable definition to you?

A It seems like I went to look up one, too, and it was like, is it 50 percent or 60 percent? What's more likely?

Q So their definition, "More likely than not or probably." So applying that definition, the issue here is whether repowering will probably result in the production of the lowest reasonable cost utility services here, correct?

A Yes.

Q So instead of reviewing the Company's request under that standard, the Division is applying a high-probability standard; isn't that correct, based on your testimony?

A Yes.

Q So to your knowledge, has the Commission ever applied that higher standard previously in a voluntary resource case?

A They may have or may not. But I believe the reason is so appropriate here because this is -- the magnitude and scope of this repowering billion-dollar project is -- it demands a high standard.

Q So the Division is asking the Commission to reject the Company's filing under a high-probability standard when that's not the

standard imposed by the statute, correct?

A   My understanding of the statute is that, besides the short-term and the long-term rate impacts and things like that, there's other factors that should be taken into consideration. And I think the size and magnitude of this project warrants that. And that being said, I don't have the copy of the full statute in front of me. Maybe my attorney can give it to me.

Q   I can represent to you that you've quoted it at line 130 of your direct testimony, also. So I also wanted to ask you about a Commission decision under the voluntary resource statute. It's from my knowledge, the only litigated decision under that statute involving the Bridger SCR determination. Are you aware of that case?

A   I'm aware of the case.

Q   So I've handed you -- or I've had distributed to you an excerpt from the Commission order in that case, which has been marked RMP Cross-Exhibit No. 1. Do you see that?

A   Yes.

Q   So the Company did cite this decision in its testimony. Do you recall that?

A   I do recall that. In fact, I think

Mr. Peterson addresses that in his testimony.

Q I'd like to just quickly go through the order with you and talk about its application to this case. Can you first refer to page 27 of that order? Are you with me there on page 27 of the order, Ms. Zenger?

A Yes.

Q So to be clear, the statute cited here that the Commission was proceeding under was the voluntary resource statute that we're talking about, cited here on page 27. Does that seem right?

A Uh-huh (affirmative).

Q And then if you refer to page 12, going back to page 12, there's a discussion of the Company's proposal in that case and its analysis. So I just wanted to quickly review that with you and refresh your recollection about this case. So on page 12 in the second full sentence from the top, it says, "Second, the Company compared the difference in the present value revenue requirement of the two system optimizer SO model simulations to evaluate costs with and without the project." Do you see that?

A I see that.

Q So in that case, the Company used the same

SO model that it's using here to evaluate repowering?

A Yes. You know, I really didn't work on this case, so I don't know if they also used the PaR model, and if they did the 20-year and the 30-year model as well. So I'm probably going to defer any questions on this case to Mr. Peterson.

Q Let me just ask you a few more. So that analysis was, with and without the project, similar to how the Company has analyzed, with and without repowering in its economic analysis here, correct?

A The SO part is similar --

MR. JETTER: I object to that question because it's misrepresenting the facts of that case. In that case, I was a part of that case, and the comparison was not with and without the SCRs only. That case involved with and without -- without the SCR scenario, involved a natural gas power plant as an alternative. So I believe that question misrepresents --

COMMISSIONER LEVAR: Do you want to respond to the objection, or would you like try to say the question differently? Do you want me to rule on it?

MS. MCDOWELL: I'm happy to restate

the question and just move on to the next question.
BY MS. MCDOWELL:
Q On page 13, if you could turn to that. And according to the language of this order, it says, beginning in the second paragraph, "According to the Company, six of the nine cases modeled in its updated analysis produced a PVRRD favorable to the SCR investment." Do you see that?
A I see that.
Q And the Company further argued that the PVRRD results are unfavorable to the SCR investment only in cases that assume low natural gas prices. Do you see that?
A Yes. And I see this case is totally different. The first line includes the coal costs, the load forecast, the mine capital. So without knowing the case, to me it appears like they're not analogous.
Q So let me ask you, you're aware, aren't you, that the Commission approved the SCR voluntary resource decision? And that's at page 32 if you want that reference.
A Uh-huh (affirmative).
Q And are you aware also that the DPU in that case supported the SCR?

A   I believe they did. It was when the clean power plan was issued.

Q   Now, I just wanted to ask you very briefly about a couple of other exhibits related to this case. That would be Cross-Exhibit 2 and 3, if you can pull those out. In Cross-Exhibit 2 -- that's the testimony of George Evans, the Division's witness in that case. Do you see that?

A   Yes.

Q   And on page 4 of that testimony -- if you could turn to that -- there is a statement on line 52 where Mr. Evans is asked what he would recommend, and he states on line 54 -- basically on line 53 -- that he recommends a redacted number as the risk-weighted benefit of the Bridger SCRs. And then explains that the value is the simple average of the nine SO model results, including base, high and low natural gas prices, and base, high and low carbon dioxide prices discussed by Mr. Link. And then he says using a simple average is equivalent to assuming that each of the nine results is equally likely. Do you see that?

A   I don't see the last sentence you just read, but I'm looking at page 4.

Q   And that's on lines 57 through 58.

A I'm looking at that and it looks like they had to correct errors concerning the mine capital costs and make modified assumptions.

Q So I'm on line 57 where it says, "Using a simple average is equivalent to assuming that each of the nine results is equally likely." Do you see that?

A I see that.

Q And then further on, Exhibit 3 -- that is a copy of the transcript from that case -- where Mr. Evans further explained this risk-weighted average approach that the Division previously proposed. And on page 164 of that transcript, he says, basically, I feel the way to do it is to combine the results of the nine different modeling simulations that were performed. Do you see that language?

A What lines are you on?

Q I'm on lines 23 through 25 at the bottom of the page. That's an explanation of his risk-weighted average.

A I see he has a disagreement with the way the Company is doing it. Which way is the Company doing it in this case?

Q And then he says, on basically line 24 and

beginning on line 23, he says, "I feel the way to do that is to combine the results of the nine different modeling simulations that were performed." Do you see that?

A Yes, I see that. But in reading that same page, it looks like Mr. Evans has a dispute over the way the Company has done it, so I guess he's trying to come to a resolution.

Q I think in that case the Company didn't agree with the risk-weighted average. So just quickly to finish up in terms of this review, on page 165 where he's explaining to the hearing officer about how his risk-weighted average -- on lines 6 through 8, he says, "I think that's one way to approach it, and a pretty good way, and one that's neutral. It doesn't attempt to say that lower gas prices are more likely or less likely in the future, just that they are equally likely with the base and high gas price forecasts." Do you see that explanation of the risk-weighted average?

A I see that.

Q So what I want to ask you is, related to your testimony and your summary where you say that the Division can't say that repowering is the least-cost resource based on the scenarios. Do you

have Mr. Link's testimony with you?

A   Yes.

Q   What I specifically wanted to ask you about is his supplemental direct testimony.

A   I have that.

Q   Turn to his tables, which are -- those are really the most up-to-date scenario tables on the repowering project as a whole. Page 20 is the first one I'm going to ask you about, Table 5-SD. And do you recognize this as Mr. Link's scenario analysis for the entire project for the 20-year period?

A   Yes.

Q   So I'll ask you to accept, subject to check, that averaging the SO results on this chart produces a net benefit of 212 million. Will you accept that number, subject to check?

A   Subject to check.

Q   And also, subject to check, that would create a benefit cost ratio equal to 1.21. Will you accept that number, subject to check?

A   I'm not sure how you're calculating the benefit-to-cost.

Q   I calculated the benefit-to-cost ratio based on the 1.01 billion NPV cost, compared to the --

A To the average of the SOs?

Q Yes.

A I don't agree with the predicate of this exercise.

Q I understand, but I'm asking you accept those numbers, subject to check.

A I accept the numbers.

Q Basically, that you have a 212 average benefit, your risk-weighted average, using the Division's approach from that SCR case, and that would equal a benefit-to-cost ratio equal to 1.21.

A Excuse me, but the Division's approach was not to average them.

Q The Division's approach in the SCR case used a risk-weighted average of the nine scenarios.

A Okay. I can't comment on that because I wasn't involved in the -- I believe Mr. Peterson can comment on the Bridger case.

Q And I'm not asking you to comment on that. I'm asking you --

A I know it was in this case.

Q I understand. But if you apply that methodology to this case, I'm asking you to accept, subject to check, that the average of the benefits would be 212 million, and the average of that

benefit cost ratio would be 1.21. Will you accept those numbers, subject to check?

A Subject to check.

Q So then, if you turn to page 22, which is the same table -- this time for the 2050 benefits -- and doing the same analysis for the 2050 benefits, an average of the scenario results here, would you accept, subject to check, that that average is 281 million?

A So this is a different table. So are you averaging the annual revenue requirement? Is that what you're doing?

Q That's correct. I'm averaging the updated annual revenue requirement.

A And what's the average?

Q That average is -- I'll represent to you is 281 million.

A Okay. I don't think it's representative of anything but an average.

Q Right. And the benefit-to-cost ratio that you would derive would be 1.28. Would you accept that, subject to check, as well?

A Yes.

Q So let me ask you a hypothetical that uses those cost benefit ratios. If we were analyzing a

proposed DSM investment which requires a cost benefit ratio of 1.0 or greater to demonstrate cost effectiveness. With benefit-to-cost ratios of 1.21 or 1.28, that investment would clearly be cost-effective, wouldn't it?

A   I'm -- again, I don't do the DSM so I'm not familiar with those calculations.

Q   So if you assume for purposes of my hypothetical that cost effectiveness requires 1.0 or greater, cost benefit ratios of 1.21 or 1.28 would demonstrate a cost-effective investment, correct?

A   Yes, assuming both of those.

MS. SCHMID: Pardon me. With this line of questions, the Division does have another witness that is prepared to answer with more familiarity considering these topics. And the Division would like to note that Dr. William Powell is available to testify and answer these questions.

MS. MCDOWELL: You know, I've just concluded that line of questioning, so I'm ready to move on.

COMMISSIONER LEVAR: I think that addresses the objection at this point.

THE WITNESS: I don't see any relevance to this case.

BY MS. MCDOWELL:

Q Now I'm going to shift and ask you some questions about need. And first, before I ask you about your testimony, I just wanted to ask about your summary. You cited some comments from the Oregon staff in the Oregon IRP process. Do you recall that?

A Yes.

Q Isn't it true that the Oregon Commission has acknowledged the IRP?

A I have not seen an acknowledgment order. I know the Oregon staff recommended they not acknowledge it and I heard that they were going to, but I have not seen an order yet as of this time. Have you?

Q I can represent to you that there was an acknowledgment order issued last week.

A There was. So I have not seen that.

Q And the Commission actually acknowledged it in a public meeting in December of 2017.

A I understand that they acknowledged it in a meeting, but I haven't seen a written order.

Q I was going to ask you about your testimony, but you also indicated in your summary that your position is that need should be a

prerequisite for repowering. Is that your position in this case?

A I think the need should be established through an IRP stakeholder process, determined there, and then from there, whatever reliability or capacity resources come from that would be what the need is.

Q So I wanted to ask you about your definition of need in this context. So I think your direct testimony has some insight into that. Can you turn to that, please? Just let me know when you're there.

A What page are you on?

Q It's your direct testimony at lines 207-209, which is page 11. So when you're talking about the IRP and need, you say -- you refer to operational need and indicate that there is -- on line 207 -- a lack of operational need for the wind repowering resources. Do you see that?

A Yes.

Q So when you talk about a resource need as traditionally understood, you're referring to the need for a new capacity resource; is that correct?

A It wouldn't have to be new capacity resource. It could be, for instance, like the scrubbers on the plants, you know, something that goes through the IRP process where you have a CPCN proceeding to determine if it's needed. So most times, it could be a new resource.

Q   Well, don't you agree that a resource could be needed, as in the case of DSM, to more cost effectively service current load?

A   Yes, I do.

Q   So I wanted to explore a little bit further this question of need in your testimony. Can you turn to page -- well, it's your surrebuttal testimony at lines 193 to 195. Are you with me there?

A   Yes.

Q   So there, you say, "The Division can say that the wind repowered resources, if they were actually needed, would displace resources such as short-term market purchases." Do you see that?

A   Yes.

Q   So what we're talking about here in terms of whether there's a need or not, is really around whether there's a need for the 750 gigawatts of new zero-cost, or zero-fuel-cost energy that repowering would result in between now and 2037; is that correct?

A That's what we're talking about in this proceeding, yes.

Q And then, just to make sure we're all on the same page, basically, the new energy that repowering brings -- the incremental energy -- is approximately 750 gigawatt hours through 2037, and then thereafter would be 3,500 gigawatt hours. Will you accept those numbers, subject to check?

A Subject to check. It's around 17 to 30 percent average capacity, I believe.

Q And so those -- that zero-fuel-cost energy, just operationally, would displace market purchases for the Company if they were lower cost, correct?

A Yes. It could displace coal plants, it could displace lots of resources.

Q And it would only displace those resources if it were lower cost, correct?

A It depends if there's too much wind in the system and they're experiencing the duck curve, they might have to curtail wind, too, but that's not necessarily the least cost.

Q In the normal order, that zero-fuel-cost wind would displace other resources if it were the -- only if it were the lowest cost resource,

correct?

A Right. You want to start with energy efficiency and DSM and the low -- to displace things.

Q So just focusing in on those market purchases, the Company currently uses market purchases to balance its system and serve load, correct?

A Correct.

Q And in the current case, the status quo case, customers bear all the risks associated with those market purchases, correct?

A Well, I'm assuming as long as the Company is following its hedging practices, it should.

Q And in fact, the Division has previously expressed some concern about the Company relying on market purchases to serve its need, correct?

A Yes.

Q And I wanted to give you -- an example of that is in our Cross-Exhibit 5. Do you have that?

A Yes.

Q So I'll just represent to you, these are the Division's comments on PacifiCorp's 2015 IRP. Do you see that?

A Yes.

Q And you're listed as one of the authors of these comments, so I take it you're familiar with these comments?

A Yes, I am.

Q So if you turn to what's marked as page 16 of this exhibit, following up on my question to you about the Division expressing concern about market reliance, there in the -- basically the first paragraph under the graph, and I want to just read a sentence to you to direct your attention to it. It's the last full sentence of that paragraph where you say, "The reliance on FOT," and that would be front office transaction. Is that the definition of FOT? Can you help with that for a moment?

A Yes. That's the terminology we use.

Q And that refers to market purchases, correct?

A Yes. Short-term. It could be hourly, sub-hourly, a two-year --

Q Just a range of market purchases, correct? So you could say, "The reliance on market purchases continues to be a concern to the Division and to other Utah parties. This reliance on the wholesale electric market could result in ratepayers facing greater price volatility and potentially loss of

power, except at very high prices, in the event that the wholesale markets dry up due to environmental concerns and the possible closure of existing coal-fired generation facilities, among other reasons." Do you recall those comments from the Division?

A   Yes, I do.

Q   So I take it that by -- if the Company takes steps to reduce its reliance on the market to meet load, that would be consistent with the Division's position that that would be risk reducing to customers?

A   You're making an extra assumption there. I'm sure we filed those comments -- the Commission issued an order requiring the Company to demonstrate that it had the market depth and liquidity to sustain that level of market purchases. And so ever since the Company has included in Appendix J -- and it's Volume 2 of its IRP, Western Resource Adequacy study -- so these fears that we had back in 2011, '15, the Commission ruled and those have been somewhat gone, pretty much. We don't have to worry much about that anymore.

Q   Well, by -- repowering would basically reduce the Company's reliance on market purchases by

750 gigawatt hours of new energy in the next 20 years or so. Do you accept that?

A Over 20 years or 30 years?

Q Well, through 2037. Would you accept that?

A I don't know. I'd have to check that one. I'm thinking more of the first 10 years while we have the PTCs. And it seems like they would only displace maybe 174 megawatts, and that's not very much.

Q Well, if it's zero-fuel cost and 750 gigawatt hours, wouldn't the Company be using that -- those gigawatt hours instead of market purchases to serve and balance its load?

A I would think so.

Q And isn't that consistent with the concerns the Division expressed, as recently as 2015, about the risk of the Company's reliance on the market?

A Yes. It's consistent with that, but again, that concern has been assuaged.

Q Can you turn to your direct testimony -- actually, excuse me -- your surrebuttal testimony at lines 2014 -- surrebuttal, lines 214 to 216.

A Sure. What is the correct line?

Q 214. So let me ask you more generally, your position is that repowering should be in the IRP, correct?

A I'm sorry. Excuse me. I've got the wrong testimony.

Q That's all right. I can just ask you more generally.

A I have it right here. Okay.

Q So generally, this Q and A beginning on line 207 indicates that your position is that the repowering should be in the IRP. Is that a fair summary of that Q and A?

A My position is that IRP stakeholders should have been introduced so that IRP stakeholders could have discussed it and expressed concerns over it earlier in the process.

Q So can I turn your attention to the final cross-exhibit in that stack, RMP Cross-Exhibit 6? Do you have that? These are the comments, PacifiCorp's comments -- or excuse me, the Division's comments on PacifiCorp's 2017 IRP. Do you have that?

A Yes.

Q So do you recognize these comments? It's just an excerpt from the comments, from PacifiCorp's

2017 IRP.

A Yes.

Q So you assisted on these comments; is that correct?

A Yes.

Q What I wanted to ask you about is on page 34 of this exhibit. And at the top of the page -- do you have that?

A Uh-huh (affirmative).

Q You talk about wind repowering, basically beginning with "however." You say, "However, the 2017 IRP and its Action Plan include wind repowering and new wind and transmission resources that are based on an economic opportunity." Do you see that sentence?

A Yes.

Q And then, I wanted to ask you about the next sentence where you say, "Economic opportunities are best evaluated in the context of a rate-based setting, not an IRP setting." Do you see that?

A Yes.

Q So didn't the Division actually recommend even considering repowering in the IRP?

A Did the Division recommend repowering?

Q Against considering repowering in the IRP?

A Yes, against. Yes.

Q So you indicated that the Commission should not consider repowering in the IRP; it should have instead considered it in a rate case?

A No, not instead. It should have gone through an IRP stakeholder planning process and then through a rate case.

Q That's curious, because your comments here say, "Economic opportunities are best evaluated in the context of a rate-based setting, not an IRP setting." So I read those comments as indicating that the Division did not believe that repowering belonged in the IRP.

A Then if you want to read the very next sentence, it says, "The Division recommends the Commission direct the Company toward Utah's IRP objectives, need-based resource planning, and least-cost, least-risk objective, according to the Commission's IRP Standards and Guidelines."

Q So I wanted to ask you about a statement, and indicate whether you agree with it in the context of repowering. And that is that regulators should not discourage the Company from looking for potential economic benefits for ratepayers, even if the proposals seem unusual within a regulatory

framework. Do you agree with that statement?

A No. I think that companies should still look for good opportunities. I don't want to discourage the Company from looking for good opportunities.

Q So you do agree with that statement?

A Uh-huh (affirmative).

MS. MCDOWELL: That's all I have. I would like to offer our cross-exhibits, which are 1 through 3, and 5 and 6.

DR. ZENGER: We don't have the full comments, we just have certain pages here.

MS. MCDOWELL: And they are just excerpts. We did that in the interest of not wasting a bunch of paper. I certainly would not object to complete versions of any of these documents being submitted into the record in lieu of these cross-exhibits.

COMMISSIONER LEVAR: Do any parties object to the admission of any of these cross-exhibits? I'm not seeing any, so the motion is granted. Ms. Schmid, any redirect?

MS. SCHMID: Yes.

REDIRECT EXAMINATION

BY MS. SCHMID:

Q You were asked a series of questions about whether a project would most likely result in the acquisition, production, and delivery of utility services in the least reasonable cost to the retail consumers of an energy utility located in this state. Is that the only thing that the Public Service Commission is required to take into consideration when it is determining whether or not to give pre-approval to a project like that presented in the application before it?

A I closed my statute, but no. Definitely not. There's the long-term impacts and short-term factors, long-term factors, the financial impact on the Utility, if there's any other factors that might be deemed relevant at the time. Like, for instance, when we were going through the '80s recession, that was obviously a factor. So I think the magnitude and scope of this project is a factor because this is unprecedented. So no, it's not the only factor. There are many factors.

Q So even if there were NPVs that were positive, it's possible that customers might not see the lowest reasonable cost because of other factors; is that correct?

A That's true.

Q And I want to focus on this. The standard is, isn't it, whether or not the Commission determines that the decision is in the public interest. The Division is really evaluating whether or not it's worth taking a risk; is that correct?

A Yes.

Q You were asked about front office transactions. Isn't it true that the Division has expressed concern about reliance upon front office transactions?

A Yes, yes.

Q But isn't it true that the Division thinks that this application requesting a billion dollars of pre-approval isn't the resource to eliminate all reliance on front office transactions?

A Correct. This -- the small amount of energy that comes from the repower of wind projects wouldn't displace all the front office transactions. And the Company needs to have a certain level of transactions for balancing intra-hour and intra-day hour balancing, so it's not like you want to get rid of all of your front office transactions.

Q So is it true that front office transactions replace capacity that the Company doesn't have for, like, meeting its summer peak; is

that true?

A It could. They're basically considered a proxy resource in the IRP. And then when we get to all the tangible resources and what we need in considering the 13 percent planning reserve margin, then they usually fill in the numbers. But we've always had them in the IRP.

Q And so with these front office transactions, the Division is concerned but they may be needed. Is that a fair statement?

A Yes.

Q And is it also a fair statement that when the Company builds a resource, like a billion-dollar resource, the ratepayers are locked in? And I'll use that -- I'm trying to not use it as a pejorative term -- but the ratepayers are committed to paying not only for the cost of the project, its capital costs, its expenses, but also a return on rate base to the Company?

A That's right. And the rate base on the unused equipment, too, that's being taken out.

Q So isn't it true that the Division is really evaluating and saying it's not worth taking a risk on this $1 billion investment?

A Yes. The Division is not saying the

Company should not ever look for opportunities, new battery technology and new advances that can cut costs and improve system reliability, but this particular acquisition presents too much risk.

Q And the Division isn't trying to discourage the Company from looking -- is it true that the Division just wants to make sure that if a project is approved, it's in the public interest?

A Exactly. Yes. In the public interest.

MS. SCHMID: Now, it's Mr. Jetter's turn to ask questions on a different topic.

REDIRECT EXAMINATION

BY MR. JETTER:

Q Thank you. I apologize for any disruption this will cause, but because of my involvement in the Jim Bridger SCR approval docket, I think it would be reasonable for me to follow up with some redirect questions regarding that topic and distinctions between that and this case.

With respect to the Jim Bridger SCR process -- I'm just going to ask a hypothetical, so we don't even need to go into facts. But hypothetically, would you view a resource decision to add a pair of selected catalytic reaction reduction systems to a coal power plant that would

allow it to stay in service and generate something in the range of 500 megawatts of capacity -- in that analysis where the alternative comparison, the need to construct a very similar cost combined cycle natural gas power plant in a different location, if the scenario arose where those were two options -- neither existed in the current state -- and the decision between the two was necessary to have one or the other to keep the lights on, would you view that as a different analysis as compared to an analysis of whether we should spend a billion dollars to try to make some extra money?

A   Yes, definitely. And probably in the case you described, it wouldn't have happened after the fact. So here, the IRP is all done, we've done this so we've got sensitivities. Is it better with, is it better without? I think if you're doing two complete alternate possibilities, you could do a full analysis for alternatives.

Q   Thank you. And if you were forced to choose one of two alternatives, neither of which were available as a no-action alternative, would it be more reasonable to choose the one that was maybe one dollar better than the other?

A   Not if there is too much risk.

MR. JETTER: Okay. I'd like to approach the witness and hand her -- what I'm going to hand her is a copy -- and I don't intend to enter this as an exhibit -- but it's Rocky Mountain Power's 2017 integrated resource plan update, May 1st, which was, I believe, yesterday or two days ago, 2018?

COMMISSIONER LEVAR: Yes.

BY MR. JETTER:

Q And you were asked some questions about the Division's concern in the 2015 IRP. Do you have Rocky Mountain Power Cross-Exhibit 5? And specifically, I'm looking at page 16. That includes a chart titled, The 2015 IRP Load and Resource Balance?

A Yes.

Q Is it accurate to say that in 2015, looking at that chart, if you go out to 2024, that chart shows that 2015 IRP total resource in megawatts is 10,424, and the projected obligation in reserve is 12,259?

A Yes.

Q And would you also accept, subject to check, that the Company has represented that the depth of front office transactions is

1,575 megawatts?

A   Is that per year?

Q   That's on an instantaneous basis, I believe.

A   Okay.

Q   Would you accept that, subject to check, that that is also in that IRP?

A   Yes.

Q   Now, would you turn to page 24 of the Company's 2017 updated IRP. Do you see a chart at the top, which is figure 4.2? And that shows the forecasted annual coincident peak load. Are you looking at that?

A   Yes.

Q   And is it accurate that, if you go out to 2024, which matches the end year of the 2015 IRP you had commented about, in the gap between the available resources and the projected load, is it accurate to say that the current Company forecast for 2024 for forecasted coincident peak load is around 10,300 megawatts?

A   Yes, yes.

Q   And in fact, 10,300 megawatts, the Company forecasted coincident peak load in its current projections is less than the Company's 2015 IRP

projected total resources. Is that accurate?

A Yes, it is.

Q Does that cause a substantial change in your concern about the number of front office transactions available to meet that peak load?

A Well, yeah. I mean, with load changing, if load is increasing, then of course, you have to worry about when you're going to build the next major plant. But with load being steady or decreasing, you're in a no-build option and you don't have the same concern over front office transactions.

Q And so, in fact, if you have enough generating capacity within the Company to exceed the projected load, you may not need any front office transactions. Is that accurate? You may end up selling primarily through those transactions?

A Right, right. Short-term sales.

Q Thank you. With respect to the ability to meet load, there was some discussion sort of mixing in --

MS. MCDOWELL: I hate to interrupt, but this is really extensive redirect. I really can't remember any redirect I've ever seen that's gone on this long. I understand and I hate to interrupt anybody, but it does seem like we're well beyond the scope of my cross-examination at this point.

COMMISSIONER LEVAR: So that's your objection, is that it's beyond the scope of cross?

MS. MCDOWELL: It seems like a lot of this could have been covered in their testimony and or in their direct filing. We don't have a chance to cross-examine on all of this new information that's coming out, so I guess I'm just objecting because it seems like that is going beyond the scope of normal redirect.

COMMISSIONER LEVAR: Well, I think I'm going to rule that I don't think we're outside of the topic of what the cross-examination was on. So I don't see a basis for shutting this down based on length, because I think we're within the topics that you covered on cross. So I don't see an evidentiary basis based on length of redirect, so I will continue.

However, this is a good time to give everyone and our court reporter a brief break. So why don't we take a ten-minute break, come back, and we'll continue with the redirect. If we're going to be back tomorrow no matter what, there's probably no reason to continue going. So it looks like we'll be here tomorrow, so we'll probably come back and try to wrap up around 5:00 or so. We can continue and get as far as we can. Why don't we take about a ten-minute recess.

(A brief recess was taken.)

COMMISSIONER LEVAR: We're back on the record. Dr. Zenger, you're still under oath. And we'll continue with redirect by Mr. Jetter.

MR. JETTER: Thank you. I am finished with redirect, so we can move on to recross.

COMMISSIONER LEVAR: Ms. McDowell, do you have any recross?

RECROSS EXAMINATION

BY MS. MCDOWELL:

Q I wanted to ask a clarifying question about the 2017 IRP update. Do you still have that?

A Yes.

Q Were you present when Mr. Link testified that the load forecast used in the IRP update is the same that was used in the supplemental direct economic analysis presented by the Company?

A Yes, I heard that. That was the first time I'd heard it.

Q So basically, whatever load forecast is represented in the update is also already incorporated in the Company's economic analysis?

A Yes.

Q And that's also true with the forward price curve? I don't know how familiar -- since you're testifying on it, I don't know how familiar you are on it, but I'll represent to you that the forward price curve used in the update is the December 2017 forward price curve. Will you accept that?

A Subject to check. And could I ask, also, are the PTCs being modeled as nominal in the update, or levelized?

Q I can represent to you that they are modeled on a nominal basis in the IRP. Mr. Link also testified to that earlier today. But back to my question, is it your understanding that Mr. Link's supplemental testimony providing the new economic analysis is also used in the December 2017 forward price curve?

A Yes.

Q Which is the same forward price curve?

A Yes.

MS. MCDOWELL: Thank you. That's all

I have.

COMMISSIONER LEVAR: Thank you. Commissioner White, do you have any questions for Dr. Zenger?

COMMISSIONER WHITE: No questions. Thank you.

COMMISSIONER LEVAR: Commissioner Clark?

COMMISSIONER CLARK: No questions.

COMMISSIONER LEVAR: I don't have any either. Thank you for your testimony today. Ms. Schmid.

MS. SCHMID: As its next witness, the Division would like to call Mr. Peaco.

DANIEL PEACO,

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

DIRECT EXAMINATION

BY MS. SCHMID:

Q Good morning. Could you please state your full name, business address, and employer for the record?

A Yes. My name is Daniel Peaco. I'm principle consultant for Daymark Energy Advisers, consultant to the Division, and my business address is 48 Free Street, Portland, Maine 04101.

Q In connection with your employment by the Division and your participation in this docket, have you prepared and caused to be filed what's been marked as DPU Exhibit No. 2.0-DIR in confidential and redacted form, along with Exhibit No. 2.1 and along with Exhibit No. 2.2-DIR in confidential and redacted form. And those were filed on September 20th of 2017?

A Yes.

Q Did you also prepare and cause to be filed what's been marked as DPU Exhibit No. 2.0-SR in confidential and redated form, along with other Exhibits 2.1 and 2.2-DIR, both in confidential and redacted form? That was filed on November 15th, 2017?

A Yes.

Q And finally, did you prepare and cause to be filed what's been marked as DPU Exhibit No. 2.0-RESP, your prefiled response testimony in confidential and redacted form, filed on April 2nd, 2018?

A Yes.

Q Do you have any changes or corrections to those prefiled exhibits?

A I do not.
Q If I were to ask you the same questions today as are presented in your prefiled testimony, would your answers be the same?
A They would.
MS. SCHMID: With that, the Division moves for the admission of Mr. Peaco's direct, surrebuttal, and response as previously identified.
COMMISSIONER LEVAR: If anyone objects to that motion, please indicate to me. I'm not seeing any objections, so the motion is granted.
(DPU Exhibit Nos. 2.0-DIR Confidential, 2.0-DIR Redacted, 2.1-DIR, 2.2-DIR Confidential, 2.2-DIR Redacted admitted.)
BY MS. SCHMID:
Q Do you have a summary to present today?
A I do.
Q Please proceed?
A Commissioners, good afternoon. The Company has proposed a collection of 12 wind repowering projects for approval by this Commission that the Company claims represents a unique economic opportunity to provide benefits to customers, deriving from the limited time nature of the federal production tax credit, or PTC policy.

On behalf of the Division, I've offered three pieces of testimony in this proceeding, which we have just described. The Company has offered the projects as a unique opportunity for the Company to repower these projects and receive renewed qualification for PTC benefits, resulting in lower costs to customers. The repowering projects are different than a typical resource decision. In this case, the Company has failed to show that there is a resource need for these projects. They do not serve to address any identified need from a reliability or public policy requirement. The sole justification of these projects provided by the Company is to lower costs to customers.

The Company's initial application offered the 12 projects as a single project, with an economic analysis of these projects as one. In response to concerns expressed by me and others, the Company acknowledged that other than the common timing objective for the purposes of the PTC qualification, the 12 repowering projects are independent investment decisions. My testimony examines the Company's economic case for each of the 12 projects. The Company has asserted that these projects officer a high likelihood of significant benefits to ratepayers. In the context of this case and in the context of that representation of the benefits to customers, a 50/50 proposition is not acceptable.

I've examined the potential for adverse outcomes to seek an assurance of a much higher probability of significant benefits to customers; I've examined the project economics to determine whether the results are sufficiently robust to be beneficial to ratepayers across the full range of possible market and policy outcomes, and they are not. I observed that the Company's current estimate of economic benefits of the entire package of the repowering projects has declined from the analysis it presented in its rebuttal testimony last fall. The Company's current analysis estimates that the net ratepayer benefits across all jurisdictions of the combined projects for the nine price policy scenarios ranging from $127 million to $446 million. These values are lower than the $360 million to $635 million range offered in the Company's rebuttal testimony. My testimony shows that the benefit cost margins in those results are not sufficient to assure a high likelihood of significant benefits to ratepayers, even if you assume the Company's estimates are reasonable.

In the low gas, zero CO2 scenario, the Company's analysis shows the $1.1 billion investment offers ratepayers across all jurisdictions a $127 million in net benefits. This value is much less than the return on investment that the Company is seeking, with ratepayers receiving lower estimated benefits while continuing to bear many important risks.

The economics vary considerably between the 12 sites and by subsets of wind turbine generation within each site. My testimony provides benefit cost ratios for each of the 12 projects, showing the range of value between the projects in the Company's analysis and in alternative market price sensitivity I've prepared. Note that the ratios I've used to determine this variation among the sites do not represent my view of the economics, but the Company's. In addition, I provide an analysis that illustrates that there are different values for those wind turbine generators that the Company has identified as needing repairs and those that have already been repaired. I have identified a number of problems with the Company's economic modeling methodology and analysis that cause me to conclude that the savings analysis is not a sound or reasonable basis for supporting the Company's recommendation.

The Company's primary analysis employs its IRP models to evaluate the economics of the first 17 years of the project life, and an extrapolation method to develop values for the remaining 13 years of the project life. In each of my three filed testimonies, I describe anomalous results that I have observed that leave me concerned that the modeling methodology is not providing reliable results. In response to these concerns, the Company has offered an alternative extrapolation methodology, but I have found that that method has flaws as well.

The Company's primary and alternative methodologies are each challenged to provide reasonable economic analysis of the unique characteristics of the incremental production offered by the repowered projects. Neither method provides a sufficiently sound and transparent evaluation of the projects to give confidence in the results. As a result, I cannot conclude that either method is a proper basis to make judgments as to whether any or all of the projects have a high likelihood of customer benefits.

There remains significant risk that the actual economic value to ratepayers will be significantly different than the results in the Company's analysis. The Company's proposal requires that ratepayers bear a number of significant economic risks and uncertainties. I believe it is particularly important for the Company to explore the magnitude of any potential downside risks that the customers are being asked to assume if these projects are to proceed. These risks include project cost uncertainty, project energy production estimate uncertainty, and assumptions regarding project life. While the Company asserts that it has demonstrated the net benefits to customers over a wide range of scenarios, the analysis the Company presented does not include any analysis for these factors for those price policy scenarios that produced the least attractive benefit outcomes for customers.

I recommend that the Company's application for the 12 repowering projects be denied. However, there is potential for a downsized repowering program to be considered by the Company. I recommend that the Company consider a revised program proposal that eliminates at least six of the least attractive sites. In addition, I recommend that the repowering be limited to those turbines that have problematic gear box equipment that is slated for replacement. As shown in my testimony, based on the Company's analysis, removing at least six of the 12 sites and eliminating the repowering of towers that have already had new gear box equipment replaced, would deliver a higher probability of benefits and substantially reduce costs to ratepayers. The Seven Mile Hill I and II, Glenrock I and III, Dunlap Ranch, and Marengo I appear to demonstrate better economics and may merit further consideration. Goodnoe Hills, Marengo II, Rolling Hills, McFadden Ridge, High Plains, and Leaning Juniper are the most economically challenged sites and should be removed from further consideration.

The Company could consider revising its repowering program to focus on the best six sites, and within those sites, the turbines that have the problematic gear box equipment. Even if the repowering program is reduced in size to target the best investment opportunities, the ratepayer risk issues would not be eliminated, only mitigated. If any of these projects are to be approved, the Company should be held accountable for meeting the PTC requirements and effectively managing the other risks that I have identified.

I recommend that the Commission not approve any alternative configuration based on the record before it. The Company could decide to proceed with a modified proposal in another pre-approval application.

Q Have you prepared a hearing exhibit to help explain your summary and live testimony today?

A Yes. I have prepared a number of comments and surrebuttal to the Company's latest filed rebuttal testimony, and I would explain that exhibit in that context.

Q Thank you. Please proceed.

A Okay. There are a number of points in the Company's most recent filed testimony that I would like to respond to.

First, I would state that Mr. Hoogeveen has indicated at lines 31 and 32, that the Company has addressed or mitigated the major risks identified by the parties. And as I've just explained in my summary, there are a number of risks that we have identified as major that the Company has not addressed. The Company even today, this morning, he acknowledged in testimony that the Company is not assuming risks that I've identified, including change in federal law, change in the IRS letter rulings on the implementation of the PTC program, they're taking none of the production risk -- downside production risks associated with the projects -- and they're not assuming any of the market risks, among some others. But those are the major ones that I wanted to clarify, that there are major risks that we have identified that the Company has not addressed or mitigated.

The second point goes to the representation of the relationship between the value of the PTC benefit and the cost of the project. Mr. Hoogeveen in testimony, and I think again today, indicated that the investment at 1.1 billion would pass 1.26 billion in PTC benefits, a number in excess of the cost that he's quoted. That number -- I will go to the exhibit that been circulated to explain what those numbers are and why I disagree with his representation of those.

MS. SCHMID: And if we may break for just a moment, I have not provided the exhibit to the Commissioners, however, it has been previously provided to Counsel. So if I may distribute this now.

COMMISSIONER LEVAR: Is that a confidential exhibit?

MS. SCHMID: Thank you. Yes, it is a confidential exhibit.

COMMISSIONER LEVAR: So I'll ask to get a copy to the court reporter, but keep it out of the public transcripts if it's admitted.

THE WITNESS: My intention is to not -- I'll refer to numbers on this page that are confidential, but I don't intend to discuss them. But I first will point you to two numbers on this page that are not confidential, the numbers that are in Mr. Hoogeveen's testimony --

MS. SCHMID: And if I could stop for just one second, could we have this identified as DPU Hearing Exhibit 1?

(DPU Confidential Hearing Exhibit No. 1 marked.)

BY MS. SCHMID:

Q Please proceed.

A Okay. So there's Mr. Hoogeveen's testimony that indicates that the proposed investment is in the amount of $1.101 billion. That number shows in the highlighted box at the very top of the page. And I've included the source for that information. All of these numbers are sourced from a work paper attached to Mr. Link's testimony. The second number from Mr. Hoogeveen's testimony, which is in the public domain, is a number that's corresponding to -- under the production tax credit collection of numbers, the sum of nominal, there's a number, a billion two-sixty-two. That's the second number in his testimony and he talked today and he characterized that as demonstrating that the PTC benefits exceed the cost of the project.

What I want to do first is to explain to you what those numbers are. The capital cost number and the production tax credit are what I would call nominal numbers. They're basically the sum of nominal values. The capital costs that occur in 2018 and 2019 summed together bring you to the 1.01. That's only the investment cost, it's not all of the costs that go into the revenue requirements that are in the analysis. It's the initial investment in a nominal basis expressed in the years that they're incurred. The production tax credit number, a billion two-sixty-two, is also a nominal number. It's the sum of the nominal values for the production tax credit benefit from the year 2019 through 2030 in the analysis. It is not a present value number, it's expressed and inflated into the year dollars where the benefits occur. And so it's therefore not on the same year-dollar basis or the same present-value basis as the cost.

What I also show here on this sheet, the row immediately below the billion two-sixty-two number, is the present value version of that number for the production tax credits. What I show in the middle section, the section that is Project Cost, (NPV), which is net present value of project costs, and this would include the capital recovery O&M and wind tax, all of the costs built into the revenue requirements for a total. And the total is shown there. And as you can see from comparing that total to the net present value of the production tax credits, the production tax credits clearly are still a major component of offsetting cost, but they do not exceed the cost of the project. And I think it's important to put in apples to apples, the magnitude of the production tax credit benefit relative to the cost on a consistent basis.

The next point that I would like to discuss is that -- and this was partly addressed in oral this morning -- Mr. Hoogeveen has asserted in his testimony at lines 154 to 156 that my analysis shows all facilities showing net benefits in the medium/medium case in the low gas, no carbon scenarios. And that representation is not a correct representation of my testimony. He is pointing to -- I did not include any analysis in my testimony that showed numbers through 2036 as he stated. He subsequently this morning corrected that his intent was to refer to 2050 numbers, but the values that he was directing to were values where I was restating the Company's numbers and not my own. I would also note that in the discussion about the analysis -- the 20-year and the 30-year analysis that both Mr. Hoogeveen and Mr. Link talked about today -- while they stressed many of the benefits in the 20-year analysis and the 30-year analysis, I had argued in my filed testimony and continue to believe that there are real problems, particularly with the 20-year analysis, and that the focus should be on the 30-year results. And they now have both agreed with that concept. And we're now in agreement with that, but I think it's important to stress that that should be the proper focus of looking at the economics, and that those 20-year value numbers have significant problems and they're not effective metrics to use for determining -- making decisions on the projects.

My next point -- there was a misrepresentation by Mr. Hoogeveen in his filed testimony regarding my Table 4 on line 39 of my testimony. He indicates that my analysis shows 43 of 48 scenarios showing net benefits. He misrepresents that table in a couple of ways. First, the table was not offered to show scenarios or my net benefits, it was to show how the economic value of the projects, the 12 projects, varies amongst the projects. He also misses the point that, instead of 48 scenarios, there's only two scenarios represented in the sets of numbers in that table. And from that -- I used that table, in part, to form my recommendation that the Company should do an analysis of a downsized program, and the Company so far has refused to do that.

My next point goes to testimony offered by Mr. Hemstreet. He has indicated in his filed testimony that the Company has agreed to fully assume all PTC risks associated with factors within its control, and that my testimony does not explain what risks remain. He misses the point that I have an extensive section in my testimony where I talk about a number of risks that remain, including those risks that implicate the ultimate value of the PTC benefit to customers. That's presented in section 4 of my testimony.

He also further indicated that, in oral testimony today, that he did not believe a 10 percent reduction in production would be significant on the value of PTC. And I would like to refer you back to my -- the exhibit that we talked about with the numbers, and I would like to return your attention to the net present value of production tax credit. And if I can indulge to ask you to do a little math and look at what 10 percent of that number is, I consider that a significant value. And that would be the loss if production was -- in the first ten years of the project -- were 10 percent less than is in the Company's analysis.

I also want, at this point, make the point that I was concerned to hear that Mr. Hemstreet has not even considered what the uncertainty around his estimate is. He's represented it as a long-term average. I think in the interest of understanding the downside risk, they have some data, they could have done a better representation of what the variance is and what would happen -- what adverse outcome over the first ten years of the projects might look like, so that we can understand exactly how much exposure, downside exposure, there is in realizing those PTC benefits.

I have just a few more. I'm sorry to move on here. I wanted to speak briefly to the five reasons why Mr. Hemstreet says the Company would not consider repowering only some of the turbines on each of the sites, and that was discussed in cross earlier today. And I guess my point here is that he offered a number of points, five points in his testimony as to why it was not reasonable to consider. But then yet today, he says those issues are not unresolvable. Yet despite the fact that we called in our prior testimony for him to address that, he argued that it shouldn't be done and now he says there's ways we can resolve that, and we have not heard evidence on that to date.

My next point is, Mr. Hemstreet obviously disagrees with my recommendation to eliminate at least six sites and to limit the proposal to only certain turbines. And I guess I would say at this point, the fact that they didn't respond with an alternative to show the Commission in their filed testimony is a concern to me. I'm at least pleased to hear today that the Company witness acknowledged that this is a project-by-project evaluation and we should look on a project basis. But they have yet to respond and to provide an alternative configuration that I would contend would provide higher benefits at lower costs than what we're considering today.

Responding to a point in Mr. Link's testimony, he indicates -- I have offered a number of critiques of his economic modeling. And to be clear, the modeling that he's offered on the 30-year analysis we're talking about, there really is two components to the modeling. There's the detailed system modeling that he describes that is conducted for 17 years of the projects. And then there's this extrapolation of those results to get the balance of the economics. I and others in this case have offered a number of critiques of both components of that analysis. And I think together, there are some real problematic issues that we've identified that the Company has yet to really acknowledge or respond to. The primary response that Mr. Link offers is that I'm discarding his robust system modeling, and I take issue with that. I've done planning in this kind of environment for a long time. I do a lot of system modeling. I also do a lot of work testing those model results because they have a lot of data, they're complicated models, and you have to be comfortable that what you're getting out is reasonable results. What I've offered in my testimony are the kinds of things that I typically do to test our own models to see whether they're producing reasonable results. I have not conducted an independent analysis of system modeling, but I have done enough testing to be able to demonstrate that the results from his models, both the 17-year models and the extrapolation methods, are not producing reasonable results.

And I would hope and presume that his organization is also doing the same kind of diagnostic test of their results to test reasonableness. That's what I've offered in my testimony, and he claims that I'm dismissing his model rather than pointing out the fact that our diagnostic checks are pointing out the fact that he has real problems. And so I take issue with his, sort of, bold assertion that we should believe in the model, regardless of whether the results look reasonable or not.

Just a couple more points. Mr. Link addresses my alternative method for reviewing project-by-project benefits and the use of his price script from Palo Verde. Again, I did two tests on that. I tested his Palo Verde price script by comparing it to his own natural gas price forecast and what I considered to a reasonable system average heat rate. Again, that's a simple method to check to see whether the result is reasonable. And what I found is, his Palo Verde price scripts are much more expensive than what any combination of natural gas-fired plants on their own system would produce. So what I did in my analysis is, I tested the economics of the project using his gas price and a reasonable system average heat rate, which is about 30 percent below his Palo Verde price. So he rejects my result on that because he disagrees with the fact that my reasonable check shows that the numbers he's asking us to look at are quite higher than the value of energy based upon natural gas in their system.

The last point I'd like to make -- it goes to a point that was in my prior testimony. We started our analysis at the beginning of the case based upon a representation that the Company made that there is a high likelihood of customer benefits and that there will be significant benefits to customers, and this was a unique economic opportunity, and we should look at it that way. This case has evolved -- and particularly Mr. Link and Ms. Steward's testimonies -- they now would like us to review this from -- this is like any other choice between two resource alternatives, and a dollar benefit to the good is reason to go forward with these projects. That's a substantial shift in the Company's own articulation of how they believe we should view the benefits of these projects. And I think that's a major issue in how the Commission will look at what value proposition these projects actually offer customers.

And with that, I conclude my surrebuttal.

MS. SCHMID: Thank you. The Division would like to move for the admission of what's been marked as DPU Exhibit 1, which is a confidential exhibit.

(DPU Confidential Hearing Exhibit No. 1 admitted.)

COMMISSIONER LEVAR: If any party objects to that motion, please indicate to me.

MS. MCDOWELL: No objection.

BY MS. SCHMID:

Q Just one question. You were engaged to evaluate the risks and benefits, not to make the policy decision on public interest; is that correct?

A That's correct.

Q And so your testimony has focused on evaluating those risks and benefits and found the projects lacking?

A Yes.

MS. SCHMID: Mr. Peaco is now available for questioning.

COMMISSIONER LEVAR: And your motion to enter into the record DPU Hearing Exhibit 1 is granted.

MS. SCHMID: Thank you.

COMMISSIONER LEVAR: Mr. Moore or Mr. Snarr, do you have any questions for Mr. Peaco?

MR. SNARR: No questions.

COMMISSIONER LEVAR: Mr. Russell, do you have any questions?

MR. RUSSELL: No questions, Chair.

COMMISSIONER LEVAR: Ms. Tormoen Hickey?

CROSS-EXAMINATION

BY MS. HICKEY:

Q Mr. Peaco, thank you. Lisa Hickey representing the Interwest Energy Alliance. I really just had one question. You indicate that six of the projects should be approved, it sounds like?

A No. I've indicated that six projects should be eliminated, six others should be considered -- subject to further review because they have more potential to be beneficial.

Q And the further review would require another application?

A That's currently what -- because the Company did not respond to providing a more focused analysis of those projects, we don't have the information in front of us to make that decision.

MS. HICKEY: Thank you.

COMMISSIONER LEVAR: Ms. McDowell or Mr. Lowney?

CROSS-EXAMINATION

BY MS. MCDOWELL:

Q Yes, I definitely have some questions for Mr. Peaco and just as a time --

COMMISSIONER LEVAR: Does it make sense to start and stop and finish in the morning, or would it be better just to start in the morning?

MS. MCDOWELL: Because this is

financial analysis cross-examination, I hate to start it and stop and then have to resume in the morning. If we could just restart in the morning, I think it would make a more cogent presentation of my cross-examination and these responses.

COMMISSIONER LEVAR: Any objection from anybody to that?

MS. SCHMID: No objection.

MR. RUSSELL: Chair, I don't really have an objection. I am a little concerned about whether we're going to make it all the way through tomorrow. That concern really is related to the fact that we're going to have some very severe scheduling difficulties if we don't make it through tomorrow. It's not really an objection to Ms. McDowell's -- I'm sympathetic to the point that she's making, I do want to raise the concern about whether we're going to make it through tomorrow.

COMMISSIONER LEVAR: And you know, we've been through six witnesses today and we have Mr. Peaco, plus five others tomorrow so you're right, we could be pushing things tomorrow. I'm not sure the next 20 minutes of starting and stopping is going to make much difference on that, but that's an issue that we, as we get to the afternoon, we can start thinking about tomorrow.

MS. MCDOWELL: And can I respond by saying that we're also highly incented to complete this case by tomorrow, so we'll certainly tailor our cross-examination to work toward that end, and we think it's certainly doable.

COMMISSIONER LEVAR: Okay. Anything else that needs to be addressed before we recess until tomorrow morning? We will be recessed and we'll reconvene at 9:00 a.m. tomorrow morning.

(The hearing was recessed at 4:55 p.m.)

REPORTER'S CERTIFICATE

STATE OF UTAH)
COUNTY OF SUMMIT)

I, Mary R. Honigman, a 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 witness was placed under oath to tell the truth, the whole truth, and nothing but 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 14th day of May, 2018.

Mary R. Honigman
Registered Professional Reporter #972887

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